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**Community Development Projects and Food Security: The case of Zanyokwe
Irrigation Project Eastern Cape Province, South Africa**

By

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requirements of the Master of Social Science in Development
Studies**

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DECLARATION

I, SIKHANYISO NDLOVU do hereby declare that this dissertation is a product of my original work that was built from literature that has been carefully acknowledged as required in the University's plagiarism policy. The work has not been submitted elsewhere for the purpose of obtaining another degree.

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DECLARATION ON RESEARCH ETHICS CLEARANCE

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To my loving family, especially my uncle Mr Luka Popi Matshenjeda Mudau, who was my pillar of inspiration from when I was at high school till thus far. May God richly bless you for all the support you have given me.

I also dedicate this achievement to my late mother Elina Popi Mudau, mum, you are sadly missed!

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ABSTRACT

Although food insecurity is said to have decreased in South Africa in the past years particularly at the national level, however, at household level a substantial proportion of households remains at risk of food insecurity and are experiencing hunger particularly in the Eastern Cape Province where poverty is rife. Food insecurity in the Eastern Cape Province is attributed to the fact that agriculture, the mainstay of the rural economy is no longer given the value that it should carry, does not help the situation. Despite much research on food (in) security in South Africa, the link between poverty and household food security is not at all clear. This study seeks to fill this gap specifically by looking at the linkages in the main between food security and poverty especially in the community level. Amidst the various programmes and initiatives that are in place in South Africa, there is continual prevalence of food insecurity facing the majority of South African households. The major aim of this study was therefore to examine the impact of one of these programmes, the Zanyokwe irrigation scheme in enhancing food security not only for the farmers but also for the surrounding communities. This study adopted a qualitative approach to research. The study unearthed that even though Zanyokwe irrigation scheme has played an indispensable role in enhancing food security for the smallholder farmers and the community at large challenges such as market challenges, road infrastructural issues, land tenure issues, lack of proper coordination amongst the farmers as well as farmer empowerment are a major limitation to the growth of the irrigation scheme and the farmers. Thus, the study recommended that farmer support services, training, agriculture subsidies, improved infrastructure as well as addressing market related challenges will go a long way in reducing the plight of the Zanyokwe farmers as well as enhancing food security.

LIST OF ACRONYMS

Agri-SETA	Agricultural Sector Education Training Authority
AsgiSa	EC Accelerated and Shared Growth Initiative-South Africa in the Eastern Cape
AIDS	Acquired Immunodeficiency Syndrome
CAADP	Comprehensive Africa Agriculture Development Programme
CARE	Centre for Animal Rehabilitation and Education
CDD	Community Driven Development
DFID	Department for International Development
EC	Eastern Cape
ECP	Eastern Cape Province
ECSECC	Eastern Cape Socio Economic Consultative Council
FAO	Food and Agriculture Organization of the United Nations
FSI	Food Security Index
HIV	Human Immunodeficiency Virus
IPNI	International Plant Nutrition Institute
MDG	Millennium Development Goal
NEPAD	New Partnership for Africa's Development
OECD	Organisation for Economic Co-operation and Development

PGDP	Eastern Cape Provincial Growth and Development
RSA	Republic of South Africa
SLA	Sustainable Livelihoods Approach
SSA	Sub-Saharan Africa
SSA	Statistics South Africa
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
WDR	World Development Report
ZIS	Zanyokwe Irrigation Scheme

CHAPTER ONE

BACKGROUND TO THE STUDY

1.1 Introduction

This study sought to examine the potential role played by community based projects in rural communities to uplift the socio-economic status of the rural communities. The Zanyokwe Irrigation Scheme located in Amahlathi Local Municipality in Eastern Cape is used as a case study. In particular, the study endeavours to examine whether community development projects have had a significant impact on the food insecurity challenges facing the rural communities of the Eastern Cape, South Africa. This chapter introduces the background, problem statement and the main objectives addressed by the study. The significance and delimitation of the study will be discussed. A snapshot of the research methodology is presented; however, a comprehensive discussion of the research methodology will be given in the research methodology chapter. To this end, the following section presents the background to the study.

Food (in) security is a pressing global development challenge that is however resolvable in many diverse ways. According to Dixon and Minae (2006) enhancing food security and poverty alleviation have been central preoccupations for mankind especially in sub-Saharan Africa where hunger persists and has been increasing in recent years. Food security is defined by the Food and Agriculture Organization of the United Nations (1996) as a situation which exists when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life. This definition is in keeping with the principle that everyone should have both the right to an

adequate standard of living, including adequate food and the fundamental right to be free from hunger enshrined in the International Covenant on Economic, Social and Cultural Rights. Food insecurity, then, is the lack of food security. The outcome of food insecurity is hunger, a condition in which people lack the basic food intake to provide them with the energy and nutrients for fully productive and active lives.

Food insecurity is a multidimensional problem that demands numerous solutions to be considered fully in bid to address its implications to poverty and socio-economic development. In as much as there are global and many national interventions to the problematic of food insecurity, there has been limited attention to the extent to which community development projects address contextual or community food security challenges. Community projects play numerous roles that help in terms of income, employment and food that is convenient to the community. An ever-rising food price in the last five years is sending millions of people back into poverty (Cribb, 2010).

What is more alarming is that at global level, challenges to food security are being exacerbated by climate change, rising food prices, growing population, profit-focused markets, diversion of food into bio-fuel and changing eating habit in the rising economies. This is fostering huge challenges for both farming and non-agricultural households across the world, even in seemingly food sufficient countries like South Africa. There is a need for further studies to determine the role that agriculture can play in food security reduction by investigating the impacts of agricultural project that have been initiated over the past years especially in rural areas as poverty and food insecurity alleviation strategy as it is often asserted that there is often a strong interrelationship between food insecurity and poverty and food insecurity persists primarily because of poverty. According to Oni et al., (2010) food security and

insecurity are terms used to describe whether people have access to sufficient quality and quantity of food.

The strategies of reducing poverty and food insecurity in the past gave much attention to the role of large national projects which were meant to reduce the plight of the poor through a process that is commonly known as trickle down. However, over the years focus changed from trickle down to empowerment paradigm because the trickle down approach fell far too short of reaching the intended beneficiaries, the poor. Endorsing this view, the World Bank (2000) opines that whereas the trickle-down approach was based on the assumption that the poor would benefit largely from the mere phenomenon of economic growth, the empowerment paradigm envisages moving away from an exclusive focus on economic growth implicitly to quality of growth and attention in particular to those at the lowest rung of the ladder.

The empowerment approach it is anticipated that it will bring about desirable results as opposed to the trickle down approach in that in the empowerment approach those in the lowest rung of the ladder are now in the centre of the stage and they are the drivers of their own development. In this context, it is now recognized that the poor in society can best be helped by getting them increasingly involved in designing and implementing development activities (World Bank, 2000). Of course, growth is recognized as the critically “necessary” condition for poverty reduction but not a “sufficient” condition. The new paradigm seeks to put the poor at the.

With growing awareness of the limitations of traditional “top down” approaches for poverty reduction, interest has increasingly shifted to the potentially powerful role of the participation of communities in the planning and management of public sector service delivery at the local level. CDD’s initiatives are increasingly having more

impact on the World Bank's operational work, leading to fostering of inclusion, ownership, and accountability.

The issue of food (in) security has been critical in many parts of the world including South Africa (Department of Agriculture, Forestry and Fisheries of South Africa, 2011). Food security is becoming an increasingly important concept in South Africa, especially in the light of the periodical droughts experienced on the sub-continent (Van Zyl and Kirsten, 1992). However, unlike other countries in the sub-Saharan Africa, South Africa presents a unique feature. South Africa is characterised by a paradox of instances of food insecurity amid a national food surplus (Strategic Analysis Paper, 2012). The same paper states further that, despite being a net exporter of food, however, there are large sections of South African society that cannot be considered food secure. In fact, 35% of its population, or more than 14 million people, are estimated to be vulnerable to food insecurity. As a result, in the 2010/2011 financial year food security was reprioritised as one of the top priorities for South African government (State of Nation Address, 2010), which is in line with South Africa's millennium development goal which aims to halve the proportion of people who go hungry over the period 1990 and 2015 and to halve poverty and unemployment by 2014 (Department of Agriculture, 2002). The major role of the Department of Agriculture, Forestry and Fisheries among others is to ensure that opportunities are created to encourage South African citizens to participate in agriculture and produce to reduce food insecurity in the country. The department has since initiated a number of programmes that are meant to contribute positively to food security in the country. The Zanyokwe irrigation scheme in the Eastern Cape is one such a programme that is meant to contribute positively to food security in the

Zanyokwe community. However, whether or not the Zanyokwe irrigation project contributes positively to food security is yet to be proved.

In the Eastern Cape Province, the Provincial Growth and Development Plan (2004-2014) revealed that although over 60% of the EC lives in rural areas, the province is only about 20% food secure. This stands in sharp contrast to the national average and the global image of South Africa as a developed country. The food insecurity problem is much attributed to the great disparities in food access between communities and households across the country. Rural communities have a much steeper food security challenges in the country if compared with their urban counterparts. As such, they are an important target group for the implementation of programmes or projects to counter food insecurity. Community development projects appear to be playing an important role in this regard, as a result of the extent to which these projects meets the practical needs of everyday life which food is one of the practical needs. Endorsing this view is the National Development Agency (2009) which advised that it is of utmost important to carry out studies to determine the impact of agricultural projects at community and household level since the Department of agriculture has invested heavily in a number of agricultural projects at community and household level.

According to Hulse (1995) food security should be counted as a basic human right and in South Africa food is considered as such under Section 26 and 27 of the South African Constitutional law of 1996. Hulse (1995) goes further to say that food security is practically arrived at by shrewd assessment of the needs and resources of families and discreet communities. Supporting this he states even further that, “a state of food security is one in which the individuals or communities under consideration enjoy consistent access of foods that in quantity, quality and composition provide a

hygienic and nutritionally adequate diet (Hulse, 1995: 7). Simply put, it is critical to acknowledge that conceptualising food security is complex controversial and sometimes subjective. According to FAO (2008) food security entails a situation when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life. At community level food security is defined as the condition whereby the residents in a community can obtain safe, culturally accepted, nutritionally adequate diets through a sustainable system that maximises community self-reliance.

Having critically conceptualised food security, it is important to highlight the importance of stability because shocks and stresses often pose huge challenges for households, especially those with low incomes. In short, food security demands predictability but unfortunately the fluctuations in weather, climate and prices other contingencies. In short, volatilities present a challenge, which local projects can help ensure some form of stability. In other words, shocks and stresses often deepen the severity of poverty in low-income. Accordingly, rural households are often the most insecure and the poorest.

They are various facets to poverty that cause food insecurity, lack of income/purchasing power is one such facet. In this regard a question may arise as to how can households cope with price hikes? According to Maxwell et al., (2000: 1) poverty and food insecurity is hugely a rural problem. The difficulty of food security has been faced and given as the priority in achieving the most fundamental human right in all developing countries. Poor households are in a difficult position when it comes to food security. Amartya Sen (1981), posit that reducing poverty is one key element that can ensure food security. Sen (1977) argues that poverty or what he calls a lack

of food entitlement, for example access to land, credit, income and support services, is an important cause of hunger and starvation.

There are various definitions pertaining to what poverty really is. Poverty as an individual concept is described as a person living less than a dollar per day. However, Vayrynen (2005) contends that such individualization of poverty has a little meaning, unless it addresses the pervasive inequalities for instance power relations among gender and class which are largely persistent in every society that contributes to the absolute poverty. He further commented that “poverty is not a natural state of affairs but a function of deep inequities in the national and global systems” (Vayrynen, 2005). In the same vein, Sahlins (1997) argues that “poverty is not a certain small amount of goods nor is it just a relation between means and ends. Poverty is a social status as well as the invention of civilization and has grown up with civilization” (Sahlins, 1997). Poverty is created through multiple deprivations which reinforce each other (Allen and Thomas, 2000). Poverty can further be referred to a social phenomenon under which the standard of living of individuals and households in a community or a country is persistently below a certain level required physically for sustaining human life according to some accepted social norms (Bhalla and Qiu, 2006). Poverty can be seen as deprivation of basic capabilities, rather than merely low income (Sen, 1999a). For instance, deprivation of elementary capabilities is reflected in premature mortality, significant under nourishment, widespread illiteracy and other failures (Sen, 1995).

Hunger and starvation affect food entitlement in that poor households spend a disproportionate share of their incomes on food, leaving them vulnerable to food price hikes and other volatilities. In this regard, local projects seem to be playing a key role as both a source of food for the community members and as a source of

income as well. Famine or starvation is therefore not primarily viewed as caused by a decline in agricultural production in a particular area (Sen, 1977). This implies that food insecurity is no longer seen simply as a failure of agriculture to produce sufficient food at the national level, but instead as a failure of livelihoods to guarantee access to sufficient food at the household level.

Broca (2002) argues that promoting rural agriculture and encouraging non-farm activities is one way to address the food security challenges in rural areas. In fact, this ensures more direct and immediate access to food for the most need. Again, Broca (2002) also underlines that the majority of the poor people reside in rural areas. Thus in light of contemporary food hikes across the world people who depend entirely on purchasing from conventional shops are susceptible to suffer heavily. Community projects, especially agricultural products are one way for food security. But how do these agricultural projects help eradicate food insecurity in diverse communities across the world. These projects help create a convenient source of produces, which means external catastrophic events that affect food security will have limited impact on households within that particular community. But in communities where it is characterised by few income-earners and many dependants, can community projects be of help to help deal with food insecurity challenges they might be facing.

Statistics South Africa (SSA) has shown that food insecurity is not an exceptional, short-term event, but is rather a continuous threat for more than a third of the population (Human Sciences Research Council (HSRC), 2004). The contributing factor to this situation might be that the vast majority of South Africans buy their staple foods from commercial suppliers, rather than growing it themselves, and are therefore dependent on having (direct or indirect) access to cash. In addition, given

that agricultural production is no longer given the value that it should carry, in and around rural communities, is on its own a problem that carries explanations to the prevalence of food insecurity at the household level amidst surplus food at the national level.

As such, the South African government, as part of the poverty alleviation strategy, the National Department of Social Development set goals to develop food security programmes where communities produce products and sell them at affordable prices to communities at large and create jobs for themselves (Business Plan for Poverty Relief Programme, 2001/2003). However, despite all this, high rates of food insecurity are still reported in the province (Eastern Cape Provincial Government, 2001). The socio-economic challenges of the Eastern Cape Province can be qualified in terms of income, employment, poverty, growth, investment and productivity (Eastern Cape Provincial Department of Agriculture, 2002). The Eastern Cape Province is one of the poorest provinces in South Africa and it is made up of two of the former Bantustans, Transkei and Ciskei (Eastern Cape Provincial Department of Agriculture, 2002). The Eastern Cape Province has a population of 6,872,022 of which, 54% are female and 46% are males (Eastern Cape Provincial government, 2004).

Gray (1998) views social development as an effective strategy to break the cycle of poverty and is implemented through community development as an intervention mechanism for poverty reduction. Community development is considered a national priority and the National Department of Social Development in South Africa is developing policy on community development that is relevant to the democratic context of the country. To get a better insight on community development it is important to contextualise it. Community development is not a new concept. The

United Nations (1999) defined community development as “a process by which efforts of the people themselves are united with those of governmental authorities to improve the economic, social and cultural conditions of the communities and to integrate these communities into the life of the nation and to enable them to contribute fully to national progress.

Community development is a process of change from the traditional ways of living of rural communities to progressive ways of living; as a method by which people can be assisted to develop themselves in their own capacity and resources; as a programme for accomplishing certain activities in fields concerning the welfare of the rural people and as a movement for progress with certain ideological context (United Nations, 1999). Suffice to say, the heart of community development is village organisation and the technique of how people are brought together and how they are democratically organised. In the same vein, community development fosters a unified approach to the problems of the villagers/community members by capitalising on and putting to work manpower, the greatest resource of underdeveloped countries (Bhattacharyya, 1972).

According to Jeppe (1985) community development is a movement designed to promote better living for the whole community with the active participation and if possible, the initiative of the community. In the Constitution of the Republic of South Africa (1996: 9) community development is defined as “a strategy to address basic material, physical needs and social needs and to encourage voluntary participation in social and community programmes. Against this backdrop, community development could be viewed as an appropriate mechanism or intervention to empower women and other institutions to integrate them in their own development as participants of development in their respective communities.

Development according to Coetzee (1988) is about people who experience the implications and practical functioning of the realities in which they constantly and unavoidably find themselves in. Within the South African context however human development ranges from enjoying a decent standard of living to participating in community activities, as opposed to solely economic development (Singh et al., 1999). Sharing similar sentiments is Conroy (2007) who added that human development is the process of enhancing individual collective quality of life in a manner that satisfies basic needs (as a minimum), is environmentally, socially and economically sustainable, and is empowering in the sense that the people concerned have a substantial degree of control over the process through access to the means of accumulating social power. Lastly, Sen (1999a) defined development as the removal of various unfreedom: poverty as well as tyranny, poor economic opportunities as well as systematic social deprivation, neglect of public facilities as well as intolerance or over activity of repressive states.

Desperate economic realities in many African countries both oblige and compel communities to seek solutions to the circumstances in which they find themselves (Nel and Binns, 1999). As such, communities are forced to look inward at their own resources and potential in order to carve some form of future for themselves and their children. The unbalanced nature of food security in South Africa reflects the country's continuing social and economic inequities. Stemming from the pre 1994 apartheid era, different sections of the population are faced with varied circumstances in education, employment, health and nutrition. Many facets of South African society have improved over the last two decades. Food security and nutrition, however, remain key obstacles to achieving national equality. At present, the country

must contend with the double challenge of both under- and over-nutrition, as it undergoes transition to a developed economy.

In addition, despite the political and economic advances made since 1994, South Africa continues to experience major challenges of poverty, unemployment and, more recently, steep increases in food and fuel prices, energy tariffs and interest rates (Koch, 2011). These adverse conditions have placed rural South Africans, already struggling to meet their basic household needs, in an ever more vulnerable situation (Labadarios, 2009). This is even more on key particularly in the Eastern Cape where subsistence agriculture, the mainstay of most rural communities contributes so minimal to the livelihoods of the rural populace.

Rural households in the Eastern Cape Province eke out a living out of or from remittances and social grants, and minimal households from subsistence farming that is embedded with its short comings. In the EC for example, subsistence agriculture contributes such a minimal percentage to the livelihoods of the rural households; this has exacerbated poverty which is a principal root cause of food insecurity at the level of households. As a result of the minimal contribution of subsistence agriculture to the livelihoods of the rural people, community-based development projects emerged as an alternative strategy to address the poverty challenge. Accordingly, the South African policy framework on Local Economic development established community based projects in an attempt to address the challenges posed by poverty of which food insecurity is one such a challenge. Thus, it is the aim of this study to examine the role of community based development projects in addressing food insecurity in rural communities of the Eastern Cape in general and particularly in the Zanyokwe area.

1.2 Statement of the problem

Although food insecurity is said to have decreased in South Africa in the past years particularly at the national level, at household level a substantial proportion of households remains at risk of food insecurity and are experiencing hunger particularly in the Eastern Cape Province where poverty is rife. In the same vein, the World Health Organisation bulletin (2011), stipulated that although the prevalence of food insecurity had decreased in all provinces in South Africa by 2008, in the Eastern Cape Province still had the highest prevalence. The contributing factor to the high prevalence of food insecurity in the Eastern Cape can be attributed to the fact that agricultural production is no longer given the value that it should carry, in and around rural communities does not help the situation. Although the initiatives and programmes that are put in place by the South African government appear to be beneficial, they need to be run more effectively to further alleviate food insecurity.

In the same vein, although there are many initiatives adopted by the South Africa governments to reduce food insecurity, community projects seem to play a critical role in that regard. In the context of communities that are grappling with food security, there is need to ascertain to what extent the community projects are playing with regard to ensuring food security for households in communities. In the Eastern Cape Province the presence of food insecurity at the household level is due to the insufficient resources to obtain available food caused by poverty which is a major challenge for the rural populace. The previously held assumptions that food security interventions related to food shortage alleviation would be achieved through the process of 'trickle down' from richer to poorer regions and communities has been to be not necessarily true. There have been many instances of such programmes failing to reach the poor, specifically those living in remote rural areas (Easter, 1995).

To compound this challenge, external volatilities and stresses can spell huge food insecurity challenges due to those in rural areas that are mostly unemployed and dependent on fixed social grants. The problems can be increased prices, undependable transportation and other critical factors that often worsen poverty.

In South Africa, as in most of the world, the poor are rurally based. Although they might not be directly engaged in agriculture, they rely mostly on non-farm employment and income that, in some or other way, depends on agriculture (Pinstrup-Anderson and Pandya-Lorch, 1995). Producing more food through agricultural growth and development is not the only challenge. Of equal importance is creating income and employment for poor people in and outside of the agricultural sector.

Against this background, community based projects depending on whether they were initiated to address the social, economic or political aspect of the community in question, these projects often play a very significant role in the reducing the plight of the rural poor. Community based projects are known to create job opportunities, equips its beneficiaries with skills, offer goods and services to the locals at affordable prices as well as empowering them. Although this is not always the case, nonetheless, the contention here is that community based or driven development projects that are initiated and owned by the community offer all these previously mentioned benefits and more. Whether or not the beneficiaries of the Zanyokwe irrigation project as well as the community at large shares the same sentiments with this assertion is yet to be proved.

In particular, against the backdrop of this recently implemented community based project, questions arise as to how has these projects impacted on the food security

status especially at the household level. Has it improved the household status or it has contributed to its further deterioration? How exactly is the project performing in the light of addressing food security challenges? Are there any other factors inhibiting this community project from realising the goal of uplifting the well-being of the Zanyokwe irrigation scheme beneficiaries? From the problem articulated here, the objectives of the study follow below.

1.3 Objectives of the study

The main aim of this study is to examine whether the Zanyokwe irrigation scheme has made any significant impact in enhancing food security not only for the farmers but also for the surrounding communities. The sub objectives of this study are:

- To realize if there are changes, which could be associated with the existence of the project, in the quality of lives of the members of the community?
- To analyse the challenges faced by the Zanyokwe farmers with regards to addressing food insecurity.

1.4 Significance of the study

This study was prompted by the continual prevalence of food insecurity facing the majority of South African households amidst the various programmes and initiatives that are in place in South Africa. Although food insecurity is said to have decreased in South Africa in the past years particularly at the national level, at household level a substantial proportion of households remains at risk of food insecurity and are experiencing hunger particularly in the Eastern Cape Province where poverty is rife. Put simply, food is available in South Africa but the challenge lies in the households' resources to acquire the available food. There are distributional and accessibility challenges in acquiring food that have to be clearly spelled out, this study is more

interested in the accessibility part. Food can be accessed either through purchasing it from retail stores or from own production. Poverty has an effect on both the purchasing aspect and own production. Simply put, poverty and food insecurity are directly linked in one way or another. To understand household food security status in South Africa, it is necessary to investigate how food production in the community or household level can be enhanced so as to reduce both food insecurity and poverty. Ideally, poverty and food insecurity should be addressed by intensifying production by smallholder farmers as well as by expanding employment opportunities in the agricultural sector so as to enhancing food security on the one hand and household incomes on the other.

Despite much research on food (in) security in South Africa, the link between poverty and household food security is not at all clear since they have only been a handful of studies on community development projects and food security, especially those trying to link the two with poverty issues. Although food insecurity is inevitably bound up with agricultural production, it should be considered within the broader context of poverty. This study sought to fill this gap specifically by looking at the linkages in the main between food security and poverty especially in the community level. Small-scale and subsistence agriculture might be one option to contribute to incomes and/or savings, as well as to encourage food diversification. While household production of food is prevalent, opportunities and threats need to be better understood and appropriate interventions developed to support household-level production.

As such, the outcome of this study will be of significance in addressing community development issue and to policy debates on food security. This study seeks to

examine the impact of the Zanyokwe irrigation project towards enhancing food security at the community and household level. This examination will be achieved through field survey, which includes collection and gathering of primary data from the study area.

Field research was specifically chosen because through it the problem under investigation is studied in depth as per the predefined objectives which convey precise results there by reducing any foregone conclusion that the researcher might have. In addition, field surveys facilitate the collection of local level information that is not available through secondary sources. This have a propensity of bringing out a new dimension to the phenomenon under study, through identifying a knowledge gap from previous studies and enhancing the accumulation of existing data, as mentioned earlier on. The findings of this study will be of significance to the department of Agriculture in South Africa particularly which has invested heavily in numerous agricultural projects however there is a gap when it comes to follow up studies on the impact of these projects. As such this study aimed to fill this gap as well.

Moreover, it is anticipated that the outcome of this study will contribute towards an enhanced understanding into issues related to food security especially at the community level. The community development approach to addressing the complex issue of food insecurity is also critical as it provides much needed literature that to date has been elusive. Accordingly, this seeks to help cover the lacuna in literature concerning grassroots better understand the dynamics of poverty which is a major factor when it comes to addressing food security at the community level.

In addition, community development and local economic development officers in the Zanyokwe community as well as elsewhere in South Africa are anticipated to benefit from the outcomes of this research. The outcome of the study will help with these people to make informed practical decisions, set achievable goals and avoid impractical mistakes that can be costly to the project they are implanting. Moreover, the study has a potential to enlighten policy makers to take an informed decisions when it comes to the approaches to food security debates, policy formulation and implementation. Equally important is that the study takes into consideration the needs of the community as well as resources of the comparative advantage of those communities when implementing projects. It is also expected that the outcome of this study will come up with recommendations that might be of help to the Zanyokwe farmers in enhancing their farm productivity as well as their standards of living.

1.5 Delimitation of the study

This study is delimited to the Zanyokwe Irrigation project in Amahlathi Local Municipality of the Eastern Cape province of South Africa. The study does not seek to deal with everything about food security; rather it revolves around community development and food security. More specifically, this research is conducted within the following parameters: only beneficiaries and extension officers of the Zanyokwe Irrigation project in the Nkonkobe Municipality irrespective of gender and race will be included in this study. By definition, delimitations of a study are those characteristics that limit the scope (define the boundaries) of the inquiry as determined by the conscious excluding and including some issues or individuals that is usual made made throughout the development of the proposal. Among these are the choice of objectives and questions, variables of interest, alternative theoretical perspectives that could be take on. Correspondingly, Ellis (2000) stated that while not always

possible for reasons of resources and time pressures; accurate livelihood research should involve repeated visits to the same households at different points across the calendar year, both to verify and recall data collected previously, and to gain an insight into the seasonality characteristics of livelihood strategies.

1.6 Research Methodology

This study adopted a qualitative approach to research. The reason for choosing this type of research methodology lies in that this study seeks to get an in depth understanding of the role that the community project in Zanyokwe community have played in addressing the plight of the Zanyokwe farmers and the community at large. In this respect, qualitative research methodology is known to play a key role as it allows researchers to gather an in-depth understanding of human behaviour and the reasons that govern such behaviour.

Moreover, the qualitative research methodology is advantageous in that it is often used for policy and program evaluation in research since it can answer certain important questions more efficiently and effectively than quantitative approaches. This is particularly the case for understanding how and why certain outcomes were achieved not just what was achieved. It also answers important questions about relevance, unintended effects and impact of programs such as: Were expectations reasonable? Did processes operate as expected? Were key players able to carry out their duties? Were there any unintended effects of the program? Qualitative approaches have the advantage of allowing for more diversity in responses as well as the capacity to adapt to new developments or issues during the research process itself (Babbie, 2001).

1.6.1 Research Design

This study adopted a case study research design. A research design is the plan according to which one obtains research particularly (subjects) and collect information from them. It entails a description of what one intends to do with the participants, with a view to reach conclusions about the research problem. Mouton (2001) in Fouché and De Vos (2002: 137) defines a research design as a plan or blue print of how one intends conducting the research. A research design focuses on the end product, formulates a research problem as a point of departure and focuses on the logic of the research study. This is a case study based research, the key respondents for this research comprised of the Zanyokwe irrigation scheme beneficiaries as well as the Project Manager commonly known as the Agricultural Extension Worker. In research designs, sampling requirements are equally important. These requirements serve as criteria for the evaluation of research reports. Accordingly, defining and explaining the terms population and sample most important.

1.6.2 Population and sample

The population of this study consists of the beneficiaries of the Zanyokwe irrigation scheme as well as the project manager. The population of a study generally consists of individuals, groups, organizations, human products and events, or the conditions to which they are exposed. Put differently, the population encompasses the total collection of all units of analysis about which the researcher wishes to make specific conclusions. Simply put, a population is the full set of cases from which a sample is taken.

1.6.3 Data collection

Data will be collected using in depth interviews as well as focus groups. Face to face interviews with the project manager as well as those in charge of for the day to day running of the project, which in this case involved all the Zanyokwe irrigation scheme beneficiaries.

1.6.4 Data analysis

De Vos (2002: 339) notes that 'data analysis is the process of bringing order, structure and meaning to the mass of collected data'. Data which is collected through the qualitative method is usually large in volume and unless it is arranged in a certain form, becomes very difficult to understand by both the researcher and those who may benefit from the research report. The arrangement of data in an orderly and simplified manner is called data analysis. After the field work, the data collected was critically analysed and presented. Quantifiable data was analysed using Microsoft Power Point software.

1.7 Ethical consideration

To render this study ethical the researcher sought an ethical clearance letter from the dean of research in the university. Strydom (1996: 63) defines ethics as a set of moral principles that are suggested by an individual or group and are subsequently widely accepted. The conducting of research requires not only expertise and diligence but also honesty and integrity. This is done to recognize and protect the human rights of respondents. To render the study ethical, the rights to self-determination, anonymity, confidentiality and informed consent will be observed.

Written permission to conduct the study will be obtained from the university of Fort hare. Respondents' consent will be obtained before administering the

questionnaires. The respondents' consent was obtained through asking for their willingness to participate voluntarily in the study. Burns and Grove (1993:776) define informed consent as the prospective subject's agreement to participate voluntarily in a study which is reached after assimilation of essential information about the study. The respondents were informed of their rights to voluntarily consent or decline to participate at any time without penalty. Respondents were also informed about the purpose of the study and will be given the assurance that there will not be any potential risks or costs involved.

Anonymity and confidentiality will also be maintained throughout the study. Burns and Grove (1993:762) define anonymity as a situation where respondents cannot be linked even by the researcher with his or her individual responses. In this study anonymity will be ensured by not disclosing the respondent's name on the when analysing data, and questionnaires will only be numbered after data collection. Confidentiality means that the information the respondent provide will not be publicly reported in a way which identifies them (Polit and Hungler 1995:139). In this study confidentiality will be maintained by withholding respondents' real names and by using the findings of this study for academic purposes only.

1.8 Organisation of the Study

This study is divided into six chapters that are organised sequentially as follows: Chapter 1, the introductory chapter articulated the background of the study, problem statement, study objectives, significance of the study, ethical consideration, and delimitation of the study and the layout of the study. Chapter 2 focused on covering literature review comprising of conceptualisations, theoretical framework, and some empirical studies. In particular, the challenges encountered in realising the goal of food security; the impact of these projects as well as factors that impede these

projects from enhancing food security will also be discussed in chapter. Chapter three described the study area and it gives a comprehensive discussion of the research methodology and methods. Chapter four focused on data presentation, interpretation and analysis. Chapter five highlighted a summary of study findings, conclusion and recommendations.

CHAPTER TWO

THEORETICAL AND EMPIRICAL OVERVIEW OF AGRICULTURAL DEVELOPMENT AND FOOD SECURITY

2.1 Introduction

The purpose of this chapter as alluded to in chapter one, is to examine the literature that is relevant to the researcher's study. This particular chapter will also delve on discussing the theoretical framework underpinning the study as well as the argument for and against the theories discussed. The key concepts underpinning the study are clarified and articulated. The chapter further cite examples of analogous studies done elsewhere.

2.2 Theoretical perspectives of rural development

This section discusses the three theoretical approaches underpinning agricultural development and food security. These three approaches are; Entitlement Approach, sustainable livelihoods approach (SLA) and the community driven development (CDD). The Entitlement approach to food insecurity concentrates on the ability of people to command food through the legal means available in the society, entitlements *vis-à-vis* the state, and other methods of acquiring food (Sen, 1981). The Sustainable Livelihoods Approach on the other hand is seen as a way of thinking about the objectives, scope and priorities for development, as a framework for analysis and design and as a basis for evaluating interventions with respect to their effectiveness in achieving poverty reduction (Krantz, 2001). The sustainable livelihoods approach is a holistic approach that tries to capture, and provide a means of understanding, the fundamental causes and dimensions of poverty without

collapsing the focus onto just a few factors such as economic issues or food security. The Entitlement approach will be discussed first.

2.2.1 Entitlement Approach

At its core the entitlement approach was devised to measure poverty in a famine condition as a temporary phenomenon associated with drought or other internal factors that require public action within the country to counter hunger (Sen, 1990). The famous scholar who is regarded as the originator of the approach is Amartya Sen. Amartya Sen is one of the foremost scholars on food security, particularly famine. His famous entitlement approach has become a potent framework for food security and famine analysis across the world. The approach was developed in the late 1970s, and clearly expounded in his work *Poverty and Famines: an Essay on entitlements and Deprivation* from 1981. According to Sen (1990: 23) the entitlement approach denotes a set of different alternative commodity bundles that a person can acquire through the use of the various networks of relationships that are influenced by a variety of social, political and legal factors open to someone in this position (as cited in Rahim, 2011).

The entitlement approach was developed as a result of Sen's dissatisfaction with the prevalent theories of that time, particularly the food availability approach. The food availability approach concentrates on the ability of the people to command food through legal means available in that society. The approach concentrates on each person's entitlements to commodity including food, and views starvation as resulting from a failure to be entitled to any bundle with enough food. In contrast, the entitlement approach disagreed on fundamentals and entitlement approach won the food insecurity debate on explanations. In the main, the approach focuses more on

poverty and access to food not just its availability. In the same vein, Bringham argues that the entitlement approach views food insecurity as a state of someone “not having enough food” (Bringham, 2003). This argument is contrary to the food availability approach which argues that food insecurity is a state of “there not being enough food”. Inherent in the entitlement approach is that people do not have enough food because they are poor not as a result of lack of food (Bringham 2003). Put differently, lack of purchasing power by the poor is the main reason of food insecurity in the rural areas; this explains why a country can be food secure at the national level and be food insecure at the community and household level. This scenario is common in countries where there are huge differences economically speaking between the haves and the have-nots as can be seen in South Africa.

When the entitlement approach came to the fore, it brought a new vision about hunger, especially for the developing world. The focus of the approach was that poverty is the main cause of food insecurity. Previous approaches to food security did not give enough attention to the question of poverty in relation to food security. It was until after the advent of Amartya Sen’s entitlement approach that the issue of poverty was brought to the centre. More importantly, the approach challenged the Malthusian-based explanations for starvation. The approach was critical to the argument that famines should be blamed to natural disasters that cause failures in harvests. The approach, therefore took a different slant to the Malthusian approach because Sen emphasised on investigating why some groups of people have more than enough to eat, whilst others starve within the same area. Thus, the approach was concerned with the determinants of distribution of food between difference groups in any society. To the entitlement approach, starvation is mainly caused by problems in access; that is the ability to produce, buy or otherwise command the

food they need. Many people starve or are food insecure mainly because they do not have the capacity to access food due to limitations of finances.

The entitlement approach has three building blocks which are endowments, entitlement mapping and the achievement-set (Sen, 1981). Each of these is elaborated below. Endowments are the legal resource that can be used to obtain food. They range from resources like money, land, machinery and animals, labour power and 'know how' and citizenship (Sen, 1981). The second block is entitlement mapping or e-mapping. This entails the trade between endowments and food, goods and services (Sen 1981:46). The entitlement mapping materialises in the ration between money wages and the price of food, or the input-output rations in farm production. The third and final block is the entitlement-set, which represents the basket of food, goods and services that a person can obtain using the endowments. There is a way of converting the endowment into an entitlement set. This set is divided into two, one is direct entitlements and the other one is indirect entitlements. Direct entitlements cover the production of food for one's consumption. The indirect entitlements covers a person's purchasing power to food as well as person's right to food as derived from social security programmes, inheritance, or other legal arrangements. It is important to posit that some groups of people use both approaches. This is especially true for poor people for they use diverse means to source food.

According to the entitlement approach the deterioration of food security can be traced in either reduction in endowments or deterioration in exchange rates (e-mapping) between the endowment and the entitlement set. The approach dismisses the arguments that a misbalance between population and food availability is the principal case for starvation. Sen did so by using the example of the famous Great

Bengal Famine in 1942-3 (Sen, 1972) when food availability was at its highest in Bengal's history. In that Bengal famine, more than 1.5 million people died despite the availability of this plentiful food. According to Sen (1981), the food problem was caused by problems in exchange entitlements. The weak and seclude groups were worse off during this period of the Bengal Famine.

The entitlement approach is applicable to the understanding famine, chronic hunger and any forms of food insecurity. Further, the approach also captures challenges related with endemic under-malnutrition and deprivation. The strengths of the entitlement approach that it can be applied from the global, national, community, households and individual basis. The approach therefore is in agreement with the definition of food security as posited above. The approach also guides research on causation and remedies along the lines of individual's endowments, entitlement mappings and entitlement-sets. More importantly, it brings the level of analysis to individuals. The approach also provides us with the conceptual framework that can help us understand causes and remedies in the social, economic and political realms. According to Sen, a person's entitlement set is a way of characterising his or her 'overall command over things' taking note of all relevant rights and obligations. Whereas rights are generally characterised as relationships that hold between distinct agents (for example between one person and another person, or one person and the state), a person's entitlements 'are the totality of things he can have by virtue of his rights.

The entitlement approach is not without its criticisms. The approach has been criticised by Woldemeskel (1990) who said that the approach pays a blind eye to the role of market forces and institutions (as cited in Bringham, 2003). He goes further to say the approach ignores the role of institutional elements, market forces and

availability. The institutional element, the government can and should play an indispensable role in addressing the food security crisis. Market forces and availability are one such area where the international and national government are expected to play a role that will ensure that the terms of trade are fair so that even the smallholder farmers gain from such trading.

Early thinking on agriculture clearly linked hunger and food insecurity to reduced food availability. Hunger, and particularly famine, appeared to be a result of an acute food shortage, which could be best addressed through steps to increase the production and distribution of food. Thinking on food security was thus largely seen in terms of increasing aggregate food supply, an idea that fitted well with the focus of contemporary agricultural development thinking, particularly in Asia during the era of the Green Revolution (Wiggins, 2004). Increasing availability through technology-based productivity improvements seemed to offer the world a way out of hunger, famine and food insecurity (Wiggins, 2004). However in the early 1980s, the idea that famines are caused by harvest failures alone was disputed, and gave way to explanations in terms of failures of 'entitlements', that is the inability of individuals to access the food they need due to poverty. This line of argument was most famously championed by Sen (1981), who illustrated his argument by explaining the Bengal famine of 1943 in terms of the disjuncture between soaring rice prices and farm labourers' stagnant wages, which left them unable to buy enough food. Food access, or 'entitlement' in Sen's terminology, certainly matters as much if not more than food availability (Wiggins, 2004). The focus of efforts consequently switched to addressing poverty rather than increasing food availability. An adequate and appropriate food supply is a necessary condition for eliminating hunger though

increased food supply does not automatically mean increased food security for all (Pretty et al., 2003).

Recent research on famine (in particular, the work of Amartya Sen) has shown that massive crises of widespread hunger and increased mortality often occur despite aggregate food supplies that are no less adequate - and sometimes even more abundant - than usual. In such cases, the underlying cause of hunger is lack of access to food rather than lack of food. When such an upsurge in food poverty occurs, increasing aggregate food supplies will not necessarily improve the situation; the basic challenge is to develop and safeguard mechanisms of entitlement to food for those who have been denied access to existing food supplies (DeRose, 1998).

Widespread entitlement failure may coincide with shortage, as when poor harvests undermine the livelihoods of farmers, reduce aggregate food availability, and drive up prices (Derose and Millman, 1998). Or it may occur quite independently, as when unemployment or rising prices of other goods reduce the amounts of food that certain groups can afford to purchase, or when food supplies are directed away from civilians and toward military needs (Derose and Millman, 1998). The point is that famine has multiple causes: we cannot conclude simply from the fact that some households are food poor that there is any shortfall in aggregate food supply (Barrera and Brown, 2011).

According to Wiggins (2004), a number of new perspectives on food security have begun to emerge recently, and these challenge the entitlement approach. The challenge focuses on the way in which entitlement theory underplays the role of assets, makes famine victims appear passive and marginalises non-economic

factors such as conflict and health. De Waal's (1989) analysis of events in Darfur in 1984–85, for example, judged famine to be more a crisis of health than of food.

Other new perspectives (Maxwell, 1996) include a greater awareness of the heterogeneity of food insecurity and famine conditions, and of the many factors that potentially play a role in explaining events. Within this view, poor people's livelihoods, and the ways in which people strive to protect them, are seen as central to understanding food crises, particularly in Africa. People's vulnerability and their coping mechanisms for dealing with the hazards they face have become central points of interest. The next section looks at the sustainable livelihoods approach.

2.2.2 Sustainable Livelihoods Approach

The sustainable livelihoods approach (SLA) is one of the key theories in development and poverty analysis (Ashley and Carney, 1999). The SLA combines a conceptual framework with a set of operational principles to provide guidance of policy formulation and development practice. The key proponents of the SLA are DFID, Oxfam, CARE and UNDP. They emphasise and use the approach in various projects and initiatives across the world. There are many ways of applying the livelihoods approach, but it is very important to keep or work along the underlying principles of the approach.

A sustainable livelihood is defined by Chambers and Conway (1992) as comprising of the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from shocks and stresses and maintain and enhance its capabilities and assets both now and in the future, whilst not undermining the natural resource

base. Sustainable livelihoods in one community can contribute to net benefits of other livelihoods at both local and global levels and both short and long term range.

Sustainable livelihood incorporates the notion of complexity, change, and uncertainty. As a result, emphasis is on adaptive strategies at local or community levels. The significance of this theory to our study is that it seeks to empower the capacity of people to earn incomes to meet the current and future economic and social needs, and minimise their vulnerability to external stresses. The approach helps to identify and develop assets, strategies and strengths of people across all various sectors to meet the goals of community. In the case of food security, focus is on ensuring that all community members and households are food secure. The approach put emphasis of livelihood assets as discussed below.

2.2.2.1 Livelihood Assets

The primary focus of the sustainable livelihoods approach is to focus on how people can enhance their livelihoods. In other words the approach focuses on the following category of assets (Department for International Development, 1999) :

- Human capital; which entails things such as skills, knowledge, the ability to labour and good health
- Social capital such as networks and connectedness, membership of formalised groups or relationships of trust, reciprocity and exchanges;
- Financial capital including available stocks and regular inflows of money;
- Physical capital including the basic infrastructure and producer goods (tools' and equipment) used to function more effectively; and

- Natural capital, which is the natural stocks that can be used in developing livelihood strategies and land, water, air quality and storm protection.

The approach emphasises on strengthening livelihood assets through various strategies such as building grassroots organisations, transforming relations between community and local governments, and enhancing the knowledge and skills of the people (Salvestrin, 2006). The potential outcomes of the approach is improved food security, higher incomes, reduced vulnerability, increased well-being and enhanced human dignity. Strength of the approach is that it focuses on local approaches as well as context specific appreciation of things, thus, community development projects came into play.

However, the approach has been criticised for underplaying the effect of macro-economic trends and conflict to livelihoods. The approach has also been criticised for assuming that capital assets can be expanded in generalised and incremental fashion. The approach does not pay particular attention to inequalities of power. The approach also underplays the fact enhancing the livelihoods of one group can undermine those another.

It is important to understand vulnerability. It is not the same as poverty, but underlying poverty increases vulnerabilities in many households. Thus, poor households are more vulnerable food insecurity if compared with the well-off. Other livelihoods definitions make people more central and are less concerned with precise terminology for different kinds of assets. They highlight issues of ownership, access and decision making.

People's capacity to generate and maintain their means of living, enhance their well-being and that of future generations is at the heart of the theory. These capacities

are contingent upon the availability and accessibility of options which are ecological, economic and political and which are predicated on equity, ownership of resources and participatory decision making (Delgado, 2004).

Despite differences in emphasis by different practitioners, the livelihoods framework helps us to identify (and value) what people are already doing to cope with risk and uncertainty. Secondly it helps us in making the connections between factors that constrain or enhance their livelihoods on the one hand, and policies and institutions in the wider environment. Thirdly, they help us identify measures that can strengthen assets, enhance capabilities and reduce vulnerability.

Sustainable Livelihoods approach work with people, supporting them to build upon their strengths and realise their potential, while at the same time acknowledging the effects of policies, institutions, external shocks and trends. The approach affords the basis for identifying the constraints to livelihoods development and poverty reduction in a particular context. This approach can be helpful in identifying the complexity of food security. Thus, enhancing or building upon the community's portfolio in terms of the five capitals; physical, human, natural, social and financials capital. Arguably, if a project is able to enhance food security by enhancing these other capabilities can be regarded as a boon for that community. In short, increase in livelihood security, arguably means increase in food security.

What underlies the sustainable livelihoods approach is the people draw upon a range of capital assets. These assets are categorised as social, human, natural, physical, financial and natural. In other words, given the vulnerability of people to food insecurity as induced by external events and other factors, they inevitably have a bearing on other assets.

The capability approach is also used extensively in the designing and refining of projects and programmes (Gilling, Jones and Duncan, 2001). In fact the main proponents of the approach like DFID, UNDP, and CARE have been attuning their programmes and programmes using this approach. Because of this, the SLA has actually led to the growing improvement in quality and potential impact of donor assistance and projects. Furthermore, the SLA espouses core principles of good development practice, including the need for high levels of participation focus on multiple levels (macro, meso and micro) and for sustainable development (Ashley and Carney, 1999).

The uses of the SLA are diverse and flexibly adaptable to many settings, but it does not represent a magic tool being able to eliminate problems of poverty with a single sign, nor is it a complete new idea that will be revolutionary for development research and cooperation (Kollmair and Juli 2002).

Rooted within the strengths of the approach quite often its weaknesses can be found too as outlined by Kollmair and Juli (2002). On the one hand a differentiated livelihood analysis requires enormous financial, time and personal resources often lacking in practical projects. Moreover, the claim to be holistic leads to a consideration of very many aspects, what inevitably delivers a flood of information hardly possible to cope with. The decision about what to consider with priority leads to a normative dilemma. One such weakness arises with the analysis of the livelihood assets, as for example the difficulties to measure and to compare social capital. The asset status of a person is highly associated with the amount of dependence from a certain resource, varying according to the local context, as for instance some actors might be able to satisfy their needs with a low level of financial

capital, whereas others with more financial capital show by far less ability to do so (Kollmair and Juli, 2002).

Further, as discussed earlier on, the wellbeing of the poor people is not only a function of their income but of their overall livelihood at large. However, what is fundamental is that the lives as well as the livelihoods of the poor people can be improved especially if the poor people are viewed as protagonist with agency not just passive beneficiary of development despite the multi-dimension aspect of poverty (Goldman, 2010). Even though the SLA helps in understanding this complexity of poverty it does not however, bring out the localised aspect of addressing food insecurity that is widespread especially in rural areas where the majority of the poor are living. It is widely acknowledged that agriculture is the mainstay of the rural economy, particularly in Africa, where the community, household and individuals though different support each other when it comes to addressing food insecurity. The three tiers: individuals, household and community, are involved in local activities that augment their livelihoods. The SLA is silent when it comes to the localisation of development where the relationship of the individuals and households within a community is an avenue of moving development from being transactional (dependence) to that of being transformative (empowerment) which is important in localising development. The goals of local development tend to revolve around a set of common issues of job creation, empowerment, the pursuit of agricultural growth, community development and also establishing the 'locality' as a vibrant and sustainable economic entity, often within a global context (World Bank, 2001). A key theory that seems to be addressing the locality aspect of development is embedded in the community driven development approach.

The community driven development (CDD) approach appear to be taking into consideration the importance of the relationship amongst the community, household and individuals. When there is an understanding amongst these three tiers then rural as well as agricultural development will not take a long time impact positively on the poor people's lives because now development will not from above to the bottom but it will be within. According to Taylor and Mackenzie (1992) development from within, like development from above focuses on the relationship between local actions, arguing for the flexibility as an ideology as well as a strategy where the priorities and needs of the rural poor are the fore front of rural and agricultural development. Based on these shortcomings of the SLA, a more affluent picture emerges one in which strategies which the rural people are using to survive the food insecurity crisis through agriculture which is the backbone of the economy. The community driven development projects or programmes are an example of the localisation of development in that through community driven development communities, households as well as individuals are supported and encouraged to develop their own plans which they are then helped with funding and implementation of those plans (Goldman, 2010). Community-driven development (CDD) recognizes that poor people are prime actors in the development process, not targets of externally designed poverty reduction efforts. The next section looks at the Community Driven Development theory (CDD).

2.2.3 Community driven development (CDD) theory

Community based theory is a robust approach in understanding changes in individuals and households within a community. It applies the definition of community development as the employment of community structures to address social needs and empower a group of people (Cavaye, 2008). In essence, it seeks to employ the

community structures and makes sure that people are appropriately engaged and empowered. The approach affords control of development decisions and resources to community groups. In a way, communities get funding on their use, plan and execute the chosen local projects, and monitor the implementation of those projects. What is implicit in the theory is the importance of empowering communities. In other words, community projects should be more than just provide material benefits like income, but they should empower people, because disempowerment is seen a symptom of poverty.

The community driven development came as a response to the failures of earlier approaches to target poverty reduction, such as integrated development programs for a geographical area and the sustainable livelihoods approach. According to Alkire et al (2001:2) community driven development (CDD) gives control of decisions and resources to community groups. These groups often work in partnership with demand-responsive support organization sand service providers including elected local governments, the private sector, NGOs, and central government agencies. CDD is a way to provide social and infrastructure services, to organize economic activity and resource management, to empower poor people, improve governance, and enhance security of the poorest (Alkire et al, 2001).

Alkire et al, 2001 further categorised the strength of the approach into the following points:

- Complements market and public sector activities
- Enhances sustainability
- Improves efficiency and effectiveness

- Allows poverty reduction efforts to be taken to scale
- Makes development more inclusive of the interest groups and vulnerable groups
- Empowers communities and builds social capital and, strengthens governance.

Unlike many approaches that merely treats communities and poor people as targets for programmes; the CDD in contrast, treats those people and their institutions as assets and partners in the development process. It puts trust in communities and people to effectively organise to provide goods and services that meet their immediate priorities. So for example, if a community has food insecurity challenges that community need to initiate something to alleviate the problem. Because, the process is in the hands of the communities, they know they have a lot to gain from making good use of resources, to tackle challenges of food security.

Alkire et al, (2001) opines that CDD is an effective mechanism for poverty reduction and for the achieving immediate and lasting results at grassroots levels. It makes interventions more demand responsive and can enhance sustainability. They further posit that CDD has been shown to increase the efficiency and effectiveness of numerous interventions. The other strength of the CDD is that if it is well organised it is inclusive of poor and vulnerable groups. In this sense, programmes or projects initiated through CDD tend to build positive social capital and give greater voice to communities.

Across the world because of the need for improved transparency and performance, many local government institutions, NGOs, donors are investing substantially in

community driven projects (Casey et al, 2010). A peculiar example is that of the World Bank which lends 9% of its total lending support to CDD projects (World Bank, 2007). Emphasis on local participation in project implementation is a means to provide public goods through a political process that empowers the poor. CDD has become one of the most popular mechanisms among donors aiming to strengthen local democratic institutions, while simultaneously providing bottom up support for government decentralization reforms.

In essence CDD involves a degree of devolution of responsibilities to communities for managing theory development. This entails various aspects of development ranging from designing and implementation of projects. In other words, communities need to have the capacities to assume responsibility. The approach also stresses the need to view communities as recipients of things but as partners for development. Community driven development is regarded as a way to manage development, including design and implementation of policies and projects that facilitates poor people to social, human and physical capital.

According to Nkonya et al., (2009) community driven development has become a key strategy for development. According to Nkonya et al., (2009) the popularity of the CDD approach has been propelled by its potential to develop projects and programs that are sustainable and responsive to local priorities, empower local communities to manage and govern their own development programs, and more effectively target poor and vulnerable groups (Gillespie, 2004). The poor and vulnerable group consists of the rural poor who comprise mainly of women, girls, the youth and the elderly. These vulnerable groups stay in rural areas where agriculture is the mainstay of the economy. As such it is vital that an understanding of the role of agriculture's contribution to food security dilemma which has a rural face be

discussed. Accordingly, the following section looks at the role of agriculture towards ensuring food security particularly at the community, household and individual level.

2.3 Understanding agriculture's contribution to food security

Although 'improving' agriculture alone will not lead to a reduction in hunger and food insecurity, agriculture has played and will continue to play a fundamental role (Wiggins, 2004). Most commentators and policy makers frame agriculture's contribution in two key criteria, that is increasing the availability of food at prices that poor people can afford as well as providing improved job opportunities and incomes that will give poor people the means to access food. These two criterion address food availability and food access which are important component of food security. Incomes generated in agriculture projects also provide the money to access other forms of food. Thus, increasing productivity in a community help impact the following three components: increased incomes of farmers, increased rural employment; that is employment opportunities and rural wages for other people in the non-farm rural economy and it has wider implications to wider economic growth and poverty reduction.

According to Wiggins (2004), agriculture growth increased incomes for farmers and has other downstream benefits to processing industries. Dev (1998) reports that in India average real income of small-scale farmers rose by 90% as a result of increases in productivity (cited in Wiggins (2004). Further, it is argued that in Zimbabwe there was a 'smallholder green revolution' during the 1980s in maize and sorghum production in which yields more than doubled and 95% of crop area was planted with improved varieties (IFPRI, 2005). In Bangladesh, expansion of small scale agriculture also led to the expansion of off-farm jobs (Mandal, 2002a).

Another benefit of expanding agriculture is increased employment opportunities and higher wages in rural areas. Accelerated agricultural development, particularly increasing agricultural productivity typically creates more jobs and, depending on levels of employment and underemployment, pushes up wage rates both on- and off-farm. Since community driven development rises mostly because of hunger, agricultural growth increases the demand for labour in preparation, planting, weeding and harvesting and can result in higher wage rates. While intensification may involve some labour-economising measures, the ability to double- and even triple-crop the land has been shown to consistently increase the demand for labour, even if unit labour use falls (Binswanger, 1986). All this has been witnessed in India in the 1970s and 1980s and in Bangladesh in the same period. It later led to increased food security in the respective countries in years to follow. In addition, it has been established that as farmers become richer, they are increasingly inclined to substitute hired labour for household labour, thus creating greater employment opportunities. Leavy and White (2000) note that in rural Africa, employment opportunities exist not only on large commercial farms but also in the smallholder sector in which there is an active labour market. Dev (1998) provides more evidence from India and suggests that increases in agricultural productivity led to 125% increases in average incomes of the landless (cited in Wiggins (2004)). Agricultural development also generates new and better-paid jobs off-farm for the poor through linkages between agriculture and the wider rural economy. The combination of extra jobs within and outside farming can have strong effects on rural labour markets, pushing up wages and improving the ability of the poor to buy food. This rise in incomes helps to provide incomes that people can use to purchase food in difficult circumstances.

Looking at the impact on the wider economy, cross-country comparisons find a strong relationship between progress in agriculture, broader economic growth and progress in reducing poverty throughout the economy (Wiggins, 2004). Generally, the countries that increased agricultural productivity most rapidly have also witnessed the most significant reductions in poverty. Ashley and Maxwell (2001), citing Datt and Ravallion (1996) posit that increasing yields by one third can reduce the numbers in poverty by a quarter or more. Suffice to say, agricultural growth is critical to broader economic growth and tends to benefit the poor more than growth in any other sector. Wiggins (2004) argues that no other sector offers the same possibilities to create employment and lift people out of poverty focusing policy attention on agriculture remains important. However, differences exist in the pattern of agricultural development. While it is generally accepted that agricultural growth is good for poverty reduction, dispute remains about the extent to which these differences matter as far as the impact on the poor is concerned.

2.4 Agriculture Growth, Development and Food Security

According to Davis (2003) agriculture stands out as the most obvious activity with potential to increase rural incomes due to the sheer number of people directly involved in this activity and its production linkages. The question of agriculture's role towards food security in Africa has been of much debate especially given the background of widespread poverty, food insecurity and undernourishment facing the continent. Similarly, for a continent facing perennial food shortages, persistent poverty and limited financial resources, meeting the challenge of food insecurity and poverty reduction presents a daunting challenge for most African governments (Idasa, 2009). Accordingly, the Committee on Agriculture (2010) underscored that agriculture lies at the heart of the development process where smallholders are often

seen as the driving force of economic growth, poverty reduction and food security. This is because smallholder farmers are a defining feature of African agriculture whose livelihoods is derived from smallholder agriculture and they are mainly found in rural areas where poverty is rife as well as food insecurity. Agriculture is the backbone of Africa's economy, contributing about 30% of the continent's GDP and about 50% of the total export value (IPNI, 2007). About 70% of Africans and roughly 80% of the continent's poor live in rural areas and depends mainly on agriculture for their livelihood (UNESCO, 2007). The sector accounts for about 60% of its labour force and 20% of the total merchandise exports (CAADP, 2003).

Despite rapid urbanization proceeding at the annual rate of 4.9 % over the past decades, the agricultural sector still provides a great part of the total employment (UNESCO, 2007). Correspondingly, growth in agriculture is widely seen as the means to address global food crisis and simultaneously alleviate poverty, hunger and malnutrition particularly in Africa (NEPAD, 2003). Promoting agriculture also remains crucial for meeting the Millennium Development Goal (MDG) of halving poverty and hunger by 2015. It is not only how much growth occurs but whether it is based on rapid agricultural growth that counts for poverty reduction. The World Bank Report of 2008 states that agriculture operates in three distinct worlds: agriculture based, transforming and urbanised. A detail of these three worlds according to the World Bank Report 2008 is as follows: In the agriculture based which includes most of sub-Saharan Africa (SSA), agriculture and its associated industries are essential to growth and to reducing mass poverty and food insecurity. Using agriculture as the basis for economic growth in the agriculture based countries requires a productivity revolution in smallholder farming. When it comes to transforming countries such as the South and East Asia, rapidly rising rural urban

income disparities and continuing extreme rural poverty are major sources of social and political tensions.

Addressing income disparities in transforming countries requires a comprehensive approach that pursues multiple pathways out of poverty shifting to the high value agriculture, decentralising nonfarm economic activity to rural areas and providing assistance to help move people out of agriculture. In urbanised countries, which include most of Latin America and much of Europe, agriculture can help reduce the remaining rural poverty if smallholder agriculture becomes direct suppliers in modern food markets, good jobs are created in agriculture and agro industry and markets for environmental services are introduced. While the worlds of agriculture are vast, varied and rapidly changing, with the right policies and supportive investment at local, national and global levels, today's agriculture offers new opportunities to hundreds of millions of rural people to move out of poverty (WDR, 2008). Smallholder agriculture in particular has been identified as the most efficient sector when it comes to poverty alleviation as well as household food security for the rural people.

In Africa, agriculture continues to be the linchpin of most national economies and serves as the main source of livelihood for poor rural households; issues that relate to smallholder farming have been inadequately addressed and continue to be marginalised in major global debates. Smallholder agriculture offers a way out of poverty and food insecurity, given the correct resources and a chance on the part of government and other relevant stakeholders to recognize the role it could play in development and improving food security. While smallholder production is important for food security, the productivity of the sector has been declining and this has impacted negatively on increased food prices and food insecurity. In South Africa,

the term smallholder or small-scale irrigation is mainly used when referring to irrigated agriculture practiced by black people and it is estimated that the number of South African smallholder irrigators range between 200 000 and 250 000 (Van Averbek and Mohamed, 2006).

The term smallholder farmer is sometimes confused with subsistence farming as such there is need to define the two concepts and bring out their differences. Subsistence farming entails farming in which crop production, livestock rearing and other activities are conducted mainly for personal consumption, characterised by low productivity, risk and uncertainty (Todaro, 1995) whereas smallholder farming entails those farm households with access to means of livelihoods in land relying primarily on family labour for farm production to produce for self-subsistence and often for market sale (Ellis 1998). In addition, Todaro (1989) defines smallholder farmers as owning small-based plots of land on which they grow subsistence crops and one or two cash crops relying almost exclusively on family labour. The difference between the two concepts lies in that the main feature of smallholder agricultural production is its loose, incomplete links with the market whereas that of subsistence agricultural production is that it is non-marketed production which is consumed within the household (Waugh, 2000).

According to Todaro and Smith (2009), in much of sub-Saharan Africa, agriculture is still in the subsistence stage. This poses a challenge in that production is mainly hand to mouth there is no surplus produce that is sold for income that can be used for other needs of the poor such as education their children and increasing their productivity. Failure of these farmers to increase their productivity is bound to affect their food security status in one way or another. Ukeje (undated) contends that the slow growth of agricultural productivity and food production has resulted in growing

food imports and food insecurity. In support of this view, Kirtsen and Van Zyl (1992) contended further that the provision of enough food at affordable prices remains the most essential role that the agricultural sector has to play.

Thus, unless smallholder agriculture reaches some degree of commercialisation, the impact of agricultural growth on food insecurity and poverty alleviation will remain limited (Machete, 2004). Smallholder agriculture is simply too important to employment, human welfare, and political stability in Sub-Saharan Africa to be either ignored or treated as just another small adjusting sector of a market economy (Delgado, 1995). In addition, Ashley and Maxwell (2001) state that there has been a decline in resource flows to the rural sector and this applies more to agriculture than it does to other sectors thereby impacting negatively on food security especially at the household level. Increasing the contribution of agriculture to poverty alleviation implies raising the incomes of smallholder farmers (Machete, 2004). Against this background it is imperative to discuss the agriculture condition in South Africa and how this has impacted food security.

2.5 Agriculture in South Africa

South African agriculture at a national macro-level is regarded as a sophisticated and successful sector, which is self-sufficient in most agricultural products and a net exporter (Antrobus and Antrobus, 2008). South Africa's agricultural sector is characterised by dualism: a modern commercial farming sector using hired farm workers alongside small-scale farmers, mostly in the former homeland areas (Agri-SETA, 2010). The former comprises of well-resourced large, mainly white owned and operated farms contributing to the whole value of agricultural production in the country (Mudhara, 2010). The author states further that the latter are resource-poor

small-holder farms owned and operated by black farmers who mainly produce for subsistence and lack institutional support. The sector is inflicted by all the vagaries of poverty, food insecurity, lack of employment, HIV/AIDS, among other things (Mudhara, 2010).

South Africa is divided into a number of farming regions according to climate, natural vegetation, soil type and farming practices (AgriSETA, 2010). Agricultural activities range from intensive crop production and mixed farming in winter rainfall and high summer rainfall areas to cattle ranching in the bushveld and sheep farming in more arid regions (AgriSETA, 2010). The main agricultural activities are crop production, mixed farming, cattle ranching and sheep farming, dairy farming, game ranching, aquaculture, beekeeping, and winemaking (GCIS, 2010). South Africa is the largest producer of maize, the staple food in the Southern African Development Community (SADC) as well as the main ingredient for animal feed. South Africa is said to be an industrialised country, it is predominantly rural and a large proportion of its population are, one way or the other, involved in some agriculture-related activity. 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's failure to feed its population at the household level despite it being food secure at the national level, its rural persistent poverty affecting millions of its citizens is a problem that prompts a broad economic discussion. The problem of South African agriculture especially in the Eastern Cape cannot be primarily explained by natural endowments. By any measure, the Eastern Cape Province is well endowed at least in part with a fertile soil, abundant water resources, labour and good climatic conditions. As a result this calls for a thorough analysis as to why smallholder farmers continue to suffer from

household food insecurity and poverty yet they are endowed with such agricultural resources.

2.5.1 Agriculture's contribution at the National Level

In monetary terms, agriculture's share of the economy has long since been outstripped by those of the mining and secondary industries. In 1960, agriculture contributed 11.1 percent of the GDP, down from about 20 percent in the 1930s (Nations' Encyclopedia, 2010). Currently, primary agriculture's share of the GDP has dropped to less about 5 percent (Agri-Seta, 2010), while the larger agro-food complex accounts for another 9 % (Department of Agriculture, 2001). In addition, agriculture has strong backward and forward linkages into the economy. Despite the farming industry's declining share of the Gross Domestic Product (GDP), it remains vital to the economy, development, and stability of the Southern African region.

2.5.2 National agriculture and food security statistics and indicators

South Africa has 2.76 million hectares of cultivated land, of which nearly 10.45 million hectares (82%) is used for commercial purposes (AgriSETA, 2010). A total of 0.79 million hectares (only 6.19%) is permanently under cultivation and more than 10.83 million hectares (85%) is rain-fed (National Treasury, 2010). Although 80% of South African land is used for agriculture and subsistence farming, only 12% is arable, in 2001 produced about one third of the total agricultural output (AgriSETA, 2010). The remainder of the land is used for extensive grazing (72 million hectares), nature conservation (11 million hectares), forestry (1 million hectares) and .other. (7 million hectares) (Feynes and Meyer 2003: 24). Agricultural irrigation represents close to 60% of the total water requirements in the country while contributing less than 1,5 percent of each of the GDP and of total employment (AgriSETA, 2010). A

quarter of agriculture's contribution to GDP comes from irrigation (Department of Agriculture, 2001). There are approximately 320 smallholder irrigation schemes in the former homeland areas. There is an estimated 3 million farmers, mostly in the communal areas of the former homelands, which produce food primarily to meet their family's needs (Department of Agriculture, 2001).

³When it comes to food security, the FAO report of 2008 noted that South Africa is largely deemed a food secure nation producing enough staple foods or having the capacity to import food, if needed in order to meet the basic nutritional requirements of its population though the same cannot be said about households in rural areas. Recent survey by Statistics South Africa (General Household Survey, 2009) reported that an estimated 20% of South African households have inadequate or severely inadequate food access. The General Household Survey (GHS) report indicates further that during 2008 food access problems were mostly serious in Free State where 33.5 % of the households have inadequate food access. They were followed by household in Kwazulu- Natal with 23%, Eastern cape 21,4 % and Mpumalanga 21,5 %. Limpopo (11,9 %) and Western Cape (14,5 %) had the least food security problems in 2008. Statistics South Africa (Stats SA, 2009) mid-year estimates indicate that South Africa had an estimated population of 49 million in 2009 with a population growth rate of 1.7 % per annum. National foods security indicators reveal that South Africa has been able to meet the food needs of its growing population over the past year. However, there are no clear statistics to ascertain that the food insecurity condition is the same at household level, especially in rural areas of South Africa. Literature by Demetre *et al* (2004), confirm South Africa's national food

³ This section is heavily dependent on the Department of Agriculture, Forestry and Fisheries report of 2011 authored by Du Toit.

secure status but suggests that more than 14 million people, or about 35 % of the population in the country are estimated to be vulnerable to food insecurity. It is also reckoned that as many as 1,5 million, or about one quarter, of children under the age of six are to have been stunted by malnutrition. This is supported by Machete *et al* (2004) in his study which confirms that food insecurity is more pervasive in rural areas. According to the report, the majority of poor people are found in rural areas with roughly 75% of those chronically poor.

Agriculture plays an important part in this regard and provincial development and for most provinces provides a source of employment as well as being a potential focus for increased employment and sustainable livelihoods (AgriSETA, 2010). In South Africa, agriculture therefore features as a key focus for economic development and growth in the all provinces. The main challenge for South African agriculture is to unlock the untapped potential that lies in its people as well as the low profitability and competitiveness that constrains the participation of a full spectrum of people and economic entities. The importance of the smallholder sector in the livelihoods of the rural household cannot be over emphasized, and the need to revitalise the sector so as to augment food security at the household level is similarly important. South Africa is characterized by high levels of poverty, especially in rural areas. Their incomes are constrained because the rural economy is not sufficiently vibrant to provide them with remunerative jobs or self-employment opportunities. The situation in the Eastern Cape Province is not dissimilar; except that a very large proportion of its population reside in rural areas (57%), particularly in the former Transkei and Ciskei, yet do not participate meaningfully in farming (SAIRR, 2007).

2.5.3 Agriculture at the provincial level

The Eastern Cape Province has six District Municipalities namely, Alfred Nzo, Amatole, Chris Hani, Ukhahlamba, OR Tambo and Cacadu; and the Nelson Mandela Metropole (Eastern Cape Development Plan, 2004-2014). The District Municipalities in turn consists of many magisterial districts spread around the country. The province, which is mainly rural, incorporates the former homeland areas of Transkei and Ciskei. The total population of the Eastern Cape estimated at 6, 9 million broken into 54% women and 46% men. The province has 55% unemployment rate (National Development Agency, 2008/2009).

In the Eastern Cape, two thirds of the population live in rural areas and the development of agriculture is a key factor in the development of the people's socio-economic livelihood. Development of agriculture will provide employment and an income to many families. The focus of the growth and development strategy is to promote household food security through expanded smallholder production, development of commercial agriculture through optimal use of agricultural land in the homelands, focus on land redistribution and tenure, and integration of homelands agriculture into mainstream provincial agricultural activity (Eastern Cape Growth Development Plan, 2004 - 2014

The South African Department of Agriculture in its quest to fast-track initiatives aimed at combating food insecurity in the Eastern Cape stating that a substantial number its inhabitants are situated in rural areas and as such the agricultural economy presents a key opportunity to graduate people out of the poverty trap. Key to the welfare of rural households a range of stakeholders such as Accelerated and Shared Growth Initiative-South Africa in the Eastern Cape (AsgiSa EC), Eastern

Cape Provincial Growth and Development (PGDP), Afesis Corplan and Eastern Cape Socio Economic Consultative Council (ECSECC) are involved in the development of the Eastern Cape's agricultural sector and they have voiced their views regarding the sector. For example AsgiSA EC is aimed at improving rural livelihoods through of its people through unlocking the dormant potential of the land. In addition, AsgiSA EC asserts that the optimal use of arable land in the province could spell the difference between wealth creation and sinking further into poverty and that the current global food shortage which is pushing up South African food prices could have been minimised if the country's rural residents grew their own crops. AsgiSA EC not only aims at exploiting the Eastern Cape's agricultural potential, but to ensure that beneficiation or value adding activities through the processing of agricultural produce of the rural communities is established.

Economically, the Eastern Cape has excellent agricultural and forest potential, yet this potential remain untapped. The EC province is further characterised by extreme levels of uneven development. This is evident through a number of dualisms: between the two urban industrial manufacturing centres and the poverty stricken and underdeveloped rural hinterland particularly in the former homeland areas of the Transkei and Ciskei; between a developed commercial farming sector and a floundering subsistence agricultural sector. The Eastern Cape has immense agricultural potential, which bodes well for food security among the province's poorest of the poor. Despite this positive outlook, the province is still characterised by high levels of poverty, unemployment, household food insecurity and poor infrastructure, especially in districts found in the former Ciskei and Transkei homelands such as the OR Tambo and Alfred Nzo municipalities. In OR Tambo municipality particularly, more than 78, 2% of people live in extreme poverty.

Women constitute a larger proportion (54%) of the provincial population than the national average (52%), the high proportion of women is a reflection of the migrant labour system and is particularly visible in rural labour supplying areas such as Alfred Nzo and OR Tambo, which have recorded levels higher even than the provincial average standing at 55% and 56% respectively (EC Growth and Development Plan, 2004-2014).

Drawing from various scholars, there is ample evidence to show that much prominence towards agricultural development has been given to small scale farmers as a homogeneous group. As a result, discrimination became the food for the day. In the main, women farmers are often neglected or are left lagging behind their counterparts in agricultural development. One consequence of this neglect is the appalling state of food insecurity at the household level. Thus, in addressing agricultural development principal attention must be given to the challenges of marginalized groups. Under this arrangement, the challenges of women farmers should be addressed so as to overcome past and present discrimination. Endorsing this view is the 2008 World Development Report, which showed that agriculture is a critical source of livelihoods for women in many developing countries, and a key pathway out of poverty (World Bank, 2008). The report also portrayed women in many rural societies as especially constrained by a lack of access to inputs, productive resources, and services. The report further articulate that, also women often lack incentives to invest given the greater vulnerability and proportionately greater exposure to risk that result from having fewer assets, and the very real likelihood that once their niche in the value chain becomes commercially profitable it will be expropriated by men. Moreover, given the fact that most subsistence farmers are women as is the case in Limpopo Province for example where women constitute

80% of the subsistence farmers, neglecting this sector will be detrimental especially to these often vulnerable women. Simply put, by neglecting the subsistence sector, the government is in actual fact neglecting women.

Giving much emphasis to the marginalized group should not be mistaken to imply that only women are targeted. For actions, projects or policies to be more effective, they should be designed in such an approach that they reach both men and women, taking their gender-differentiated roles and opportunities into account. Evidence suggests that getting men's support is critical to, and often necessary for the success of gender-responsive projects. Thus, full and equal participation of women and men in, and their full enjoyment of the benefits from agricultural development are essential for eradicating food insecurity and rural poverty and enhancing agricultural and rural development (FAO, 2007).

Studies conducted in the Eastern Cape Province in South Africa focusing on rural livelihoods, gives an impression of a "virtual collapse of agriculture" and subsequent dependence of rural people on non-agricultural incomes, which include wages, social pensions, remittances and, to a smaller extent informal economic activities (Manona, 1988). This view is shared by Hadju (2003), based on a similar study conducted in Cutwini village in Lusikisiki, which suggests an increasing reliance on jobs instead of environment, and with agriculture not presenting an option in families lacking the tradition for it.

The community driven approach to food security seem to be playing a crucial role in dealing with context-specific challenges of different nature. Based on the definition of food security, questions of access, healthy, available, affordable food are problematic in many ways. In other ways project to address food security challenges

come in different packages ranging from awareness programmes, emphasising on local healthy food, enhancing the food knowledge and skills of people, developing and crafting policies that support food security and a whole host of other possible strategies. Other projects can intervene directly through agriculture especially in rural contexts. That agriculture has the capacity to help produce local foods, produce convenient food, enhance the variety of food, provide employment, produce cheap local food and raise extra income for the people directly involved as farmers and employees. This give people disposal income to purchase food they could otherwise cannot produce. In other words, production has the capacity to build a sustainable food system that maximises self-reliance and social justice.

However, it is particularly challenging to ensure access to everyone in rural communities to nutritious food. But, when it comes to hunger alleviation, food production and distribution can play a critical roles. Food security problems can help unsure availability, accessibility, adequacy and agencies like actors, policies and processes that enable actions. In this market based economy it is important that non-members of community agricultural projects have the capacity mainly in terms of income to purchase food. Community development projects in the form of agricultural projects have proved to enhance the purchasing power of the community members through creating jobs where these community members are paid mostly in cash and sometimes in kind thereby reducing their food insecurity status. According to Annan (2011) food insecurity is caused by a complex interplay of factors, some outside the direct control of governments; but there is now a growing recognition that institutions, rules and political processes play an important role in enabling or constraining particular pathways to sustainable agricultural production growth, increased food and nutrition security, and better livelihoods and wellbeing for all. The

implication here is that the state or government has a role to play when it comes to the food security issue. Many of the services required to promote smallholder agricultural development are public goods. Therefore, little progress can be expected in achieving the objectives of agricultural development without government/ state involvement (FAO 2002). Accordingly, the next section discusses the role of the state/government towards agricultural development.

2.5 Government involvement and agricultural development.

According to Todaro and Smith (2009) one of the most important challenges for agricultural development is to get the role of the government right. These authors reveal that in the 1980s, a major development theme of reducing the intervention of the government in agriculture brought more harm than good. Although agriculture is generally thought of as a perfectly competitive activity, this does not mean that there are no market failures and no role for government (Todaro and Smith, 2009). Despite many failures, sometimes government has relatively effective roles, as in Asia during its green revolution (World Bank, 2008). For Evans, 'government involvement is a given', however, the appropriate question to pose when discussing the role of the government is not 'how much' but 'what kind' of government involvement is taking place in a particular economy and society and what are the effects of such involvement (Buthelezi, 2009). Recently, a number of studies have pointed to the growing gap that exists between ordinary people, especially the poor, and the institutions which affect their lives, especially government (Gaventa, 2004). For instance, the 2001 World Bank Report found out that many poor people around the globe perceive large institutions, especially those of the state to be distant and unaccountable. Hence, it is this shows that regardless of its failure the government has plays an indispensable role in the lives of the poor especially through its

involvement in agricultural development that has up to date been minimal. In addition, every State is obliged to ensure for everyone under its jurisdiction access to the minimum essential food which is sufficient, nutritionally adequate and safe, to ensure their freedom from hunger. Violations of the covenant occur when a State fails to ensure the satisfaction of, at the very least, the minimum essential level required to be free from hunger (Food and Agriculture Organization of the United Nations, 2009). According to Beer (1975), food is an instrument of power and hence government must be concerned with how to increase its availability because the shortage of food weakens the power of the state.

The government has a role in agricultural development simply because of its necessary role in poverty alleviation and for the reason that a large majority of the world's poor are still farmers (Todaro and Smith, 2009). Poverty prevents farmers from taking advantage of opportunities that could help them escape the poverty vicious cycle as well as food security. According to Ashley and Maxwell, poverty is not only widespread in rural areas, but most poverty is rural, yet this core problem appears to be neglected. A key role for the government then is to ensure that growth in agriculture is shared by the poor. This comes as a result of the fact that in some countries (for example Brazil and Pakistan), impressive agricultural growth and development has occurred without the poor receiving proportional benefits (Todaro and Smith, 2009).

The government plays a crucial role in ensuring that its people have sound food security. This is because smallholder agricultural development and food security require a governance regime that will be respected by all parties and that puts the interest and experience of the most affected at the fore, the poor (An African

Democracy Institute, undated). According to Alence (2004), in developmental terms, distinct governance institutions in the rest of sub-Saharan Africa have been found to be crucial for enhancing the state's performance in development process. In agricultural development literature much emphasis has been placed on the inputs side of agriculture growth with little attention being paid to the instruments, institutions and processes in the agriculture process has further done little to change the relations between government and smallholder farmers. The exclusion of the smallholder producers' voice in the design of all these intervention efforts is partly to blame for the focus on one end of the process (Idasa, Undated).⁴

This failure by technocrats to look into farming 'wealth' that the poor communities are endowed with has led to a vicious cycle of poverty that is not easy to break out of. The many assumptions about what poor farmers need have thus done more harm than good. However, a 'new' political economy approach evaluates the role and interaction between various interest groups in society, and state or government is considered a special interest group in its own right. Particularly, in sub Saharan Africa, improved national governance is most needed to reduce hunger (Paarlberg, 2002).

In the case of the South African state, through its government it purports that food security is fundamental for its citizens. The government says that "to attain universal physical, social, economic access to sufficient, safe and nutritious food by all South Africans at all times to meet the dietary and food preferences for an active and

⁴ For instance, the Luapula province officials in Zambia ordered donkeys for the local community so they could use in ploughing but the community ignored the donkeys and no one touched them. When the community was asked why they were not interested in the donkeys they replied that they never wanted donkeys for ploughing and that they should have been consulted first before the donkeys were brought to the community. To the Luapula community donkeys are a sign of extreme poverty and there is a stigma associated with owning and using them (Idasa, undated)

health lifestyle” as adapted from FAO, 2010. South Africa is also a signatory to the United Nations Millennium Development Goals (MDG) of which of the goals aims to eradicate hunger, malnutrition and food insecurity by 2015. To deal with the problems of food insecurity in the country the government put in place various mechanisms to ensure food security across the country. The government joined hands with civil society to share information and learn from each other for the benefit of the poor masses.

The government has been investing in agricultural productivity, infrastructure, and social protection and regulating food markets. This is because the government understands that food security underpins all other development. Focus has been on increasing availability and improving trade and while also increasing poor people’s ability to access food. Agriculture contributes less than 4% to the South African GDP and a total of 10% of reported employment (OECD, 2006). Agriculture is diversified with field crops, livestock and horticulture being the main sectors. In the post-apartheid agricultural reformation, the government came up with a package of measures to address past injustices like land distribution, agricultural support programmes, and the likes of broad based black economic empowerment. To date very little have been achieved in terms of land distribution. Resuscitating agriculture in rural communities has proven to be an enormous challenge as very few people in the Eastern Cape Province are into agriculture. It is important to underline that even though states have the mandate to provide food for their people, they are not legally culpable if they fail to ensure food security in the country. Thus, given this, it is important for the people through community projects to work for their food production. They cannot wait for the state to fulfil this role; otherwise reliance on the state alone will hardly ensure food security for the people.

The greatest asset that poor communities have to offer is their labour capacity as such this asset needs to be harnessed through actions of local government that will provide options for poverty alleviation. The local government does this by being a facilitator of community development with the community in the driving seat of their own development. It is vital that local governments as important as they are in rural development, they should discard the view that poor communities are liabilities and a burden to economic growth in their areas. Instead, they should view these impoverished communities as untapped resources and assets that can be mobilised for production, job creation and new economic opportunities (Abrahams, 2005). Sharing similar sentiments with Abrahams is Weiss (2002) who states that for local government to deal effectively with the tension between the new pro-poor and the market led approaches to community development, they need to move away from conventional ways of dealing with the poor in their areas which usually amount to feeding and housing, not empowerment which is what is vital in developing the poor communities. What the governments need to do is to be innovative and find alternative ways to provide the poor with amenities without shirking their responsibility to their community.

2.6 Conclusion

This chapter started by discussing the three key theories underpinning this study which are Amartya Sen's entitlement approach, sustainable livelihoods approach and community driven approach. It went further to articulate the question of agriculture development and growth and how growth in agriculture addresses the food insecurity crisis. The current status of agriculture in South Africa was also addressed as well as the role of the state in ensuring food security across Africa and particularly in South Africa.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

The purpose of this study is to determine the role of community development projects in enhancing food security at the community and household level in Zanyokwe. The aim of this chapter is to give a detailed description of the study area and research methodology collection. First, the chapter starts by providing a spatial, socio-economic, and biophysical description of the study area, within a broader context. That is it will elaborate on South Africa, Eastern Cape Province and the municipalities in which Zanyokwe falls under. The history of the Zanyokwe irrigation scheme is also rendered. This chapter will then move on to giving a detailed discussion on the different research methodologies. This helps in justifying why the researcher ended up adopting one research methodology over another. A comprehensive discussion of the research methods that support the adopted research methodology will be rendered as well.

The study also made use of secondary data which entails the use of government documents, books, journals and scholarly articles. This implies that both primary and secondary sources were used in collecting data for this study. Primary data was gathered as an attempt to fill the knowledge gap in literature with regards to the variables under study. Specifically, primary data was gathered through field surveys which entailed in-depth interviews with a representative from the Department of Rural Development and Agrarian Reform as well as focus group discussions with a sample of selected farmers from the six villages that form part of the larger Zanyokwe community.

The next section deals with the presentation of the spatial, socio-economic, and biophysical description of the study area, within the broader context of the country, province, district municipality and local municipality within which it is located

3.2 Description of the study area

The Republic of South Africa (RSA) occupies the southern tip of the African continent. According to the Encyclopaedia of the World (2010), South Africa stretches latitudinal from 22 degrees to 35 degrees South and longitudinally from 17 degrees to 33 degrees East with a surface area of 1 219 090 square kilometres. The country shares boundaries with Namibia, Botswana, Zimbabwe, Mozambique and Swaziland. There is also the republic of Lesotho which is completely enclosed by South Africa. The other parts of the country are bordered by the coastline with the Indian Ocean on the South and East and Atlantic Ocean to the West, as shown in the map in figure 1.



Figure 1: Map of South Africa (Google Maps)

South Africa is further divided into nine provinces, with their own legislature, executive councils and premier. These provinces are KwaZulu Natal, Northern Cape, Eastern Cape, Western Cape, Gauteng, North West, Limpopo and Mpumalanga as illustrated in figure 3.1. From the map in figure 3.1 it can also be seen that the neighbours are the Atlantic and Indian oceans, which meet at the south-western corner of the continent.

3.2.1 Climatic conditions

Although the country is classified as semi-arid, it has considerable variation in climate. The subtropical location, on either side of 30° S, accounts for the warm temperate conditions so typical of South Africa, making it a popular destination for foreign tourists. Being in the southern hemisphere, the seasons in South Africa are opposite to those of Europe and North America. The country also falls squarely within the subtropical belt of high pressure, making it dry with an abundance of sunshine. Although Durban (east coast) and Port Nolloth (west coast) lie more or less on the same latitude, there is a difference of at least 6° C in their mean annual temperatures (South Africa Year book, 2012).

According to the South African Weather Service the hottest place in South Africa is Letaba (Limpopo), with a mean annual temperature of 23,3° C and an average annual maximum temperature of 35° C. The coldest place in South Africa is Buffelsfontein near Molteno (Eastern Cape), with a mean annual temperature of 11,3° C and an average annual minimum temperature of 2,8° C. The highest ever rainfall in one year was measured at Jonkershoek in the Western Cape (3 874 mm in 1950). The wettest place in South Africa is Matiwa, with an average annual rainfall of 2 004 mm (calculated over a 60-year period). The driest place in South Africa is Alexander Bay in the Northern Cape, with an average annual rainfall of only 46 mm. The windiest place in South Africa is Cape Point (Western Cape), which experiences only 2% of all hours in the year with calm conditions. The annual average wind speed is 14, 1 m/s, with 42, 1% of the wind speeds greater than 8 m/s. The strongest wind gust ever in South Africa occurred at Beaufort West (Western Cape) on 16 May 1984 and measured 186 km/h.

Temperature conditions in South Africa are characterised by three main features: they tend to be lower than in other regions at similar latitudes, for example, Australia, due primarily to the greater elevation of the subcontinent above sea level; despite a latitudinal span of 13°, average annual temperatures are remarkably uniform throughout the country; and there is a striking contrast between temperatures on the east and west coasts. Owing to the increase in the height of the plateau towards the north-east, there is hardly any increase in temperature from south to north. Temperatures above 32° C are fairly common in summer, and frequently exceed 38° C in the lower Orange River Valley and the Mpumalanga Lowveld (South Africa Year book, 2012).+

3.2.2 Rainfall

South Africa has an average annual rainfall of 450 mm, compared with a world average of 860 mm. About 65% of the country receives less than 500 mm per year, which is generally accepted as the minimum amount required for successful dry-land farming (South Africa Year book, 2012). South Africa's rainfall is unreliable and unpredictable. Large fluctuations in the average annual rainfall are the rule rather than the exception in most areas. About 21% of the country, mainly the arid west, receives less than 200 mm per year. Below-average annual rainfall is more often recorded than above-average total annual rainfall. South Africa is periodically afflicted by drastic and prolonged droughts, which often end in severe floods. In Cape Town, the capital city of the Western Cape, the average rainfall is highest in the winter months, while in the capital cities of the other eight provinces, the average rainfall is highest during summer (South Africa Yearbook 2011/12).

3.3 Profile of the study area

This research took place in the Eastern Cape Province (ECP) which comprises of the former homelands Transkei and Ciskei. The province lies in the south eastern coast of South Africa and is divided into six district municipalities, namely: Alfred Nzo, Amatole, Cacadu, Chris Hani, O.R. Tambo, and UKhahlamba, and a metropolitan area called Nelson Mandela Bay. The province has approximately 6 829 958 according to according to Statistics South Africa (2011). Its provincial capital is Bisho, and isiXhosa is the main language used by 83, 4% of the provincial population. The Eastern Cape Province is the second-largest province in terms of land size after Northern Cape, taking up 13, 9% of South Africa's area. The Eastern Cape Province map is presented in figure 2.



Figure 2: Map of the Eastern Cape Province (Google Maps)

Eastern Cape Province is largely rural with more than 60 % of its populace residing in the rural areas. Agriculture is an important pillar of the Eastern Cape economy and although it has been deteriorating of late (Eastern Cape Economic Profile and Outlook, 2010). Rural households in the Eastern Cape Province eke out a living mainly from remittances and social grants, and minimal households from subsistence farming that is embedded with its short comings. To be precise, in the EC the agricultural potential is there however it is largely underutilised in most parts. In the Zanyokwe area at least the irrigation scheme seem to contribute to the livelihoods of the rural people. The underutilisation of the agriculture potential which remains untapped into has exacerbated poverty which is a principal root cause of food insecurity at the community and household level. It should be noted that despite the minimal contribution of agriculture to the national and provincial gross domestic product it is and will always be a vital sector especially in rural aareas where the majority of people live. It should be noted though that agriculture alone cannot take up the slack, however, the importance of non-farm activities is not taken into consideration.

The next section looks at Amahlathi local municipality in which Zanyokwe irrigation scheme is located.

3.3.1 Amahlathi Local Municipality

Amahlathi local municipality falls under the Amatole district municipality of the Eastern Cape Province of the republic of South Africa. The Amahlathi municipality is situated to the south of the Chris Hani municipality. It covers a cluster of Tsomo, Cathcart, King-Kei, Keiskammahoek and Stutterheim. The main economic activities

in the district are agriculture followed by tourism. The agricultural activities include forestry, crop farming, and livestock production. The municipality's primary resource is its favourable climate and fertile soils which remains untapped into. In addition agriculture is still a potential growth area. The study area, Zanyokwe Irrigation Scheme falls under Amahlathi municipality.

Zanyokwe Irrigation Scheme (ZIS) is situated in the Keiskammahoek district, about 30 km west of King Williams Town. The scheme is in Zanyokwe across the Keiskammahoek River (Ngemntu, 2010). The scheme is comprised of six villages which are Lenye, Zingcuka, Burnshill, Kamma Furrow, Lower Ngqumeya and Zanyokwe. The area is characterized by the warm temperature and sub-humid climate with an annual average summer rainfall of 590 mm per annum (Ngemntu, 2010). The Sandile dam is the major source of water for this scheme. Figure 3 presents the map of Zanyokwe irrigation scheme.

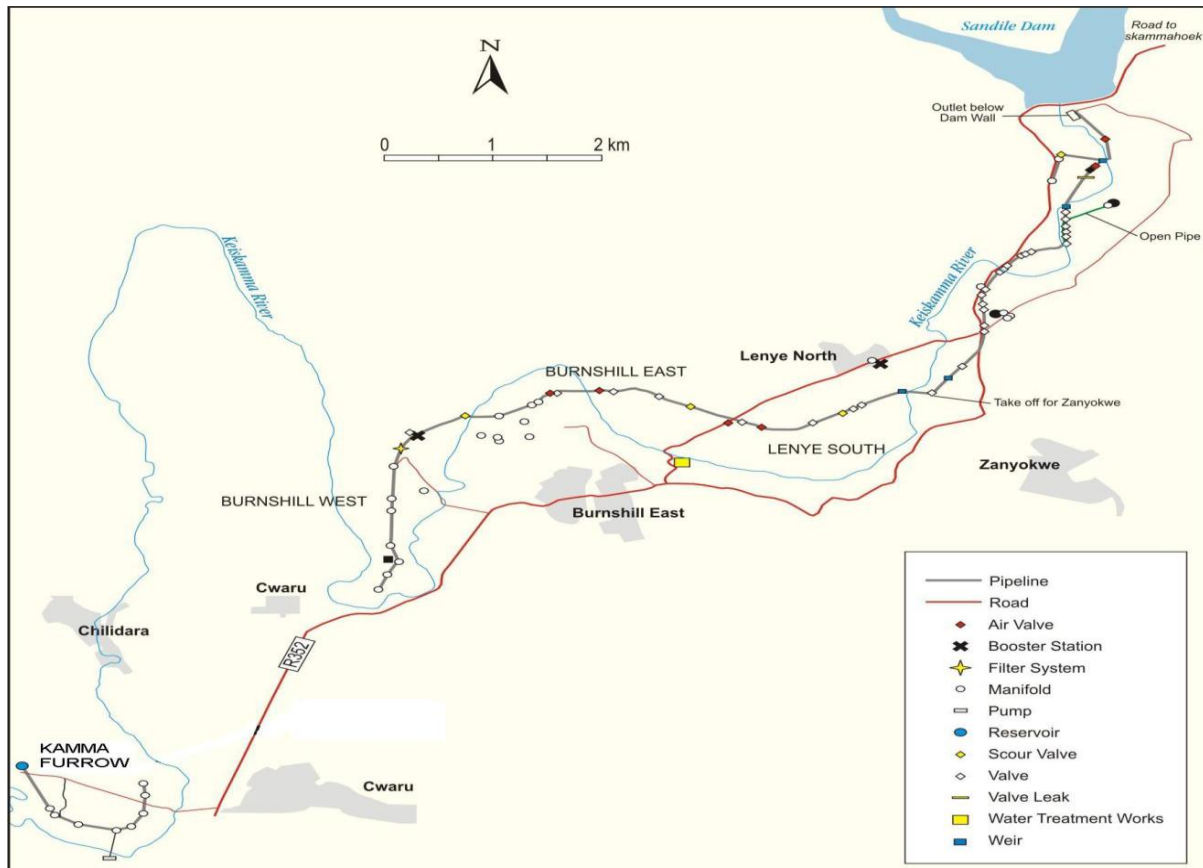


Figure 3: Map of the Zanyokwe irrigation Scheme (Yokwe, 2005).

3.4 History of the Zanyokwe irrigation scheme⁵

The history of Zanyokwe irrigation scheme (ZIS) can be traced from 1983 when the construction of Sandile dam was completed and it was named after the Zanyokwe village. The ZIS is a typical development project planned by the Ciskei Government (CG) in consultation with community in an attempt to improve the living standards and job opportunities around that community (Ntsonto, 2005). The CG negotiated with the Zanyokwe residents to establish an irrigation scheme in their arable lands (Makara, 2010). This was an intended regional water project, multipurpose in terms of supplying urban centres and villages located within the Keiskamma river basin. In particular, the dam was supposed to supply Dimbabza, Middledrift, Fot Cox

⁵ This Historical overview of the Zanyokwe irrigation scheme is heavily depended on the report by Asgisa Eastern Cape for the Department of Rural Development and Agrarian Reform in the Amathole District Municipality. This report gives detailed information on the study area, where possible other sources are used.

Agricultural College, Ntaba ka Ndoda, Belembu Airport and other villages within the Keiskamma basin. The Irrigation Scheme No. 7 ultimately led to the development of the Zanyokwe Irrigation Scheme.

Planning of the project began in 1983 by Loxton, Venn and Associates and went through several revisions until 1985, when Cis-Carmel, a subsidiary of the Israel company Agri-Carmel, was engaged by the then Ciskei Government to prepare a final version and implement the project (Asgisa EC, 2011). The same report explains further that, the Cis-Carmel plan was based on estate-type agriculture and it required the release of land by the individuals in the communities that owned the rights to it. At this stage, the Development Bank of South Africa (DBSA), was requested to fund the capital elements of the project and made it a condition that the land would ultimately be transferred from estate farming back to the local farmers to operate for their own account (Asgisa EC, 2011). The report states further that, the land holders affected by the scheme had refused to surrender their holdings for consolidation into an estate project and the present pattern of land holdings on the schemes still reflects the original.

Currently, the project consists of 412 hectares of irrigated land in a series of blocks running from Sandile dam to the R63 at Middeldrift. It is estimated that 180 hectares of land is being used by farmers within a cooperative structure (Asgisa EC, 2011). It is important to underline that much of the funding to the project comes from the public sector in form of grants. There are six cooperatives which form a secondary coop which is not involved in production, but supports and coordinates the activities of the producers' cooperatives. It also provides technical and financial support and project management to farmers. The secondary cooperative is funded by the

provincial and national departments of agriculture. It, in turn, channels the funding to the primary cooperatives and also helps them rise their own funding. In support of this project, the Department of Local Government municipal infrastructure grant helped in ensuring access to roads by upgrading and regular maintenance.

Much of the products that are produced by the project range from cabbages, carrots, summer potatoes, green peppers, maize, onions, spinach, butternut and paprika. Other produces are deciduous fruits like peaches, grains and pasture crops. Most of these producers are determined by the market demands, both local and external. Several outside agencies ask the project members to produce crops for their own purposed. These have high value for they employ many people from the surrounding communities.

The ZIS has several advantages with regard to its proximity to the Fort Cox Agricultural College. It has the potential to provide support to farmers on the scheme and provide learning opportunities for its students, particularly in achieving food security at village level. This engagement of teaching, commercial farming and village production will help improve food security at village people. Another supporter is the Fort Hare Agriculture Faculty but to date there is very little support from this institution.

Having outlined the history of the Zanyokwe irrigation scheme it is important to present the current status of the scheme as well. Thus the next section presents the present state of the Zanyokwe project.

3.5 Present state of the Zanyokwe irrigation project

Currently, the project consists of 412 hectares of irrigated land in a series of blocks running from Sandile dam to the R63 at Middledrift and it is estimated that 180 ha of

land is being used by farmers within a cooperative structure (Asgisa EC, 2011). There are six cooperatives which form a secondary coop which is not involved in production, but supports and coordinates the activities of the producers' cooperatives. It also provides technical and financial support and project management to farmers. The secondary cooperative is funded by the provincial and national departments of agriculture. The secondary cooperative then channels the funding to the primary cooperatives and also helps them rise their own funding. In support of this project, the department of local government helped in ensuring access to roads by upgrading and regular maintenance, however, road infrastructure is still a challenge.

As alluded to earlier on, the main focus of this study is to determine the potential role that community development projects has on reducing food insecurity. Accordingly, it is expedient that the research adopts a way for such a determination. This is what is termed 'research methodology'. The next section unpacks what a research methodology is all about as well as the types of research methodologies commonly used in social enquiry.

3.6 Research Methodology

Research methodology is generally classified along the lines of being quantitative, qualitative and mixed methodology or triangulation. Triangulation uses both that both qualitative and quantitative.

Quantitative and qualitative research methodologies are different in many ways, such as the research output they produce also tends to be different (Neuman, 2004) as such it is important to consider these differences between the research methodologies so as to adopt the relevant one for the phenomenon under study.

According to Dawson (2002) qualitative research explores attitudes, behaviours and experiences through such research methods as interviews or focus groups. The qualitative methodology attempts to get an in-depth opinion or response from the respondents by means of giving importance to the behaviour and experiences. As a result of giving importance to the behaviour and experiences of the respondents which takes a long time to acquire fewer respondents take part in qualitative research however the contact with the respondents tend to last a lot longer as compared to quantitative research.

The quantitative methodology describes, tests, and examines cause and effect relationships, using a deductive process of knowledge attainment (Burns & Grove, 1987). Whereas, qualitative methodologies test theory deductively from existing knowledge, through developing hypothesized relationships and proposed outcomes for study, qualitative researchers are guided by certain ideas, perspectives or hunches regarding the subject to be investigated (Cormack, 1991). Qualitative research is influenced by the 'paradigm' of social constructionism, description and interpretation. In addition, quantitative research mainly generates statistics through the use of large survey research, using methods such as questionnaires or structured interviews (Dawson, 2002). Dawson also notes that the quantitative type of research reaches many more people than the qualitative research, however, the contact with those people is much quicker than it is in qualitative research.

The merit of qualitative methodology lies in the fact that it is holistic, flexible and is more suited for a deeper understanding of phenomena. To underscore this point, it is

regarded as valid for understanding of the subject as could be achieved through a more rigid approach (Duffy, 1986). It also allows subjects to raise issues and topics which the researcher might not have included in a structured research design, adding to the quality of data collected. However, a weakness of qualitative methodology is the possible effect of the researchers' presence on study subjects. As a result, the relationship between the researcher and participants may actually distort the findings. It is imperative to underline that a research methodology comprises of, population sample, sampling procedure, data collection and data analysis techniques used to conduct the study.

This study employed a qualitative research methodology. The main reason for adopting this methodology is that it solicits rich information about the community projects from various sources. Qualitative research makes it easier for the researcher to flexibly explore the field with the aim of assessing specific information to come up with accurate results. Qualitative inquiry employs different knowledge claims, strategies of inquiry, and methods of data collection and analysis.

Quantitative methodology deals with numerical descriptions of research data. It is basically used for empirical studies for it is associated with 'empiricism' and 'positivism' (Burns and Grove, 1987). According to Cresswell (2003) a quantitative research procedure uses post-positivist claims for developing knowledge. Tewksbury (2009) posit that quantitative research is typically considered to be the more "scientific" approach to doing social science than the qualitative approach. Tewksbury goes further to say that, the focus of quantitative research is on using specific definitions and carefully operationalizing what particular concepts and variables mean.

The history of quantitative methodologies can be traced from natural sciences. It is predicated upon the argument that things should be measured and the relationship between cause and effect is easily discernible. In other words, it argues that research should be objective, systematic and replicable under the same conditions. The outcome should be depicted by numerical data that shows the relationship between variables in a clear way. In other words, quantitative methodology does the following: describes tests and examines cause and effect relationships (Burns and Grove, 1987). The other characteristic of quantitative methodology is that it tests a theory deductively. That is, it deduces a theory from existing knowledge. Deductive logic is used and the design is suitable for phenomena that have been well developed with regard to theory and concept.

The strengths or advantages of quantitative research methodology are numerous. Firstly, it is a widely used methodology because according to Worrall (2000: 354) it has strength in its predictive advantages that the qualitative approach lacks (as cited in Tewksbury, 2009). One significant advantage of the quantitative methodology is that it reduces personal implication of the researcher into a study to a negligible minimum. Since it seeks to be scientific like what is done in natural sciences, quantitative research has very little intrusion into the findings of the research by the researcher. Even more important that methodology has understandable methods and logical structure that makes it replicable with a significant degree of confidence.

Secondly, Worrall (2000) underlines this by saying that the ability of the approach to make correct predictions is an outstanding characteristic of the quantitative

methodology. Thirdly, a quantitative methodology is more suitable for studies that require quantitative answers. That is to say, when people need to know a phenomenon in terms of figures, it is a more suitable approach than a qualitative approach because it does not yield figures. In short, qualitative approach cannot give us quantitative answers. Quantitative approaches are also succinct and parsimonious relative to qualitative approaches. Fourth, quantitative approach is stronger than a qualitative approach for testing a hypothesis because it emphasises on the relationship between variables, the quantitative approach can easily help us approve or disapprove a hypothesis. Fifth, quantitative approaches are relatively fast and economical as a whole compared to qualitative approaches. This is because they are specific and bounded unlike qualitative approaches. Thus, when resources are limited for an empirical study, quantitative methodologies tend to be cheap.

Quantitative methodologies are not without criticism. First, they are not suitable for in-depth studies that seek to unpack people's opinions and perceptions of the people. This is because it is limited to focusing on few variables, whereas in a real world, more than two variables might be interacting at a time. For instance, when examining the issue of food insecurity more than two variables have an effect on it. Food security is not only affected by the failure of agriculture to produce food but by lack of purchasing power for the rural poor to purchase the available food. In other words it does not pay attention to other variables that may emerge during a research study. Put differently, quantitative approach is inflexible and relatively artificial. Because it provides very little understanding of a phenomenon it is weak for generating theories. Further, the emphasis by the approach on objectivity and detachment from the research by the researcher is particularly challenging. It is difficult for a researcher to carry out a study dispassionately and with no bias. The

argument is that regardless of its emphasis on objectivity all research is somewhat subjective epistemologically speaking.

Thirdly, the quantitative approach is ill-suited for addressing tough and complex research questions. Because it needs to start with an existing theory it is not suited for exploratory research. In the same line, its assumption of a linear understanding of reality pays a lip service to the complexity of certain phenomena. Furthermore, because it is highly structured it is thus not well suited for studying highly unstructured issues. Thus highly structured processes limit the flexibility which is necessary in social science studies. The quantitative approach is not strong in capturing an array of factors relating to human interaction. In other words it does not give richer perspectives. Cohen (1987) contends that quantitative research is research that employs empirical methods and empirical statements which are expressed in numerical terms.

Quantitative and qualitative research methodologies are not the only methodologies that can or are adopted by researcher when collecting data. Gaining an understanding of the strengths and weaknesses of both quantitative and qualitative research methodology was done so as to put a researcher in a position to mix or combine strategies and to use what Johnson and Turner (2003) call the fundamental principle of mixed research. Thus, the third research methodology is a mixture of the quantitative research methodology and qualitative research methodology hence the name mixed method or triangulation. According to this mixed approach researchers should collect multiple data using different strategies, approaches, and methods in such a way that the resulting mixture or combination is likely to result in complementary strengths and non-overlapping weaknesses (Brewer & Hunter, 1989). Triangulation refers to the use of more than one approach to a research in

order to enhance confidence in the ensuing findings. This mixed method approach is becoming a rapidly developing field of social science methodology. As a result of the weaknesses inherent in both qualitative and quantitative methodologies, it is the mixed-method approach that can compensate for their mutual and overlapping weaknesses. Basically, when social scientists are faced with the problem of generalising and understanding ideas, they are better off incorporating both approaches whenever possible. In other words, this is a robust approach that credible social science research recognizes the benefits of gaining the best of both research worlds through the combination of quantitative and qualitative techniques. The results from the qualitative study can then be the basis for the questionnaire's development that leads to the quantitative study. The understanding of both paradigms helped in identifying the ways these divergent approaches complement each other.

The strength of the approach is that it generates quantitative and qualitative data. It employs both flexible and controlled designs. What is more, it adopts both qualitative and quantitative data. Qualitative approach might be used to understand the meaning of the numbers produced by quantitative approach. In this regard, the mixed approach can help address the central challenge of using a either qualitative or quantitative approach, because reality is complex, thus a mixed approach is credible. This study could not adopt the mixed approach because of the paucity of resources for carrying out such a study.

This following section delves on the instruments or tools used for data collections commonly known as research methods. The difference between research methodology and research methods lies in that research methodology is the overall approach to studying a certain topic whereas research methods are tools that a

researcher uses to collect data. The next section delves on discussing these tools that were used for data collection.

3.6.1 Population and Sample size

In survey research, care must be taken in selecting respondents and in formulating the questions to be asked (Black, 1988). The term population simply refers to the entire group whose characteristics are to be estimated by using a selected group or sample whose characteristics are to be measured. Babbie (2001) defines a population as people or items with the characteristic one wish to understand, while a sample is a finite part of a statistical population whose properties are studied to gain information about the whole. In other words, a population consists of all those people with the characteristics a researcher wants to study. Most populations are too large and inaccessible to collect information on all members and for this reason, a sample is often drawn. A sample is a representative sub-population of limited number of cases drawn from the larger population. The sample must be selected carefully if it is to have the same basic characteristics as the population from which it is drawn, the survey findings cannot be used to make generalisations about the entire population.

The population of this study is the farmers and the agriculture extension officers of the Zanyokwe irrigation scheme. This method is akin to the purposive or judgmental sampling technique that involves the conscious selection by the researcher of certain participants to be included in the study (Burns and Grove, 2003). In this study three quarters of the Zanyokwe irrigation project farmers were taken as a sample. The researcher had intended to interview all the farmers however this was not achievable as some farmers were busy with circumcision preparations for their boys. Purposive sampling is applied in this study as a sampling method.

Most populations are too large and inaccessible to collect information on all members. For this reason, a sample is drawn. The main function of the sample is to allow the researchers to conduct the study to individuals from the population so that the results of their study can be used to derive conclusions that will apply to the entire population. However, caution was taken when sampling to avoid choosing respondents without the necessary characteristics needed so as to eliminate the misrepresentation of the results and findings from this study. Discussions were conducted in the form of focus groups with the farmers, those that belonged to a cooperative and the non-cooperative member farmers. An in depth interview was also done with the agricultural extension officer.

3.6.2 Sampling Procedure

As mentioned in the research methodology section, this study adopted a qualitative research methodology. Qualitative research typically, although not exclusively employs nonprobability sampling techniques (Murphy et al., 1998). This means that it is not usually intended that the findings of a particular study will be generalizable, but will apply only to the specific population under investigation. According to Macnee and McCabe (2004) qualitative sampling strategies are fluid and flexible and are intentionally and thoughtfully revised as the data analysis suggests an exploration of new avenues or aspects that need additional focus as is the case with the food security phenomenon.

In this study, non-random sampling procedure called purposive sampling was employed in this study. Purposive sampling is a sampling procedure based on the judgement of the researcher that the sample has the typical elements which contain the main attributes of the population (Alson and Bowles, 2003) and is almost

synonymous with qualitative research, which is the methodology underpinning this study. Purposive sampling is used mainly in a study where there are a limited number of respondents as is the case in Zanyokwe scheme there were presently 63 farmers. Similarly, probability sampling is the process by which a selection of the population can be chosen by researchers as they have characteristics that can be viewed as representative of wider society, albeit in smaller numbers. This enables generalisations to be made from a small population to the entire population. The generalizability issue is the key distinguishing factor between qualitative and quantitative research. Purposive sampling method permitted the researcher to actively select the most productive sample with qualities and experiences that can enrich the understanding to answer the research question.

The strength of the purposive sampling procedure lies in that it permits the selection of respondents whose qualities and experiences gives way to an understanding of the phenomenon in question making it valued. In addition, this sampling procedure is helpful in that in obtaining a detailed and rich understanding of the aspect under study. Additionally, purposive sampling helped the researcher to focus on people with expertise and rich insight into issues under study, like in the case of this study, Zanyokwe community. The virtue of the sampling procedure is that it helped deal with people who can give insight into the particular issues that the research intends to address. Furthermore, from this sampling procedure, the findings of this study can be generalized to the whole population. In that regard it helped in saving time and resources that could have been used to address respondents with no or little knowledge about the research. Respondents in this study encompassed of the Zanyokwe irrigation farmers those who belong to a cooperative, those that are do not belong to any cooperative. Thus, on the basis of the knowledge of the researcher,

this selection was valid for it helped in obtaining diverse views to the issues important to the objectives of the study.

Purposive sampling has its own shortcomings or disadvantages. A purposive sample in a qualitative study actively seeks to enrich the data by including participants who have a particular type of experience, characteristic or understanding to share (Macnee and McCabe, 2004). The potential disadvantage to this type of sampling is the possibility of prematurely focussing the data collection on one experience or understanding and missing the broader range of data that may come from a convenience sample. In this study, this shortcoming was reduced in that the researcher was not much knowledgeable or acquainted with the respondents prior to the data collection process. In addition, the shortcomings of using purposive sampling are that the participants that can be deemed most suitable by the researcher might actually be unknowledgeable about the phenomena under study. The researcher reduced this shortcoming by asking for assistance from the Department of Rural development and Agrarian Reform in the study area in selecting the respondents.

3.6.3 Research Design

This study made use of the case study research design as the operational framework for data gathering. A research design is the plan according to which one obtains research particularly (subjects) and collect information from them. It entails a description of what one intends to do with the participants, with a view to reach conclusions about the research problem. In the research design, therefore, the following aspects need to be specified:

- The number of groups that should be used, this is necessary as it helps the researcher decide which technique to employ.
- Whether these groups are to be drawn randomly from the populations involved and whether they should be assigned randomly to groups.
- What exactly should be done with them in the case of experimental research?

The research requirements serve as criteria for the evaluation of research reports. Accordingly, defining and explaining the terms population and sample most important. The reason for choosing this design is that it helps in having a narrow focus on the subject under study. It allows for a deep analysis of the problem and the thinking of creative solutions. The case study is a kind of descriptive research in which an in-depth investigation of an individual, group, event, community or institution is conducted. This approach uses data collection techniques such as observation, interviews, documents past, and audiovisual materials (Leedy and Ormrod, 2004). In this study, the researcher collected data through interviews, focus groups as well as past documents that contains rich information about the project as well as issues that are vital in addressing the phenomena under study.

The strength of the case study approach is its depth, rather than its breadth. The weakness of the case study is its lack of breadth. The dynamics of one individual or social unit may bear little relationship to the dynamics of others. The case study approach involves finding typical subjects that exemplify some relevant trait.

3.7 Data collection

Data for this study was collected from primary and secondary sources using different data collection instruments. For primary data, along with a closed ended questionnaire, an open ended questionnaire was also used in interviewing the

project leader, the farmers and the focus group. An open ended questionnaire was used by the researcher to solicit pertinent information for this research. This questionnaire was the research instrument used for this kind of data collected. The pre-drafted questions were used for face to face interviews which were held with the project leader as well as the farmers' committee members who represented all the six cooperatives that form part of the larger Zanyokwe community. Using pre drafted questions was of advantage in that all the interviewed farmers were asked similar questions which minimised any bias as well as obtaining relevant information needed for data analysis. It should be mentioned however, that where necessary follow up question were asked to the farmers. Face to face interviews were chosen as they have the propensity of bringing out information that would have otherwise remain unknown or hidden had it been in a focus group, since in focus groups respondents do not feel at easy often times to respond freely to the questions as a result of fear sometimes or respect. Some of the respondents in the face to face interview were illiterate thus there was need for a Xhosa speaking research assistant who is well versed with the Xhosa language as well as equipped with research skills and is kept abreast concerning the research objectives as well as the problem statement of the study so as to strengthen the synthesis of the findings.

Apart from face to face interviews, the adopted focus group discussions approach in order to collect more information that would be of assistance during the course of the study. Focus group discussion is a method of collecting data in which several people discuss and comment on personal experience about the topic that is the subject of the research. Gibbs (1997) argues that the focus group also enables researchers to examine people's different perspectives as they operate within a social network. Focus groups have a high apparent validity since the idea is easy to understand and

the results are believable. In addition, they are low in cost, one can get results relatively quickly, and they can increase the sample size of a report by talking with several people at once (Marshall and Rossman, 1999). The focus groups assisted the researcher with possible responses needed to make this study a success.

The discussion with the focus group was mainly semi-structured. It allowed for a deep engagement on issues that needed further clarity. This study also used focus groups. Focus groups are basically a group of individuals selected and assembled by the researcher to discuss and comment on, from personal experience the issues that are subject of the research. The reason for employing focus groups was to garner relevant information from the Zanyokwe farmers and the impact of the irrigation project on the lives of the farmers as well as community at large particularly when it comes to addressing food security issue. The focus group kind of collecting data allowed for flexibility in terms of allowing every person in the focus group to say something about the irrigation project and the question of food security in the area. These interview responses were recorded on a notepad.

All the respondents were asked questions from the questionnaire and they could elaborate on the content of the question as they want. This allowed for the respondents to seek clarity on issues they could not get clearly. A set of questions with a fixed wording sequence of presentation as well as precise indications of how to answer each question will be provided. Moreover, questions designed were carefully phrased to avoid ambiguity, sensitive and provocative questions. This type of data collection was more suited for a qualitative study of this nature.

A document from the Department of Agriculture and Rural Development was also used as the source of secondary data for this study. It provided the background details and other pertinent information about the project goals, objectives and the challenges it is facing. This was an invaluable source of rich information containing some figures that some members and supporters of the Zanyokwe village were not knowledgeable of. Secondary information was complimentary to the primary information used in the study. The information obtained from both the primary and secondary sources assisted in determining the potential role that community development projects towards enhancing food security at the community and household level where food insecurity is rife.

3.8 Data Analysis

Data analysis is a critical step after collecting research data. It basically entails the structuring and analysis of the vast amounts of data into sensible and logical output for easy understanding. The first step was to transcribe the information from notepad into computer and the information was structured in a thematic format for easy analysis. Most of the qualitative information put in thematic topic with regard to similarity and the manner it addresses the research objectives. The information was then entered into the Microsoft excel sheet where graphs were then obtained. This made it easy to come up with graphs and tables that clearly depict the findings of the research. Data used for the study was collected and analysed with the assistance of an independent statistician using Microsoft Excels to illustrate and explain some graphs used to interpret the findings of the research.

3.9 Limitations of the study

The study used in this study was particularly small as was anticipated at the beginning. Thus, a research with a much larger sample size would produce slightly more different findings that can be generalized to other contexts. The study relied largely on qualitative methodology which made it restrictive that if it could have possibly utilized both quantitative and qualitative approaches. However constraints of time, resources and the difficulty in accessing the research participants made qualitative research more appropriate and realistic for this study. If a quantitative methodology will be adopted by other researchers, it would provide a wider perspective to this present study on Zanyokwe on food security. Getting research participants was very challenging in this study because appointments were sometimes not honoured and a lot of travelling was needed because the area has serious transportation problems.

Another limitation to the study was language challenge. Translating the precise meaning of English words into Xhosa was not easy, thus there is a chance that the meaning of the translation might have been compromised in the process. Furthermore, because each language has its own nuances and semantics, some of the responses came in jargon and other slangs that needed to be clarified during the research. The research assistant who is Xhosa speaking was very helpful in this regard for he helped in giving clarity to these responses and in recording them down. Employing a Xhosa speaking researcher helped in reducing the limitation caused by language.

3.10 Ethical considerations

The researcher sought for an ethical clearance from the University of Fort Hare (see appendix C) as well as from the project leader of the Zanyokwe scheme. Strydom (2002: 63) defines ethics as a set of moral principles that are suggested by an individual or group and are subsequently widely accepted. The conducting of research requires not only expertise and diligence but also honesty and integrity. This is done to recognize and protect the human rights of respondents. To render the study ethical, the rights to self-determination, anonymity, confidentiality and informed consent were observed. Written permission to conduct the study was obtained from the University of Fort Hare. Respondents' consent was obtained before administering the questionnaires. Burns and Grove (1993:776) define informed consent as the prospective subject's agreement to participate voluntarily in a study which is reached after assimilation of essential information about the study. The respondents were informed of their rights to voluntarily consent or decline to participate at any time without penalty. Respondents were also informed about the purpose of the study and given the assurance that there will not be any potential risks or costs involved.

Anonymity and confidentiality were also maintained throughout the study. Burns and Grove (1993) define anonymity as a situation where respondents cannot be linked even by the researcher with his or her individual responses. In this study anonymity was ensured by not disclosing the respondent's name when analyzing data and questionnaires will only be numbered after data collection. Confidentiality means that the information the respondent provide will not be publicly reported in a way which identifies them (Polit and Hungler, 1995). In this study confidentiality was maintained

by withholding respondents' real names and by using the findings of this study for academic purposes only.

3.11 Conclusion

This chapter outlined the research methodology adopted in the study. It started by rendering a comprehensive description and overview of the study area and defined what a research methodology entails. A critical analysis of the three different research methodologies was discussed in this chapter. After weighing the pros and cons of the three research methodologies as well as basing on the research questions in this study the researcher then adopted the qualitative research methodology to be the methodology that underpins this study. The reasons for adopting the qualitative methodology are: this methodology helps a researcher to gain a more detailed understanding of the phenomena of interest than with quantitative research. In addition, qualitative research is known to be helpful in bringing new light or explaining unusual situations that could not be identified through large scale quantitative methods. Lastly, in a qualitative study there is flexibility in that the researcher is able to adjust data collection procedures during the data collection process as new issues may arise when collecting data. Various aspects of collecting and collecting detailed information based on , the research design, population, sample, methods of data collection and ethical considerations were also discussed. The following chapter covers data presentation, interpretation and analysis.

CHAPTER 4

DATA PRESENTATION AND ANALYSIS

4.1 Introduction

This chapter presents and analyses primary data collected from the research area, Zanyokwe. Findings were analysed and interpreted in relation to the research objectives and questions. Data is presented according to the key themes that underpin the key issues of this study, such as characteristics of respondents, factors that impinge on food security at the community and household level. The key findings are important in the understanding of community projects and food security in Zanyokwe area located in the Amahlathi Local Municipality. Diagrams, figures, pictures and tables are used to present data and facilitate the understanding of finding.

Socioeconomic characteristics of respondents, such as age, gender, level of education, and marital status are presented, followed by data on farmers' production patterns. Factors affecting agricultural activities in relation to food security are also outlined. The roles that Zanyokwe communal farmers play to address food insecurity issues are also discussed. Following a critical discussion on findings from this study, theories underpinning this study will be discussed.

However, before discussing the above mentioned categories this study will discuss the rationale that drove members of the Zanyokwe community members to be interested in farming. The researcher saw it vital to discuss the motivation of the Zanyokwe community members to become farmers as such motivation has an impact on the farm productivity of these smallholder farmers. There are

multidimensional factors that can drive an individual into farming; the discussion below will bring to light some of such factors.

4.2 Motivation by farmers to join the Zanyokwe project

Smallholder farmers who are resource-poor faced socio-economic backdrops that motivated them to venture into farming. The Zanyokwe community is poverty stricken, has an ever increasing rate of unemployment among youths as well as the elderly and is challenged by food insecurity. As a result, the irrigation scheme opened a way for farmers to increase food production, strengthens crop-livestock systems at the same time creating employment. In Zanyokwe community the manufacturing and mining industry are not viable as such the agriculture industry appears to be their viable livelihood.

The establishment of the irrigation project opened ways for utilization of water resources and agricultural land which was lying idle and degrading. Additionally, some community members resorted to farming because they had a fervour for farming whilst others joined the irrigation scheme for health reasons, such leisure pursuits, relaxation and exercising. In addition, the agricultural industry requires less capital compared to other sectors, such as, manufacturing and mining henceforth, it opens way for resource-poor farmers to generate income. Consequently, it was imperative that there be some way of social relation, that is some form of communication channel that had to be adopted for the progress of the project in addressing challenges such as poverty and food insecurity faced by the Zanyokwe famers as well as the Zanyokwe community at large.

4.3 Zanyokwe irrigation scheme's communication channel

People with different socioeconomic backgrounds networked and shared ideas that ensured the success of the project. People behind the success of this project comprised of Agricultural Extension officers from the Department of Agriculture and Rural Reform and local farmers. The project communication channel is demonstrated in Figure 4 below.

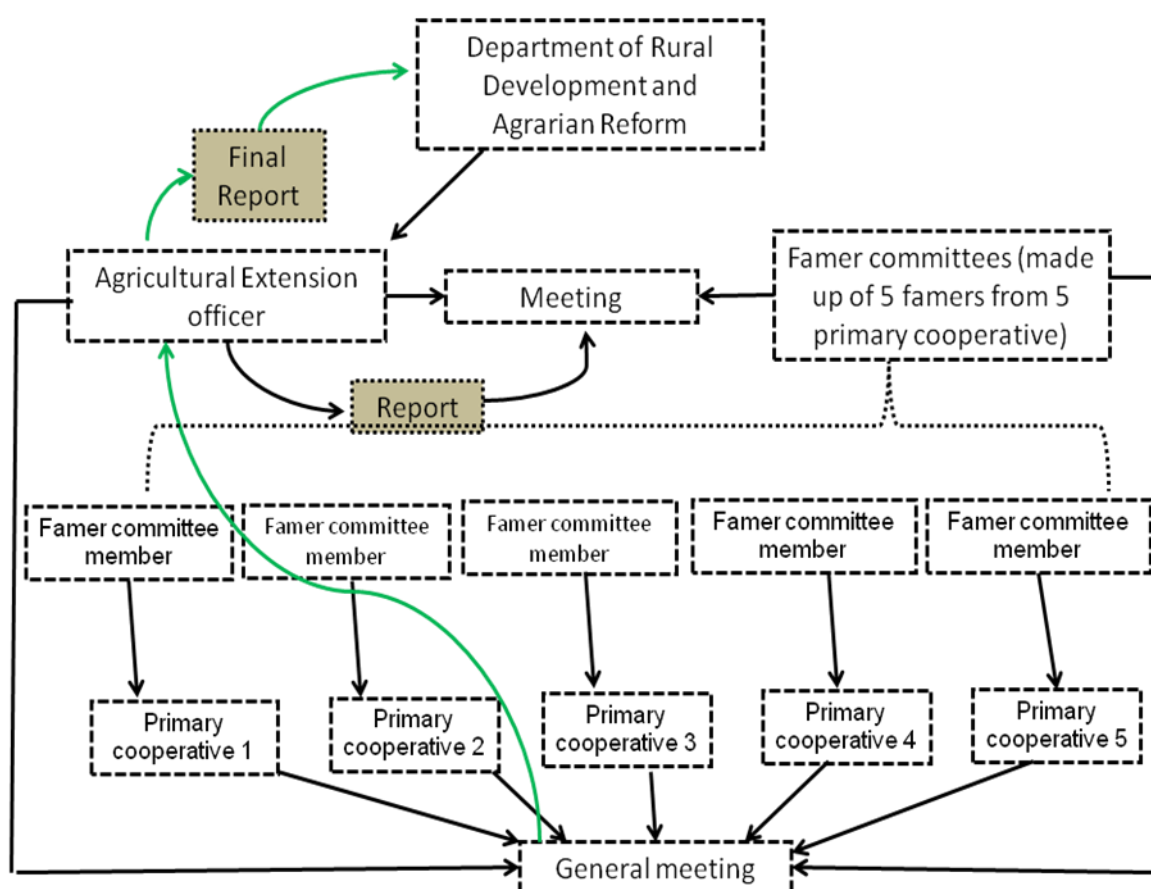


Figure 4: Project communication channel within the Zanyokwe irrigation scheme

Extension officers and the farmers' committee (made up of five farmers) who are part of a planning committee meet regularly, to plan on which crops or vegetables should they farm in a certain season and the reasons behind choosing such certain crops or vegetables. Farmers are representatives of primary cooperatives. The

outcome of the meeting compiled by the extension officer is presented back to the farmers so that farmers can endorse such a report to be including their own views not those of the extension officer. After the farmers' committee and the extension officer meet for the second time, each and every farmer who belongs to a farmers' committee then goes to his own primary cooperative to disseminate the outcome of the meeting to the members of the cooperative. Thereafter, a general meeting is held where the extension officer, the farmers' committee and all farmers meet for the presentation of the outcome of the meeting by the extension officer. As a result, the farmers in Zanyokwe irrigation scheme feel that sense of ownership that comes with being involved in the initiating and implementing phase of community projects is vital for the sustainability of agricultural development projects. Only then can the all the farmers be expected to adopt or do according to what the report from these meetings stipulates because the report contains the views, needs, and perceptions of farmers by farmers themselves. This is what the extension officer defined to be 'community participation and consultation' aspect of the Zanyokwe irrigation scheme.

Projects that are initiated and implemented by the poor people in a bottom up approach are known to succeed compared to those that are initiated by people who come from elsewhere normally referred to as outsiders. Endorsing this view is the World Bank Report which notes that growing awareness of the limitations of poverty alleviation projects that are initiated and implemented by outsiders, commonly known as top down approaches interests has increasingly shifted to the potentially powerful role of approaches that are from below or within in which the poor people initiated their own projects that address their needs (World Bank, 2001) In Zanyokwe irrigation scheme, this has demonstrated to be working towards the betterment of the project in that the farmer have that sense of ownership, participative and that they

are consulted beforehand indicating that nothing is imposed on them which is fundamental to the sustainability of the project as well as reducing the voice poverty as posited by Sen. Poverty is often taken to refer to lack of income, lack of education and health facilities however as Sen (2000) puts it poverty is lack of voice which refers to the need for people or the community to have avenues to express their needs or obtain redress.

However, whilst the success of the way communication takes place within the Zanyokwe irrigation scheme cannot be taken for granted, however, there are loopholes. The farmers' committee consists of male farmers only. There is no representation of female farmers whatsoever. Female farmers only attend the general meeting where all farmers are advised to attend.

This is a major challenge in rural areas and in especially agriculture. There is ample evidence to show that much prominence towards agricultural development has been given to small scale farmers as a homogeneous group. As a result, women farmers are often neglected or are left lagging behind their counterparts in agricultural development. Thus, in addressing agricultural development women should be given equal opportunities so as to overcome past and present discrimination. Endorsing this view is the 2008 World Development Report, which showed that agriculture is a critical source of livelihoods for women in many developing countries, and a key pathway out of poverty (World Bank, 2008). The report also portrayed women in many rural societies as especially constrained by a lack of access to inputs, productive resources, and services. The report further articulates that, also women often lack incentives to invest given the greater vulnerability and proportionately greater exposure to risk that result from having fewer assets, and the very real likelihood that once their niche in the value chain becomes commercially profitable it

will be expropriated by men. However, giving much emphasis to the marginalized group should not be mistaken to imply that only women are targeted. For actions, projects or policies to be more effective, they should be designed in such an approach that they reach both men and women, taking their gender-differentiated roles and opportunities into account. Literature suggests that getting men's support is critical to, and often necessary for the success of gender-responsive projects. Thus, full and equal participation of women and men in, and their full enjoyment of the benefits from agricultural development are essential for eradicating food insecurity and rural poverty (FAO, 2007). The channel of communication amongst the project participants is influenced by socioeconomic characteristics such as age, gender, marital status, education level and income of the respondents. These socioeconomic characteristics are discussed below respectively.

4. 4 Socio-economic characteristics of the respondents (farmers)

4.4.1. Age

Figure 5 presents the age of the respondents (farmers). The majority of the farmers in the study area are in the age group of 55 to 65 years. This age group has advantages and disadvantages. In a nutshell, the sustainability of the project might be threatened because of the age of the farmers that are the current beneficiaries of the project. Since this is the age that most farmers will not be in a physical standing to continue farming. This study found out that there are farmers who already left farming because of old age. In addition, the flight of human capital especially the youths to the urban centres is a challenge that was stated to be destroying or undermining agriculture as a sector since mostly the elderly, the sick and young children are the only ones that remain in rural areas. Furthermore, Mabena 2011 concurs that the flight of human capital to the towns and cities has been

compounded by the lack of employment opportunities and income generating related activities in rural areas (Mabhena, 2011).

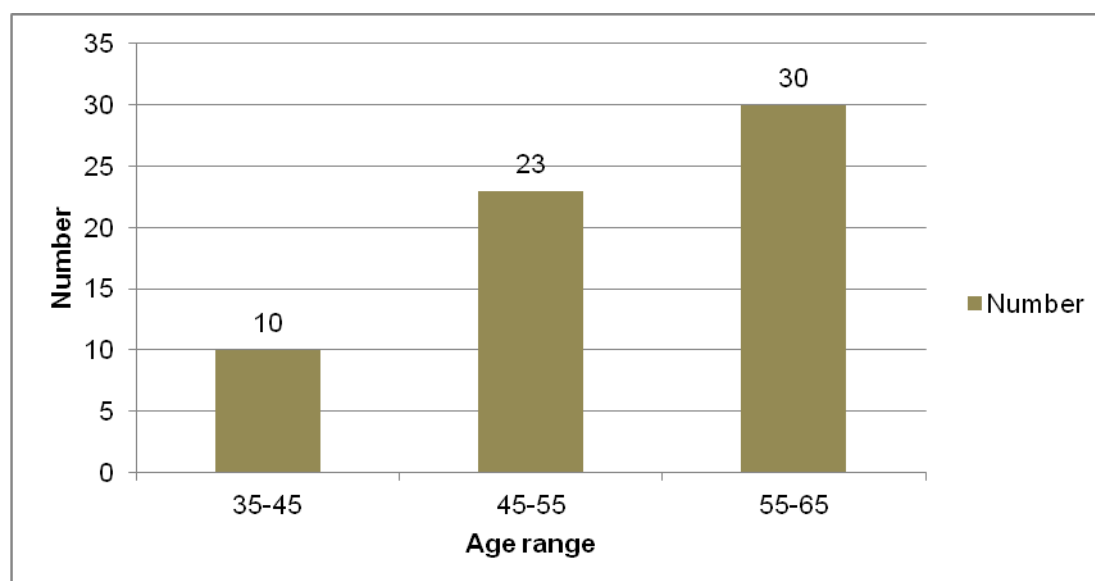


Figure 5: Distribution of respondents by Age

Source: Field Survey, 2012

The youths were said not to be interested in farming because of the uncertainties that comes with farming and the fact that farming is a demanding job and has not been engrained in the way of life of the youth of today. Simply put, the youths view farming as an activity or job of the elderly as well as the uneducated. Consequently, the retirement of these old farmers will impact negatively on food security status and the availability of food in general in the near future will be threatened. Accordingly, there is a need to come up with a strategy that can be employed in addressing the issue of the un-involvement of youths in farming. Future projects should have an element that will make the youths to be interested in farming. In this regard, it is vital that the youths should be consulted before such a project can be implemented. Projects should not be imposed on youth but youths should be empowered in such a way that they will come up with their own project ideas that suit their expectations.

There were no respondents over the age of 65 and the youngest respondent was aged 35.

4.4.2 Gender

A gender perspective adds significant insight into rural poverty and livelihood issues because gender is an integral and inseparable part of rural livelihoods (Ellis, 2001). In this study area the majority of farmers are men, women are a minority. There are 40 male farmers and 23 female farmers. The reason is found in that traditionally, farming is taken to be a men's job. As such, women though they may own land they need a male companion to help them in farming. Figure 6 shows the percentage male and female involved in the farming process.

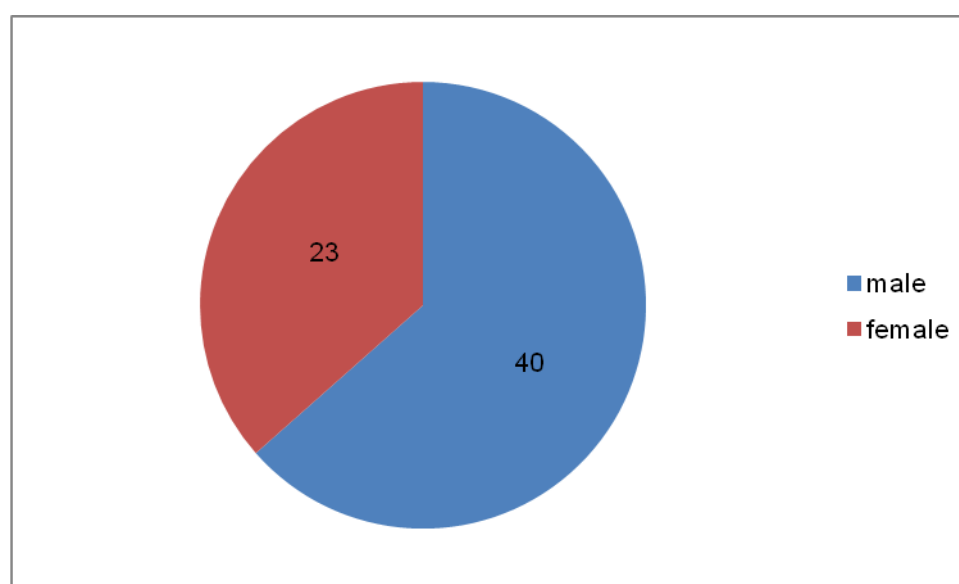


Figure 6: Distribution of respondents by Gender

Source: Field Survey, 2012

4.4.3 Marital status

Data on marital status was collected and the majority of the respondents were found to be 58% of married, 30% of single people and the remainder was either divorced or

widowed. Marital status has an impact on the productivity of the irrigation project because of patriarchal related issues on land ownership that still exist in South Africa; this is a hindrance in female headed households.

4.4.4 Level of education

Education was another key issue that have implications on joining community projects and in household food security. Consequently, the respondents of the study were requested mention the level of educational level they reached. This component of levels of education was categorised in four cohorts which are namely; primary, matriculation, college, and university. The survey gave results reported in Figure 7.

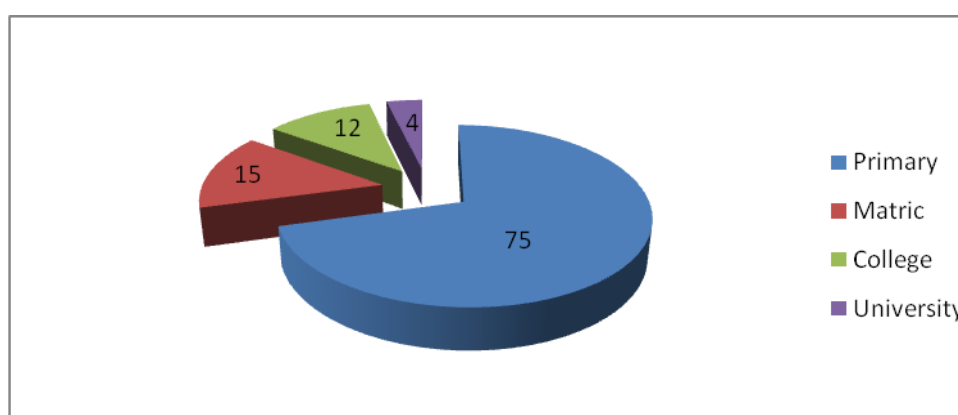


Figure 7: Distribution of respondents by Educational Level:

Source: Field Survey, 2012

In the Zanyokwe irrigation scheme, the majority of farmers (75%) have a primary education qualification, those with grade ten made up 15%, those with college education were 12% and those with university education made up 4% of the respondents as shown in Figure 4-3 above. The educational level of farmers is vital especially when it comes to irrigation farming were modern technologies that are complicated are used. In addition, education is equally important as literate farmers

are known to be welcoming when it comes to change and are risk takers compared to the illiterate.

4. 4.5 Quarterly Income

The farmers do not have a monthly income per se since they get their income after 3 months which is the average time for harvesting crops and vegetables in the Zanyokwe irrigation scheme. As indicated in table 3 in the following pages, farmers in the Zanyokwe area are obtaining a source of livelihoods from farming.. It was reported that the revenue from the farm is not ploughed back to farming meaning that the money is used to address the farmers' needs such as food (not produced in the farm), health, educating their children, health purposes and clothing. It is reported that in a situation where a farmer can harvest the above mentioned crops and vegetable in the same season and get the same revenue then such a farmer is better off when it comes to their livelihood and food security status. Therefore the project has made a major impact in the area (community) where it is implemented to the extent that one of the respondents indicated that if there are people who are facing food shortage challenges in the Zanyokwe area then it is by choice not by default. This is because the Zanyokwe irrigation scheme does not meet the needs of the farmers only but those of the community as well.

The project has created jobs as mentioned earlier on, implying that even members of the community who are not interested in farming are benefitting through these jobs as they are paid both in cash and in kind which is important as it addresses the food availability and food access part which are major challenges especially in the rural areas where income poverty is widespread. Food availability refers to the continuous supply of food at national and household level which is mainly influenced by market conditions and food access refers to the ability of a nation and its households to

acquire sufficient food on a sustainable basis (Bonti-Ankomah, 2001). Community members that are not interested in farming (especially the youths), get employed by the farmers who pay them in cash and also give them food at the end of each and every working day. Socioeconomic characteristics do not only influence the communication channel but also has an impact on the farm productivity of the Zanyokwe irrigation scheme farmers.

4. 5 Impact of Zanyokwe irrigation scheme on food security

The main objective of this study is to ascertain the extent to which the Zanyokwe irrigation scheme contributes towards food security to the Zanyokwe community. To achieve this objective the study collected some information on food security issues at both the community and household level. This was done in relation to the farm productivity in crop and vegetables at the Zanyokwe scheme as discussed later on. The Zanyokwe farmers as well the department of Rural Development and Agrarian Reform's representative (agricultural extension officer) stated that food insecurity is not a major challenge at the 6 villages where the irrigation project is located. This is attributed to the fact that the project produces different outputs ranging from potatoes, onions, maize, spinach and cabbages throughout the year. Other foods that are needed for a nutritious meal can be obtained from the supermarkets using the income that the farmers get from selling their produce.

The Zanyokwe scheme is playing a part also in increasing the purchasing power of its community members through the jobs they create. With increased purchasing power members of the community are in a position to buy the nutritious food needed for their healthy living thus enhancing their food security status.

Much of the foods produced by the project range from cabbages, carrots, summer potatoes, green peppers, maize, onions, spinach, butternut, paprika. Other produces are deciduous fruits like peaches, grains and pasture crops. Production is determined by the market demands both local and external. Several outside agencies order crops for their own purposed. The production of the above mentioned crops, fruits and vegetables has a major impact on the surrounding communities in that it creates many jobs especially during the weeding and harvest season.

The Zanyokwe farmers and the representative of the Department of Rural Development and Agrarian Reform from Asgisa Eastern Cape indicated that food insecurity is not a major challenge at the 6 villages where the irrigation project is situated. This is attributed to the fact that the project produces different outputs which contributes towards food security. These output ranges from potatoes, onions, beet root, spinach and cabbages throughout the year. The Zanyokwe farm production is demonstrated in the table 1 below.

Table 1: Estimated tonnes per harvest for crops and vegetables at Zanyokwe irrigation scheme.

Produce	Yield per hectare (tonnes)		Produce	Yield per hectare (tonnes)
Cabbages	± 35 tonnes		Butternut	± 20 tonnes
Carrots	± 20 tonnes		Onions	± 25 tonnes
Potatoes	± 25 tonnes		Spinach	± 20 tonnes
Green peppers	± 20 tonnes		Maize	± 7 tonnes

Source: Researcher's own initiative, 2012

The study revealed that the community has access to crops and vegetables produced in the scheme at affordable prices. Smallholder farmers are price takers and do not determine the market price of their produce. The supermarkets prefer dealing with commercial farmers who deliver in bulk, are reliable and their prices are affordable. Consequently, the smallholder farmers end up losing such markets to the commercial farmers and turn to the informal market. The informal market is where they get better returns because they do not incur any transportation costs since the hawkers come to the scheme using their own transport to purchase for re-sale.

However, due to road infrastructure challenges at times the hawkers fail to go to the scheme especially during rainy season. All the same, table 2 below illustrates the impact of the project and affordability of food by comparing the costs of some produces from Zanyokwe scheme with Spar retail shops in the surrounding community.

Table 2: Comparison of prices for crops and vegetables

Produce	Price (Rand)			Produce	Price (Rand)	
	Farm bag/bunch	Shop (e.g. Spar)			Farm per bag/bunch	Shop (e.g. Spar)
Cabbages	4 to 5	7 to 8		Butternut	25 to 30	40 to 45
Carrots	4	6 to 7		Onions	4	7 to 8
Potatoes	25 to 30	35 to 40		Spinach	4	7 to 8
Green peppers	8	10 to 15		Maize	120	150 to 160

Source: Researcher's own initiative, 2012

Despite the fact that the project is producing food that can easily accessible to the community there are several constrains that makes the food access a challenge for some. Some respondents indicated that some households; especially those that are dependent on grants do not purchase much from the farm; they prefer buying all their groceries from retail shops because there is variety of food stuffs.

In the same vein, the surrounding communities' members often prefer to buy their vegetables in town where they buy most of their groceries. This is because the irrigation scheme does not produce all the necessary foods (see table 3) needed for a nutritious meal as such people end up buying in supermarkets where they are able to do their grocery shopping at once. At the end of the day, since hawkers are an important market for the smallholder farmer, the reduction of these hawkers has a negative effect on the smallholder farmer.

Moreover, farmers end up losing some of the income that they may have obtained from hawkers especially on perishables such as green pepper and spinach. The government can play a part when it comes to curbing this challenge faced by farmers by supporting the Zanyokwe farmers to an extent that they will be in a position to farm most if not all of the desired, nutritious and culturally accepted foods for their customers. In short, the Zanyokwe farmers have to reach some form of commercialisation in order for them to harvest significant profits from farming and be consistent also in the supply side to their consumers.

Table 3 below illustrates the profits that farmers make per crop or vegetable is tangible, however, farmers in the Zanyokwe area they do not plough back much of these profits to farming. The casual factor for this is that farmers lack business know-how on profit maximisation. As such any crop failure will have a major negative impact on the livelihoods of the farmers.

Table 3: Estimated amount for crops and vegetables per harvest in rand produced at Zanyokwe irrigation scheme.

Produce	Estimated amount per harvest (per hectare) in Rand		Produce	Estimated amount per harvest (per hectare) in Rand
Cabbages	R26,600.00		Butternut	R60,000.00
Carrots	R80,000.00		Onions	R50,000.00
Potatoes	R75,000.00		Spinach	R40,000.00
Green peppers	R160,000.00		Maize	R168,000.00

Source: Researcher's own initiative, 2012

4.6 Factors affecting farmers productivity

One of the sub-objectives of this study was to analyse the challenges faced by the Zanyokwe farmers with regards to addressing to improving farm productivity as well as the quality of their lives. This objective was achieved through collecting data on the different challenges faced by farmers and the impact of these challenges thereof.

4.6.1 Market challenges

The growth and development of community projects especially those related to farming like the Zanyokwe scheme face numerous challenges. In this case, market

related challenges were shown as the major challenge. The respondents overwhelmingly indicated that they have challenges when it comes to accessing the market for their produces. The unavailability or unreliability of agricultural markets was mentioned to be one area that is at present and in the past, has affected the sustainability of the smallholder farmers' productivity. This challenge greatly constrains the economic base of the smallholder farmers since they depend mainly on farming and are hardly involved in any nonfarm activities that might stabilise their economic base in cases where farming fails.

The first challenge was that the Zanyokwe community was a very small market for their produces, in fact the farmers stated that people around the community do not have much disposable incomes to purchase their products. Yet another challenge was that they are competing with well to do or established commercial farmers from Stutterheim. They elaborated by saying that farmers in Stutterheim are well funded and operate on commercial lines, thus, they normally outcompete them. The competition is rife especially when it comes to prices and supply consistency. When it comes to price, the commercial farmers from Stutterheim have cost-effective products compared to the farmers from Zanyokwe. This is because Stutterheim farmers produce on a large scale. Even the transportation used for delivering their produce is heavy duty vehicles which can carry up to 7 tonnes. The Zanyokwe farmers on the other hand use their own bakkies (small pick-up trucks) to supply their produce to the East London fresh produce. As such, they are disadvantaged when it comes to market access competition with other suppliers.

The other facet related to the market issues pertains to the failure of the Zanyokwe farmers to supply their market consistently. This is because farmers lack

coordination when it comes to planting season, they plant the same crop all of them at the same time. As such when the crop is ripe it floods the market and the farmers end up not gaining much from selling their produce. In the same vein, the farmers admitted that it is a challenge for them to supply their produce consistently because there is a three months period between one harvests to the following harvest. That is to say when farmers harvest their crops they have to wait for at least 3 months for another harvest period especially for vegetables such as cabbages. Unfortunately, this does not comply with the supermarkets' expectation. Regrettably, the supermarkets happen to be one of their major markets for these farmers. The farmers end up losing their market to those farmers who are better organised.

Another market related facet that seems to be hampering the productivity of farmers concerns market price. Zanyokwe farmers indicated that they do not determine the price of their produce, in other words they are price takers. Farmers indicated further that sometimes they do not receive fair market prices for their produce thereby threatening the income security of smallholder farmers which is vital to strengthen further their food security. The implication here is that there is need for some form of intervention by the government on behalf of the smallholder farmers when it comes to market price. Sharing similar sentiments is Todaro and Smith (2009) who remarked that smallholder farmers are responsive to price incentives and economic opportunities and with these they are able to make radical changes in what they produce as well as how they produce.

4.6.2 Road infrastructure

The Zanyokwe irrigation scheme is about 20 kilometres away from the tarred road (R63) towards King Williams Town. Access to the scheme is by ground road which can be described as a clay-gravel road. It was reported by all the respondents that

this road get muddy during rainy seasons, making it a challenging situation for delivering the produce from the scheme since the roads are sometimes impassable. The road issue does not only challenge farmers to deliver their produce to the market but also discourages hawkers who sometimes get their supplies from the scheme. The reason is that light weight vehicles can hardly use the roads, thus, those with trucks tend to charge higher prices because there is very little competition. The roads are not maintained or surfaced with asphalt as the residents of Zanyokwe would have desired. The farmers indicated that the roads are improperly developed, hardly maintained and do not meet the basic earth road standard to make it proper for transport utilisation. Poor roads are leading to higher transportation costs.

4.6.3 Land tenure issues

It is important to notice that almost 90% of the farmers from the Zanyokwe for instance in Burnshill irrigation which belongs to the larger Zanyokwe project have insecure tenure rights. They rent the land from the owners (retired/discouraged/heirs who have left farming for various reasons such as old age, seeking for greener pastures elsewhere or for less demanding jobs. Therefore, three different types of land holding are known in Zanyokwe irrigation scheme: landowner, rentals and quit. The quit type denotes that whenever the farmer that is allocated that land are no longer interested in farming should quit and open avenues for other emerging farmers.

The amount of land a farmer owns is associated with the amount of produce obtained in a season. 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 sizes

farmers owned in this sample was 2.741 hectares ranging from 0.3ha to 10 hectares. There is no significant difference in the sizes of land owned by the farmers in the two areas. Almost 90% of the farmers from the Zanyokwe project do not have land rights; they rent the land for a fee from the land holders. All these farmers rent the land for a fee. According to both project supporters and the farmers, land tenure remains a complicated challenge that contributes to improper utilisation and fall in productivity in the farms. One challenge that this brings is that those using the land have no collateral and they cannot borrow from the banks if they need to make substantial investments to their property. Second, the tenants are reluctant to make whole hearted investments because the tenants are insecure of when the owner might demand the land back. The respondents relayed the stories of the farmers who had the land they were using taken back by the owners who in turn leave their pieces of land unutilised. This system the project supporters, said is a serious challenge to the sustainable growth and development of the project itself. This is because land is currently not being utilised productively.

Many of land owners have left farming for various reasons for example because of old age, some they realised that farming is demanding job others left for greener pastures elsewhere. There three different types of land holding: landowner, rentals and quit. The quit type denotes that whenever the farmer that is allocated that land are no longer interested in farming should quit and open avenues for other emerging farmers. Thus, land tenure has implications to food security.

4.6.4 Lack of proper coordination amongst the farmers

Lack of proper coordination amongst farmers was raised as one of the most challenging issue for the success of the project and they showed that they are taking

most of the blame for this. They plant what they want whenever they desire too resulting in a situation where most the farmers will have the same crop at the same time, and the harvest time floods crops or vegetables in the market affecting the profitability thereof. Another fact related to lack of coordination amongst farmers was the issue of consistence in supplying their produce.

However, it was indicated that the shortage of agriculture extension officers could also be contributing to the demise. This is what farmers aired out to be the most challenge that they are facing when it comes to market issues. It was reported that when each and every community had the agricultural extension workers and scientists were operating, such issue was significantly mitigated. During those times the project was a major success.

Nevertheless, the challenges of coordination and poor planning mentioned earlier on were a contributing factor to the inconsistency of delivering their produce to the retailers. Furthermore, since maize production 3 months, it might be possible that the community mostly get maize once in a year. As such, those who have larger households size may be vulnerable to food security. Another factor is that agriculture is contingent to weather patterns, years of serious poor weather conditions also diminish the availability of food within that period. In the study area, these poor weather conditions were also reported to be frequent, in the form of floods, hail stones, snow and these poor weather conditions they affect the productivity of farmers as well as food availability. The farmers were reported to not taking necessary precautions to avoid such poor weather conditions in that when the agricultural extension worker advised them not to plant a certain crop in fear of the snow that was going to hit the place, the farmers did not adhere to the agricultural extension workers and as a result, their far, productivity was affected.

An example of poor weather patterns is the rain stones/ hailstones that destroyed the farmers' produces in November 2010 illustrated by the photograph below.



Figure 8: Green maize destroyed by rain stones/hailstones

Source: Field Survey, 2012

This incident compelled the farmers to convert maize crops to cows' fodder, a way of recuperating income for their livelihoods in general and food security in particular.

4.6.5 Empowerment of farmer organisations and the role of agricultural extension officers.

Farmer empowerment is very important if sustainability of agriculture is to be achieved. One of the ways of empowering farmers is to offer them skills through training program which are normally offered by extension officers. In the Zanyokwe irrigation scheme there is a serious shortage of extension officers. This perhaps explains the reason behind the lack of training for the farmers. Farmers in the Zanyokwe irrigation scheme when asked to mention the type of trainings they

received with respect to their farming enterprises indicated that they received in few trainings years ago. They mentioned that after their irrigation groups were formed, they received trainings in various skills such as group dynamics, farming as business, operation and maintenance of irrigation equipment. The respondent were not very clear about the role of coops its pillars and values as such there is need that these farmers be equipped about what coops are all about so that when they decide to join one they are aware fully what they are getting themselves into.

4.7 Agricultural training

Agriculture training is helpful to farmers in that it equips them with the necessary technical skills and knowledge, to enable them to utilise their land, capital and labour to the best advantage, and also to develop the ability of the farmer, given the input resources available to them to choose the enterprise that would give the most profit through the use. Agriculture, as the mainstay of the rural economy can, it is argued, be transformed through technology transfer, supported by effective extension and input supply and credit systems. Training of smallholder farmers is a vital tool needed especially in the use of technology in irrigation that is known to lead to increased farm production were smallholder farmers produce sufficient food to eliminate food insecurity, provide opportunities for labour, and form the basis for broader-based rural growth (Ellis and Biggs, 2001).

As such, to update their farming skills and improve farm production, farmers should receive training related to farming techniques. Put differently, skills and knowledge are important components for agricultural development and growth. In addition, as a result of the limited farmland available and small size of farm holdings in the scheme, skills improvement plays a very significant role .Though traditionally farming is

considered as well known, for efficient productivity, training is one of the most important components of this activity. This is especially so in projects which most farmers do not have the adequate know-how of farming and current practices. Moreover, Doni (1997) states that any agricultural development initiative should start with training of the targeted farmers before other support services are provided.

Thus, it was essential for the study to establish whether there has been specific training of the farmers within Zanyokwe. The respondent farmers agreed that they received some form of capacity development support and training. With regards to the importance of farm planning system, farmers were taken to Uitenhage to observe some of the commercial farmers' activities in Uitenhage.

However, the farmers indicated that though this training could have been usefully it was not implemented in the Zanyokwe project as expected, because the farmers did exactly the opposite of what they were trained in. accordingly, they showed that they take the blame for the failure of that training upon themselves. The reason for such an outcome might be caused by the education level and age factor as indicated earlier on that 75% of the farmers have a primary education and that more than 50 % of the farmers belong in the oldest age group of 55 to 65 years, which is a worrying factor. Thus, Nompozolo (2000) suggests that education and training should go hand in hand, education being the primary motivator and initiator.

The aging of the farm population and the decreasing number of farmers have also contributed to the importance of the agricultural extension service. However, the aging factor of the farmers comes with its own pros and cons. The advantage of having aged farmers lies in that they have now grown to know and realise that farming is not an easy business and that it needs people who are passionate about

farming, not only interested in the income that they can derive from farming. On the other hand farmers who are old as is the case with most farmers in Zanyokwe, their physical strength that is vital in farming is now reduced and they can retire anytime. In addition, old age is also associated with sickness, a hindrance when it comes to agriculture. Moreover, old farmers are not keen to be kept abreast with recent technologies, thus affecting their productivity.

The farmers further received training in bookkeeping for business management by the department of Labour. This is vital especially in the context of the increasing globalization of the world economy, improving business management skills has been made even more indispensable to the strengthening of the competitiveness of the domestic agriculture of the country.

4.8 Access agricultural support services

Agricultural support services have played an important role in the development of the agriculture sector as they have facilitated the adoption of new technologies and practices which has led to significant improvement in the productivity of many crops over the years (Asian Development Bank, 2005). In South Africa, government support for agriculture has been substantially reduced as such access to agricultural support services remains a major factor constraining the growth of smallholder agriculture in the former homelands of South Africa (Williams et al, 2008 and Machingura, 2007). Machingura elaborated further that in South Africa the launch of the Comprehensive Agricultural Support Programme for the provision of farmer support services required to achieve growth in the smallholder agricultural sector has been embraced. However, to achieve a broad-based smallholder agricultural development, it will be necessary to broaden the scope of the programme to include smallholder farmers in the former homelands. In the Zanyokwe irrigation scheme,

farmers get agricultural support services in the form of inputs (seedlings, insecticides, fertilizers, seeds).

4.9 Natural disasters

Throughout human history, natural disasters have played a major role in the economic development and survival of humanity. Agricultural production is highly dependent on weather, climate and water availability, and is adversely affected by weather- and climate-related disasters. In the Zanyokwe irrigation scheme farmers reported that disasters such as frost, hailstones/rain stones and snow are common in the area and they have incurred production losses in the past as a result of these disasters. An example of maize crops that were affected by hailstones/ rain stones was shown earlier on (see figure 8). When the researcher interviewed the project manager it was revealed that these losses in production could have been avoided if the farmers had adhered to the project leader who warned them to farm a bit early so as to escape the snow. This shows that since major impact of the natural disasters is on poor farmers with limited means in developing countries, community-wide awareness and education programs on natural disasters should be a priority. This is because the poor are more exposed because they tend to live in marginal areas and depend on high-risk, low return livelihood systems such as rain-fed agriculture and face many sources of economic vulnerability including little physical infrastructure.

Programs for improving prediction methods and dissemination of warnings should be expanded and intensified. Efforts are also needed to determine the impact of disasters on the farm productivity of the Zanyokwe farmers. Farming communities constantly live with the risk of natural disasters, the Zanyokwe farmers are not an exception. As reported earlier on, hailstones destroyed maize crops for the

Zanyokwe farmers and affected their food availability. The following section deals with the social implications of the finding of this study on the Zanyokwe community.

4.10 Social implications of food security in the Zanyokwe Community

Food insecurity not only impacts nutrition, it also affects learning, brain development, behaviour, immune resistance and in turn, job prospects and life chances over the long term. Farmers depend upon profits from farming for their families' upkeep. Farmers do not in farming for food security reasons only. Their main involvement in farming is profit maximisation from their produce, once they have achieved this goal they are now able to take care of other immediate basic needs such as shelter and clothing. However, most farmers' main concern is their children's future in terms of education and health. With maximised returns from farming they can be in a position to fulfil this goal that is also a need. The presence of the scheme in the Zanyokwe community has played a positive role in that the community is able to buy fresh vegetables straight from the farm and at reasonable prices. The scheme also produces culturally accepted foods such as green maize that is sold in the form of maize cobs and also grinded and in the form of meal mealie and samp, which are staple diets or foods of Xhosa people. Moreover, farmers are self-employed and do not have pensions its vital that their farming business bring better profits so that they can save money for their upkeep and that of their minor children when they reach a stage where they do not have the strength for farming .

Although it is important to educate people about nutrition and diet, our living conditions, socioeconomic status and other outside factors affect the options available to us and our ability to stay healthy. As mentioned earlier on one of the major challenges facing is infrastructural challenges, as such remedying this

challenge is not only advantageous to the farmers but also to the community at large. Policies that would help improve food security include encouraging investment in poor communities; improving public transportation; developing community gardens, farmers' markets and partnerships between local, sustainable growers and low-income neighbourhoods, limiting advertising and the availability of junk food in schools; guaranteeing a living wage; and eliminating sugar and corn subsidies to large manufacturers in favour of locally grown fruits and vegetables. Implementing of such policies will reduce challenges associated with poor dieting such as obesity and malnutrition in both children and adults. Among the elderly, food insecurity exacerbates acute chronic diseases and speeds the onset of degenerative diseases, leading to decreased quality and length of life.

Having discussed and analysed the data collected it was expedient that the study discussion and findings be critically evaluated using the lens of the theory underpinning this study. This section intends to present this critical analysis of the study discussion, findings and analysis. Basically linkages with the theories and empirical studies made in Chapter 2 will be made. The chosen theory for evaluation is the Community Driven Development.

4.11 Community driven development: A critical evaluation

The CDD was chosen as the theory underpinning this study. From the findings the study has established that the Zanyokwe community is working for the betterment of themselves through the assistance from the government. In other words, the project has contributed significantly to community development and ultimately towards food security. The project has managed to create employment direct and indirect, created a closer source of farm produce is producing cheap food. Furthermore, looking at self-

initiative part of the CDD especial this study revealed that the project is contributed significantly towards food security.

One other issue that challenges food security and the CDD is the manner in which the sustenance of the project is viewed. In the Zanyokwe irrigation scheme, the farmers are over reliant on the government for funding as such their decisions over the project is sometimes undermined. The other challenge concerns the land tenure challenge which is problematic for the tenants to make long term plans and investments into land they do not have tenure security over.

The study also revealed that the community in Zanyokwe prefers to purchase produces from the irrigation project. This means the people are also supporting the farmers, whilst farmers are also supporting community development. In particular, this builds social capital within a community. In other words strong social capital is a critical component for community projects to flourish. The project also brought about infrastructure development, more jobs and enhanced incomes for the people. In a way the projects is building self-reliance, which makes the community immune to price hikes of commodities they should have been buying had they had no irrigation project. The study revealed further that community driven development theory postulates that increased capabilities and effectiveness of community systems brings substantial benefits to the people who are members. There would be no purpose in working for the elaboration of community systems to improve abilities and performance unless there was the expectation that this would bring benefits in excess of cost to the people served. But for the Zanyokwe project it is bringing benefits to the community.

The study showed that the components that are being addressed by the project are availability and affordability. In fact, theory accepts this proposition as the basis for concentrating on actions at the community level. For this study, focus should be directed on the fact that community driven development theory should enhance the entire community system in which Zanyokwe project is immersed. From this study, community driven development theory expresses a unique perspective on food security. It supplies, to those who would consciously intervene in community food security, a conceptual framework. It presents a logical basis for and general guides to the use of open system or democratic structuring, and the application of a holistic approach in efforts to stimulate the building of capacities, and to improve the performance of and in community for building a basis for producing and supplying food for the Zanyokwe community. From the findings of this study, it is clear that the community need to be more empowered by have the capacity to drive their projects with little reliance for funding from the government. From the point of view of community driven development theory, the benefits from broad and open participation accrue to the system. Individuals may profit or suffer from the learning and development gained through their own civic participation. However, the system has a net increase in its potential as more persons become active in the project than the current few people active on farming projects. This calls for more coordination among farmers so that they lessen conflicts as well as in making sure that they farm products to the optimal benefit of everyone; both farmers and the community at large. While, the community driven development approach does not purport to give answers to the basic questions of what, why, or how with regards to food security, it does however provide a conceptual platform or grounding for the building of community, setting and time specific theory by which to guide and assess

intervention in each particular system. For this study, it has been established that community projects should be more than just provide material benefits like income, but they should empower people, because disempowerment is seen a symptom of poverty. Considerable evidence from the study confirms that indeed the Zanyokwe project is contributing to food security in the community.

Furthermore, using the CDD approach, the project supporters are indeed playing a critical role in the sustenance and productivity of the project. However, as seen by the challenges of lack of adequate extension officers and the arguments by the respondents that they are not being prioritised by the government. Thus for the project to operate optimally, it will be necessary to further strengthen and deepen the support from the project supporters, especially the government. Moreover, other possible project supporters who can make substantial impact are the academic institutions especially Fort Knox College and the University of Fort Hare. These institutions can help enhance the expertise of the farmers, so that the project can produce more varieties than it is doing now.

4.12 Conclusion

In this chapter, the findings on Zanyokwe irrigation scheme were interpreted and discussed from data collected. This was related to the operations and structure of the Zanyokwe project as well as the challenges to the project with regard to food security. From the findings of this research, it is suffice to articulate that the Zanyokwe project is contributing substantially to food security for the Zanyokwe farmers and the surrounding communities.

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS

5.1. Introduction

The purpose of this study was to examine whether community development projects have made significant inroads into the food insecurity challenges facing the rural communities of the Eastern Cape in general, South Africa. In particular, the Zanyokwe irrigation scheme located in the Amahlathi Local Municipality was taken as the case study. This study was prompted by the continual prevalence of food insecurity facing the majority of South African households amidst the various programmes and initiatives that the South Africa government initiated. Food insecurity remains a threat to a significant number of households especially those that are in rural areas who depend largely in smallholder agricultural activities as a source of livelihood. Food insecurity continues to be a threat in the rural areas of South Africa particularly the Eastern Cape Province which is also counted amongst the poor provinces in South Africa. In addition, though food insecurity is reported to have decreased over the past years, the Eastern Cape Province remained the most affected in the country (WHO, 2011). The Zanyokwe irrigation scheme is one such project or programme that was initiated in order to reduce poverty and food insecurity in the Zanyokwe area. This study therefore aimed at examining whether the Zanyokwe irrigation scheme has made any significant inroads in enhancing food insecurity as well as improving the farmers' standards of living.

5.2 Conclusion

The main findings of this study indicate that the Zanyokwe irrigation scheme has and still is enhancing food security not only for its beneficiaries (farmers) but also for the

Zanyokwe area and surrounding communities at large. In the Zanyokwe area food insecurity is no longer a threat to the rural populace because of the presence of the project as it creates jobs for the non-beneficiaries as well as selling the farm produce at very affordable prices compared to the retail prices (see Table 4-2). The irrigation scheme has not only enhanced food security but has presented farmers with opportunities to send their children to school to even higher levels of education. According to the farmers if it was not for the presence of the irrigation scheme their children were going to be as illiterate as they (farmers) are. Farmers also indicated that they are now in a position to pay for their medical expenses and that they do not have to rely on state funds all the time. In a nutshell, the study found out that the Zanyokwe irrigation scheme has made significant.

It has been recognised that the Zanyokwe Irrigation scheme is has proved to be livelihood strategy that resource-poor farmers in Zanyokwe area can depend on in enhancing food security and improving the standards of living for the farmers as well as the Zanyokwe area at larger. The causes of food insecurity or the factors contributing to a food secure individual, family or community in the Zanyokwe rural areas are multidimensional. Zanyokwe area is an impoverished community that is characterised of low rainfall, high unemployment rate, and poor harvests especially where irrigation is not practised and to frequent droughts, shortage of inputs, lack of access to credit to buy agricultural inputs and lack of draught power lack of capital to start other businesses are also contributing factors. These issues are complex, and other aspects besides financial resources contribute to food security, such as access to appropriate food sources, the capacity to store and cook food, food production and distribution methods and so on.

With efforts to alleviate poverty and food security, the government of South Africa adopted a participatory approach in realising the goals or mandates of community development particularly on rural villages. The Zanyokwe irrigation scheme was initiated by the community and appeared to be having a positive impact on the plight of the rural people. There was a need for an adoptive collaborative management approach to address food insecurity in Zanyokwe, henceforth, the government, resource users (farmers) were involved in implementing the irrigation scheme. Resources, such as water bodies, land and labour were available but not fully utilized, therefore, the community was motivated to start the irrigation scheme.

Farmers with different socio-economic backgrounds were amalgamated, cooperatives were formed and leaders to implement the projects were elected. However, socioeconomic status of these farmers, such as age, marital status, gender and their level of education influenced productivity of farmers. For instance, the majority of the farmers fall in the age group of 55 to 65 years and the youths were said to be not interested in farming because of the uncertainties that comes with farming and the fact that farming is a demanding job. Apart from this, livelihood issues, passion about farming, the need to utilise the available water, land and grazing land, unemployment and self-employment were listed amongst the reasons that pull villagers to join the project.

The majority of farmers are married but women do not participate fully in farming activities due to traditional beliefs. Marital status has an impact on the productivity of the irrigation project, for example, in case of death of male spouse, it becomes difficulty for the widow to practice farming due to the fact that the Xhosa culture do not allow woman to inherit land that was previous owned by man. A majority of farmers has a primary education implying that it is difficult for some of the farmers to

adopt some modern agricultural techniques. Farmers who were the educated the most were more productive than those that were illiterate.

Agricultural products, such as, cabbages, onions and potatoes are produced and sold to the communities around Zanyokwe at reasonably affordable prices hence enhancing the food security status both at community and household level. The project is contributing remarkably not only to address food security but also for the general wellbeing of the farmers. Compared to other surrounding areas, produces from the farm are well cheap for many people within the community. Another success is job creation for community members particularly the youths with regard to land preparation, weeding, harvesting and fencing the plots. The Zanyokwe project is an economic viable program that has assisted resource-poor farmers to generate incomes and has opened way for availability of varieties of food at low prices compared to the retail price.

Although several improvements are underway today in the Zanyokwe irrigation scheme with regards to food security, however, the project is challenged by impediments, such as, road infrastructure, market related challenges, land tenure, lack of communication and coordination amongst farmers. These challenges are an impediment that is at presents undermining the capacity of the project to move beyond subsistence production to commercial farming, which will be of paramount importance in improving the farmers' standards of living in general and enhancing food security in particular.

Based on the findings of this study, the following recommendations are proposed:

5.3 Recommendations

5.3.1 Infrastructural development

The growth and sustenance of the Zanyokwe project can be considerably enhanced by improving infrastructure, especially the road network. Given that farmers decried bad roads as hindrance to access their market, it would be plausible for the government and or the municipality to continuously maintain the roads or the so called all-season roads. Floods hinder farmers from going to the field and even the hawkers are not able to come to the irrigation scheme. Infrastructural development especially bridges is essential. The current road is easily destroyed by rain and it is bumpy for small cars to get to the farms. Lack of rural road connectivity seriously constrains agricultural production: in the absence of rural feeder roads, the cost of moving produce can be as high and so a proper road will lessen this.

5.3.2 Increasing agricultural extension workers

Lack of adequate agricultural extension workers in Zanyokwe need to be resolved by increasing the number of extension workers. Agricultural extension officers are essential for sustainable rural agricultural development as well as for community development. Given that there is only a single extension worker attending all the farmers in the area, that individual has not been able to give sufficient attention to the concerns of the farmers. As such, proper agricultural techniques and necessary information has not been able to reaching the farmers timely. During the study, the current agriculture extension officer decried how much he is being overstretched by the demands of so many farmers that need his attention. In addition, there seems to be lack of cooperativeness amongst the farmers need to be trained on team building so that they can work together well.

5.3.3 Proper coordination of farm activities

Poor coordination of farming activities is serious challenge to the prospects of building food security and incomes of the farmers. It is essential that there be a proper coordination at the farms so that people do not produce the same produces that flood the market, rendering their initiatives unprofitable. This has been cutting back at income growth and employment. Proper coordination will in many ways improve the following: efficiency of farmers, effectiveness in production, enhances unity among farmers and proper planning for future sustainability. With the current poor coordination it will be challenging for the Zanyokwe farmers to produce at optimal levels.

5.3.4 Revitalisation of coops institutions

There is need for structural reforms to improve functioning of the coops and for ensuring greater efficiency and viability of community development projects. Coops need assistance in phasing out government financial support with a clear and active guidance to improve financial viability and generating internal resources. Greater democratisation of coops institutions and increased professionalism in their management capacity building is needed through awareness generation, training and participation. Those that belong to a coop did not seem to understand the fundamentals of cooperatives as such they need to be taught or trained what a cooperative is and the advantages of belonging to a coop.

5.3.5 Harnessing the Youth into agriculture

There are very few young people who actually own land and are interested in farming. This is consistent with the trend across South Africa that young people view agriculture as old people's business and also as unprofitable. In light of the high

unemployment levels in the country, it is critical that youth be actively involved in self-employment initiatives such as agricultural development projects so as to earn some income and hence reduce their plight. This is also fundamental in ensuring that once the elderly people are no longer active the youth should be able to carry on with farming in Zanyokwe.

5.3.6 Market accessibility

Markets are fundamental for farmers who produce for selling and the same is true for the Zanyokwe farmers. The farmers are struggling to penetrate to the formal market they are only depended on the informal markets. As such, they sometimes end up consuming their surplus income instead of selling them. The fact that they do not have any storage facilities for their products is not helping the situation. Thus, the farmers or the cooperative members need marketing skills so that they will be able to expand their market reach as well as production. If they have skills for marketing they can have engagements with buyers like retail stores, livestock farmers, vendors and institutions that are involved in fast food production. Not only that, it essential that they have relations with buyers to produce commodities on contracts. As of now farmers in Zanyokwe do not have contract engagements to produce commodities for their contractors. The government can play a role in addressing market related challenges faced by the farmers through regulating markets and coming up with strategies and policies that are not hostile to the smallholder farmer.

5.3.7 Support by educational institutions

Educational institutions near the Zanyokwe agricultural project can play a critical role in enhancing production at the project through offering technical support to the smallholder farmers. These institutions, particularly Fort Hare University and Fort

Cox agricultural college can assist the project with plant production, protection and quarantine, sustainable ecological management, sustainable insect management, land development and land-use planning and extension. These institutions through their research and teaching can be handy to the farmers by increasing their know-how and skills on various aspects essential for success and food security of the Zanyokwe community.

5.3.8 Addressing Land tenure challenges

It is important to strengthen and ensure secure land tenure for the smallholder farmers so as ensure increased farm productivity. This means addressing the land tenure problems, in which those owning the land are not the ones utilising the land. The land owners have been cited as predatory to the farmers, as they do not give them assurance over how long they should be working on their plots. Arguably, since this project has profound significance to the community there should be a mechanism that allows the transfer of ownership of land to those who are actually earning a livelihood on it. Thus the government can play a role in addressing this problem. In short, the people working on the project need secure land tenure rights. Simply put, secure access to land, whether through formal, informal, customary or other means, is necessary for the Zanyokwe farmers to enjoy sustainable livelihoods. As this study illustrates, what constitutes secure access is relative and the attributes of security will change from context to context. Land tenure problems are often an important contributor to food insecurity when disagreements arise over terms and conditions of use and it is most often that the tenant is kicked out by the landlord. Secure access to land should thus be considered when designing initiatives to curb food insecurity especially in the rural areas where it is widespread.

5.3.8 Agricultural subsidies

An agricultural subsidy is a governmental subsidy paid to farmers and agribusiness to supplement their income, manage the supply of agricultural commodities, and influence the cost and supply of such commodities. Examples of such commodities include wheat, feed grains (grain used as fodder, such as maize or corn, sorghum, barley, and oats), cotton, milk, rice, peanuts, sugar, tobacco, and oilseeds such as soybeans. The Zanyokwe farmers could increase their farm productivity if the subsidies that they receive in the form of inputs, seedlings, insecticides, fertilizers, seeds arrived in time. The farmers acknowledged the assistance given by the government but lamented that oftentimes these commodities arrive much later than anticipated.

In a nutshell, to enhance food security as well as improve the smallholder farmers' lives, this study recommends that there is need that the government to come up with programmes aimed at transforming smallholder farming into commercial farming or supporting smallholder farmers to graduate to commercial farming through granting farmers financial as well as technical support. When smallholder farmers graduate to commercial farming it appears that only then can tangible results are yielded in terms of farm productivity as well as profit maximisation which will help in keeping food insecurity aloof from the smallholder farmers. Commercial farming though prone to disadvantages like the smallholder farming, however, commercial farming when faces lesser challenges as such programmes aimed at transforming the lives of smallholder farmers should take such contention into consideration.

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APPENDICES:

Appendix A: In depth Interview guide and questionnaire for the Zanyokwe Irrigation Scheme beneficiaries



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My name is Sikhanyiso Ndlovu, from the University of Fort Hare in the Department of Development Studies pursuing a Master of Social Science Degree. I am conducting a research on the impact of community development projects on food security in the Eastern Cape Province; the case of Zanyokwe Irrigation Scheme in the Amahlathi Local Municipality, South Africa. You are guaranteed the information that you supply for this study will be used for academic purposes. Your responses will be treated as confidential as possible. Your co-operation determines the success of this study. Thank you.

Community:

A) Background information (Mark with an X where appropriate)

B) Gender:

Female	
Male	

b) Age

18 - 30		31 - 44	
45 -60		61+	

C) Marital Status

Single		Widowed	
Married		Divorced	

D) Educational Level

Primary		Diploma	
Matriculation		Degree	

E) Research Questions

1. What motivated you to join the Zanyokwe irrigation scheme?

.....
.....

2. When did you become a member of the Zanyokwe irrigation scheme?

.....
.....

3. How long have you been farming on your current farm?

.....

4. What kinds of Land Rights do you have? Choose from the following:
 - i) Permanent
 - ii) Temporal
 - iii) Lease
 - iv) Other (specify)

5. Choose the category that best describes your land ownership status from the following:
 - i) Owner
 - ii) Leasehold
 - iii) Freehold
 - iv) Inherited
 - v) Renting
 - vi) Other (specify)

6. What crops do you produce in your plot in Zanyokwe irrigation scheme?
.....
.....
.....

7. Is the project enhancing food security in Zanyokwe? Answer either yes or no.....
.....

8. If you answered Yes to question 4, may you kindly elaborate
.....
.....

9. If you answered No to question 4, may you kindly elaborate
.....
.....

10. In what ways does this scheme help address food security concerns in Zanyokwe?

.....
.....

11. Who finances your production on this irrigation scheme?

.....
.....
.....

12. At what level did community participation take place in the initiation of the Zanyokwe irrigation Scheme?

i. Implementation process

.....
.....
.....

ii. Decision making process

.....
.....
.....

iii. Planning process

.....
.....
.....

13. Do you belong to a coop? (Answer Yes or No)

.....
.....

14. If you answered No to the question above, may you kindly give the reasons why you do not belong to a coop?

.....
.....

15. Have you received any training pertaining to agricultural production and development? Please state what type of trainings you have received and how have they been effective to your participation in the irrigation scheme?

.....
.....

16. In what way do the Zanyokwe community benefit from the irrigation scheme?

.....
.....

17. What are the challenges and barriers that affect the Zanyokwe farmers from enhancing the farm productivity? Explain in detail

.....
.....

18. Have these challenges been addressed by the government?

.....
.....

19. What effect does the challenges and barriers mentioned in question 15 have on farm productivity in the Zanyokwe irrigation Scheme?

.....
.....

20. What are the main challenges to your production as well as to food security in Zanyokwe?

.....
.....

21. Do you receive any farm inputs? Answer Yes or No

.....
.....

22. If you answered Yes to the above question, may you state from whom do you receive farm inputs from.

.....
.....

23. If No may you explain why this is the case

.....
.....

24. May you make a comparison between the time when you were not a member of the Zanyokwe scheme to a time when you joined the scheme? What impact has the irrigation scheme had on your life besides enhancing food security?

.....
.....

25. Do you think the sustainability of the project is threatened in any way? Explain.

.....
.....

Thank you for your cooperation

Appendix B: In depth Interview guide for key informants: Agricultural Extension worker

1. How many years have you been working with the Zanyokwe farmers?
2. Role of the project leader
3. Who initiated the Zanyokwe irrigation scheme?
4. Activity (is) taking place in the irrigation scheme?
5. What criteria was used in choosing the beneficiaries of the Zanyokwe scheme
6. What is the impact of the Zanyokwe irrigation scheme on food security for the beneficiaries as well as the surrounding communities
7. Challenges facing the project leader in dealing with farmers?
8. What is the impact of the challenge (s) mentioned above on the farm production
9. Is the irrigation scheme doing well? What are the successes associated with the existence of the irrigation scheme
10. Mention and explain the failures that the irrigation scheme has had in the past
11. Structure (hierarchy) of the staff in the project (organogram)
12. Is there any monitoring and evaluation of the project activities?
13. If so, how often? Who does it?
14. Indicators of the performance of the project.
15. Who is the project sponsor? How and does he sponsor? Project objectives?

End of interview: Thank you for your co-operation in this investigation

Appendix C: Ethical Clearance Certificate



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ETHICAL CLEARANCE CERTIFICATE

Certificate Reference Number: RAH03
1SNDL01

Project title: **Community development project and food security: A case study of the Zanyokwe irrigation project in the Amahlathi local municipality, Eastern Cape Province, South Africa**

Nature of Project:
Masters

Principal Researcher: Sikhanyiso Ndlovu

Supervisor: Professor A
Rahim
Co-supervisor:

On behalf of the University of Fort Hare's Research Ethics Committee (UREC) I hereby give ethical approval in respect of the undertakings contained in the above-mentioned project and research instrument(s). Should any other instruments be used, these require separate authorization. The Researcher may therefore commence with the research as from the date of this certificate, using the reference number indicated above.

Please note that the UREC must be informed immediately of

- Any material change in the conditions or undertakings mentioned in the document
- Any material breaches of ethical undertakings or events that impact upon the ethical conduct of the research

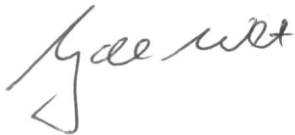
The Principal Research must report to the UREC in the prescribed format, where applicable, annually, and at the end of the project, in respect of ethical compliance.

The UREC retains the right to

- Withdraw or amend this Ethical Clearance Certificate if
 - Any unethical principal or practices are revealed or suspected
 - Relevant information has been withheld or misrepresented
 - Regulatory changes of whatsoever nature so require
 - The conditions contained in the Certificate have not been adhered to
- Request access to any information or data at any time during the course or after completion of the project.

The Ethics Committee wished you well in your

research. Yours sincerely



Professor Gideon de Wet
Dean of Research

12 December 2012