

**DETERMINANTS OF RURAL HOUSEHOLDS' DIVERSIFICATION OF
LIVELIHOOD STRATEGIES: A CASE OF INTSIKA YETHU FARMERS OF THE
EASTERN CAPE PROVINCE, SOUTH AFRICA.**



University of Fort Hare
Together in Excellence

**A Dissertation Submitted in Fulfilment of the Requirement for the Degree of Master of
Science in Agriculture (Agricultural Economics)**

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September 2014

ABSTRACT

Despite the continuing perceived economic centrality of agriculture in Intsika Yethu local municipality, rural households engage and pursue diverse non-farm livelihood activities to cope with diverse challenges and risks such as drought. This study assessed the importance of existing livelihood strategies adopted by the different rural households in Intsika Yethu; the link between households' ownership and access to different 'assets'; factors determining households' ability to adopt certain livelihood strategies in the area. A survey of 120 households in six administrative areas and informal discussions with key informants were used to collect demographic data, data on socio-economic activities and factors determining the choice of livelihood strategies of the households in Intsika Yethu. The research findings indicated that only about 10% of the interviewed households relied solely on on-farm livelihood strategy only. Credit, remittances, market distance, affiliating to cooperatives, education and household size have a potential of influencing households to shift from on-farm livelihood strategy to other livelihood strategies. The government may need to promote programs and awareness on how households can diversify their livelihood strategies as a way of coping with economic constraints in the area.

Key words: Rural households, livelihood strategies, diversification, Intsika Yethu

DEDICATIONS

This work is dedicated to my son “The-Prince”

DECLARATION

I, hereby declare that this thesis is my original work, and has not been submitted in partial or entirety for degree purposes to any other university. All the work that was written by other authors and used in the thesis is fully acknowledged.

Submitted for the Master of Science degree in Agricultural Economics at the University of Fort Hare.



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26 September 2014

Date

ACKNOWLEDGEMENTS

The Lord Almighty deserves the best for His grace, love and guidance throughout compilation of this document. The essential gift of life and good health are from the Heavens. Praises be to God.

I am quite grateful to Professor A. Mushunje, my supervisor for the guidance, support and encouragement throughout the challenging compilation of this document. His contribution made it possible for me to complete this thesis in time. Without his constructive criticism and advice, this effort would be in vain. Thumbs up!

Rumbidzai D and The Prince Tawananyasha are the “crew behind scenes” members who tirelessly supported me (the author and compiler of this document) in structuring the information till I finished. Both my arms are opened for these loved ones. You deserve all my love.

Mum and Dad.....I adore you for your love, support, encouragement, prayers and advice throughout the compilation of this document. You mean a lot to me.

My family, fellow friends, Africans and countrymen all over the world.....I still need you. Your moral support is always important to me.

LIST OF ACRONYMS

ABSA	African Bank of South Africa
AIDS	Acquired Immuno - Deficiency Syndrome
ANOVA	Analysis Of Variance
DoA	Department of Agriculture
DALA	Department of Agriculture and Land Affairs
ECSSEC	Eastern Cape Socio Economic Consultative Council
FAO	Food and Agricultural Organisation
FNB	First National Bank
HIV	Human Immuno-Deficiency Virus
IFSS	Integrated Food Security Strategy
IITA	International Institute of Tropical Agriculture
ILO	International Labour Organisation
ISIC	International Space Innovation Centre
NGO	Non-Governmental Organisation
OLS	Ordinary Least Squares
PGDP	Provincial Growth and Development Plan
PSLSD	Project for Statistics on Living Standards and Development
RIGA	Rural Income Generating Activities
RSS	Rural Surveys Statistics
S.A.	South Africa
SADC	Southern Africa Development Community
SPSS	Statistical Package for Social Scientists
TLU	Total Live Units

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CHAPTER 1

INTRODUCTION

1.0 Introduction

Diversification in rural livelihoods has become a serious subject of conceptual and policy-based research because income from farming has come under pressure due to population explosion (Barrett *et al.*, 2001; Ellis, 1998). It has been realized for some time that rural people no longer remain confined to crop production, fishing, forest management or livestock-rearing but are engaged in a range of occupations to construct a diverse portfolio of activities (Dercon and Krishanan, 1996; Ellis, 2000). In fact, livelihood diversification is a process by which rural households construct a diverse portfolio of activities and social support capabilities in their struggle for survival and improvement in their standards of living (Ellis, 1998). A study by Food and Agriculture Organization (FAO) on farming systems and poverty has suggested that diversification is the most important source of poverty reduction for small farmers in South and South-East Asia (FAO, 2004; World Bank, 2004).

Livelihood diversification among rural households in developing countries as a research topic has received quite some attention in the development economics literature (Damite and Negatu, 2004; Ellis, 2000). Attempts to develop the concept of asset based livelihoods have led to the development of frameworks for livelihoods conceptualisation and analysis (Ellis, 2000) and the 'sustainable livelihoods approach' in Carney (1998). Drawing on the work of Chambers and Conway (1992), a livelihood can be defined as comprising the capabilities, assets (including both social and material resources) and activities required for a means of living, (Maxwell, 1998).

Livelihood diversification is defined as a process by which household members construct a diverse portfolio of activities and social support capabilities in their struggle for survival and in order to improve their standards of living (Ellis, 1998). Accordingly, in this study livelihood diversification refers to the efforts by individuals and households to find new ways to raise incomes and reduce vulnerability to different livelihood shocks. Livelihood diversification can take place through both agricultural diversification i.e., production of

multiple crops or high-value crops; and non-agricultural livelihood diversification i.e., undertaking small enterprises, or choosing non-agricultural sources of livelihood like casual labour or migration (Ellis, 1998).

As an approach to understanding and facilitating development, the livelihood diversification approach contains echoes of the basic needs approach and its evolution into matters concerning food security, poverty alleviation and reduction (Maxwell, 1998). It also draws on insights from integrated rural development, from farming systems research and from participatory approaches in development. These various strands are linked with appreciation first of the diversity of livelihoods of rural people, second of the roles of different types of assets in rural peoples' livelihoods and third of the importance of wider social and political and economic environment in mediating access to assets. Increasing evidence has shown that rural households engage in many different types of income generating and livelihood activity, (Ellis, 1998). It is also recognised that rural households' ability to engage in (often more profitable) non-agricultural activities is often very dependent on their access to assets (Reardon, 1997). Baker (1995) also indicated that different types of activities require different combinations of financial, human, social, physical and natural capital.

Abdulai and Crolerees, (2001) defined diversification (of income) as the allocation of productive resources among different activities, both on-farm and off-farm. According to Barret, Reardon and Webb (2001), very few people derive their income from any one livelihood source, invest all their wealth in the form of any single asset, or use their resources in just one activity. Researchers have identified several reasons for households to diversify their income sources. The main driving forces include increasing income when the resources needed for the main activity are too limited to provide a sufficient livelihood (Minot *et al.*, 2006); and reducing income risks in the face of missing insurance markets (Reardon, 1997). Households also diversify their income sources to exploit both strategic complementarities and positive interactions between different activities; and finally to earn cash income to finance farm investments in the face of credit market failures (Reardon, 1997).

Diversification can as well be viewed as a set of changes to existing livelihood patterns in order to increase household income, or to reduce income variability. Diversification will often take the form of completely new enterprises, but may also simply involve the expansion

of existing, high value, enterprises, and will be driven by market opportunities. The addition or expansion of enterprises refers not only to production, but also to on-farm processing and other farm-based, livelihood strategies (Dixon *et al.*, 2001).

As most poor people live in rural areas of developing countries and are dependent on agriculture for their livelihood, the key to eradicating current suffering must lie in the creation of dynamic rural communities founded upon prosperous livelihood strategies (Dixon *et al.*, 2001). In broad terms, five main farm household livelihood strategies were defined by Dixon *et al.*, (2001) that could contribute to improved farm household livelihoods and escape from poverty. These strategic options are not mutually exclusive, even at the individual household level; any particular household will often pursue a mixed set of strategies. The options can be summarized as:

- intensification of existing production patterns;
- diversification of agricultural activities;
- expanded operated farm or herd size;
- complete exit from the agricultural sector within a particular farming system and
- increased off-farm income, both agricultural and non-agricultural.

Livelihood diversification in poor countries is not farming combined with just the odd bit of wage work on a neighbour's farm, or in a nearby rural town centre. Nor is it part-time or hobby farming associated with permanent wage or salary earning in fulltime non-farm occupations. Most rural families have truly multiple income sources (May, 1996; Baber, 1996). This may indeed include off-farm wage work in agriculture, but is also likely to involve wage work in non-farm activities, rural non-farm self-employment (e.g., trading), and remittances from urban areas and from abroad. Studies show that between 30 and 50 per cent of households income in sub-Saharan Africa is derived from non-farm sources (Reardon, 1997). In some regions, e.g. southern Africa, this can reach 80-90 per cent (May, 1996; Baber, 1996); and in others, e.g., Pakistan, Bangladesh, Sri Lanka, around 15 per cent of rural

household incomes are accounted for by remittances from family members working in the Persian Gulf (von Braun and Pandya-Lorch, 1991).

Off-farm income represents an important source of livelihood for many poor farmers. Seasonal migration has been one traditional household strategy for escaping poverty and remittances are often invested in land or livestock purchases (Dixon *et al.*, 2001). In locations where there is a vigorous non-farm economy, many poor households augment their incomes with part-time or full-time off-farm employment by some household members. Where few opportunities exist for improved rural livelihoods, farm households may abandon their land altogether, and move to other farming systems, or into non-farming occupations in rural or urban locations (Dixon *et al.*, 2001).

1.1 Background context

South Africa is currently undergoing economic and political transformations to address past imbalances. Between 40 and 50 percent of the country's population can be classified as living in poverty (Terreblanche, 2002; Woolard and Leibbrandt cited in FAO, 2004; Westaway 2012) while 25 percent of the population can be categorised as ultra-poor. Although the country is self-sufficient in food production, about 14 million people are said to be vulnerable to food insecurity and 43 percent of households suffer from food poverty (National Treasury, 2003).

South Africa is classified as an upper middle-income country with one of the most skewed distribution of income in the world. Progress in eliminating poverty and inequality remain elusive in South Africa (Obi, 2011). The country's Gini coefficient was estimated at 0.68 in 2004 calculated from the 1996 Population Census data (Marais cited in FAO, 2004). This is higher than the Gini coefficient of 0.58 during the mid-1990s. The Gini coefficient of South Africa dropped from 0.68 in 2004 to 0.62 in 2012 (Rawson, 2012).

Recent years have seen a number of researchers that have revealed sometimes shockingly high levels of poverty, high levels of inequality and in most cases poor standards of living in various areas of South Africa (Obi, 2011). The large income gap between the rich and poor

is a matter that is receiving attention from the government. A number of policies aimed at *inter alia* bridging the income gap and promoting economic empowerment of previously disadvantaged communities are in place. These include the Broad-based Black Economic Empowerment Act of 2003. Obi, (2011) went on to indicate that researches are continuously being carried out countrywide on the socio-economic circumstances of the rural households and the strategies they adopt to deal with their daily realities of poverty, unemployment and food shortage among others. Increasingly, the links are also being made between these issues and the institutional environment in which the smallholders operate, (Obi, 2011).

In South Africa, it is still debated how roles for rural incomes and employment are split between farm and non-farm activities, (Obi, 2011). “Rural families increasingly come to resemble miniature highly diversified conglomerates”, (Cain and McNicoll, 1988). Income diversity at household level often seems to pose problems for economic and social analysis and these problems then spill over into policy prescriptions about household income levels or farm productivity. Conventionally, official statistics analyses prefer to identify people’s place in the economy according to their main occupation and profession and then to develop a body of theory and policy around that activity.

When diversification is discussed in the rural development context, it is usually posed in terms either of the need for on-farm changes in the mix of agricultural activities or of the desirability of developing rural-based non-farm industries. The former sets out to correct the dangers of undue reliance on a single main farm output; while the latter seeks to provide alternative full-time employment for rural dwellers in locations other than cities (Saith, 1992). In both cases, diversification is thought of as changing the nature of full-time occupations rather than as a single individual or family possessing multiple occupations.

Yet, as has now been demonstrated by several comparative studies (Haggblade *et al.*, 2005; von Braun and Pandya-Lorch, 1991; Sahn, 1994; Reardon, 1997), it is the maintenance and continuous adaptation of a highly diverse portfolio of activities in order to secure survival that is a distinguishing feature of rural livelihood strategies in contemporary poor countries. This household level diversification has implications for rural poverty reduction policies

since it means that conventional approaches aimed at increasing employment, incomes and productivity in single occupations, like farming, may be missing their targets. First, participation in multiple activities by farm families is, of course, not new, nor only confined to the rural sectors of developing countries. In the industrial country agricultural economics literature, it has been referred to as “pluri-activity” (Shucksmith *et al.*, 1989; Evans and Ilberry, 1993), and there is recognition of the likelihood of its increasing prevalence as agricultural income supports are gradually removed (Benjamin, 1994; Kelly and Ilberry, 1995; Hearn *et al.*, 1996). It also as much characterises the livelihoods of the urban poor as the rural poor in developing countries (de Haan, 1997; Moser, 1998).

What is distinctive about diversification in many of the poorer developing countries, amongst which virtually all sub-Saharan African countries are counted, is its pervasive and enduring character (Reardon, 1997). It is pervasive in the sense that this is not just an isolated or scattered phenomenon corresponding to particular types of farm families in particular locations, like, for example, hill farmers in the UK. Livelihood diversification is widespread and is found in all locations, as well as across farm sizes and across ranges of income and wealth. It is enduring in the sense that it is not just a transient phenomenon, caused by lags in the otherwise smooth adjustment of resource use between equilibrium states, so that it will quickly disappear with further economic growth and change. On the contrary, both rural and urban livelihoods in many developing countries are becoming more, not less precarious, and even when improvements, as measured by economic growth, are occurring these are not necessarily following orthodox lines of increasing opportunities in well-paid, permanent, formal sector jobs (Reardon, 1997).

The concept of livelihood seeks to convey the noneconomic attributes of survival, not just the economic ones; it therefore includes, *inter alia*, the social relationships and institutions that mediate people’s access to different assets and income streams. One example of the social dimension of livelihoods is the use that farm families make of extended kinship networks to secure income components that originate from different activities in different locations (Berry, 1989). Another is the typically unequal access of women to different potential income sources compared to men. The institutional dimension of livelihoods includes the tenure

systems which govern access to land for farming, with most of sub-Saharan Africa remaining under customary tenure in this respect, and the village or community arrangements that determine access to environmental resources such as grazing, fuel-wood, and water (Reardon, 1997).

1.2 Problem Statement

According to the Poverty Profile of South Africa, (2008/2009) people living in traditional areas are hit the hardest by poverty compared to people living in other settlement types. Poverty Profile of South Africa, (2008/2009) data indicates that during the survey period, approximately 47,5% of the population who were living in tribal areas were living below the food poverty line and approximately 79,1% were living below the upper-bound poverty line. This was followed by the population living in urban informal areas, 31,7% for the food poverty line and 68,3% for the upper-bound poverty line. According to Advocacy Aid (2013), poverty levels decreased between 2000 and 2006, then later increased between 2006 to 2009 in the Eastern Cape. The black African population is the most severely affected by poverty, with 61.9% living under the upper bound poverty line. Using the food poverty line only, it was found out by Advocacy Aid (2013) that Limpopo was the poorest province, with a poverty headcount of almost 50%, followed by the Eastern Cape (35.7%) and Kwazulu-Natal (33%). The Eastern Cape Province ranks as the second poorest province in the country harbouring some 6.2 million inhabitants out of whom 70.7% were classified as poor (Perret, 2002).

Despite the continuing economic centrality of agriculture in South Africa, rural households engage and pursue diverse non-farm livelihood activities to cope with diverse challenges and risks such as drought. Reducing poverty by promoting small scale agriculture is seemingly hard in rural South Africa. The most disappointing aspect of post-apartheid economic performance is the widespread poverty and the widening of inequalities (Perret, 2002).

Agriculture must be the key driver to rural income growth but this is not the case in rural South Africa. According to 1995 to 2000 income and expenditure survey's figures, South Africa's rural share of income poverty declined by approximately 5% but this decline was

largely due to unprecedented expansion of social grants expenditure, (Katungi *et al.*, 2007). Researchers advocate that own agriculture continues to be the main livelihood strategy for the poor South Africa but small scale agriculture is in moribund state. The debate on small scale agricultural development and rural poverty in South Africa remains an unsettled issue due to continuous poverty among the rural population. A greater proportion of households practicing agriculture is reeling with poverty (Perret, 2002).

Some researchers argue that agriculture (on-farm livelihood strategy) has the potential to reduce poverty in rural South Africa (Katungi *et al.*, 2007). Its characteristic features like the concentration of the poor in the sector, its growth linkages to other sectors and the positive externalities from assuring food security and reducing prices makes it an important driver of poverty. Increasing household income through investment in small scale agriculture like infrastructural development, research and development, land reform and land redistributions have until recently been used to promote rural income growth in South Africa. But South Africa's small scale agriculture remains passive, so no doubt whether this sector alone will be sufficient to address rural poverty.

Further the fact that according to the World Bank (2006), about 75% of the poor live in rural areas, calls for deeper enquiry into the dynamics of rural livelihoods and poverty. A logical starting point of such enquiry is gaining an understanding of the factors driving whatever positive changes might have taken place. In that regard, it is important to ascertain whether any positive trends put in place for poverty reduction are due to income growth derived from small scale agriculture as the only rural livelihood strategy, or whether they have been due to other livelihood sources.

1.3 Objectives

To come up with the determinants of rural households' diversification of livelihood strategies in Intsika Yethu local municipality.

1.3.1 The specific objectives are:

- To identify the livelihood strategies adopted by households in Intsika Yethu local municipality.
- To assess the contribution of each livelihood strategy to household income.
- To identify determinant factors for rural households to adopt certain livelihood strategies.

1.4 Research Questions

- What are the livelihood strategies adopted by the households in Intsika Yethu local municipality?
- What is the contribution of each livelihood strategy to household income in Intsika Yethu?
- What factors influence rural households to adopt certain livelihood strategies?

1.5 Hypotheses

- The livelihood strategies adopted by these households in Intsika Yethu local municipality are diversified.
- Off-farm and non-farm activities contribute the highest to income in Intsika Yethu households.
- Non-farm and off-farm household livelihood strategies that include financial capital (credit and remittances) and some on-farm activities are generally adopted by rural households as strategies to mitigate poverty.

1.6 Significance of study

The study of diversification patterns in a developing country such as South Africa is important for several reasons apart from its expected impact on income and poverty reduction. First, in a context of missing or imperfect markets for credit, insurance, or land, diversification choices are supposed to reflect optimal strategies followed by farm households in order to balance their expected returns with the related risk exposure they face. Since all diversification strategies may not be equally lucrative, understanding both the incentives and the constraints that rural households face in their decision making between alternative options can offer important insights as to what policy might effectively improve the rural poor access to higher return activities.

Second, diversification choices do not only reflect the allocation of household assets, but also the allocation of household labour resources across various activities. Given the large size of the rural population in the Eastern Cape, a good understanding of how rural labour markets work and specifically, how out-migration movements and rural exodus are taking place is essential for the design of adequate rural and urban development policies. Regarding these issues, a key question is whether or not the opportunities to develop non-agricultural activities are large enough to foster the expansion of middle-size cities and towns in rural areas, or if one should continue to encourage huge flows of rural population into big cities.

Promoting agriculture remains the core economic activity of the Chris Hani District Municipality's mandate in its strategy to alleviate poverty (Intsika Yethu Municipality, 2012). The study is going to come up with recommendations that will encourage or discourage diversification of rural household livelihood strategies in target population. Economically profitable and sustainable livelihood strategies for rural households which can reduce poverty and pressure on the available resources need to be identified (the study is going to identify them).

The research highlights the determinants and driving forces of livelihood diversification in Intsika Yethu, based on the data collected from the households in the study area. The results contribute to the empirical literature, because little related evidence is available for the study area. In addition, the research study makes a conceptual contribution by not only looking at

the determinants, but also at the impacts of diversification on total household incomes. This reverse causality has hardly been analysed before in quantitative terms.

1.7 Outline of study

This study comprises six chapters. The second chapter reviews the literature of rural household livelihood strategies. The third chapter gives an overview of the study area, including its location, the main agricultural and economic activities. In the fourth chapter, the methodology is presented. The fourth chapter explains the sampling procedure and data collection procedures as well as the variables considered. It further clarifies on the method of data analysis, pointing out the reasons for choosing such analytical methods. Chapter five presents the descriptive and empirical results, while Chapter six concludes the research. This same chapter (Chapter six) presents the recommendations.

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

This chapter reviews the literature on determinants of rural household livelihood diversification strategies in South Africa. It focuses on the motives that prompt households to diversify assets, incomes and activities. Income sources, livelihood options in rural areas and the determinants of diversification are as well discussed in this chapter.

2.1 Theoretical framework: Definitions and concepts

2.1.1 Household

According to Rudie (1995), a household can be viewed as a family-based co-residential unit that takes care of resource management as well as the primary needs of its members. This definition by Rudie (1995) puts an emphasis on the delivery for primary needs as well as joint management of resources. Cheal (1989) indicated that people cannot do without the household when looking at how people provide for their daily needs. Kabeer (1994) on the other hand encapsulates the importance of the concept of the household by indicating that the empirical management of resource entitlements, and as the routine context of people's lives, suggests that it has a certain facticity, despite its shifting guises.

2.1.2 Livelihood

Livelihood was defined by Chambers (1989) as adequate stocks and flows of cash to meet basic needs. Chambers (1989) however did not indicate how these adequate stocks and cash are obtained by the households. Livelihood was then later described by Chambers and Conway (1992) as the capabilities, activities as well as assets needed for a means or strategy of living. Ellis (2000b) viewed livelihood as a combination of assets that include human, natural, physical, social and financial capital, the activities and the access to these assets and activities that together govern or map the type of living gained by an individual or a household. On the other hand Barret *et al*, (2001) indicated that diversification is the norm and that few people obtain all their income from just one source or hold all their wealth in the form of any single asset.

2.1.3 Strategy

Strategy was described by Anderson *et al.*, (1994) as conscious and coherently structured actions that are aimed at achieving something in the future. Anderson *et al.*, (1994) viewed copying strategy as a short term reactive response to a crisis or a stressful situation, then later went on to specifically describe copying strategies as medium term strategies that anticipate a foreseeable crisis or situation of stress in the immediate future. Meert *et al.*, (2005) outlined that household copying strategies are used by households in order to make savings on consumption, to increase earnings in production, or to replace market with non-monetary exchange.

2.2 Diversification: The rural context

Over the past decades, there has been an outstanding trend of activity diversification in rural areas in developing countries (Démurger *et al.*, 2010). Démurger *et al.*, (2010) went on to indicate that rural households adjust their activities either to exploit new opportunities created by market liberalization or to cope with livelihood risks. Diversification, pluri-activity and multifunctionality are promoted by agricultural policies as possible survival strategies for farmers (Meert *et al.*, 2005). Ilbery (1991), studied diversification and this study looked at whether diversification can be used as an adjustment strategy to cope with a changed context to farming.

Diversification patterns reflect individuals' voluntary exchange of assets and their allocation of assets across various activities so as to achieve an optimal balance between expected returns and risk exposure conditional on the constraints they face (Barret *et al.*, 2001). The focus on livelihood diversification necessarily implies a process—a broadening of income and livelihood strategies away from purely crop and livestock production towards both farm and non-farm activities that are undertaken to generate additional income via the production of other agricultural and non-agricultural goods and services, the sale of waged labour or self-employment in small enterprises (Hussein and Nelson, 1999). Barret *et al.*, (2001) then later indicated that the study of diversification behaviour offers important insights as to what sorts of interventions might be effective in reducing poverty and vulnerability in rural households by providing a window into households' revealed preference among livelihood strategies and the feasible set of strategies among which different households can choose.

Diversification of social resources can be a strategy by itself, but, more importantly, social resources are instrumental for a diversified use of other resources, (Meert *et al.*, 2005). Ruthenburg (1980) indicated that diversity in rural settings manifests itself in the different types of farming systems. Ellis (2000) went on to state that rural diversity in rural setup manifests itself in the different livelihood systems. Capillon (1986) highlighted that diversity manifests itself in a variety of responses to development actions in rural setup, which one can observe amongst rural households with a common economic and natural environment. Meert *et al.*, (2005) mentioned that in stagnating rural economies, diversification is a reflection of poor people's coping with income source specific risks: diversification for bad reasons.

Reardon (1997) pointed out that the pervasiveness of livelihood diversification is now well-recognised but however, Ellis and Allison, (2004) later outlined that there remains sufficient possibility for differences in interpretation about what this signifies, specifically for poverty reduction approaches and policies. The focus on livelihood diversification necessarily implies a process - a broadening of income and livelihood strategies away from purely crop and livestock production towards both farm and non-farm activities that are undertaken to generate additional income via the production of other agricultural and non-agricultural goods and services, the sale of waged labour or self-employment in small enterprises (Hussein and Nelson, 1999). Ellis and Allison, (2004) then went on to highlight that studies of rural income portfolios generally converge on the once startling figure that, on average, roughly 50 per cent of rural household incomes in low income countries are generated from engagement in non-farm activities and from transfers from urban areas or abroad (remittances and pension payments being the chief categories of such transfers).

Deininger and Okidi, (2000) indicated that besides the wider concept beyond income that includes both cash and in-kind income, social institutions and access to social and public services, the stress on process and thus dynamic change reflects the fluid and multi-faceted domain in which farm and non-farm based activities combine and compete. A sub-set of the literature on the rural non-farm economy and livelihood diversification in sub-Saharan Africa highlights its importance in the specific context of South Africa (Perett, 2002). Whilst much of the literature defines 'diversification' in terms of productive activities or income, the introduction of the concept of 'livelihoods' has broadened the debate to include "the process by which rural families construct a diverse portfolio of activities and social support

capabilities in their struggle for survival and in order to improve their standard of living” (Ellis, 1998). This interest in diversification in rural South Africa illustrates not only the current reality that some rural households are engaged in a diverse set of livelihood activities, but also that despite the reliance on agriculture as the driving force of the rural economy, over half of the population remain in poverty. Ellis and Allison (2004) indicated that while diversity of livelihood is dominant across different economic groups, the nature of this diversification varies greatly between better off and poorer households. In view of this dependency on agriculture and the concomitant level of rural poverty, investigations into the nature of livelihood diversification also clearly reflect the desire to understand better whether promoting diversification offers potential for livelihood enhancement and poverty reduction (Perrett, 2002).

Bryceson, (2000) pointed out that in Zimbabwe, male out-migration from rural areas is no longer enforced but it continues to be a main coping strategy for rural households. Bryceson, (2000) further went on to illustrate that the same situation in Zimbabwe applies to South Africa, where the most complex patterns of change in family structure and dependency relationships have occurred. Perhaps more importantly, nonfarm activity is typically positively correlated with income and wealth (in the form of land and livestock) in rural Africa, and thus seems to offer a pathway out of poverty if nonfarm opportunities can be seized by the rural poor. But this key finding is a double-edged sword (Perrett, 2002). The positive wealth-nonfarm correlation may also suggest that those who begin poor in land and capital face an uphill battle to overcome entry barriers and steep investment requirements to participation in nonfarm activities capable of lifting them from poverty (Barret *et al.*, 2000). Barret *et al.*, (2000) acknowledged the rapid emergence of prevalent attention paid these issues by researchers, policymakers and donors and indicated that poverty policy generally aims to improve the asset holdings of the poor, either by endowing them with additional financial, fixed, human, natural, or social assets, by increasing the productivity of assets they already hold, or both.

2.3 The components and complexity of rural livelihood: South African perspective

Maxwell and Smith (1992) highlighted the situation in rural areas of South Africa, where most poor households are said to exercise a multiplicity of claims going through a number of distinctive claiming systems. Carter and May (1999) employed the data from the Project for

Statistics on Living Standards and Development (PSLSD) survey to identify some of the income generating activities (livelihood strategies) in the rural households of South Africa. Some of these activities include:

Production, for own consumption or sale: Carter and May (1999), indicated that this involves small and micro-enterprise activities based on the extension of distribution networks such as hawking, petty commodity production such as the making of clothes and handicrafts, and niche markets in the service sector such as child minding, money lending and contract agricultural services. Perret (2002) also indicated that the rural households in the Eastern Cape have a variety of skills such as brick-laying, gardening, plastering and sewing.

Wage Labour, including migrant labourers, farm workers and commuter labourers: Carter and May (1997) confirmed the findings by Burawoy (1975), that the labour market in South Africa can be sub-divided into two major sectors namely primary and secondary. The primary sector accounts for less than one tenth (7%) of Gross Value Added for all sectors in the Eastern Cape Province (Eastern Cape Provincial Growth and Development Plan (2004-2014). Carter and May (1997), went on to indicate that in the primary sector, jobs are well paid and secure, and workers have prospects of career advancements and in the secondary sector jobs are lowly paid and offer little security and opportunities for upward mobility. Data from the Eastern Cape Provincial Growth and Development Plan (2004-2014) indicates that the secondary sector of the Eastern Cape Province is dominated by the transport equipment sub-sector which accounted for just over one quarter (26%) of GVA for 2002.

Claiming against the State: The South African government provides grants to old aged people (62 years and above), socially and economically disadvantaged individuals, and orphans. South Africa has a well-functioning social pensions system which has a high coverage among the elderly in rural areas (Carter and May, 1997). Claiming these rights from the state in the form of pensions and disability grants has been shown to be of critical importance to household incomes (Ardington and Lund, 1996).

Claiming against household and community members: Migration for employment remains an important aspect of many rural people's lives, as does the reliance of the rural household upon a share of the migrant's income in the form of a remittance (Carter and May, 1997). As

such, effective claiming of this remittance from migrants is an important livelihood tactic (Carter and May, 1997). Presently, the majority of rural people have been transformed into migrant wage-workers on large farms, in cities and in secondary industries (Perret, 2002). Carter and May (1997), went on to indicate that assistance is also rendered through kinship ties as well as through other forms of community reciprocity, including “work parties” and outright charity. In addition, households assist one another by absorbing family members. May *et al.*, (1995) used the PSLSD data to indicate how the number of resident household members increases when the declared head of household reaches pensionable age, reversing the demographic decline which sets in when the household head reaches middle age. Carter and May (1997) identified three critical types of entitlement-generating activities and these include unpaid domestic labour, illegitimate activities and non-monetized activities.

2.4 Conceptual issues

2.4.1 Livelihood strategies and modes of economic integration

Survival strategies appear at the interface between the micro (the household) and the macro (structural economic processes) (Meert *et al.*, 2005). The literature on rural households livelihood diversification draws on a wide range of sources and has its origins in the ‘assets/ processes/ activities’ framework that is utilised in various different guises by researchers concerned with poverty reduction, sustainability, and livelihood strategies (Carney, 1998; Scoones, 1998). Rudie (1995) pointed out that it is necessary to look at the mechanisms involved, at the level of the intra-household organisation as well as that of the interface between households and other institutions for answering the question of how people diversify.

Ellis (1999) unpacked the concept of rural livelihood diversification as the process by which households construct a diverse portfolio of activities and social support capabilities for survival and in order to improve their standard of living. Whilst much of the literature defines ‘diversification’ in terms of productive activities or income, the introduction of the concept of ‘livelihoods’ has broadened the debate to include “the process by which rural families construct a diverse portfolio of activities and social support capabilities in their struggle for survival and in order to improve their standard of living” (Ellis, 1998).

A few papers have surveyed the literature in an attempt to establish patterns of livelihood diversification (Barret *et al.*, 2000). Ellis, (2000b) as well outlined an idea that in the past there was an assumption that farm output growth would go on to generate large amounts of income from non-farm livelihood strategies in the rural economy and this would be done via linkage effects. Ellis (1998) pointed out that farming on its own is an insufficient livelihood strategy for survival, and there is a notable decline in the yield gains of modern technologies, mainly in those areas where they were most vivid in the past.

Diversification patterns reflect individuals' voluntary exchange of assets and their allocation of assets across various activities so as to achieve an optimal balance between expected returns and risk exposure conditional on the constraints they face (Barret *et al.*, 2000). Wanyama *et al.*, (2010) went on to support this by saying that households are involved in various agricultural, non-farms, household and other activities in order to maximize benefits and reduce or minimize costs, risks and uncertainties. However, Ellis (1998) indicated that livelihood diversity results in complex interactions with the distribution of farm income, environmental conservation, poverty, the level of farm productivity, and gender relations that are not straight-forward, are sometimes counter-intuitive and that can be contradictory between alternative pieces of case study evidence.

2.5 Farm diversification and development pathways

Meerte *et al.*, (2005) linked the survival strategies and modes of economic integration to the concepts of farm diversification and development pathways developed by Bowler (1992). Bowler (1992) illustrated a classification of how farms can develop. In this illustration the three main pathways were further subdivided into six secondary pathways as illustrated in the Figure 2.1 below.

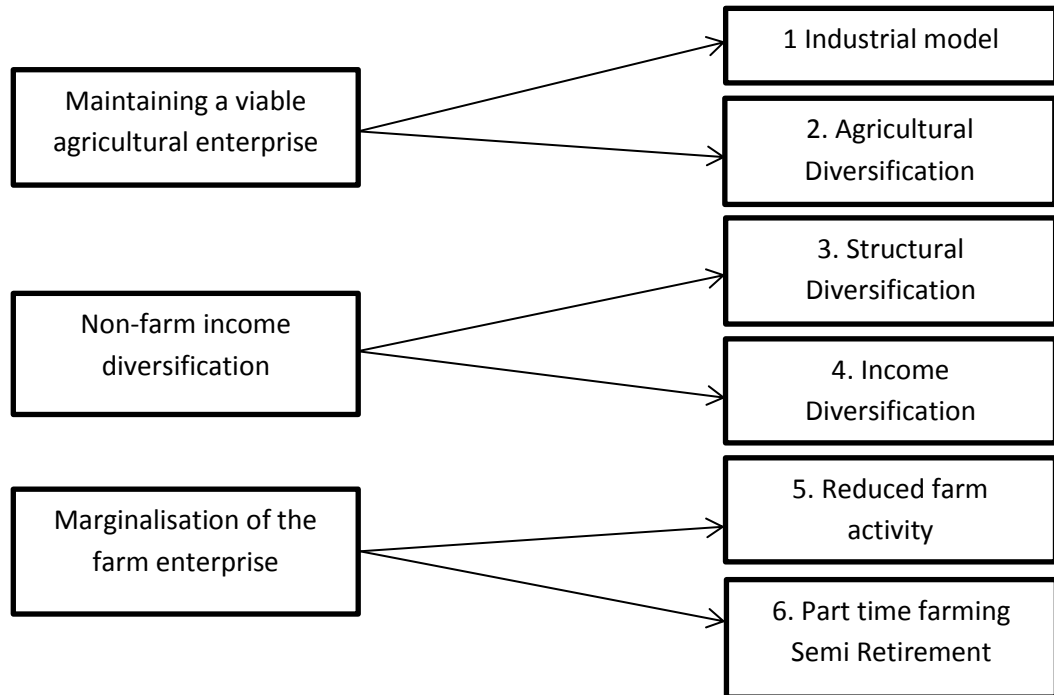


Figure 2.1: Possible development pathways of farms (Bowler, 1992)

Fig. 2.1 for secondary development pathways is actually built upon previous findings on diversification by Ilbery, (1992) and Ilbery, (2001) where pathways 2, 3 and 4 were perceived as the three major ‘diversification’ alternatives.

Agricultural diversification: This activity is basically found in the field of agricultural production and it involves the introduction of new and substitute crops and animals on the farm (Ilbery, 2001).

Structural diversification: Ilbery, (2001) outlined that specific farm resources will be redeployed or reorganized into different or new non-agricultural products or facilities. Ilbery, (2001) further illustrated that this group of approaches is extremely diverse and includes systems of diversification like sales at farmers’ markets, farm gate sales, on-farm processing and tourism, at the same time including participating in environmental programmes and the leasing of farmland and farm buildings.

Income diversification: Ilbery (1992) indicated that this pathway includes all prospects or chances where non-specific farm household resources are employed for non-agricultural activities independent from the farm business. Ilbery (1992) further illustrated that this takes

into account all forms of off-farm employment and non-agricultural activities on the part of farm household member.

Bowler (1992) highlighted the essence of the capital-generating potential of farm households in their mapping of development pathways and further indicated that there is a natural order as one moves from pathway 1 to pathway 6, with a lessening requirement for capital. Based on this order, Bowler (1992) suggested that a reverse evolution is very unlikely, due to competition with larger farms with well-known and well-structured economies of scale and as a result of this lack of capital.

2.6 Evidence on diversification

While agricultural and structural diversification in most cases provides only a secondary (although sometimes important) source of income, off-farm employment is clearly able to stabilise the household finances, providing more than a quarter of household income, (Meerte *et al.*, 2005). The research by Ellis (1998) indicated that there is a 30 to 50% reliance on non-farm livelihood strategies in the sub-Saharan region and it may be as high as 80 to 90% in southern Africa. However nonfarm income varies enormously in importance across the income distribution (Barrett *et al.*, 2000) and there is no universal pattern to who earns nonfarm income (Reardon *et al.*, 1998). Reardon (1997), in reviewing 27 case studies in Africa, found that African rural households' average share of income not sourced either from wage employment on others' farms or from their own crop or livestock production is high, around 45 per-cent of total income (Barrett *et al.*, 2000).

2.7 Poverty and income distribution

Poverty is often hidden (Meert *et al.*, 2005). It is clear that livelihood diversification, whether by the better-off, middle, or poor, possesses positive attributes for reduction of poverty and vulnerability in Sub-Saharan Africa (Wye, 2005). Westaway (2008) later indicated that despite the significant expansion of the welfare system after 1994, poverty in the rural Eastern Cape today is probably worse now than it was at the dawn of liberal democracy. Ellis (1998) stated that diversification does not have an equalising effect on rural incomes overall and better-off families are typically able to diversify in more favourable labour markets than poor rural families. Piesse *et al.*, (1999) advocate that non-farm incomes address an imbalance in income distribution across rural households.

2.8 Agriculture

Some households escape poverty by expanding farm size (Dixon *et al.*, 2001). Livestock, mainly sheep and goats, are an important feature of many farming systems. Dixon *et al.*, (2001) went on to say that a high proportion of poor households consists of farmers or pastoralists who depend on agriculture as a primary food and livelihood source. One of the main five household livelihood strategies that could improve the livelihoods of the rural households as noted by Dixon *et al.*, (2001) was the diversification of agricultural activities. According to Perret (2000), farming activities are scarce and underdeveloped with no or occasional crop growing activities, and low or no yields. Agriculture is practised on marginal lands, which suffer from overpopulation, overgrazing, soil erosion, denudation and a general decline in productivity.

The marginal lands have been providing a good supply of cheap migrant labour for industrialists (Mbongwa *et al.*, 2006). Perret (2000) also indicated that households have money supply shortages all year round. Irz *et al.*, (2001) assessed the link between agricultural growth and rural poverty and discovered that the results showed strong poverty-alleviation effects on agricultural growth. FAO, (2004) discovered a strong positive impact of agricultural growth on poverty compared to other economic sectors. Ellis (1998) outlined the three ways in which agriculture contributes to poverty alleviation at rural, urban and national levels and these include reducing food prices; employment creation; increasing real wages and improving farm income. Agricultural self-employed income consists of all own-account activities within the agricultural sector, which is income from crops, livestock, and fishing and forest products (Babatunde, 2009).

2.8.1 Crop income

Crop and livestock income, together make farm income (Babatunde, 2009). The estimation of crop income accounts for the sale of crops, crop by-products, sharecropping earnings, the consumption of home-grown crops, net of all expenditures related to these activities, such as seed and fertilizer purchases and the hire of farm labour (Carletto *et al.*). According to the research on income inequality in Nigeria by Babatunde (2009), crop income contributed about 33%, and contributed more to total income inequality than any other income source. Ellis (2000) pointed out that different income sources can have widely differing impacts on

rural inequality depending on the asset basis of livelihoods and, unequal land ownership may mean that the promotion by policy of crop income favours the better off above the poor.

2.8.2 Livestock income

Cousins (1999) highlighted that people adopt multiple livelihood strategies under circumstances of variable macro-economic policy, labour market and changing environmental regimes. Tapson (1991) indicated that such strategies include livestock production in communal areas. Wanyama *et al.*, (2010) highlighted that the interaction of off-farm, crop and livestock income generating activities are perceived to augment total incomes levels. Cavendish (1999) indicated that agriculture (in particular variations in the value of own consumption) is the second most important source of aggregate inequality with variations in livestock income having only a moderate role to play in aggregate inequality. The livestock income category includes income from the sale and barter of livestock, livestock by-products (i.e. milk, eggs, wool etc.), net of expenses related to livestock production and livestock purchases, plus the value of household consumption of own livestock and livestock by-products (Carletto *et al.*, undated).

The multi-purpose nature of livestock production and hence multiple benefits in communal rangelands has been noted to yield high economic returns (Scoones, 1992). Cash crop and livestock income exhibits consistently high correlation with total income across the different sites, reflecting how the wealthy enjoy privileged access to high-return options based on marketable commodities (Dercon, 1998). It has been revealed that households are eager to keep livestock for the multiple benefits they provide (Shackleton *et al.*, 2001), rather than for the social status as it has been in the past (Duvell and Afful, 1996). Households do depend on livestock for the milk and meat they provide, and many non-marketed outputs, such as for local transport of goods, from cattle (Shackleton *et al.*, 1999). Campbell *et al.*, (1998) supported this by highlighting that smaller animals such as goats and sheep are also kept for their meat, and the short-term monetary returns they generate on sale are enormous and this livestock as well provides opportunities for socio-cultural benefits.

Shackleton *et al.*, (2002) indicated that low input, small-scale livestock husbandry remains a primary land use option in communal areas over most of southern Africa. Recent research

studies (e.g. Adams *et al.*, 2000; Shackleton *et al.*, 1999) have tried to place monetary values on non-marketed benefits from livestock in rural areas and these have resulted in the use of different techniques based on either (i) conventional commercial economic models, and thus only making use of data on marketed output, or (ii) calculating direct-use values associated with the producers' objective in a livelihood system (Cousins, 1999). Dahlberg (1995), highlighted that low livestock production returns in rural areas could be as a result of insufficient empirical case studies, the use of conventional and sometimes inappropriate economic models to measure production and financial returns (Cousins, 1999), and failure to consider all uses (Beinart, 1992).

2.9 Environment

For decades people have been exploiting the natural environment to serve their own needs with serious consequences, including resource exploitation, air, water and land pollution, climate change, excessive waste to landfill sites, soil degradation, habitat change, and ecosystem destruction Readon *et al.*, (2003). Ellis (1998) highlighted that individual household characteristics (e.g age and gender) and the growth of non-farm income sources might be expected to reduce the need for landless rural dwellers to carry out extractive practices in local environments for survival. On the other hand, for settled agriculturalists, non-farm earning opportunities can result in neglect of labour-intensive conservation practices if labour availability is reduced (Ellis, 1998).

2.10 Individual rural households' characteristics

According to Obi (2011), individual characteristics expected to influence participation in various income generating activities and income include age, gender, marital status, employment status and level of education.

2.10.1 Age

Individual characteristics expected to influence participation in various household livelihood strategies and income generating activities include age, gender, marital status and level of education. Age influences the way the individual values the future, choice of livelihood strategies and the propensity to invest (Schwarze, 2004). Age may increase the likelihood to participate in agriculture relative migratory activities especially for elderly heads of

household (Matsumoto *et al.*, 2006). The older one gets, the more likely it is to select more sedentary or home-based activities (Matsumo *et al.*, 2006).

2.10.2 Gender

Gender is an integral and inseparable part of rural livelihoods. Men and women have different assets, access to resources, and opportunities (Ellis, 2000b). Davis, (2003) viewed gender as one of the important aspects that adds important insight into rural household poverty and livelihood strategies diversification issues. Rural women are particularly hard hit by prevailing poverty and unemployment levels and are in the most urgent need of support and assistance (Nel and Davies, 1999). Women rarely own land, may have lower education due to discriminatory access as children, and their access to productive resources as well as decision-making tend to occur through the mediation of men (Ellis, 1998). For women, the inter-relationship between land access and livelihood diversification is a particularly disadvantageous one in the Sub-Saharan African context in which male migration and male non-farm work opportunities are more prevalent than female ones (Ellis, 2004).

The households headed by women are more likely to be poor than households headed by men, as women are generally marginalised from economic opportunities. Furthermore, women have multiple roles in the household such as cooking, caring for children and these are time consuming and often prevent women from seeking formal employment (Eastern Cape Growth and development Plan, 2004-2014). The Eastern Cape Growth and development Plan, (2004-2014) went on to indicate that those who manage to get employed are formally employed in elementary positions where rates of pay are generally lower.

2.10.3 Marital status

Marital status of the household head is an important determinant that has to be assessed on households' choices of livelihood strategies. According to Obi (2011), single people are more mobile than married people, thus exhibiting greater propensity for migrating for employment.

2.10.4 Level of education

One other essential factor to consider is the level of education of the household head since they are decision makers in matters concerning farming and other household livelihood

strategies (Obi, 2011). Nkhori (2004) pointed out that education increases the ability of households to employ their resources effectively and the allocative impact of education influences the households' ability to access, interpret and analyse information.

2.10.5 Employment status

Well paid jobs and most non-farm household activities require formal education, usually to completion of primary school or beyond and also tend to favour males over females (Davis, 2003). A positive relationship between education and taking part in rural non-farm livelihood activities is often reported. Empirical findings by Bryceson (2002) in Malawi and Ethiopia, Sanchez (2005) in Bolivia, and Matsumoto *et al.* (2006) in Kenya support this. Bryceson (2002) and Matsumoto *et al.* (2006) indicated that education expressed in the number of years of formal education enhances household members' capability to exploit better income generating prospects. Level of education is linked to information acquisition by household heads, individual skills development as well as human resource development (Schwarze, 2005).

2.11 Positive and negative effects of Diversification

2.11.1 Positive effects

Ellis (1998) discussed diversification and outlined its sustainability importance on rural livelihoods and how it improves its long run resilience to adverse trends or sudden shocks. In this respect, individual and family livelihoods display similarities to larger social and economic groupings up to the level of the economy at large. In general, increased diversity promotes greater flexibility because it allows more possibilities for substitution between opportunities that are in decline and those that are expanding (Ellis, 1998).

Seasonality: Seasonality is one of the essential features of rural livelihoods noted by Chambers *et al.*, (1981). In economic terms, seasonality means that returns to labour time i.e. income that can be earned per day or week worked vary during the year in both on-farm and off-farm labour markets (Ellis, 2000). Ellis (1998) noted a problem of food insecurity caused by a mismatch resulting from peaks and troughs in labour utilisation on the farm, uneven farm income streams and continuous consumption and indicated that diversification can

contribute to reducing the adverse effects, by utilising labour and generating alternative sources of income in off-peak periods.

Risk reduction: Diversification is a primary means by which many individuals reduce risk (Ellis, 1998). Asset and livelihood diversification have important consumption smoothing, risk management and productive functions (Dorward *et al.*, 2001). Factors like climate that create risk for one income source should not be the same as those that create risk for another e.g. urban job insecurity (Ellis, 1998). Whether or not risk spreading involves a fall in income, one of the critical motives of livelihood diversification for risk reasons is the achievement of an income portfolio with low covariate risk between its components. Higher income could alone reduce risk by making better use of available resources and skills (as in seasonality above), and taking advantage of spatially dispersed income earning opportunities (Ellis, 1998).

Environmental benefits: Diversification can potentially provide environmental benefits in two ways. One is by generating resources that are then invested in improving the quality of the natural resource base. The second is by providing options that make time spent in exploiting natural resources, e.g. gathering activities in forests, less remunerative than time spent doing other things (Ellis, 2000b).

Gender benefits: It is possible for diversification to improve the independent income-generating capabilities of women and in so doing, also improve the care and nutritional status of children since a high proportion of cash income in the hands of women tends to be spent on family welfare. For this to occur, activities need to be promoted in the rural areas that are accessible to women, which means, usually, located close to sites of residence and corresponding with types of work to which women have equal or better access qualifications than men (Ellis, 1998).

2.11.2 Negative effects

Some disadvantages of the diversification examined in empirical studies are:

Income distribution: Diversification can be associated with widening disparities between the incomes of the rural poor and the better-off. This occurs, as noted already, because the better-off are able to diversify in more advantageous labour markets than the poor, and this in turn reflects asset poverty especially with respect to human capital (Ellis, 1998).

Farm output: Some types of diversification may result in stagnation on the home farm. This typically occurs when there are buoyant distant labour markets for male labour, resulting in depletion of the labour force required to undertake peak farm production demands such as land preparation and harvesting. This occurred in southern Africa in the 1970s and 1980s, where many rural households came to depend on remittances from migrants to urban areas in South Africa for their food security (Ellis, 1998).

Adverse gender effects: These are primarily associated with the type of diversification that is also held to have adverse effects on agriculture. Where it is male labour that is predominantly able to take advantage of diversification opportunities, then women may be even more relegated to the domestic sphere and to subsistence food production (Ellis, 1998).

On balance, the positive effects of diversification appear to outweigh its disadvantages (Ellis, 2000b). The positive effects tend to be beneficial impacts of wide applicability (e.g. risk reduction, mitigating seasonality), while the negative effects typically occur when labour markets happen to work in particular ways in particular places. The removal of constraints from, and expansion of opportunities for diversification are therefore desirable policy objectives because they give individuals and households more options to improve livelihood security and to raise their own living standards (Ellis, 1998).

2.12 Policy priorities

There is wide scope within existing rural development policies for support to beneficial forms of diversification. Such action does not mean increasing the role of the state in particular economic sub-sectors, nor does it mean manipulating prices and costs in order to achieve specified outcomes (Ellis, 1998). Rather it is about improving the institutional context of private decision-making by, for example, reducing risk, increasing mobility, minimising barriers to entry (e.g. licensing regulations), and ensuring fairness and transparency in the

conduct of public agencies. It is also about facilitating the poor to improve their assets, and to make use of those assets to best effect.

The appropriate mix of policies is highly context-specific, but some general principles are likely to hold:

2.12.1 Human capital

Human capital refers to the abilities and skills of human resources of a country (Adamu 2002). Meir (1995) defined human capital as the development of human resources concerned with the two-fold objective of building skills and providing productive employment for non-utilized or under-utilised manpower. Human capital impacts on productivity, employment, income generation and standard of living. By implication human capital improvement results in improved capability and ultimately a decrease in poverty. Education and training are generally indicated as the most important direct means of upgrading the human intellect and skills for productive employment (see Söderbom and Teal, 2001; Yesufu, 2000). The significance of education, both formal academic education and workplace skills, for improving livelihood prospects is established by a great number of studies, and poverty is closely associated with low levels of education and lack of skills (Ellis, 1999). Umo (1997), noted that high quality and market relevant education is capable of offering a genuine solution to most economic problems including poverty. Ellis, (1999) also indicated that a positive correlation between education and participation in rural non-farm activities is often reported. Bryceson (2002) discovered that the level of education enhances household members' capability to exploit better income generating opportunities.

2.12.2 Infrastructure

Infrastructural facilities have a potentially important impact on rural livelihood diversification and poverty reduction by contributing to the integration of national economies, improving the working of markets, speeding the flow of information, and increasing the mobility of people, resources and outputs (Ellis, 1998). Machethe (2004) highlighted that high transaction costs are some of the major factors constraining the growth of smallholder agriculture in African countries and this can largely be attributed to poor infrastructure. Babatunde (2008) indicated that provision of physical infrastructure such as good roads, water and electricity would

increase overall employment opportunities in the off-farm sector, and this could lead to income growth among poor households.

As with education, future infrastructural provision will require innovative approaches to provision and maintenance (Ellis, 1998). In order to boost agricultural activity, particularly amongst the black rural population, issues of access to land and the provision of adequate infrastructure and extension support will first need to be addressed (Nell and Davies, 1998) and according to Matsumoto *et al.*, (2006), variables which entail infrastructure, community average land productivity, the distance to the nearest market, and the distance to the government support agencies are the major determinants of participation in non-farm activities among households. Matsumoto *et al.*, (2006) went on to say that land productivity has a negative impact on the participation in local non-farm activities.

Basic problems with infrastructure, scarce information and poor utility services militate against the successful development of the rural non-farm sources of income in many parts of Africa (Perret, 2002). A case study in Poland (Chaplin *et al.*, 2000) show that average distance to public transport negatively affects the diversification into non-farm activities. Infrastructure with special focus on transport and communication are important factors in the development of viable non-farm activities. An improvement in rural infrastructure increases the chances of adoption of non-farm activities by rural farmers increases the chances of adoption of non-farm activities by rural dwellers. High land productivity encourages individuals to adopt farming instead of non-farm activities. People from low-potential agricultural areas participate in non-farm activities to a greater extent than people from high potential agricultural areas. High population density in most rural areas of South Africa has led to diversification to non-farm activities as a way of reducing pressure on limited land (Machethe, 2004).

2.12.3 Credit

There are a number of challenges, which have consistently been referred to as key challenges to either the eradication poverty or development, including shortage of capital and availability of credit (Porter and Howard, 1997). Farm household diversification into nonfarm activities emerges naturally from diminishing or time-varying returns to labour or land, from

market failures (e.g., for credit) (Barrett *et al.*, 2001). The government of South Africa however places particular importance on subsistence agriculture in its efforts to fight food insecurity and poverty improving access to credit by the poor, including women (Baiphethi, 2009). For the off-farm sector to contribute equitably to income growth of rural households there is need to remove entry barriers faced by disadvantaged households in participating in higher-paying off-farm activities and provide access to programmes like accessible credit schemes that can facilitate the establishment of off-farm businesses (Babatunde, 2008). Gebru and Beyene (2012) stated that access to credit plays a pivot role in strengthening smallholders potential to diversify their livelihood strategies and cope with stresses like drought.

2.12.4 Access to land

There are various constraints that impede the growth of smallholder farmers varying from systems constraints, allocative constraints to environmental-demographic constraints (Perret, 2002). Some of the systems constraints are lack of access to land, poor physical and institutional infrastructure. The background of a smallholder farmer given above suggests that one of the main constraints that smallholder farmers face is poor access to sufficient land. Land is arguably the most important asset in primarily agrarian rural societies especially in the rural areas of South Africa but is lacking in both ownership and size. There are restrictive administrative and social structures such as land tenure that should be improved. Most smallholder farmers have limited access to land and capital and have received inadequate or inappropriate research and extension support resulting in chronically low standards of living (NDA, 2005). Most smallholder farmers are located in the rural areas, particularly in the former homelands where both physical and institutional infrastructure limits their expansion. Access to land for production purposes is an essential requirement for the poor to enjoy the benefits of agricultural growth (Machethe, 2004). Household diversification into non-farm income varies in extent and nature based on relative household wealth (Escobal, 2001).

According to Matsumoto *et al.*, (2006), households' access to land, asset endowments, demographic composition and transfers determines the capability to participate in non-farm activities. According to (NDA, 2005), land is possibly the most essential asset in primarily agrarian rural societies, specifically in the rural areas of South Africa but is lacking in both

ownership and size. On the other hand Parkin (2008) went on to mention that land and other assets are the key requirements for entry into most local non-farm activities in rural areas. However most smallholder farmers have limited access to land and capital and have received inadequate or inappropriate research and extension support resulting in chronically low standards of living (NDA, 2005). According to Kariuki (2003), on-farm activities are largely practiced under growing pressure of scarce land resources managed under insecure customary land ownership and communal grazing land and these insecure tenure systems such as communal land tenure system constrain the farmers from producing to their highest potential. Economics theory of investment supports the view that household endowments in assets place them in relatively better position to respond to incentives (Parkin, 2008) and according to Sanchez (2005), this denotes capabilities in terms of organizational capital, physical capital, human capital and social capital.

Barrett *et al.*, (2001) highlighted that a household may have the incentive to participate in non-farm employment, but if the capacities like capital are not in place, the household will not be able to take advantage of them. Although having various assets could be a determinant of participation, it could also be a result of additional incomes from non –farm activities (Barrett *et al.*, 2001). Matsumoto *et al.*, (2006), highlighted that households that lack land resort to local non-farm activities and wage employment to earn living. If a household has limited access to land, the only way to earn income is through adoption of non-farm activities. Thus, it is assumed that the size of land owned by a particular household is negatively related to the participation in non-farm activities (Matsumoto *et al.*, 2006).

2.13 Transfers and Remittances

Ellis (1998) noted that transfers or remittances have a negative impact on participation in rural farm or non-farm activities. A negative relationship between transfers and participation in off-farm employment in Poland and Czech Republic was also discovered by Chaplin *et al.*, (2000). In the research conducted by Machethe (2004), remittances and wages were the second and third most important sources of income, respectively, for poor households in Transkei. Low-income rural households in the Eastern Cape have little or no access to employment. They depend on remittances and social grants (PGDP, 2004-2014).

Transfers act as insurance, reducing variability in total income and, therefore, decrease the income risk factor, *i.e.* reduce push and pull (Barret *et al.*, 2001; Davis, 2003). In the absence of transfers, diversification into non-farm activities is widely understood as a form of self-insurance. Diversified household economic strategies are extremely important to agricultural growth in that such strategies can serve to reduce direct population pressures on the natural resource base and where investment in agricultural enterprises is seen as profitable, household investment in new technologies is usually financed from intra-household earnings associated with non-agricultural and off-farm activities as well as family remittances (that is, savings of family members working in urban areas within and outside Africa) (FAO, 2004).

2.14 The Causal Origins of Diversification

Reardon *et al.*, (1992; 1998; 2000) described diversification as a form of self-insurance in which people exchange some foregone expected earnings for reduced income variability achieved by selecting a portfolio of assets and activities that have low or negative correlation of incomes. Reardon *et al.*, (1998) confirmed that nonfarm earnings account for a considerable share of rural household income in rural Africa. Omamo (1998) on the other hand indicated that rural households tend to diversify livelihood and production patterns partially to fulfil own demand for diversity in consumption in secluded areas where it is expensive to access markets. Individuals rationally allocate assets across activities to equalize marginal returns in the face of quasi-fixed complementary assets (e.g., land) or mobility barriers to expansion of existing (farm or nonfarm) enterprises (Ellis, 1998).

For the poorest, this typically means highly diversified portfolios with low marginal returns, or desperation-led diversification (Barrett, 1997; Reardon *et al.*, 2000; Little *et al.*, 2001). Reardon *et al.*, (1999) highlighted that where credit markets are missing or thin, diversification into non-farm livelihood strategies may be an important way for solving the problem of working capital limitations to acquiring the required variable inputs for farming if non-farm or off-farm options can be accessed easily, or to making capital improvements to one's farm. Ellis (1998) indicated that missing markets can also discourage diversification and missing credit markets can impede diversification into activities or assets characterized by substantial barriers to entry.

Bernstein *et al.*, (1992) highlighted that diversification is a norm where quite a small number of people bring together all their income from any one source, hold all their wealth in the form of any single asset, or use their assets in just one activity. Diversification of assets, incomes, and activities is prompted by quite a number of motives that were identified by Bernstein *et al.*, (1992). There are “push factors” that include risk reduction, response to diminishing factor returns in any given use, such as family labour supply in the presence of land constraints driven by population pressure and landholdings fragmentation, reaction to crisis or liquidity constraints and high transactions costs that induce households to self-provision in several goods and services (Barret *et al.*, 2000).

These micro level determinants of diversification are mirrored at more aggregate levels. From the “push factor perspective,” diversification is driven by limited risk-bearing capacity in the presence of incomplete or weak financial systems that create strong incentives to select a portfolio of activities in order to stabilize income flows and consumption, by constraints in labour and land markets, and by climatic uncertainty (Barret *et al.*, 2000). From the “pull factor perspective,” local engines of growth such as commercial agriculture or proximity to an urban area create opportunities for income diversification in production and expenditure-linkage activities. The consequence of the ubiquitous presence of the above factors in rural Africa is widespread diversification. Despite the persistent image of Africa as a continent of “subsistence farmers,” nonfarm sources may already account for as much as 40-45% of average household income and seem to be growing in importance (Bryceson and Jamal, 1997; Reardon, 1997; Little *et al.*, 2001).

2.15 Demand–pull factors

There are various motives that drive rural households and individuals to diversify assets, incomes, and livelihood strategies. Households are motivated to undertake rural non-farm income activities by either "pull" or "push" factors (Readon *et al.*, 2003). The first set of motives comprises “pull factors”: realization of strategic complementarities between activities, such as crop-livestock integration or milling and hog production, specialization according to comparative advantage accorded by superior technologies, skills or endowments (Barrett, 2001). Davis and Pearce (2001) indicated that households are ‘pulled’ into non-farm activities as a way of obtaining more income and improving their current living conditions. Davis, (2003) highlighted that the existence of a wide range of resources (e.g. labour, assets,

education) that are not suitable for traditional farming practices drives household's efforts to explore alternative opportunities for utilising these resources. In this way, households will be undertaking diversification into nonfarm activities as safety nets (Sanchez, 2005). Obi (2011) indicated that factors such as lower risk non-farm activities tend to 'pull' households into these activities. Matsumoto *et al.*, (2006) indicated that diversification of rural household livelihood strategies is undertaken to use available resources in a sustainable way on one hand, while expanding total household incomes.

2.16 Distress-push factors

One other set of motives by Barrett *et al.*, (2001a) comprises what are traditionally termed "push factors" and these include risk reduction, response to diminishing factor returns in any given use, such as family labour supply in the presence of land constraints driven by reaction to crisis or liquidity constraints, high transactions costs that induce households to self-provision in several goods and services. According to Barrett *et al.*, (2001) distress-push diversification develops naturally due to weakening or time varying returns to household productive assets which may be land or labour, from market failures, from *ex ante* risk management and from *ex post* coping with adverse shocks. Obi (2011) also highlighted that diversification might be derived by existence of incomplete markets for land, labour, credit and insurance and where markets often do not operate in competitive or efficient manner, personal and institutional constraints can play an important role in determining participation in non-farm activities.

The prevalence of subsistence behaviour towards the lower end of rural income distributions militates against these conditions occurring; indeed, on the contrary, the more families seek, or are pushed by external pressures into seeking, security from subsistence, the fewer the options created to construct more diverse and secure livelihoods (Ellis, 2004). Parkin (2008) suggested that individual factors of production face diminishing returns to scale and limited access to market forces individuals and households to come up with local coping livelihood strategies that encourage self-reliance. Nel and Binns (2000) on the other hand found out that households diversify livelihood strategies as a way of achieving self-sufficiency if located in remote areas where market accessibility is costly and at the same time causing factor and product failures. Obi (2011) outlined that the households that are able to diversify are those

that can meet the investment requirements for entry into remunerative non-farm activities. Obi (2011) further went on to state that those who own sufficiently high levels of assets, are able to access credit or possess the required skills and will be able to make full use of opportunities for increased returns to labour provided by rural non-farm income sources.

2.17 Determinants of household activity choice and diversification

When diversification is discussed in the rural development context, it is usually posed in terms either of the need for on-farm changes in the mix of agricultural activities or of the desirability of developing rural-based non-farm industries (Ellis, 2000). Matsumoto *et al.*, (2006) suggested that individual characteristics, household characteristics and community characteristics influence rural households' choice of diversification into non-farm activities. Ellis (2000) also indicated that household level diversification has implications for rural poverty reduction policies since it means that conventional approaches aimed at increasing employment, incomes and productivity in single occupations, like farming, may be missing their targets.

Ruel *et al.*, (1998) highlighted poor yields as one of the important reasons rural households diversify their livelihood strategies. Even though subsistence production is important for household food security, the productivity of the sub-sector is quite low, even by the standards of this sub-sector (Obi, 2011). Ellis (2000) indicated that a rise in off-farm or non-farm wage rates, or greater opportunities to undertake remunerative non-farm self-employment would increase the motive to diversify. Mompati and Jacobs (2009) then identified three sources from which the rural households obtain their food and these are the market, subsistence production and transfers from public programmes or other households.

According to Ruel *et al.*, (1998) rural households used to produce most of their own food in the past while urban households used to purchase theirs. Subsistence agriculture can however play an important role in livelihoods creation amongst the rural poor (Mompati and Jacobs, 2009). In their study, Mompati and Jacobs (2009) also discovered that in some parts of sub-Saharan Africa, food expenditures can range between 60 and 80% of the total household income for low-income households. There is therefore need to increase the level of production in smallholder households and according to Ruel *et al.*, (1998) this can be achieved by encouraging farmers to intensify the use of improved inputs in their production.

In improving access to inputs, access to off-farm income is also important as it is used to purchase farm inputs and investment, hence increase food security (Mompoti and Jacobs, 2009). Maxwell *et al.*, (1998) associated the lack of agricultural production assets in most parts of sub-Saharan Africa to unsustainably small and deteriorating farm sizes, degraded land, negligible investment in irrigation, as well as poor health and education, and these would result in a decline in productivity and access to other livelihood options.

2.18 Livelihood strategies in rural areas

Survival strategies appear at the interface between the micro (the household) and the macro (structural economic processes) and they involve the individual's or household's intentions to face the macro social obstacles that obstruct their intentions and goals (Meerta *et al.*, 2005). The rural sector can be considered to consist of three sub-sectors: (a) the smallholder (subsistence or semi-subsistence) sector consisting of self-employed farmers producing staple food and some commercial goods; (b) the commercial farm sector comprised of medium and large size farmers and provides employment to a significant number of the landless; and (c) the rural non-farm sector (Machethe, 2004). Several studies have recently contributed significantly to our knowledge base on livelihoods in communal areas of South Africa (Shackleton *et al.*, 2001) and these studies uphold that the majority of households in communal areas are dependent on resources from the local woodlands, and livestock production (Dovie *et al.*, 2002).

Livestock are a source of potential assets to rural households (Cousins, 1996), and it has been noted that households are keen to keep livestock for a number of benefits they provide (Shackleton *et al.*, 2001). Under circumstances of variable macro-economic policy, labour market and changing environmental regimes, people adopt multiple livelihood strategies (Chambers, 1997; Cousins, 1999). Such strategies include livestock production in communal areas (Tapson, 1991; Scoones, 1992; Shackleton *et al.*, 1999), and the harvesting of natural resources (Dovie *et al.*, 2002; Shackleton *et al.*, 2002). Perret, (2002) however highlighted that labour market (mines and industries, urban markets) still influences rural livelihood strategies, and remittances represent the second component of livelihood. The situation is so serious that today only 1% of rural households derive an income from crop production and only 4% from livestock production (BRC, 2009).

2.19 Sources of rural households income

According to Carletto *et al.*, (undated) the construction of the income aggregates takes into consideration all sources of income received by the household, some aggregation of the different sources is necessary and more functional. With a given asset base, *i.e.* land plus farm infrastructure and equipment, and a given total amount of labour time, the household makes comparisons between the return to using more of that time on the farm or deploying it in non-farm wage or other income-generating activities (Ellis, 2000). Carletto *et al.*, disaggregated two classes of household income into wage and non-wage and went on to indicate that wage income includes all activities undertaken by persons in which the income received is in the form of a wage paid out by an employer while non-wage income includes household crop and livestock production, self-employment earnings, transfer income and other non-labour income sources.

ILO, (2003) defined household income consists of all receipts whether monetary or in kind (goods and services) that are received by the household or by individual members of the household at annual or more frequent intervals, but excludes windfall gains and other such irregular and typically onetime receipts. ILO, (2003) further disaggregated income measures into six major categories which include wages (further divided into agricultural and non-agricultural wages), crop production, livestock production, transfers, self-employment and other income.

Leibbrandt *et al.*, (2010) indicated that it is important to disaggregate household income into four sources (in the South African context) which include, wage income (including self-employment), remittances, capital income (such as dividends, interest, rent income, social assistance (“grants”) and imputed rent from residing in own dwelling and private pensions). Farming plays a more dominant role as a source of household income for “rich” households and its contribution to household income exceeds the total contribution of all non-farm income sources combined. Nonfarm sources contribute more to household income for “poor” households than farming (Machethe, 2004).

Decomposition analyses indicate that wage income (including self-employment income) has a dominant share of income (around 70%) but makes an even larger contribution to inequality (around 85%) (Leibbrandt *et al.*, 2010). Leibbrandt *et al.*, (2010) related this to a high

correlation between wage income and total household income (a rank correlation of over 0.9), implying that a household's rank in the distribution of wage income is strongly correlated with that households rank in the distribution of total income.

Households in rural Eastern Cape receive incomes from a variety of activities, which may be on-farm or off-farm. Income diversification into non-farm activities has come to be recognised as typical practice among rural households (Obi, 2011). The ability to pursue different livelihood strategies is dependent on the basic material and social, tangible and intangible assets that people have in their possession (Scoones, 1998). In sub-Saharan Africa reliance on agriculture tends to diminish continuously as income level rises, *i.e.* the more diverse the income portfolio the better-off is the rural household (Ellis, 1999).

As shown in Figure 2.2 by Davis and Pearce (2001), sources of income in rural areas can be classified into three categories namely on-farm income, off-farm income and transfers. Non-farm being all the income associated with wage work or self-employment. Own farm income refers to income from own agricultural activities (Obi, 2011).

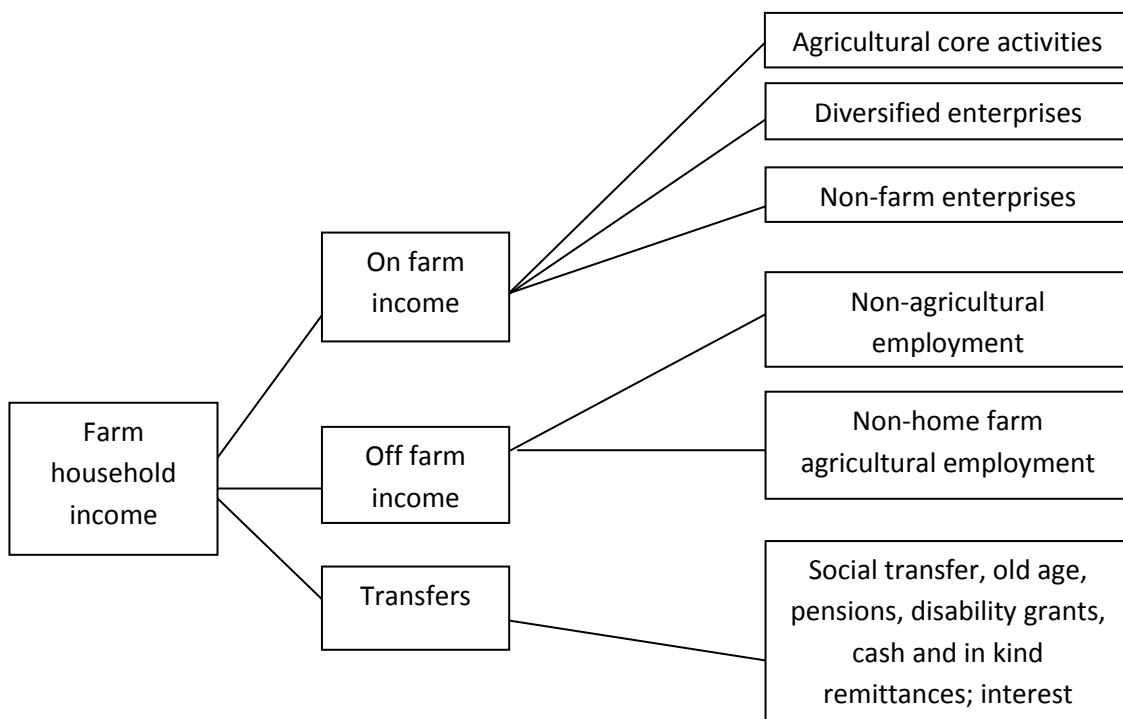


Figure 2.2: Household sources of income (Davis and Pearce, 2001)

Analyses of rural livelihoods in Africa, Asia and Latin America, show that rural households derive a significant proportion of their livelihoods from employment (Adams, 1999; Barrett *et al.*, 2001; Escobal, 2001; Fraser *et al.*, 2003). Barrett *et al.*, (2001) indicated that several rural households are becoming more actively involved in non-farm activities in developing countries. Barrett *et al.*, (2001) identified non-farm activities as a set of non-agricultural activities carried out in the rural.

2.19.1 Wage Income (off-farm income)

Wage income consists of all income received in the form of employee compensation either in cash or in kind. Since it is common for household members to simultaneously hold more than one job or change jobs throughout the survey reference period, all income from primary, secondary and any additional jobs held in a 12-month period is considered to account for individuals' pluri-activities (ILO, 2003). The values of the individual livelihood contributions to household incomes are important for understanding livelihood dynamics. The use of only wage employment and more often the shelved value of crops such as maize to represent livelihoods is a gross underestimation (Dovie *et al.*, 2005). Besides wage income, social grant income is arguably the most important safety net against adverse poverty and in terms of services, perhaps a further key to affordability (Barrett *et al.*, 2001).

2.19.2 Self-employment

The self-employment category includes the income earned from all non-farm household enterprises and all cash and in kind earnings and non-durable, recurrent expenditures for all non-farm businesses operated by any member of the household over a 12-month period (Carletto *et al.*, undated). Just as in high-paying professions (e.g., law, medicine) in post-industrial countries, skills and educational attainment serve as substantial entry barriers to high-paying nonfarm employment or self-employment in rural Africa (Barrett *et al.*, 2001). Most rural families have truly multiple income sources which may include off-farm wage work in agriculture, but are also likely to involve wage work in non-farm activities, rural non-farm self-employment (e.g., trading), and remittances from urban areas and from abroad (Ellis, 2000).

2.19.3 Transfers (Non-farm)

According to Carletto *et al.*, (undated) this category refers to both private and public transfers received by the household as a form of non-farm income, both in cash or in-kind where

private transfers primarily refer to incoming remittances, but they can also include benefits from private organizations and/or associations as well as forms of gifts and contributions not associated with the performance of a job or the provision of a service. The main sources of food for households are markets, subsistence production and transfers from the public programmes or other households (Fraser *et al.*, 2003). One implication of the “diversification as risk management” rationale is that the need for self-insurance is a function of the availability of substitute social insurance, provided through transfers by the government, by non-profit agencies, by community or family members (Barrett *et al.*, 2001). Carletto *et al.*, (undated) further divided transfers into state-funded pensions and social benefits, which include welfare support, maternity benefits, and educational transfers.

2.19.4 Other Sources

Other income consists of gross non-labour income from farm land rental, non-farm real estate rental and rental of owned assets. However, in the vast majority of cases, it only represents an insignificant portion of total income (Carletto *et al.*, undated).

2.20 Chapter Summary

In this chapter, the rural household livelihood strategies and their diversification were discussed. Different sources of income in rural households were outlined and in this case, rural households were said to survive on various livelihood strategies which include on-farm, off-farm, non-farm, on-farm + non-farm, non-farm + off-farm and the combination of the three i.e on-farm + off-farm + non-farm. The next chapter focuses on the description of the study area.

CHAPTER 3

DESCRIPTION OF STUDY AREA

3.0 Introduction

This chapter presents the study area with respect to its different social, economic and physical aspects. The chapter also presents the services available in Intsika Yethu, governance issues and activities that the community is engaged in.

Locality context

Intsika Yethu is a local municipality situated within the Chris Hani District Municipality in the Eastern Cape Province. The municipality was established in terms of the Municipal Structures Act, of 1998, consisting of two main towns namely Cofimvaba and Tsomo. Intsika Yethu local municipality covers the greater part of the province which until 1994 was known as the Transkei. It covers a total area of about 3 041km² (Mgxashe *et al.*, 2000). The rural component of the municipality is composed of 213 villages with 23 wards, including villages extracted from the neighbouring municipalities of Sakhisizwe (Cala), Emalahleni (Lady-Frere), Ngcobo, Mbashe (Dutywa) and Mnquma (Ngqamakwe) during the re-demarcation process (Stats SA, 2011). Statistics from Stats SA (2011) illustrate that when compared to other municipalities in the district, Intsika Yethu remains the largest and most rural municipality within the Chris Hani District municipality. Figure 3.1 shows the locality of Intsika Yethu local municipality within the Chris Hani District municipal context.

3.1 Climate and vegetation

The climate in Intsika Yethu varies from mild to warm and humid, with most of the rainfall being experienced in summer. The rainfall is relatively high from November to April (401-500 mm) and low from May to October (151-200 mm). Average temperatures vary; the highest being in January (20-22°C) and the lowest in July (8-10°C). The area is dry with scarce rain during winter and frosty winters with hot summer months (Cadman *et al.*, 2008).



Figure 3.1: Map of Intsika Yethu

Source: Microsoft Encarta intsikayethu-municipality.asp (2008)

Intsika Yethu lies in a semi-arid area with generally sandy soils that are red and alkaline. They are very poor for crop production and easily lose moisture especially in summer season. The Nama Karoo is the common vegetation type in Intsika Yethu. The area is mountainous and metamorphic rocks dominate, though granite is found in some parts of the catchment (Cadman *et al.*, 2008). The area is also dominated by small springs, annual streams and small natural dams, and all these are not in good condition, (Mgxashe *et al.*, 2000). The veld is generally of the sour type which dries up in winter and in periods of less or no rain. This veld is not conducive for livestock though they strive for survival (Mgxashe *et al.*, 2000).

Mgxashe *et al.*, (2000) identified 16 different grass species in Xume (an administrative area in Intsika Yethu), and seven of them were the most abundant species. *Eragrostis plana* and *Cynodon dactylon* had the highest percentage occurrence of the 59 samples collected from the area (Figure 3.2), the latter with low nutritional quality. These dominating species known as increaser II species occur when the veld is over-utilised. The absence of grazing

management and regulations increases the chances of overgrazing and an occurrence of these species (Mgxashe *et al.*, 2000).

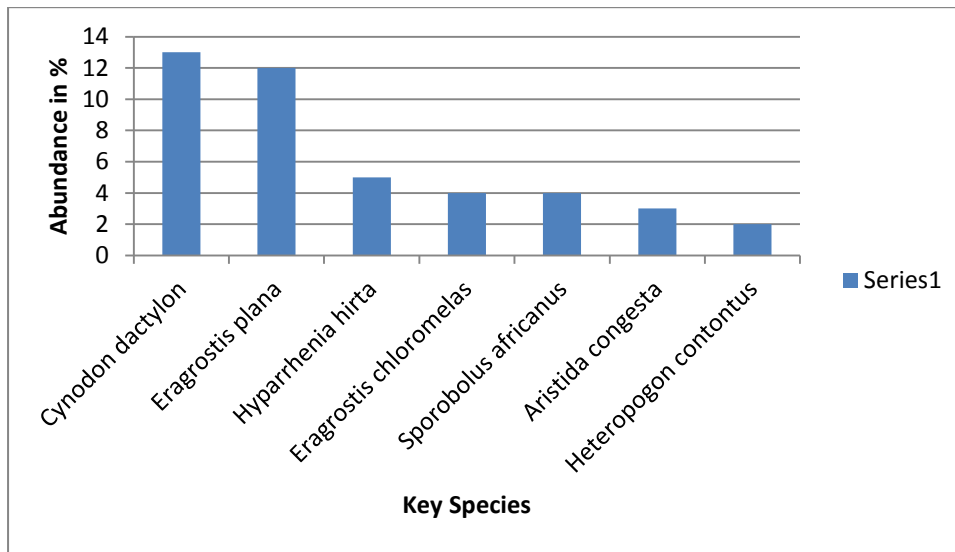


Figure 3.2: Grass species abundance for seven most occurring species in Xume village in Intsika Yethu.

Source: Mgxashe *et al.*, (2000)

3.2 Demographic profile

3.2.1 Population size and distribution

The total population of Intsika Yethu was 194 246 in 2011 with 44 768 households (Stats SA, 2011). For 2013, Statistics South Africa (Stats SA) estimates the mid-year population as 52,98 million. Given a population size of 194 246 people living in 44 768 households, the average household size was about 4 people per household. About 22% of the Chris Hani district population resides in Intsika Yethu (Stats SA, 2011). Old pensioners, look after their grand-children, whereas adults are often absentees (Perret, 2002). Perret (2002) also indicated that 50% of the households' heads were older than 59 years, whereas half of the communities' population was under 15 years old. About 33% of the households is headed by a woman (single, widowed or divorced), while 10% are headed by a married woman, whose husband works far away. Most household heads (85%) were born in the community or married a member of the community. Only 15% are immigrants (Perret, 2002).

Table 3.1 below gives a population spatial distribution for Intsika Yethu. The table indicates that 95% of the population of Intsika Yethu resides in the rural villages while 3% and 2% live in urban and peri-urban areas respectively.

Table 3.1: Population spatial distribution

Urban	Peri-urban	Rural villages
3%	2%	95%

Source: Intsika Yethu Municipality Draft Integrated Development Plan (2011).

3.2.2 Gender and Age Distribution

Global Insight (2008) statistics indicate that 53% of the municipality’s population is females, whilst 47% is males. The disparity is more than that of the national average of 49% male and 51% female. A study by Global Insight (2008) of the age structure revealed that the bulk of the population, about 60% is children in the school going age group (0 – 19 years) and about 7% falls within the pension age group. Only 33% are in the working age group (20 – 64 years). This shows that there is high dependency ratio as 67% of the population depends on the 33% workforce in the area (Stats SA, 2011).

3.2.3 Household Income distribution

Household income is a useful proxy for understanding levels of poverty (Intsika Yethu Municipality Draft Integrated Development Plan, 2011). The monthly household income distribution analysis by (RSS, 2006) within the Intsika Yethu municipality indicated that an estimated 76% of households could be regarded as poor with gross monthly incomes of less than R1500. Figure 3.3 compares the household income distribution of the Intsika Yethu with other municipalities in the district.

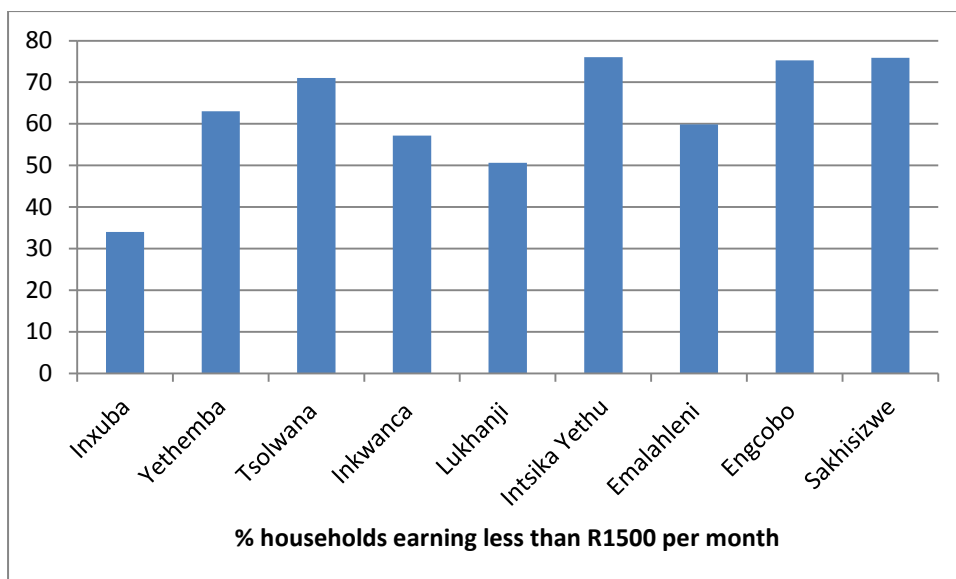


Figure 3.3: Household Income Distribution

Source: Intsika Yethu Municipality Draft Integrated Development Plan (2011)

Figure 3.3 indicates that Intsika Yethu has the highest number of households receiving incomes of less than R1500.00 a month within the district.

3.2.4 Unemployment

Even though the economy of Intsika Yethu has shown positive growth of up to 50% over the last 10 years, due to thinness of the size of the overall economy very little improvement has occurred in the fight against unemployment (Intsika Yethu Municipality Draft Integrated Development Plan, 2011). The survey by Intsika Yethu Municipality Draft Integrated Development Plan, (2011) estimated unemployment rate of Intsika Yethu to be as high as 87.1%. When compared to the district as whole, Intsika Yethu local municipality remains the worst affected. Figure 3.4 shows a comparative picture.

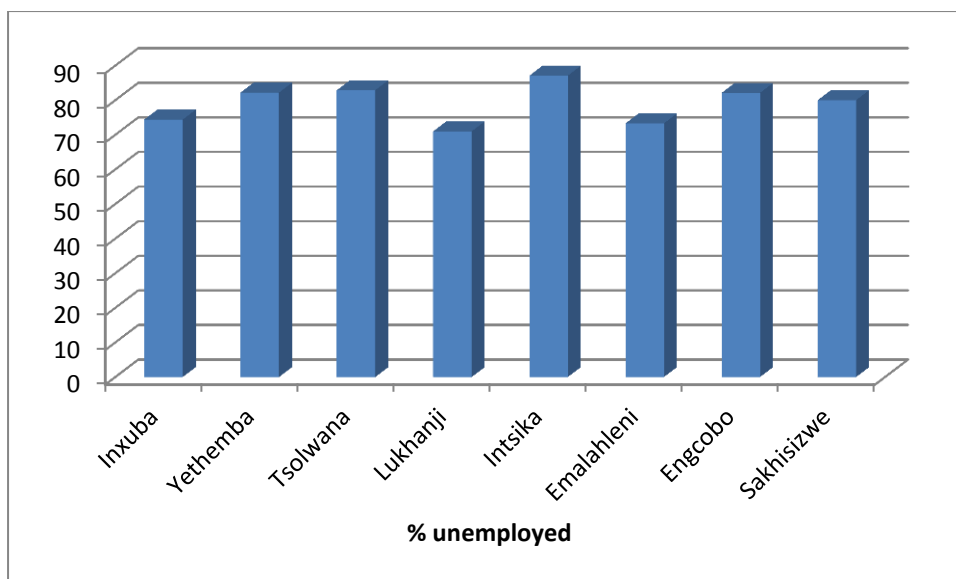


Figure 3.4: Comparative unemployment distribution

Source: Intsika Yethu Municipality Draft Integrated Development Plan (2011)

3.3 Infrastructure and service delivery

3.3.1 Water & Sanitation

Intsika Yethu is made up of 213 villages and 23 wards of which two are its major centres Cofimvaba and Tsomo, the rest is rural. It is estimated that out of 40 504 households in Intsika Yethu 23 441 households have access to tap water. This translates to 53,9 % of households with access to tap water leaving the municipality with the backlog 46,1%, *i.e* those without access to water (Basic Services Publication, 2009). It is estimated that the sanitation backlog is sitting at 79.3% with only about 20.7% of the households having access to sanitation (Basic Services Publication, 2009). Water supply is one of the limiting factors for the smallholder farmers of this local municipality. There is an on-going water provision project called the Ten Year Water Supply, conducted by the Camdekon Consulting Engineers, for the Intsika Yethu municipal area which aims at providing safe water for drinking in rural communities (Mgxashe *et al.*, 2000).

3.3.2 Electricity and energy supply sources

Eskom is a sole provider of electricity services in the Intsika Yethu jurisdictional areas. Backlogs in electricity connections remain high for most areas in the municipality. The backlog for electricity household connections is estimated by Basic Services Publication

(2011) to be 71, 1% which equals 35 128 households with no access to Grid. Dry cow dung is the main source of fuel although there is electricity in most of the communities in Intsika Yethu (Mgxashe *et al.*, 2000). As part of indigent policy, the municipality provides subsidy in the form of subsidised paraffin supplies to poor households residing in its jurisdictional areas (Statistics South Africa, 2001).

3.3.3 Roads, Storm-water & Transport

Intsika Yethu municipality is responsible for the construction, maintenance and upgrading of its local access roads and storm-water infrastructure. There is an estimated 50km length of tarred roads which are largely main distributor level roads such as R61 linking major towns of Queenstown and Umtata as well as the newly resurfaced route linking R61 through Tsomo to N2 going to East London. Off the tarred roads length about 5km or so are urban access roads running within towns of Cofimvaba and Tsomo. Access roads are gravelled and they are generally in a poor condition. On rainy days, communal areas in Intsika Yethu are difficult to access while others are completely inaccessible by road.

3.3.4 Land and Housing

The municipality is characterized by a largely rural settlement character. These settlements are clustered on ridges and along the roads with a variety of housing structures built out of mud brick, block and brick walls. Roofing varies from thatch to tiles or to corrugated iron. In the two towns of Tsomo and Cofimvaba, there are informal structures and back yard shacks behind larger houses built from brick and blocks (Statistics South Africa, 2001). It is a characteristic of this area that many settlements are located at the foot of hills and mountains. Problems are experienced with storm water run-off and flooding due to the steep hill sides. Some of the soils have a clay content which affects structural strength of walls and floors. In areas close to the hill sides, large rocky outcrops result in high costs for the provision of services.

3.3.5 Education

Levels of schooling among adult population in the municipal area are generally low (Figure 3.5). In terms of schooling facilities, the district office of education in Cofimvaba claims that there are 11 circuits, 286 schools, 238 Early Childhood Centres stand alone, 182 grade R-9 schools, 9 Abet centres, 32 grade 10-12 schools, 66 primary schools, 4 independent schools and 2 Technical schools. Intsika Yethu had an enrolment of 75 758 learners in 2010. The number of mud structures is 49 and about 97 schools are participating in scholar transport. The key challenge for education is the continued poor performance by most local schools. This challenge is also exacerbating the issue of backlogs for critical skills needed to grow the economy (Intsika Yethu Municipality Draft Integrated Development Plan, 2011).

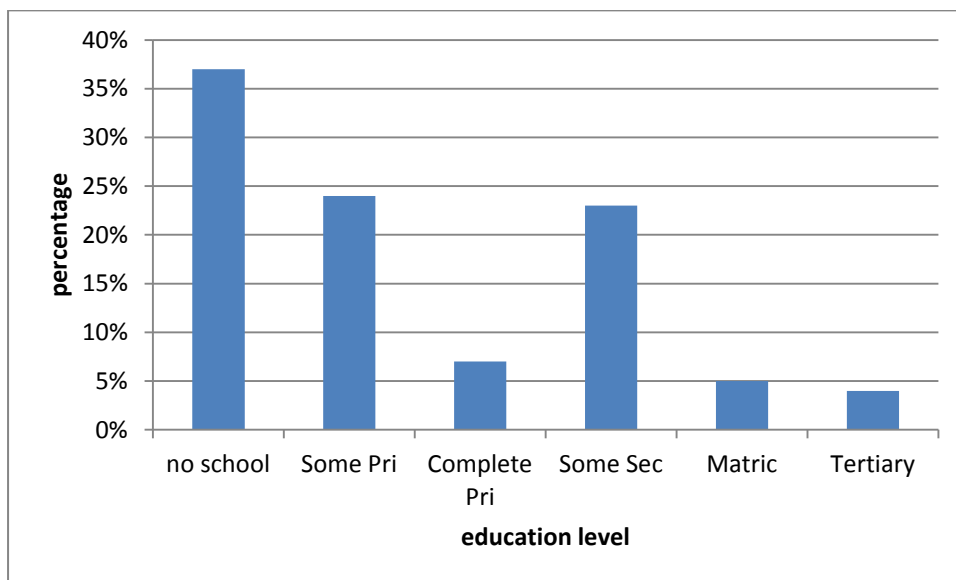


Figure 3.5: Levels of educational attainment by adult population

Source: Intsika Yethu Municipality Draft Integrated Development Plan (2011).

3.5 Services available in Intsika Yethu

Intsika Yethu local municipality benefits from few services as most communities in the former homeland areas of the province do. For telecommunication, Telkom is a provider of telephone services both publicly and privately. There is a post office in Cofimvaba and another one in Tsomo, which serve for communication. There are two banks in Tsomo town. There are three banks in Cofimvaba which are ABSA, First National Bank (FNB) and Capitec Bank. The people in Ncora either go to Tsomo or Engcobo for banking services.

Transport services consist of buses and local taxis (the latter from an organised taxi association) and are available only to those areas that are not very far from the main road. The Eastern Cape Department of Agriculture and Land Affairs (DALA) provides extension services yet with low operational budget for that (e.g. lack of departmental vehicles) hence poor and uneven delivery of extension services to farmers. Those households who live near accessible roads have greater chances of receiving extension services than those who cannot be accessed by road easily.

Extension services providers are restricted on mileages to cover per month and that prevents them from reaching out to all the extension services needy communities. The vehicle subsidy system that was introduced by the Department of Agriculture in 2000 to some extent improved the situation by allowing extension officers to reach out to the furthest communities with their own vehicles.

Presently extension work is however inadequate for the basic educational technical needs of smallholder farmers and for emerging farmers in Intsika Yethu. This may also be due to insufficient resources and a lack of a continuing flow of appropriate information and technology. Information comes mainly via radios and television sets, and yet there are very few households that have television sets with efficient signals.

3.6 Governance in Intsika Yethu

Traditional leaders (headmen and sub-headmen) and the democratically elected councillors are the governing bodies of Intsika Yethu. The Administrative Area per given area (Cofimvaba, Ncora and Tsomo) is demarcated according to sub-units called wards and each ward has a councillor who represents it in the local government; later is the District Council, where decisions are made. Mayors are the heads of town municipalities. All the chiefs of the area report to the king of the area (King Matanzima).

3.7 Socio-economic activities in Intsika Yethu- Population's livelihood strategies

According to Intsika Yethu Municipality Draft Integrated Development Plan (2011), there are projects underway in the area involving different social groups and they enhance the livelihoods of the people of the Eastern Cape communal areas. The projects address sectoral

issues such as sewing, gardening, poultry, baking and stock improvement. These projects help communities in securing food and in improving the quality of stock. The different social groups identified are the unemployed, women, widows, out-of-school youth, the farmers, pensioners, civil servants, orphans and the disabled, business people involved in various activities such as building, carpentry, shops, shoe repairs, candle-making and beadwork (Khanya, 1999). The community relies mostly on its own organisations such as churches, community schools, women's prayer groups, Farmers Unions, burial societies (*imibutho*), Taxi Associations, Bus Associations, and traditional leaders generally for social services (Perret, 1999b).



Figure 3.6: Distribution of economic activities in Intsika Yethu

Source: Intsika Yethu Municipality Draft Integrated Development Plan (2011)

The women engage in activities such as burial societies and women's *manyano* (women's prayer meetings). The youths have a variety of skills such as brick-laying, gardening, plastering and sewing. Some earn a living from baby-sitting, cleaning other people's homes and painting, (Perret, 1999b). Others depend on their grandparents' pensions for a living. The unemployed raise money from selling lambs, sheep and mutton, piglets and pork on special

days such as pension and grant days. Pigs are raised mainly for home consumption. Some of the local people run taverns while others brew Xhosa beer (*umqomboti*) for sale (Perret, 1999).

3.7.1 Agriculture (on-farm activities)

Cattle, sheep and goats are the common livestock in this area (Intsika Yethu) with sheep dominating (Obi, 2011). These may be for sale or slaughter for home consumption and ceremonial purposes. Horses are meant for riding (form of transport) and sometimes hired for drought power. Donkeys are found in very small numbers. Smallholder households use the local 14 functional dip tanks for dipping cattle and sheep and 9 shearing sheds for the shearing of sheep in the municipality (Department of Agriculture, Cofimvaba 2011). The Department of Agriculture financed the renovation of the shearing sheds in this local municipality in 2006. Fencing is generally poor and animals roam around and destroy garden produce (Perret, 2002b).

Crop and vegetable production cooperatives are also common in areas like Ncora, Qamata in Cofimvaba and Gqogqora in Tsomo. The rural households in Intsika Yethu produce crops for sale and for home consumption.

3.7.2 Non-farm livelihood strategies

From the research carried in Xume (in Intsika Yethu) by Perret in 2002, it was discovered that about 60% of households earn some cash income from farming. However, only 9% use farming as their main source of cash income. About 40% of households have access to remittances from a working spouse or children (outside the community), while about 40% also have access to one or two pensions (old age- or sick-pensions). Perret (2002) outlined that only 9% access salaries and wages from permanent local jobs and 6% from non-permanent, casual local jobs. Five percent of households accessed childhood and disablement welfare payments.

3.7.3 Off-farm activities

Perret (2002) indicated that the average household cash income in Xume was around R6 000 per annum. A quarter earned less than R2 400 p.a., whereas another quarter earned more than R8 400. Figure 3.7 shows the proportion of money flows from different sources in one of the studied communities (Xume in Intsika Yethu) by Perret (2000), and confirms the overwhelming influence of pensions and remittances on livelihood build-up. Poor inhabitants rely on gifts, state pensions and migrant labour remittances for household survival (Nel, 1998).

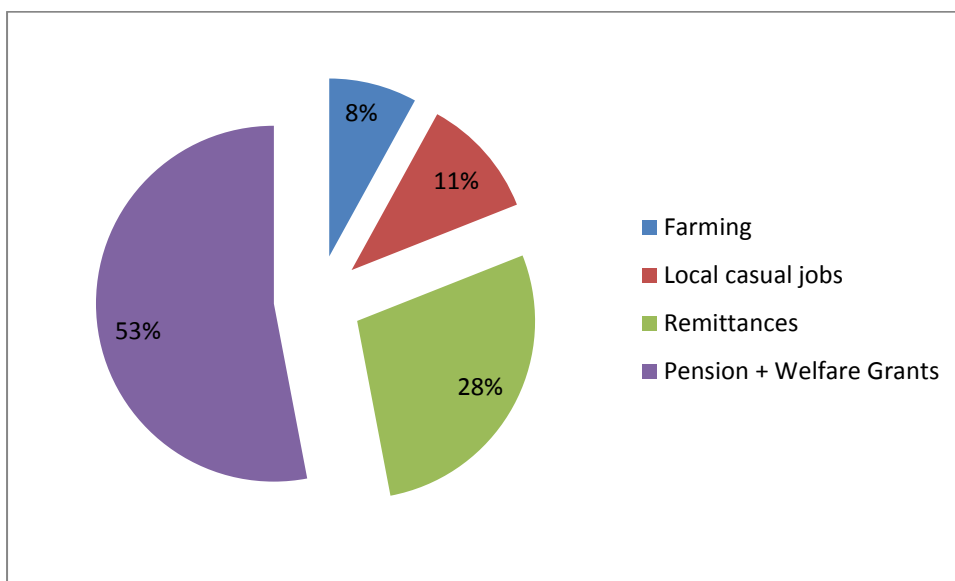


Figure 3.7: Proportion of cash income from different livelihood sources in Xume, Transkei (Perret, 2000)

From the same research by Perret (2000), most (95%) households indicated that they were short of money, at least during certain periods of the year (generally between November and March, for the poorest). Substantial number of households (about 60%) perceived themselves as not having access to enough nutritious food, at least during certain periods of the year (generally January to March). About 70% indicated that they had debts outstanding. Making use of Van Averbeké's necessary cash income standards, Verschuren (2000) found out that 83% of the households belonging to the different communities surveyed showed a ratio available cash income/necessary cash income below 1, while 54% of households have a ratio below 0.5.

3.8 Chapter conclusion

This chapter has given a background of the study area where social, economic, geographic and political aspects were explored. The chapter finally described briefly the livelihood strategies in the municipality. The households in the municipality are generally poor, less educated and rely basically on on-farm, off-farm and non-farm livelihood activities. Government development programs are in progress to upgrade the living standards of the rural households in Intsika Yethu. Having discussed these aspects in this chapter, the following chapter will focus on the data collection and analysis.

CHAPTER 4

RESEARCH METHODOLOGY

4.0 Introduction

This chapter outlines the research methods used in collecting and analysing data from households. The chapter seeks to show how the study was conducted using the selected research tools. It starts by highlighting the research design and the population size then goes on to explain the sampling technique and the sample size from which data was collected. The chapter goes on to describe the data collection methods. The section on data collection methods explains the tools that were used for collecting data and the variables that were used. The analytical framework follows, outlining descriptive statistics and the model for data processing, giving reasons why the model has been chosen.

4.1 Research Design. Cross-sectional data collection method was used in the research as part of the research design. Cross-section data are data on one or more variables collected at the same point in time (Gujarati, 1992). In cross sectional study, data are collected on the whole study population at a single point in time to examine the relationship between variables. According to Hennekens and Buring (1987), cross sectional data collection method has the following advantages:

- It is relatively quick and easy to conduct.
- Data on all variables is only collected once.
- Able to measure prevalence for all factors under investigation.
- Multiple outcomes and exposures can be studied
- Good for descriptive analyses and for generating hypotheses.

However Hennekens and Buring (1987) went on to mention the following as some of the disadvantages of cross-sectional research study:

- It is difficult to determine whether the outcome followed exposure in time or exposure resulted from the outcome.
- Unable to measure incidence and
- Associations identified may be difficult to measure.

4.2 Unit of analysis

The population of this study was composed of smallholder households in the rural areas of the Eastern Cape specifically in Cofimvaba rural, Tsomo rural, Ncora, Qamata, Camama and Ncuncuzo. The research focused on household heads involved in farming and non-farming activities as forms of livelihood strategies.

4.3 Sampling procedure

Sampling is a process of selecting units from a population of interest, so that by studying the sample, the results obtained from the sample may be generalized to the population from which the sample had been chosen (Leedy and Ormrod, 2004). Thus, the characteristics obtained from the sample should reflect approximately the same characteristics as the population. Since the data obtained from a sample will be generalized to the whole population, the manner in which the sample units are selected is important. A sample should be representative; therefore, the sample size should be *large enough* to conduct reliable statistical analyses and to ensure that the sample mean is within 1 point of the population mean at a 95% confidence interval. To calculate what a sample size needs to be, one can simply solve for n in the formula for margin of error. The following formula is therefore used:

$$n = (z_{\alpha/2} \delta E)^2$$

According to Bless and Smith (2000), in order to get reliable statistics, a sample should have at least 30 units. However this may depend on the population size and the cost of feasibility.

The household head was regarded as the sampling unit in the research study. In rural traditional societies, the household is the primary decision making unit (Abbott, 1997). Most households in Intsika Yethu comprise mainly individuals ranging from two to eighteen. Most of these households as well comprise members of the extended families (Mgxashe, 2000). Each household has got its own head who may be a child or an elder, (male or female). The head of the household is usually the main decision maker (Obi, 2011), hence the sampling unit.

Intsika Yethu comprises nodal centres (Cofimvaba and Tsomo) and rural nodes (Cofimvaba rural, Tsomo rural, Camama, Ncora, Qamata and Ncuncuzo). In this case, nodal centre stratum and rural node stratum were formulated. Of these two strata, the rural node which according to Intsika Yethu idp final (2012) comprises 213 villages was purposively selected for the desired sample.

Names of household heads willing to participate and available during the period of interviews were obtained from the headmen of the villages. Interviews were conducted during the working days. Saturday and Sunday were set aside for ethical purposes. About 606 household heads in the 6 rural nodes confirmed their willingness to participate in and their availability for interviews prior to the actual day of interviews. Only 20% of these 606 household heads were interviewed due to lack of resources. Names obtained per rural node were written on pieces of papers, placed in a hat and only 20% of the names was randomly picked thereafter. A total number of 120 randomly selected households out of the recorded 606 were therefore interviewed. For purposes of understanding households' livelihoods adaptation strategies, stratified (based on administrative areas/ rural nodes) and randomly selected respondents from each administrative area in Intsika Yethu were asked about their livelihood adaptation strategies using open-ended questions.

Table 4.1 indicates the numbers of households interviewed in rural Intsika Yethu. Samples were almost uniform across the administrative areas in the municipality due to a fairly even distribution of population in the area. This could be attributed to generally uniform edaphic factors and homogeneity in socio-economic factors. This allowed an equal chance of representation of each administrative area/ rural node in the sample. All the households in these administrative areas had equal opportunities and access to agricultural cooperatives available in the municipality. Dry-land farming and sheep production are however some of the major activities practiced in Intsika Yethu. According to Parkin (2008), the uniformity in the sample sizes of areas would reduce the biasness in the results obtained.

Table 4.1: Distribution of respondents interviewed

Area	Tot names provided	20% of total names provided	Number of household heads interviewed
Cofimvaba rural	106	21	20
Tsomo rural	98	19.6	20
Ncora	96	19.2	20
Qamata	104	20.8	20
Camama	100	20	20
Ncuncuzo	102	20.4	20
Total	606	121.2	120

Source: Own survey (2013).

Advantages of stratified random sampling:

- It can be used with random or systematic sampling, and with point, line or area techniques. If the proportions of the sub-sets are known, it can generate results which are more representative of the whole population. It is very flexible and applicable to many geographical enquiries. Correlations and comparisons can be made between sub-sets.
- The aim of the stratified random sample is to reduce the potential for human bias in the selection of cases to be included in the sample. As a result, the stratified random sample provides us with a sample that is highly representative of the population being studied, assuming that there is limited missing data (Muhoji, Undated).
- Since the units selected for inclusion within the sample are chosen using probabilistic methods, stratified random sampling allows us to make statistical conclusions from the data collected that will be considered to be valid.
- Relative to the simple random sample, the selection of units using a stratified procedure can be regarded as more effective because it improves the potential a more even spread of units over the population (Burnam, 1988). Furthermore, where the samples are the same size, a stratified random sample can provide greater precision

than a simple random sample (Binson *et al.*, 2000). Burnam (1988) went on to indicate that because of the greater precision of a stratified random sample compared with a simple random sample, it may be possible to use a smaller sample, which saves time and money.

- The stratified random sample also improves the representation of particular strata (groups) within the population, as well as ensuring that these strata are not over-represented (Muhoji, Undated) (in this case 20 respondents were selected per Administrative Area; Table 4.1). Together, this helps the researcher to compare strata, as well as make more valid inferences from the sample to the population.

4.4 Data collection

4.4.1 The Structured Interview Schedule

A structured questionnaire consisting of both closed and open-ended questions was designed and administered to households for primary data collection. The advantage of the structured interview is that it takes place over a short period of time (Yin, 1994). The questionnaire was designed in order to collect both qualitative and quantitative data. The questionnaire was then administered to respondents through face-to-face interviews. There are other ways in which questionnaires can be administered, such as self-administered questionnaires and telephone surveys (Leedy and Ormrod, 2004).

However, face-to-face interviews were chosen because they have several advantages over the other methods. According to Bless and Smith (2000), an interviewer administered interview reduces omission of difficult questions by respondents. In addition, it reduces the problem of word or question misinterpretation (misunderstandings) by respondents and can be administered to respondents who can neither read nor write. In addition, the presence of the interviewer increases the quality of the responses since the interviewer can probe for more specific answers (Leedy and Ormrod, 2004). In other words, the use of interviewer-administered questionnaires ensures minimal loss of data when compared to the other methods.

In the absence of the head, the spouse or any family member who is directly involved in the farming activities and management was interviewed. The main respondent provided most of the information, but was allowed to consult other household members where necessary. After collecting the data, a codebook was prepared in order to assign numerical values to the answers obtained from the respondents. The data from the questionnaires was then coded and transferred onto a spread-sheet (Microsoft Excel, 2010). According to Bless and Higson-Smith (2000), it is important that the information obtained be in the language that the computer will assimilate when it (computer) is used to analyse it (information).

4.4.2 Variables considered

A standardized questionnaire was designed and used to capture data on rural household composition, socio-economic characteristics, consumption and income, including details of participation in different farm and off-farm activities. For the purpose of analysis, livelihood strategies or sources of income were disaggregated into seven categories: i) crop income, ii) livestock income, iii) agricultural wage income/ on-farm income, iv) off-farm income, including both from formal and informal employment, v) self-employment income from own businesses, vi) remittances from relatives and friends, grants and pensions (non-farm income). Crop and livestock income together make up farm income, while the other five categories constitute off and non-farm incomes.

4.5 Data analysis

The Statistical Package for Social Scientists (SPSS version 20.0) was used to run the data collected from smallholder farmers in Intsika Yethu. To analyse data, descriptive and multivariate statistical analyses (the multinomial logistic regression model) were used to test the hypotheses. The main descriptive indicators that were employed were frequencies and mean values. These are useful in analysing household characteristics as well as analysing the relationship between variables.

4.5.1 Method of data analysis

There are basically two common methods described in the literature for analysing household livelihood strategies. The first method is the income based approach (Barrett *et al.*, 2005). This method focuses on household participation in different income earning activities of the rural economy (Barrett *et al.*, 2005; Damite and Negatu, 2004). The second method of

analysing data is the asset based approach. This approach analyses livelihood activities and income diversification behaviour by direct examination of the household's asset endowment (Carter and Barrett, 2006).

Babatunde (2009) researched on the diversification of income sources in Nigeria using the income-based approach while focusing on three measures of income diversification: i) the number of income sources (NIS); ii) the share of off-farm income in total income (OFS); and iii) the Herfindahl Diversification Index (HDI). The NIS used by Minot *et al.*, (2006) and Ersado (2005), is relatively easy to measure, though it has been criticized for its arbitrariness. For instance, it has been argued that a household with more economically active adults, other things being equal, will be more likely to have more livelihood strategies and income sources. This may reflect household labour supply decisions as much as the desire for diversification. The OFS (Off-Farm Share) indicates the importance of off-farm income, while the HDI is a measure of overall diversification, not only taking into account the number of income sources, but also the magnitude of income derived from them.

Data collected through structured interview schedule were processed and coded using SPSS software for further analysis. Quantitative categorical type of data was analysed using percentages and frequencies. After computing the descriptive statistics, a multinomial logistic regression (Green, 2003) was used to identify determinants of household's choice of livelihood diversification strategies where the dependent variable was multi outcome (Y = on on-farm, off-farm, non-farm, on-farm + non-farm, off-farm + non-farm, non-farm + off-farm + on-farm income generating activities) (as elaborated in section 4.5.2 – 4.5.3). This research study incorporates some aspects of both approaches (HDI and OFS) in identifying the determinants of households' choices of livelihood diversification strategies.

On-farm livelihood strategy was treated as the base category in this study because crop and livestock production are the common household livelihood adaptation strategies in rural areas (Bradley and MacNamara, 1993; Ellis, 2000). This was also because farming is the biggest source of livelihood in the area (Intsika Yethu local municipality annual report, 2010-2011). The area of Intsika Yethu offers a diverse range of opportunities in industries linked to agriculture (Intsika Yethu local municipality annual report, 2010-2011).

Ellis (1999) indicated that in Sub-Saharan Africa, reliance on agriculture tends to diminish continuously as income level rises, i.e, the more diverse the income portfolio the better-off is the rural household. Development strategies articulated by the South African government in the democratic era have been oriented towards improving a lot of the historically disadvantaged majority of the black population through the development of agriculture (Perret, 2002). This implies that almost every one considers this strategy as a livelihood source although it is not secure. In this study, efforts were targeted at understanding the potential of households to consider other household livelihood strategies, specifically off-farm and non-farm as well their combinations.

4.5.2 Multinomial logistic regression model

The multinomial logistic regression model was used to test the socio-economic factors that influence households in selecting the existing livelihood strategies, which have the potential of improving their welfare and incomes. Multinomial logistic regression can be used to predict a dependent variable, based on continuous and/or categorical independent variables, where the dependent variable takes more than two forms (Hill, Griffiths and Judge, 2001). Furthermore, it is used to determine the percent of variance in the dependent variable explained by the independent variables and to rank the relative importance of independent variables.

Multinomial logistic regression does not assume linear relationship between the dependent variable and independent variables, but requires that the independent variables be linearly related to the logit of the dependent variable (Gujarati, 1992). Pundo and Fraser (2006) explained that the model allows for the interpretation of the logit weights for the variables in the same way as in linear regression. The model has been chosen because it allows one to analyse data where participants are faced with more than two choices. In this study, smallholder farmers are faced with different livelihood strategies (dependent variables) represented by:

Y= (on farm, off-farm, non-farm, off-farm + non-farm, on-farm + non-farm, on-farm + non-farm + off-farm)

Base category: On-farm livelihood strategy was set as the base category. This was because farming is the biggest source of livelihood in Intsika Yethu and the area offers a diverse range of opportunities in industries linked to agriculture (Intsika Yethu local municipality annual report, 2010-2011) and also crop and livestock production are the common household livelihood adaptation strategies in rural areas (Bradley and MacNamara, 1993; Ellis, 2000). This may imply that almost every one considers this strategy as a livelihood source although it is not completely secure. In this study, efforts were targeted at understanding the potential of households to consider other livelihood diversification strategies, which include off-farm, non-farm, on-farm + non-farm, off-farm + non-farm as well as on-farm + off-farm + non-farm livelihood strategies.

The typical Logistic Regression Model used was in the form:

$$\text{Logit}(P_i) = \ln(P_i / 1 - P_i) = \alpha + \beta_1 X_1 + \dots + \beta_n X_n + U_t$$

Where:

$\ln(P_i / 1 - P_i)$ = logit for rural household livelihood strategy diversification choices

$1 - P_i$ = diversifying household livelihood strategy

P_i = no diversification

β = coefficient

X = covariates

U_t = error term

In the model, rural household strategy choice, with five possibilities *viz* on-farm, off-farm, non-farm, non-farm + on-farm, non-farm + off-farm and on-farm + non-farm + off-farm were set as dependent variables.

On-farm: This livelihood strategy in this case is regarded as full-time livestock and crop production entirely for sale or exchange to earn a living. Households that engage in this livelihood strategy are mainly farmers or pastoralists who depend on agriculture as a primary food and livelihood source Dixon *et al.*, (2001).

Off-farm: This is solely non-agricultural employment and non-farm based agricultural employment (Davis and Pearce, 2001) where the household head is consistently earning a sustaining wage or salary for a living. Household heads in this category were assumed to be employed by a specific employer off-farm (they are not sole proprietors).

Non-farm: Households engaged in this livelihood strategy rely solely on transfers and self-employment (refer to section 2.19.2 - 2.19.3). As illustrated earlier in Chapter 2, Barrett *et al.*, (2001) identified non-farm activities as a set of non-agricultural activities carried out in the rural.

On-farm + non-farm: Households engaged in this livelihood strategy performed on-farm and non-farm livelihood activities simultaneously or independently for any reason at any given period of the year e.g engaging in crop production and receiving transfers or brick-laying.

Off-farm + non-farm: This category involves household heads concurrently or independently engaged in both off-farm and non-farm livelihood strategies at any period of the study year.

On-farm + off-farm + non-farm: Households in this category at some point engaged themselves during the year of study (2012-2013) or are still engaged in a combination of these three livelihood strategies.

The independent variables which were used in the multinomial logistic regression model are defined in Table 4.2.

Table 4.2: Descriptive statistics

Variable	Description	Anticipated β sign
Age	Age of household head (years). Age of household head can be a proxy to experience and was hypothesized to positively influence a household to select a given household livelihood strategy.	+
Gender	Gender of household head. This was dichotomous variable (1=male; 0=female), which influences the choice of household livelihood strategy.	+
Education	Education of household head in years. Was hypothesized to influence the household head. More years in school meant higher probability to diversify household livelihood strategies.	+
Household-size	Number of household members expressed in adult equivalents (AE).	+
Dependent ratio	Number of dependants in a given household.	+
Land size	Area cultivated by household in the survey year.	+
Livestock	Number of livestock units owned by a given household.	+
Input	Resources used in the production process e.g timber or seed.	+
Membership to cooperatives	Dummy variable, member of cooperative(s), Yes/No. Membership to co-operative society hypothesized to positively influence farmers to choose a given household livelihood strategy.	+
Credit access	Dummy variable, access to formal or informal credit of a given household	+
Remittance	Availability of remittances in a given household.	+
Market distance	Distance from village to the nearest market place. (km)	+

When the variables are fitted into the model, the model is presented as:

$$\ln (P_i / 1-P_i) = \alpha + \beta_1 \text{Gender} + \beta_2 \text{Credit access} + \beta_3 \text{Age} + \beta_4 \text{Market access} \dots + U_t$$

Thus, multinomial logistic regression is an extension of binary logistic regression. According to Mohammed and Ortmann (2005), several methods can be used to explain the relationship between dependent and independent variables. Such methods include linear regression models, probit analysis, log-linear regression and discriminant analysis. However, multinomial logistic regression has been chosen because it has more advantages, especially when dealing with qualitative dependent variables.

Linear regression model (also known as Ordinary least squares regression (OLS) is the most widely used modelling method for data analysis and has been successfully applied in most studies (Montshwe, 2006). However, Gujarati (1992) pointed out that the method is useful in analysing data with a quantitative (numerical) dependent variable but has a tendency of creating problems if the dependent variable is qualitative (categorical), as in this study. Amongst other problems, the OLS cannot be used in this study because it can violate the fact that the probability has to lie between 0 and 1, if there are no restrictions on the values of the independent variables. On the other hand, multinomial logistic regression guarantees that probabilities estimated from the logit model will always lie within the logical bounds of 0 and 1 (Gujarati, 1992). In addition, OLS is not practical because it assumes that the rate of change of probability per unit change in the value of the explanatory variable is constant. With logit models, probability does not increase by a constant amount but approaches 0 at a slower rate as the value of an explanatory variable gets smaller.

When compared to log-linear regression and discriminant analysis, logistic regression proves to be more useful. Log-linear regression requires that all independent variables be categorical and discriminant analysis requires them all to be numerical, but logistic regression can be used when there is a mixture of numerical and categorical independent variables (Dougherty, 1992). In addition, discriminant analysis assumes multivariate normality, and this limits its usage because the assumption may be violated (Klecka, 1980). According to Gujarati (1992),

probit analysis gives the same results as the logistic model. In this study, the logistic model is preferred because of its comparative mathematical simplicity and fewer assumptions in theory. Moreover, logistic regression analysis is more statistically robust in practice, and is easier to use and understand than other methods.

4.6 Chapter Summary

In this chapter, the methods that were used to analyse data were reviewed. Data was collected from 120 smallholder farmers in Intsika Yethu. Stratified random sampling was applied in coming up with a sample from these smallholder farmers in Intsika Yethu local municipality. To collect the data, a questionnaire was administered to the respondents through face-to-face interviews. This chapter describes sampling procedures, analytical framework and the overall research process of the project. The chapter also presents details of the models adapted in the analysis and the data specifications of the study. The results for the research are presented in the next two chapters.

CHAPTER 5

RESULTS AND DISCUSSIONS

5.1 Introduction

In this chapter, the results of the research are presented. Results on demographic data and household income are presented first in the form of descriptive statistics where tables, graphs and charts are used to report summary data such as mean, mode, median, central tendency and percentage among others. The empirical results are presented and discussed later in the chapter. The empirical results are used for the answering of research questions. Conclusions in the next chapter were drawn from the results in this chapter.

5.2. Demographic characteristics of sampled households

In this section, household heads' demographic characteristics and aspects such as gender, age, access to credit and highest educational levels attained are discussed. These aspects are important because the main household activities are coordinated by the household head and the head's decisions are most likely to be influenced by such demographic aspects (Makhura, 2001). The section further presents and analyses data on household sizes and dependency values. According to Randela (2005), demographic characteristics of households are essential when analysing economic data because such factors influence the households' economic behaviour. As such, it is relevant to include household demographic attributes in analysing market participation choices among the smallholder and emerging farmers in Intsika Yethu local municipality.

5.2.1 Household size

Household size was defined as to the number of people living together in a household including non-family members by Perett (1999). Household size plays an important role as a source of labour; however, the household size also has an impact on household expenditures per month. The mean household size for this study is 5.2. The largest household size in the survey comprised 12 members while the smallest household size was 3. The larger the household size, the greater the chances of diversifying livelihood strategies to cater for the needs of the household members (Gebru and Beyene, 2012). In some cases individual characteristics influence participation decisions.

Montshwe (2006) indicated that household size is a useful unit of analysis given the assumptions that within the household resources are pooled, income is shared, and decisions are made jointly by responsible household members. The smaller the household size the less the livestock sales will be because of fewer household needs that require substantial cash (Obi, 2011). The average household size was 5 members. The larger the number of family members employed off-farm, the larger the chances of livelihood diversification strategies of a particular household. Young adults in some families are found to be more engaged in all types of non-farm activities than older individuals, Démurger *et al.*, (2010).

5.2.2 Gender of household heads

In this survey 63% of the respondents were male household heads while the rest of the respondents were female. The female headed households included those that were headed by females whose husbands were migrant workers, were deceased or the females that were never married. The households in which husbands were working in other towns were considered female headed as the females would be more involved in day to day livelihood activities. The larger male percentage (63%) may mean greater chances of diversification in households where male household heads access craft and brick moulding facilities as well as hard manual construction jobs in the nearby towns of Cofimvaba and Tsomo.

Gebru and Beyene (2012) in their research related gender to diversification and found out that female households have fewer chances to participate in off/non-farm activities since they invest much time in domestic roles such as childcare, cooking, washing cloth, gathering fire wood, fetching water with high participation in low economic value and time consuming agricultural activities like weeding and harvesting. As was discovered by De Brauw *et al.*, (2002) and Shi *et al.*, (2007), there was a clear gender bias in participation into off-farm activities. Men are much more likely to engage in any occupation (local wage employment, local self-employment and migration) rather than in farm labour than are women.

5.2.3 Marital status of respondents

Figure 5.1 illustrates the distribution of gender and marital status of the respondents. The research results in Figure 5.1 indicate that about 43 respondents (37%) were married. A

further analysis of gender and marital status of the sample showed that 37% of the male household heads were married while 36% of the female respondents were married. The survey results indicate that generally, the household heads were married or divorced. About 14 respondents (12%) were widowed and only 24 respondents (about 20% of the respondents) were single or never married.

In some cases single, divorced or widowed household heads may have more room for mobility due to flexibility in decision making, thus increasing the chances of searching for employment and diversification of livelihood strategies. Marital status (never been married, married or once married) is one of the aspects that can be used to estimate the level of maturity and decision making capability of an individual. Diversification in rural households of Intsika Yethu may be influenced by the marital status of a household since there will be a combination of ideas and sharing of duties in the household. There are government development programs in progress in the municipality that involve house, road and dam construction. The male household head in a married couple may decide to go and work off-farm (in the construction of dams and roads) while leaving the spouse (the wife who is regarded as a helper) at home to take care of the children, fields and livestock. This may increase diversification of household livelihood strategies in married household heads.

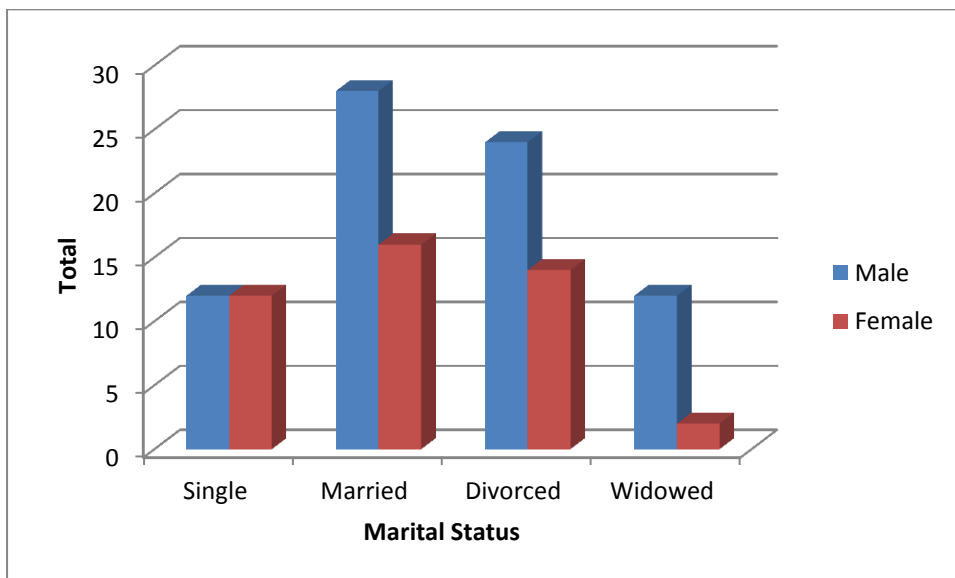


Figure 5.1: Distribution of household heads by marital status

5.2.4 Household head age

The results of age distribution in the survey are presented in Table 5.1 below. About 31% of the respondents were in the age group 50-59 while the lowest (5.8% of respondents) was below 20 years of age (child headed families). About 11% of the total sample was 70 years and above. Table 5.1 indicates that the majority of the respondents (about 90%) are in the Economically Active Population (includes people from 15 to 64 years of age who are either employed or unemployed and seeking employment). This may increase the chances of seeking non-farm and off-farm livelihood strategies, thus increasing the chances of rural household livelihood diversification. Some of the households in Intsika Yethu access child foster care grants and old aged grants from the government. These are forms of non-farm income, hence diversification of livelihood strategies.

Musemwa *et al.*, (2007) discovered that age is one of the factors that influence diversification. According to Musemwa *et al.*, (2007) the higher the age of the household head as projected for this study, the more stable the economy of the farm household, because people relatively have better experiences of social and physical environments as well as greater experience of farming activity. This may be one of the factors that reduced the levels of diversification of livelihood strategies in the households of the interviewed population.

Table 5.1: Age distribution of household heads.

Age	Frequency	%	Cumulative %
Below 20	7	5.8	5.8
20-29	12	10	15.8
30-39	14	11.7	27.5
40-49	20	16.7	44.2
50-59	37	30.8	75
60-69	17	14.2	89.2
70+	13	10.8	100
Total	120	100	

5.2.5 Education

Education and training are important aspects in rural households as they contribute to the knowledge acquired by households which they can use and apply for improved livelihoods (Bembridge, 1987). Bembridge (1987) went on to indicate that education has long been recognised as a central element in the socio-economic evolution of less developed countries. The education levels of the household heads were assessed for this sample.

Figure 5.2 illustrates the levels of education attained by the respondents in the survey. Thirty percent of the household heads attained secondary education. This secondary education ranged from grade 8 to grade 12. About 20% of the respondents did not receive any formal education and less than 10% of these respondents attained tertiary education. About 80% of the respondents acquired at least basic education. The greater percentage of the households that acquired formal education may result in an increase in the number of chances of diversifying rural household livelihood strategies in the study area. Education increases chances of access to a number of different economic activities, either as a formal requirement for wage earning jobs or because it helps setting up and managing own small businesses (Minot *et al.*, 2006).

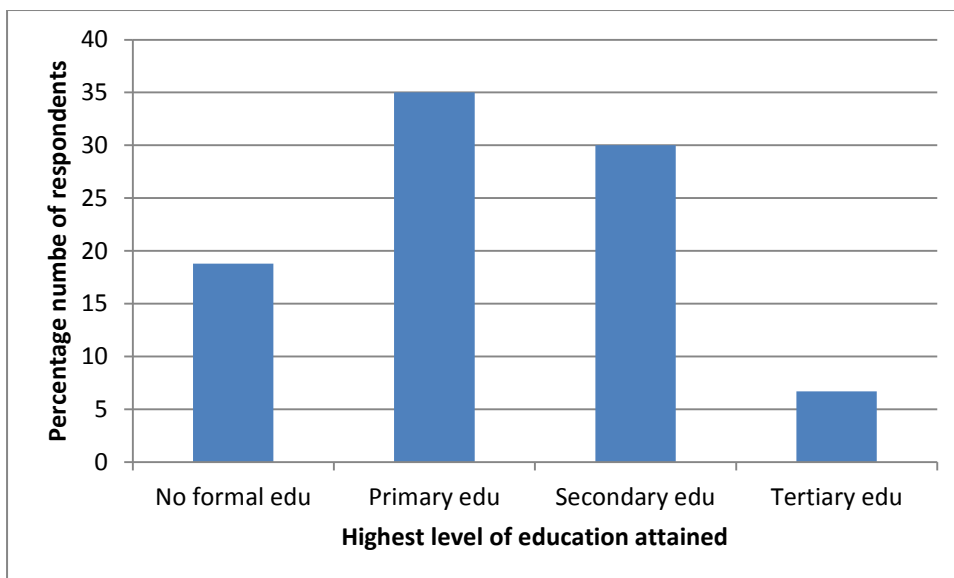


Figure 5.2: Educational trend of the household heads.

5.2.6 Land sizes owned

The amount of land a farmer owns can be associated with the amount of produce obtained in a season *ceteris paribus*. It should, however, be acknowledged that it is not always the case that the available land will be fully utilised for farming. The average land size owned by households in this sample was 2.78 hectares. Land sizes ranged from 0.2 to 10 hectares per household. According to Matsumoto *et al.*, (2006), households' access to land, asset endowments, demographic composition and transfers determines the capability to participate in non-farm activities. Land ownership and the type of veld probably are the major constraints that restricted households from owning large animal numbers. This may therefore push households to diversify their livelihood strategies. In areas like Qamata and Ncora where irrigation is popular, households may be restricted to on-farm livelihood strategies if they do not have access to government social grants.

5.2.7 Agricultural activities

In Intsika Yethu, the main agricultural activity is crop production with maize being the most common cereal crop produced. Farmers also produce other crops such as beans, cabbage, spinach, pumpkins, onions and tomatoes. About 85% of the interviewed households practice agriculture. All interviewed households have access to irrigation facilities and small gardens in which they plant vegetables such as spinach, cabbage, onions and tomatoes. Farmers in these two areas mainly use certified seeds for maize.

Livestock production is another agricultural activity in which interviewed farmers are involved. About 50% of the interviewed households involved in agricultural activities owned at least one of the following animal enterprises: cattle, sheep, goats or poultry. All the households practicing agriculture owned sheep. Interviewed households mainly use cattle as a source of draught power, especially during the cropping season. Animals are kept for purposes such as recognition, social status, wealth accrual, meat consumption and wool crafting and sale. Social status is quite important in the rural areas of the Eastern Cape (Perret, 2002). It goes with the recognition of the producers as important members of the community. This may confine households to farming as the major livelihood strategy, thus reducing the chances of households taking part in off-farm livelihood activities.

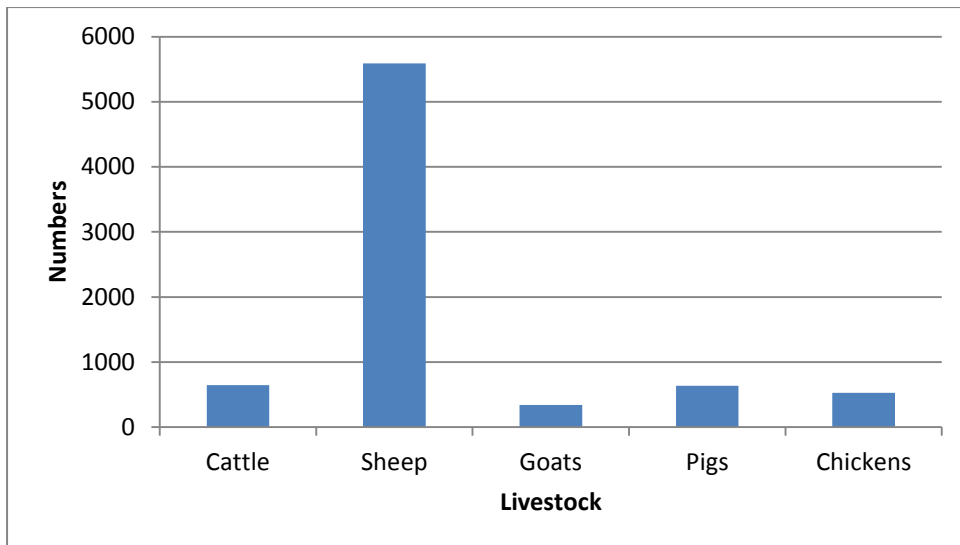


Figure 5.3: Total numbers of livestock kept by the sample

The results obtained from this study illustrate that dominant animals in Intsika Yethu local municipality were sheep. From Figure 5.3 above the sum of cattle for the interviewed households was about 650 (an average of 5 cattle per household) while the total number of sheep was about 5700 (an average of about 48 sheep per household). Goats were closer to 350 in total (an average of about 3 goats per household), and pigs were about 640 in total (an average of about 5 pigs per household) while chickens totalled to 530 (an average of about 4 chickens per household).

Households produce crops and animals for home consumption and for social status and a little surplus may be sold to neighbours. Average household income from crop is R8 500.00 per year and about R16 500.00 is from livestock sales and their products as indicated in table 5.2. If income from the surplus agricultural products is too little for the welfare of the household, diversification of livelihood strategies to meet the needs of the household results. Individuals tend to move back to their villages as they grow older probably after retirement (Obi, 2011). These individuals will be practicing agriculture and at the same time receiving pensions and government grants (non-farm income). This indicates some form of household livelihood strategy diversification.

5.3 Sources of household income

5.3.1 Farm Income (on-farm livelihood strategy)

Communities in Intsika Yethu obtain their income from farm, non-farm or off-farm activities (or a combination of the three). Farm income is generated from activities such as selling farm produce, livestock and livestock products. The average annual farm income per household (R25 000) was calculated as the total income from livestock and crop sales per total number of interviewed households Table 5.2. The proportion of farm income relative to overall income for households was then estimated. Interviewed households indicated that they were selling sheep and a few crops. Cattle were mainly for draught power while goats were kept for traditional purposes. Chickens were for home consumption.

Only a total of 274 sheep and 3 goats were sold by the interviewed households in the year 2012. No cattle were sold in the interviewed households. This indicates that only less than 5 per cent of the total sheep were sold in the year 2012. About 76 per cent of the interviewed households sold livestock and only 24 per cent did not sell any in the year 2012.

The total number of livestock units sold by interviewed households ranged from 1 to as many as 16 animals and the revenue obtained from livestock sales ranged from as little as R200.00 (average lamb price) to as much as R11 600.00 per household in the same year 2012. The average annual amount of income obtained from livestock sales was about R4200.00 per household. A household received an average income of about R21 000.00 annually from livestock and its products (i.e. milk, hides and skins, wool and meat). The average income from selling crops was about R500.00 per household per year.

Households that own livestock could also slaughter animals like sheep and consume their products instead of buying them from the shops. The average household monetary values of meat and animal products consumed in the study area are presented in Table 5.2 below. On average, information from respondents indicated that a household can consume livestock and their products as well as crops worth about R25000 per year.

Table 5.2: Average household consumption of livestock, livestock products and crops consumed per household per year.

Product consumed	Estimated average (R)/year	Average household consumption
Livestock		
Beef	2000	R16 500
Mutton	5000	
Chicken	1000	
Pork	600	
Chevon	400	
Milk	7000	
Eggs	500	
Crops		
Cereals	4000	R8500
Vegetables	3000	
Fruit	1500	
Grand Total		R25 000

5.3.2 Off-farm household income

Off-farm income is derived from non-agricultural employment and non-home agricultural employment (Davis and Pearce, 2001). Some of the respondents in the study area derived their incomes from vending in nearby towns while others were formally employed by the government or the local municipality. The results indicated that about 26% of the household heads relying solely on off-farm livelihood strategy were either formally or self-employed. Only 1% of these households did not disclose their source of off-farm income (for confidentiality purposes). The results indicated that about 10% of the off-farm livelihood strategy respondents obtained their income from businesses like tuck-shops, vending of cellular phone re-charge vouchers (or airtime), selling groceries, running taverns and shebeens (unlicensed drinking places for alcoholic beverages) and food processing. The average net salary of a government employee was estimated to be R6 000.00 per month. Other respondents that were not employed by the government (general hand workers)

indicated that they earned around R3 200.00 per month on average. These households were diversifying their livelihood strategies into off-farm + on-farm livelihood activities since they also owned livestock at their homes.

5.3.3 Non-farm income

Non-farm income is obtained from social welfare grants such as disability grants, pensions and child support grants. Other non-farm income streams are obtained from remittances and self-employment (brick moulding and craftwork). Figure 5.4 indicates that about 48% of the households relying solely on non-farm livelihood strategy obtained most of their non-farm income from social grants, mainly old aged grants and about 15% of these households obtain their income came from remittances as forms of livelihood strategies. About 37% of the households that relied solely on non-farm livelihood strategy were self-employed. Individuals who qualified for pension were receiving about R800.00 per month from pension grants. The average income obtained from pension (old age grant) per person was about R9600.00 and about R20 000 was from self-employment activities per household per year.

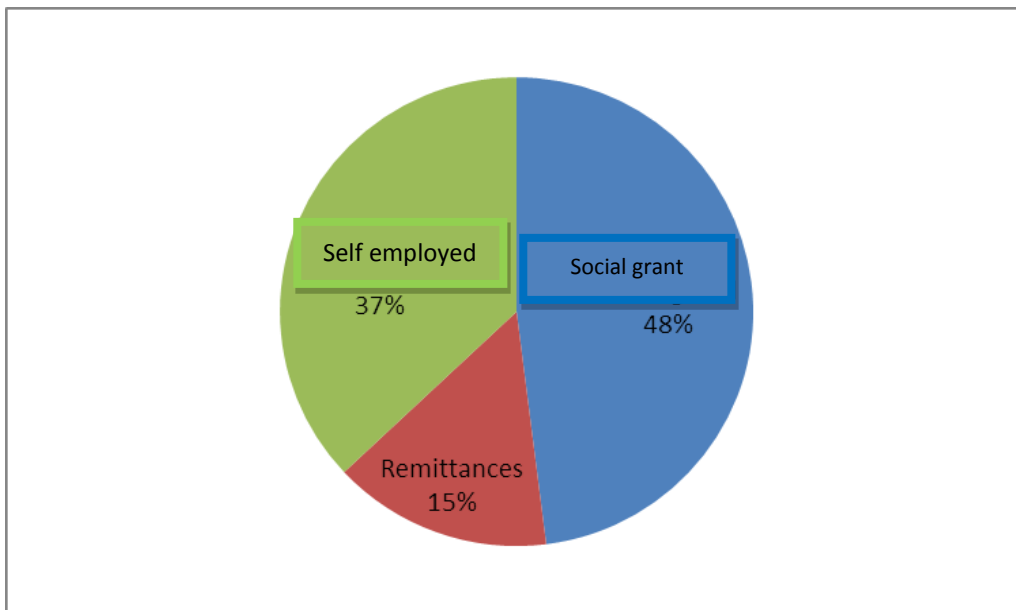


Figure 5.4: Main sources of non-farm income for households in Intsika Yethu.

5.3.4 Distribution of households by livelihood strategies adopted

The results (Figure 5.5) indicate that 27% of the interviewed households relied solely on off-farm livelihood strategy. Only 10% of the respondents relied solely on on-farm livelihood strategy while only about 7% of the respondents relied mainly on non-farm + off-farm livelihood strategy. About 55% of the households rely on three types of combinations of livelihood strategies.

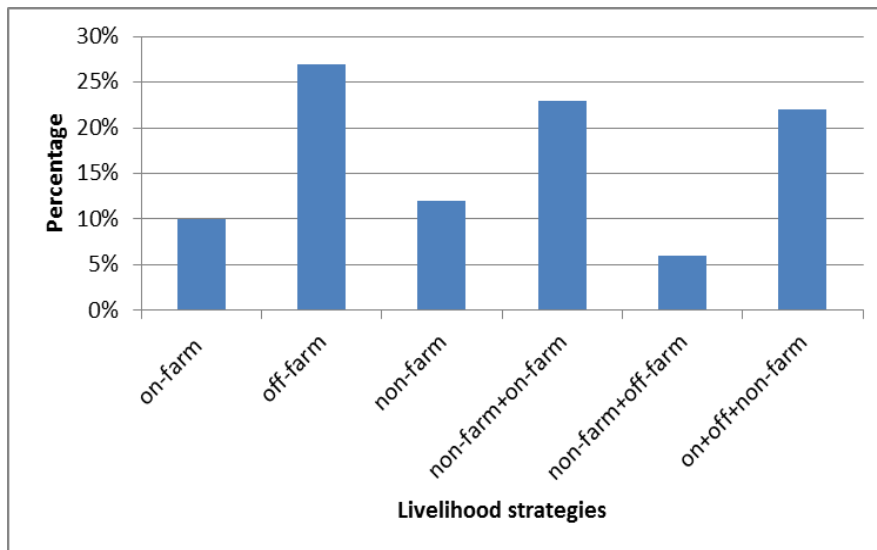


Figure 5.5: Percentage distribution of households by livelihood strategy adopted

5.4 Access to credit

The ability to bear risks largely depends on household's access to credit (Zeller, Diagne & Mataya, 1997). This means that access to credit is an important aspect in rural households as it may influence the type of household livelihood strategy adopted. Bank loans are an example of institutional credit that boosts the asset bases of individual households. Credit facilities encourage diversification of livelihood strategies in rural households. Figure 5.6 indicates that about 41% of the households in the survey received some loans for school fees, small enterprises and construction among others from financial institutions in the municipality, whilst about 59% of the households did not receive any credit facilities from financial institutions in 2012 to promote entrepreneurship in their households. Lack of credit may be one of the constraints that were hindering people from diversifying their livelihood strategies in the study area.

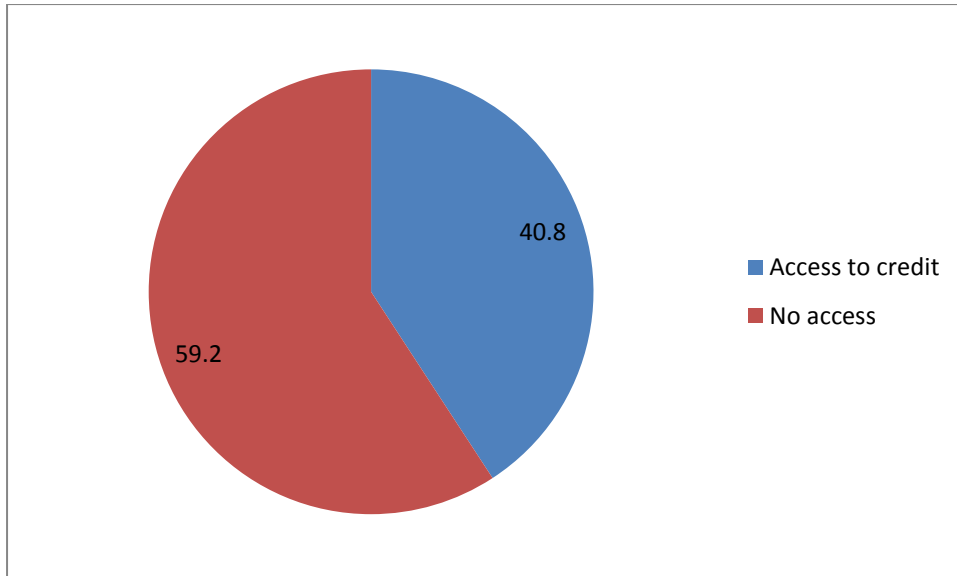


Figure 5.6: Percentage distribution of households with access to credit facilities

5.6 Continuous and categorical variables

Independent variables were categorised under social capital (membership to cooperatives and access to market centres), human capital (age, gender, household size and highest education level attained by the household head), financial capital (credit access) and natural capital (land ownership). The categorical variables descriptive analysis results by household's choice of livelihood strategy are summarised in Table 5.3 below. The results for continuous variables used in descriptive analysis are also summarised in Table 5.4. The continuous variables summarised include age, household size, dependency ratio, highest education level attained by the household head, land size owned by the household, number of livestock units owned by a given household, distance to the market centre, remittances and formal employment income.

Table 5.3: Summary of categorical variables descriptive analysis results by household's choice of livelihood strategies.

Independent Variables	Response of sample households	Household livelihood strategies (%)						
		On-farm	Non + off-farm	Off-farm	Non-farm	Non + on - farm	On + off - non - farm	Total %
Gender	Male	4.4	8.6	15.0	7.0	16.0	12.0	63.0
	Female	12.3	5.2	6.7	5.1	4.0	3.7	37.0
Member of cooperative	Yes	4.0	0.7	5.1	7.0	9.0	11.2	37.0
	No	3.6	13.0	18.2	5.6	5.4	17.2	63.0
Credit access	Yes	4.5	7.6	7.1	4.0	5.2	12.4	40.8
	No	15.1	13.0	4.1	8.0	7.0	12.0	59.2
Education level	No Edu	1.2	0.5	2.0	0.3	2.0	0.7	6.7
	Pri Edu	3	4.1	5.8	2.1	3.1	2	20.0
	Sec Edu	9.1	15.4	9.2	10.0	6.1	5.3	55.1
	Tert Edu	1.2	6.6	2.4	2.0	3.0	3.0	18.2
Marital status	Single	5.7	3.3	2.0	1.0	5.0	3.0	20
	Married	6.2	5.8	6.5	5.0	8.2	5.0	36.7
	Divorced	7.3	5.8	4.3	6.0	5.0	3.2	31.6
	Widowed	3.6	0	2.0	1.0	3.1	2.0	11.7
Grant access	Yes	0	15.2	15.6	15.0	16.0	19.2	81
	No	1	2.6	5.3	3.0	4.0	3.1	19
Formal employment	Yes	0.00	5.0	21.3	5.0	12.7	9.0	53
	No	17.1	6	2.0	7.9	5	9.0	47

Table 5.4: Summary of continuous variables descriptive analysis results by household's choice of livelihood strategies.

Independent variable	On-farm	Off-farm	Non-farm	On + Non-farm	Non + Off-farm	On + Non + Off - farm	min	max
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)		
Age (years)	45.61 (9.351)	43.56 (14.811)	49.12 (12.22)	46.33 (11.32)	46.01 (10.33)	47.86 (13.821)	19	79
Household size	5.34 (1.622)	5.76 (1.568)	5.01 (2.310)	5.98 (2.847)	5.91 (2.613)	6.81 (1.436)	3	12
Dependence ratio	1.345 (0.639)	2.091 (0.575)	2.312 (0.531)	0.886 (0.491)	0.916 (0.521)	2.091 (0.575)	0	3
Education (years)	9.54 (1.568)	11.11 (1.764)	9.65 (2.311)	10.65 (2.847)	12.21 (2.617)	12.11 (1.764)	0	15
Land size (hectare)	2.31 (0.176)	2.328 (0.171)	2.326 (0.101)	2.227 (0.191)	2.437 (0.185)	2.228 (0.163)	0.2	10
Livestock (TLU)	46.697 (0.877)	44.642 (0.863)	47.443 (1.210)	48.683 (1.223)	47.588 (1.316)	49.532 (0.835)	5	300
Formal emp inc (R)	490.30 (427.28)	7600 (7446.07)	7400 (742.95)	9000 (7333.95)	9800 (7321.95)	9970 (7516.07)	0	8500
Remittance inc (R)	160 (342.13)	569.556 (713.91)	1002.93(690.41)	961.98 (810.43)	998.98 (880.48)	994.556 (733.94)	0	3500
Dist to market (km)	24.66 (9.162)	24.44 (7.002)	16.28 (8.514)	18.28 (8.664)	17.14 (8.784)	16.94 (7.582)	3	31

5.7 Social capital and household livelihood strategies

5.7.1 Cooperative membership

Membership to cooperatives is a means of building social networks that enable households to obtain updated information in sharing pooled labour, farm equipment, cash credit usage and other non-farm income generating activities (Gebru and Beyene, 2012). The results of the survey indicate that, out of the total of 120 sample respondents, 37% were active cooperative members while about 63% of them were no longer willing to participate in some of these cooperatives though all the respondents had equal access to irrigation schemes/ cooperatives (e.g. Qamata and Ncora irrigation schemes) and informal cooperative institutions (e.g. Vukuzenzele and Sibanye farming cooperatives) (Table 5.3). Here, most of the farm households involved in cooperatives were unable to diversify their livelihood strategies into off-farm + non-farm, on-farm + non-farm + off-farm strategies as they spend most of their time working in their cooperatives.

Only 3.6% of the non-members to cooperatives relied solely on on-farm livelihood strategy. About 60% of the non-members to cooperatives diversified their livelihood strategies (Table 5.3). Most of the non-members to cooperatives are either self-employed, employed by the government or municipality and NGOs or are receiving their pension funds. Non-members to cooperatives may have a greater chance of diversifying their livelihood strategies than agricultural cooperative members who spend most of their time in field cooperatives that require a lot of their attention. Cooperative members indicated that they do not have enough time attend to other non-farm activities.

5.7.2 Market access

Among various social services, access to market plays a crucial role in determining access to assets and livelihood strategies, terms of exchange for assets, and returns to an investment (Bembridge, 1987). So, households that are closer to market centres get several key advantages including access to larger agricultural markets, save their substantial time, incur much lower transport costs and have access to better and more remunerative non-farm and off-farm activities.

The results show that the mean distance between the main market centre (Cofimvaba) and the sample respondents is 28 km with a minimum of 3 km and a maximum of 31 km (Table 5.4).

The mean distance away from the market centres for households relying solely on agriculture (24.66 km) is greater than 16.94 km which is the mean distance away from the market centre for the households that diversify their livelihood strategies into on-farm + non-farm + off-farm. Households closer to the market centre were able to diversify their livelihood strategies into off-farm, off-farm + non-farm, on-farm + non-farm and on-farm + non-farm + off-farm livelihood activities as compared to the households that were situated further from the markets. The households that are closer to the markets (in Cofimvaba and Tsomo) have greater chances of participating in off-farm activities in closer towns than the households located far away from these markets, hence an increased chance of diversification. Poor road infrastructure and long distances to market centres (in Cofimvaba and Tsomo) would reduce the chances of households to diversify their livelihood strategies.

5.8 Financial capital and household livelihood strategies

5.8.1 Credit access

As once illustrated in Section 5.4, credit is an important source of earning future income which plays a vital role in supporting the production and income generating activities of farmers. However, the results of the survey indicate that 40.8% of the households accessed credit while 59.2% of the households could not access credit. Only 15.1% of the households that could not access credit relied solely on on-farm livelihood strategy (Table 5.3). About 4.5% of the households that could access credit were relying mainly on on-farm livelihood strategy while 12.4% of the households were diversifying their livelihood strategies into on-farm + off-farm + non-farm. The 4.5% of those households that accessed loans in 2012 generally used their loans for agricultural activities at their homes while the 12.4% used their loans for off-farm activities like retail shop operations in town. Lack of access to credit facilities remains one of the key problems in Intsika Yethu to potential diversification into non-farm, off-farm and a combination of these activities.

Some of the main reasons for households' failure to use credit were: lack of knowledge about credit providers, ascribed tight repayment schedules, fear of repayment back due to crop failure because of drought and disasters, high interest rates charged by local financial institutions, limitation of loans availability and lack of information. The interviewed

households that engaged in diversified livelihood strategies gained relatively more remittances than those that rely on on-farm livelihood strategies alone due to their high social network with their relatives living in towns and cities. Some of the households that were able to diversify their livelihood strategies indicated that they also earn money from their sons and daughters working in other provinces (e.g. Gauteng, Cape Town) since they invested in educating them.

5.9 Human capital and household livelihood strategies

5.9.1 Age

The increase in the age of the household head seems to have no influence on the decision to diversify the household livelihood strategies. The average age of household heads that depended solely on on-farm income alone was 45.61, while that of those who depended on non-farm + off-farm income was 43.56. The mean age of households depending on on-farm + off-farm + non-farm was 46.33 (Table 5.4).

Results show that in Intsika Yethu, old aged household heads (above 62 years of age) receive old aged grants and pensions from the government while orphans and children under the age of 18 from poor single parent headed households are formally registered to receive child care grants and these are forms of non-farm income hence greater chances of livelihood diversification. However, Gebru and Beyene (2012) found out that young household heads are more active and flexible with time to use different non-farm and off-farm income diversification livelihood strategies than the older ones due to their access to education, less experience to tolerate bad conditions like droughts and wars and their physical strength to work wherever.

5.9.2 Gender

The sample survey results illustrated in Table 5.3 indicate that out of the total 63% male headed households, only 4.4% of them had their livelihoods depending solely on on-farm income while out of the total 37% female headed households, only 12.3% dominantly relied on on-farm income alone. Table 5.3 indicates that, about 93% of male headed households were able to participate in different non-farm and off-farm (and/or their combinations)

livelihood strategies while exactly 90% was true for the female headed sample households in the study area. This slight difference indicates that male and female headed households in Intsika Yethu have almost equal chances of participating in off-farm and or non-farm activities. The probable reasons for the slight difference are that female households have less chance to participate in off-farm or non-farm activities since they invest some of their time in domestic roles such as childcare, cooking and washing clothes, with high participation in low economic value and time consuming agricultural activities like weeding and harvesting (Gebru and Beyene, 2012).

5.9.3 Household size

The research indicates that the mean household size was 5.34 for households that depended solely on on-farm income, 5.76 for those that relied solely on off-farm, while 6.81 was for those households that relied on the combination of the three, i.e on-farm + off-farm + non-farm (Table 5.4). The results indicate that the larger the family size, the greater the chances of diversifying livelihood strategies of interviewed households. This may be because on-farm income only will not be sufficient to cover the households' needs. The larger the household size, the larger the chances of having household members employed in the nearby towns (Cofimvaba and Tsomo). Once employed in these towns, household members will be providing off farm income in the household. On the other hand, children below the age of 18 will be receiving Child Foster Care grants from the government (a form of non-farm income). The smaller the household size, the greater the chances of having household members spending much of their time at home taking care of their livestock and working in fields and gardens while school children will be at school.

5.9.4 Education

The mean number of household heads with no formal education decreases as we move from on-farm, off-farm to non-farm as well as the combination of these three household livelihood strategies. The average number of years of education was 9.54 for household heads who relied mainly on on-farm, 11.11 for those that relied solely on off-farm, 10.65 for on-farm + non-farm and 12.11 for on-farm + off-farm + non-farm household livelihood strategy (Table 5.4). These results indicate higher chances of diversifying household livelihood strategies as

one attains higher levels of education. There is a positive relationship between education (number of years of learning) and choice of livelihood strategy (Gebru and Beyene, 2012).

Bhaumik (2007) indicated that educated persons diversify their livelihood options through opting for highly paid jobs and self-employment activities, whereas low-educated and illiterate persons engage themselves in low wage earning activities. Therefore, investing in education and increasing access to higher education will help the rural households in getting alternative income. Improvement in the educational level will increase the probability of engagement in rural non-farm activities and livelihood diversification (Bhaumik, 2007). This indicates that households with higher average levels of education lead relatively better life by diversifying their income enhancing livelihood activities such as working off-farm and having access to credit facilities (often in better remunerated occupations) than those with lower levels of education.

5.10 Natural capital and household livelihood strategies

5.10.1 Land ownership

Land is one among the most fundamental and important means of production (Perret, 2002). It is a crucial productive resource for the rural communities. Households that own and effectively cultivate large pieces of land in Intsika Yethu can earn more cash income directly by selling the produce and indirectly from livestock and livestock product sales, and are able to develop their potential in diversifying their household livelihood strategies into off and non-farm activities. The results in Table 5.4 indicate an average of 2.31 hectares of land for those households that relied solely on on-farm livelihood strategy, 2.33 hectares for off-farm, 2.23 hectares for on-farm + non-farm, 2.44 hectares for non-farm + off-farm and 2.23 hectares for on-farm + non-farm + off-farm livelihood strategies. The land size per household does not seem to influence the choice of household livelihood strategy in the interviewed households maybe because the land in the study area is generally degraded and poor for any other household economic activities that encourage livelihood diversification.

5.11 Physical capital and household livelihood strategies

Results indicate that, the mean number of sheep (the most common and dominant enterprise) is 46.70, 44.64, 48.68, 47.59, and 49.53 in households that rely mainly on on-farm, off-farm, on-farm + non-farm, non + off-farm and on + non + off-farm livelihood strategies respectively (Table 5.4). In conjunction with what was highlighted in section 5.2.7, almost all households in the area own quite high average herd sizes of livestock though grazing land is generally degraded. The increase in the livestock size has no influence on the ability of a household to diversify its livelihood strategies in the study area since livestock is mainly for social status and home consumption. Livestock keeping in Intsika Yethu local municipality is the second important complement activity to cropping. It is considered one of the most vital assets that play a crucial role in securing households from any crisis during crop failure in the study area (Perett, 2002). Besides this, farmers owning more livestock are considered as wealthier and have high social status in the eye of the community..

5.12 Results of the empirical analysis

5.12.0 Introduction

This section presents the results of the multinomial logistic regression analysis (outlined in chapter 4) and discusses results of the significant variables determining the choice of rural households' livelihood strategies in Intsika Yethu municipality of the Eastern Cape Province. The multinomial logistic regression model was used for testing the socio-economic factors that influence rural households in selecting all their existing livelihood strategies where the livelihood strategies were treated as the dependent variables while the independent variables included amongst others age, gender, land size owned and access to market centres (as highlighted in chapter 4). The results of the multinomial logistic analysis of the hypothesized independent variables which were expected to affect the choice of rural households' livelihood strategies are provided in Table 5.5.

5.12.1 Model Fitness

The multinomial logistic regression results for determinants of household livelihood strategies are presented in Table 5.5. With reference to the proportion of variance in the dependent variables associated with the predictor variables, a pseudo R^2 of 0.562 was obtained, as shown in Table 5.5; this suggests that more of the variation was explained by the model.

Table 5.5: Multinomial Logistic Regression results for household livelihood strategies.

Predictor variables	Category	Livelihood Strategy									
		Off-farm		Non-farm		On-farm + Non-farm		Non-farm + Off-farm		On+Off+Non-farm	
		β	Sig	β	Sig	β	Sig	β	Sig	β	Sig
Gender	Male	1.232	.427	0.767	.753	-1.932	.141	-1.077	.470	-1.290	.514
Age	Cont	-2.505	.993	-2.271	.992	-2.583	.994	-1.543	.998	-1.002	.998
Dependency ratio	Below 2	0.766	.556	-1.039	.531	-0.768	.437	0.613	.562	-1.732	.288
Market access	Below 10km	2.512	.994	-2.101	.229	0.326	.833	1.129	.562	1.149	.571
	10-15km	1.703	.995	-2.546	.389	-2.243	.112	-0.725	.663	-2.725	.168
	Over 15km	1.759	.995	-0.808	.022*	-1.158	.391	0.168	.915	-0.484	.022**
Education level	No Edu	0.256	.075	0.286	.035*	-1.964	.997	0.482	.819	-1.709	.998
	Primary Ed	1.869	.420	1.591	.125	2.412	.075	-0.649	.716	1.825	.357
	Sec Edu	3.493	.080	0.524	.158	1.903	.107	1.038	.394	2.809	.106
Household size	1-5	0.225	.063	1.019	.160	1.532	.228	-0.298	.840	0.478	.018*
	6-10	0.663	.016*	0.515	.007*	0.815	.016*	0.473	.687	2.138	.202
Credit access	Yes	0.574	.020*	1.996	.342	0.924	.379	0.128	.913	0.612	.003*
Cooperative memb	Yes	1.047	.509	0.977	.012**	.285	.772	0.407	.746	-2.018	.249
Employment status	Unemployed	1.662	.992	2.051	.991	3.371	.986	0.221	1.000	3.680	.986
	Employed	4.583	.415	-5.171	.385	0.068	.986	-0.839	.788	-1.846	.147
Remittances	Yes	2.302	.212	0.236	.050**	-0.389	.627	-0.784	.454	-1.290	.514
Base Category					On-farm						
Number of observations					120						
Pseudo R ² (Nagelkerk)					.562						

The maximum likelihood estimates of the multinomial logistic model are: Dependent variable (HH livelihood strategies), number of observations (120), *,**, Significant at 1 and 5% probability levels respectively. Source: Own survey (2013).

5.12.2 Education

Education is one of the major determinants of households' choice of livelihood strategy in Intsika Yethu local municipality as indicated by the results in Table 5.5. As noted by Micevska and Rahut (2008), "empirical evidence overwhelmingly finds positive effects of education on participation in non-farm activities". The results (Table 5.5) indicate a positive relationship between lack of basic education and the probability of the household heads to adopt non-farm livelihood strategy. The positive coefficient 1.286 implies that holding all other factors constant, lack of education has a potential of influencing households to move from on-farm livelihood strategy to non-farm livelihood strategy. A 1 level drop in the level of education attained by a household head from the highest expected level of education (tertiary level) will result in a 1.286 (units) chance to shift from on-farm livelihood strategy to non-farm livelihood strategy.

The results (Table 5.5) indicate that uneducated household heads have a positive probability of shifting from on-farm to non-farm livelihood strategy although De Brauw *et al.*, (2002) highlighted that households' knowledge, skill and attitude are shaped through education on how to diversify livelihood strategies. Where agriculture is poor, uneducated household heads resort to brick moulding, buying and selling commodities in nearby towns, brewing and selling home-made beer (*umqomboti*), remittances, borrowing, transfers and social grants as well as doing piece jobs in neighbouring villages. Research results in Table 5.5 indicate that uneducated households have a positive probability of engaging in non-farm (non-wage/salary livelihood strategy) and this conforms to De Brauw *et al.*, (2002) findings on a sample of 6 provinces in China which indicated that higher education level increases the individual's likelihood to engage in a local wage work.

5.12.3 Household size

From the study, the household size was another determinant that influenced rural households to diversify their livelihood income generation into off-farm, non-farm and on-farm + non-farm livelihood strategies. There was a significantly positive relationship between household livelihood diversification strategies and the increase in household size as indicated by the positive coefficients 0.663, 0.515 and 0.815. This indicates that family size has a potential of

influencing households to shift from on-farm livelihood strategy and engage in off-farm, non-farm and on-farm + non-farm livelihood strategies. Holding all other factors constant, an increase in the size of the household by one member will result in a 0.663 units increase in chances to shift from on-farm livelihood strategy to off-farm livelihood strategy by a household and a 0.515 units increase in the probability of a household shifting from on-farm livelihood strategy to non-farm livelihood strategy. Also holding all other factors constant, an increase in the household size by one member will result in a 0.815 units increase in the chances of a household to shift from on-farm livelihood strategy to on-farm + non-farm livelihood strategy. Greater family sizes in the study area have a positive probability of shifting from on-farm livelihood strategy and engage in off-farm, non-farm and on-farm + non-farm livelihood strategies and this conforms to what Reardon (1997) discovered.

Reardon (1997) discovered that a larger family size increases the ability of a household to supply labour to the farm (hence on-farm + non-farm livelihood strategy). All the households that were engaged in on-farm + non-farm livelihood strategies were not receiving any forms of social grants from the government. These households would only resort to non-farm livelihood strategy (remittances, brick moulding and running kiosks) as the second best livelihood strategy to on-farm livelihood strategy during dry season. Some family members in larger households were migrating to closer towns and cities for off-farm employment while members from small households were fully based in the rural areas of the study area taking care of livestock and crops during the rainy season.

5.12.4 Credit access

The statistically significant coefficients of 0.574 and 0.612 (Table 5.5) indicate a positive relationship between the increase in the number of sources of credit and the probability of the households to diversify their livelihood strategies into off-farm and on-farm + off-farm + non-farm. Credit access has a potential of influencing households in the study area to shift from on-farm livelihood strategy to off-farm and on-farm + off-farm + non-farm livelihood strategies. As the chances to access credit and the number of credit sources increases, the probability of households to engage into these livelihood strategies increases. Holding all other factors constant, an increase in access to credit by 1 extra source will result in 0.574 and

0.612 units increase in chances to shift from on-farm livelihood strategy to off-farm and on+off+non-farm livelihood strategies respectively. Most households in Intsika Yethu have a poor resource base, therefore providing credit to these households will improve their livelihoods. Access to educational loans builds a strong education base which may in turn increase job opportunities (off-farm livelihood strategy). This conforms to what De Brauw *et al.*, (2002) concluded in their research in China (refer to 5.10.1)

5.12.5 Market access

One of the determinants of engagement by rural households into non-farm and on-farm + off-farm + non-farm livelihood strategies was market accessibility. The probability of the respondents to shift from on-farm livelihood strategy and engage in non-farm and on-farm + off-farm + non-farm livelihood strategies decreases as the distance from a specific household to the market centre or town increases. This relationship is indicated by the coefficients -0.808 and -0.484 respectively in Table 5.5. Holding all other factors constant, a 1km increase in the distance from a given rural household to the closest market centre will result in a 0.808 and 0.484 units decline in the probability by a household to shift from on-farm livelihood strategy to non-farm and on+off+non-farm livelihood strategies respectively. Generally, as the households get situated closer to the markets centres or towns, the probability to diversify their livelihood strategies is very high. Households near market centres get several key advantages such as access to different information and terms of exchange for assets. They also save a lot of time, incur much lower transport costs and have better access to more remunerative non-farm and off-farm activities (Gebru and Beyene, 2012).

5.12.6 Remittances

Access to remittances has a potential of influencing households in the study area to move from on-farm livelihood strategy to non-farm livelihood strategy. Brown *et al.*, (2006) indicated that having relative economic support from abroad and within the country is positively related to the improvement of livelihood by participating in more remunerative activities such as local trading for which financial capital is required. The coefficient 0.236 indicates that the greater the chances of access to remittances, the greater the probability of the household to shift from on-farm livelihood strategy and engage in non-farm livelihood strategy. Holding all other factors constant, a 1 unit increase in the number of sources or

chances of receiving remittances will result in a 0.236 units increase in chances of a household to shift from on-farm livelihood strategy and engage in non-farm livelihood strategy. The households that receive remittances can have increased chances of strengthening their economic potential that helps them to participate in different household livelihood activities within and away from on-farm depending on the amount of the support.

5.12.7 Cooperative membership

The Multinomial logistic regression results of the survey reflected that as expected, the relationship between livelihood diversification ability and membership to a cooperative society as well as training was found positive and statistically significant. The coefficient 0.977 indicates that cooperatives have a potential of influencing households to move from on-farm livelihood strategy to non-farm livelihood strategy. Holding all other factors constant, a 1 unit increase in the number of cooperatives per individual household will result in a 0.977 units increase in the probability of a household to shift from on-farm livelihood strategy to non-farm livelihood strategy. Members to cooperatives have a positive probability of shifting from on-farm livelihood strategy and engage in non-farm livelihood strategy. During the dry season when some water sources for agricultural cooperatives are dry, members of the cooperatives resort to other income generating activities like piece jobs and selling building materials like pit-sand and bricks (non-farm livelihood strategy). The money obtained from the cooperatives may be used for other non-farm income generating activities in dry seasons. This diversification of activities is meant to reduce risks of crop failure in local agricultural cooperatives.

5.13 Constraints to livelihood diversification in Intsika Yethu.

Diversification of livelihood strategies is important for the rural households in the developing countries particularly in rural households. Rural households in the study area are facing some problems to successful livelihood diversification. Identification of constraints for a particular agro-ecological region is crucial for future policy formulation Gebru and Beyene (2012). Some of the challenges that include the socio-economic, technological, institutional and policy challenges to rural livelihood diversification in Intsika Yethu local municipality are outlined below.

Some of the major challenges that were identified by the rural households in the study area include: poor household asset base, poor rural infrastructure, lack of access to credit facilities, lack of awareness, shortage of training facilities, fear of taking risk, and lack of opportunities in non-farm sector (Table 5.6).

Table 5.6: Rank of some major constraints to livelihood diversification in Intsika Yethu.

Constraints	% score	Rank	Most affected individuals
Poor asset base/capital	90	i	Small enterprises
Lack of access to credit	87	ii	Non-agricultural labourers
Fear of taking risk	85	iii	Petty business, casual labourers
Poor infrastructure	60	iv	Petty business, casual labourers
Lack of awareness to training	40	v	Small businesses, casual labourers
Unfavourable climate	24	vi	Agricultural cooperative members

Lack of access to credit facilities: Limited or lack of access to credit facilities is one of the major limiting factors to livelihood diversification in Intsika Yethu. In the absence of credit support from the institutional agencies, the resource poor households are not able to start their own nonfarm business or enterprises (Geberu and Beyene, 2012). Katona-Apte (1988) in Geberu and Beyene (2012) reported the vital role played by the Bangladesh Grameen Bank in providing credit to women which enabled them to carry out diversification activities. Credit facilities are important for livelihood diversification in poor rural households. Lack of access to credit facilities in rural households reduces the chances of participating in various off-farm income generating activities hence limited household livelihood diversification strategies. Households that fail to acquire loans from financial institutions due to lack of collateral are forced to engage themselves in less remunerative non-farm work and wage work. Individual money lenders charge very high interests on these rural households in the study area and this limits diversification in Intsika Yethu rural households. Entrepreneurial skills acquired from government training in the rural households become less effective due to lack of access to credit by rural households in the study area.

Poor infrastructure: Infrastructure plays an influential role in the development of rural livelihoods (Geburu and Beyene, 2012). Geburu and Beyene (2012) went on to indicate that improved communications help easy access to market which is important for both buying and selling of goods and services and for getting non-farm jobs. Good road network, effective

telecommunications, electricity and clean water availability enhance economic development in the rural areas. Intsika Yethu is one of the industrially backward municipalities of the Eastern Cape due to poor infrastructure.

Infrastructural bottlenecks also hamper industrial development in the study area. This can as well reduce the chances for rural household livelihood diversification in Intsika Yethu. Some of the villages are situated far away from the major tarred roads. Some rural households indicated that they have to travel a distance of about 9-10 km to reach the main road to access public transport. Towns cannot therefore be accessed easily by some of the rural households in remote areas of Intsika Yethu. This poses a serious obstacle to improvement in these rural households' livelihood strategies.

Lack of capital: This is one of the major challenges to rural household livelihood diversification in this municipality (Intsika Yethu). Chances to take up self-employment activities will be reduced by lack of access to capital in rural households. Ownership of assets which include bicycles, ploughs and carts may enhance rural household diversification of livelihood strategies in rural households. A household that possesses a sewing machine may diversify livelihood strategies by venturing into fashion businesses. Possession of animals like donkeys, horses, cattle (for draught power) and carts may as well encourage individual rural households to take part in off-farm livelihood activities like transportation of goods for money. Some of the rural households in the study area lack assets useful for self-employment and this acts also as another obstacle to livelihood diversification.

Lack of awareness and training: Lack of awareness and training in rural households reduce the chances of livelihood diversification in the study area. Not all rural households in the study area are aware of the schemes provided by the South African government for the development of the rural sector. Some of the rural households in the study area cannot even access the training programs offered by the government in the rural areas due to illiteracy and poor infrastructure. Some rural households lack information regarding modern income-generating activities due to limited information dissemination mechanisms from the government. Though technical subjects are now being offered in some schools in the Eastern Cape Province, rural households still lack training in modern activities like machine knitting and hosiery, dyeing and printing, welding, carpentry and bricklaying.

Fear of taking risk: Lack of household assets in those households that were engaged in non-farm and on-farm livelihood strategies resulted in the lowering of the risk-bearing ability of these rural households in this study area. Fear of taking risks in agriculture can as well reduce the chances of livelihood diversification in rural households in Intsika Yethu.

Climate: The climate of Intsika Yethu is generally unfavourable. Extreme temperatures, erratic rainfall, and water scarcity prevent some of the rural households to move from one place to another in search of a livelihood. Poor climatic conditions therefore reduce the chances of livelihood diversification in rural households of Intsika Yethu.

Lack of opportunities: Job opportunities for off-farm livelihood strategies, in some households, are very low. These opportunities may include access to accommodation in neighbouring towns, access to government development programs and access to resources like clean water and land. Lack of opportunities in some of the rural households in the study area reduces the chances of livelihood diversification in these households.

5.14 Chapter summary

Results of the descriptive analysis as well as empirical results were presented in this chapter. The regression analysis has shown that growth in the household-head's age, educational level, dependency ratio, access to credit and remittances are some of the main driving forces towards livelihood diversification in the study area. Some of the common constraints to diversification in the study area are highlighted in this chapter. The following chapter will summarize the findings of the research and give policy recommendations on the implications of the results obtained in this study.

CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

This chapter draws conclusions from the findings of this study. The conclusions relate to the research sub-problems stated by providing answers of the research questions asked at the beginning of the study. Areas of short comings and further studies are also outlined in the study.

6.2 Research conclusions

Rural households in Intsika Yethu local municipality rely on on-farm, off-farm, non-farm and/or their combinations as their livelihood strategies. Most households in the study area relied solely on off-farm livelihood strategy while only a few of rural households in Intsika Yethu relied solely on agriculture as the main livelihood strategy. Most old aged households are engaged in more income diversification strategies and have densities of networks to build relations in and outside agriculture. Given that resources are available, households in Intsika Yethu are willing and able to diversify their livelihood strategies.

Off-farm as well as on-farm + non-farm + off-farm livelihood strategies were indicated by most of the respondents as best livelihood strategies to cope with different socio-economic household challenges and to improve their livelihoods in this poor rural area. These two livelihood strategies provided a constant and continuous flow of income into rural households in the study area. On the other hand non-farm and off-farm livelihood strategies increased the level of rural household earnings and therefore lead to a growth in earnings and consumption of most of the households in the study area.

The livelihood assets discussed in this research study that include the role of human capital, financial capital, social capital and institutional supports are very important building block livelihood assets that can help marginalised rural households to diversify their livelihood income into off-farm and on-farm + non-farm + off-farm activities in this study area. The research study has indicated that there is a relationship between access to high levels of

income and the chances of diversifying the livelihood strategies in rural households of the study area. The rural households that had access to education, financial capital, or markets were wealthier than their counterparts. Access to remunerative opportunities varies across the poor households with youths, women, less and un-educated as well as other households lacking social ties in the community.

6.3 Recommendations

The findings of the study imply that any projects undertaken by the South African government and NGOs aiming at sustainable improvement of poor rural households' livelihood should give attention to the following:

- Diversification of livelihood strategies needs to be strengthened in rural households in the study area (Intsika Yethu). These households should acquire more training and awareness on how they can venture into, run businesses and engage on better income generating livelihood activities to cope with economic constraints in the area,
- Strengthening both formal and informal education and vocational training should be promoted to increase rural household's participation in more viable livelihood options and offer better prospects for improving their livelihood;
- The role of the South African government in procuring and sharing information and making assets as well as improved infrastructure (like expansion of rural road, education, telecommunication, electrification, market, telecommunication, storage facilities and health centres) available to underprivileged households is still essential in promoting different income generating livelihood strategies. Development of infrastructure is therefore essential to link the rural households with market and efforts should be made to make remunerative non-farm opportunities accessible to these rural households, particularly in remote and disadvantaged regions of the study area.

- Rehabilitation of irrigation schemes in the province (specifically in the study area) by the government is also necessary as it may increase the chances of household livelihood strategy diversification and hence improve the average household income in the study area.
- Stokvels and cooperatives are important and popular aspects for building up savings and increasing the rate of development. Rural households can diversify and increase the rate of productivity through stokvels.
- Livestock production programmes can be intensified by the government to enhance the level of rural household livelihood diversification in the study area. The Nguni cattle project initiated by the University of Fort Hare is an example of the livestock programme can be extended further to the disadvantaged communities to allow them develop their cattle herds, hence livelihood diversification and greater chances of profit making.

6.4 Areas of future studies

Rural households engaged in similar household livelihood strategies differ in terms of levels of wealth. Causes of and wealth value margins need to be assessed both at household levels and at community levels. It is also essential to assess the impact of the heterogeneity in terms of the economic activities in the study area on the rural households' decisions to diversify their livelihood strategies.

6.5 Shortcomings of the study

Lack of funds reduced the sample size of the research study though the data collected was relevant and effective in coming up with conclusions. If the sample size was larger than the one used in the study, probably more significant results would have been obtained.

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APPENDIX

QUESTIONNAIRE

DETERMINANTS OF RURAL HOUSEHOLDS' DIVERSIFICATION OF LIVELIHOOD STRATEGIES: THE CASE OF INTSIKA YETHU FARMERS OF THE EASTERN CAPE PROVINCE, SOUTH AFRICA.

Questionnaire Number:

Administrative Area:

Date of Interview:

HOUSEHOLD DEMOGRAPHY

Age:Years

Age Range	Below 20	20-29	30-39	40-49	50-59	60-69	70+
Code	1	2	3	4	5	6	7

Gender

Female	Male
1	2

Education Attained (indicate with X)

Years of study	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	16+
Edu level	No education	Primary Education							Secondary Education				Tertiary Education					
Code	0	1							2				3					

Marital Status

Marital status	Single	Married	Divorced	Widowed
Code	0	1	2	3

Employment status (Indicate with an X)

Employment status	Unemployed	Employed	Retired
Range	1	2	3

Salary scale

Voluntary	Below 1000	1-5000	5-10 000	Over 10 000 (net)
0	1	2	3	4

Household Size (indicate with X)

Family members	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Over 15
Code	1			2			3			4						

Dependency Ratio

Number of dependents	Below 2	2-4	5 and above
Code	1	2	3

Land ownership

Land size (Ha)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Over 15
Code	1			2			3			4						

Access to credit

Access to credit	Yes	Total amount per year (R.....)	No
Code	1		2

Access to Social grants

Access to Social grant	Yes	Total amount per year (R.....)	No
Code	1		2

Remittances

Access to remittances	Yes	Total amount per year (R.....)	No
Code	1		2

Membership to cooperative

Member to cooperative	Yes	No
Code	1	2

Market access

Distance to the nearest major market	Below 10km	10-15km	Over 15km
Code	1	2	3

SECTION B (ECONOMIC ACTIVITIES)

Major source of income (Indicate with an X. N.B you can indicate more than two sources)

Source	Agriculture	Wages & Salaries	Social Grants, Pension, Transfers, Remittances, Own job (self employed non agric)
	On-farm	Off-Farm	Non-farm
Code	0	1	2

Household Livelihood strategies during the 2011/12 season

Livelihood strategy	Economic Activity	Period/season (e.g Jan-April)	Estimated Income obtained
On-farm	Animal production		
	Crop Production		
Off-farm	Wages/Salaries		
	Grants		
Non-farm	Remittances		
	Donations		
	Credit		
	Self employed		
Total			R

Physical assets purchased/obtained from the main livelihood adopted

Asset	Year purchased/obtained	Expected monetary value
Total value		R

Monthly household expenditure

Month	Goods and services acquired	Average Cost
Total cost		R

C. LIVESTOCK PRODUCTION

CATTLE

Cattle	Bulls	Cows	Heifers	Oxen	Total
Number					
Number sold					
Price/ Animal					
Number slaughtered					
Number donated as gifts					
Number used for batter trade					

Products and Uses

Monetary Value of beef consumed

Milk:

Uses of milk: home consumption for sale

Number of cows milked (Jan-Dec 2011)	Approximate capacity of milk obtained per day per cow	Total Quantity obtained	Price of milk per litre	Total Revenue

Skin/ Hides

Skins obtained (Jan-Dec 2011)	Price of the products (<i>Isikhakha</i>)	Total revenue obtained

SHEEP

Sheep	Rams	Ewes	Lambs	Wethers	Total
Number					
Number sold					
Price/ sheep					
Number used for batter trade					

Products and Uses

Mutton: Number of sheep slaughtered (Jan-Dec 2011):

Nature of sheep slaughtered: Rams Ewes Castrated

Monetary Value of mutton consumed

Milk:

Uses of milk: home consumption for sale

Number of sheep milked (Jan-Dec 2011)	Approximate capacity of milk obtained per day per sheep	Total Quantity obtained	Price of milk per litre	Total Revenue	

Wool: Number of sheep sheared

Quantity of wool sold (year 2011)

Amount of money obtained

Skin

Skins obtained (Jan-Dec 2011)	Price of the products (<i>Isikhakha</i>)	Total revenue obtained

GOATS

Goats	Rams	Ewe	Kids	Kapaters	Total
Number					
Number sold					
Price/ Animal					
Number donated as gifts					

Products and Uses

Monetary value of meat consumed

Milk:

Uses of milk: home consumption for sale

Number of cows milked (Jan-Dec 2011)	Approximate capacity of milk obtained per day per cow	Total Quantity obtained	Price of milk per litre	Total Revenue

Skin

Skins obtained (Jan-Dec 2011)	Price of the products	Total revenue obtained

PIGS

Pigs	Boar	Sow	Piglets	Total
Number				
Number sold				
Price/ pig				

Monetary value of pork consumed

Chickens

Chickens	Cocks	Hens	Total
Number			
Number sold			
Number consumed			
Price/ chicken (R)			

Eggs

	Value (R)	Total
Number Consumed		
Number sold		
Price/ egg (R)		

Crop production

Do you own land for crop production? Yes No (tick the appropriate)

Production (Hectares occupied)

Year/ Crop	Sweetpotato	Cereals	Vegetables	Legumes	Others
2008/09					
2009/10					
2010/11					
2011/12					
2012					

Name/ type/ variety grown:

Year	Area grown	Average yield	Price per unit	Tot value obtained

Household reasons for growing the crop

Reason	Quantity/ ha	Monetary Value/ kg	Gross amount of money
Home consumption			
For sale			
Animal Feed			

Constraints to diversification (Rank according to their degree of influence on the ability to diversify household livelihood strategies)

Constraint	Reason