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**A SITUATIONAL SURVEY OF SIYAZONDLA HOMESTEAD FOOD
PRODUCTION PROGRAMME AND FOOD SECURITY, POVERTY
ALLEVIATION IN SELECTED COMMUNITIES OF NKONKOBÉ LOCAL
MUNICIPALITY OF THE EASTERN CAPE**

By

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DECLARATION

I, Bulelani Phezisa, hereby declare that:

- The work presented and contained in this dissertational project is mine and is my own original work.
- This work has not been previously presented or submitted at any other College, University or any High Research Institution for obtaining diploma, degree or for polices respectively.
- All form of sources used or referred to, have been documented.
- If this work has been finally approved, I hereby give permission for my thesis, to be available for use and photocopying to improve and increase standard learning environment.

Submitted in partial fulfilment for the degree of Master of Agriculture in Agricultural Extension in Department of Agricultural Economics and Extension at the University of Fort Hare.

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Signed _____

Date _____

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ABSTRACT

People living in rural areas are continually losing their value, dignity, ubuntu and rural nature of livelihood. Agriculture in these areas characterises the nature of rural livelihood. Traditionally, people living in rural areas were highly dependent on their production from gardens for food, income (barter exchange), and other social activities. Nowadays, that motive and interest is no longer operating at its full potential, so to revive that history and nature, household (homestead) production, certain programmes were introduced to greatly improved the standard of living of the poor, and it has proved to have an impact as it has generated income, and created food stability and employment through the project.

Home gardens are there and can be used as the method and the strategy toward improvement and development of the people around the world, more especial to developing countries. Certain programmes that are initiated for acting against the challenges faced by rural people have failed to materialise and operate on their fully potential. The Siyazondla homestead food production programme is the one of the programmes practiced by the government of South Africa to act against such challenges, affecting especially poor people.

This study was aimed at assessing the role of Siyazondla homestead food production programme in food security and poverty alleviation in selected communities of Nkonkobe local municipality of the Eastern Cape. It took the form of a case study in Msobomvu, Ngcothoyi and Binfield locations. The Nkonkobe local municipality is demarcated into five major areas: Middeldrift, Alice, Seymour, Fort Beaufort and Balfour. The study sample was collected from beneficiaries and non-beneficiaries of the Siyazondla programme. The sample size was 90 respondents, from which in one area, a 15 beneficiaries and anticipated non-

beneficiaries were targeted. The target sample from each village was collected from 15 beneficiaries and non-beneficiaries. Many farmers from the study area benefited from the programme, though a limited number was targeted. Therefore, a probability sampling was applied and employed, where there were more than required number of beneficiaries of the programme and anticipated beneficiaries of the programme. The study was effectively and efficiently carried out and achieved with the use of personal interviewing of the recipients by use of questionnaires. The study was analysed by a computerised programme of analyses called SPSS v.2.1 and excel.

The objectives of the study based on food security, poverty alleviation and reduction, and also improving nutritious status. The finding of the research clearly indicates the outcome of the programme on livelihood basis of the beneficiaries. Some of the objectives of the programme were achieved, such as food security and nutritious levels, whilst other objectives had shortcomings. The finding of the study also shows that programme, though had original benefits but also there are the anticipated and probable benefits of the programme Siyazondla, such as income, skill of farming, improving social status, and there are some possibilities when the programme is properly implemented.

Though the majority of people are concentrated in rural areas, the programme on its own had shortcoming to meet needs of the whole population, as food insecurity, unemployment and poverty are taking its course. The programme on its own had shortcoming such as lack of adequate resource and as results, very few people benefited from the programme. Another shortcoming of the programme is the effectiveness of agricultural extension personnel to certain aspect such as marketing of farmers produce and proper monitoring and evaluation of the programme. Therefore, in the long run programmes of this nature are promising, there

will be some development and improvement toward growth and better standards of livelihood. It is through this study that had to assess the structure, procedure, strategies implemented of the programme and impact of the programme to both beneficiaries and anticipated beneficiaries of the programme.

Keywords: rural area, social challenges, home garden, home based food production and Siyazondla

DEDICATION

This report is dedicated to my family, especially my grandmother, wishing her a speedy recovery. Her support is immeasurable. To my neighbour, Mr. Bangani Mbuyiselo, who motivated me from High school and up to now, you have been a rock star and the pillar of my strength.

Abbreviations and Acronyms

AVRDC	Asian Vegetable Research and Development Center
Bnfl	Binfield
CASP	Comprehensive Agriculture Support Programme
CLT	Communal Land Tenure
DoA	Department of Agriculture
DRDAR	Department of Rural Development and Agrarian Reform
EC	Eastern Cape
ECDA	Eastern Cape Development Agency
ECDARD	Eastern Cape Department of Agriculture and Rural Development
FAO	Food and Agriculture Organization
FMT	Foreign Modern Technical
FPL	Food Produce Satisfactory
HFPP	Household Food Production Programme
HPHC	Home production for home consumption
IAASTD	International Assessment of Agricultural Science and Technology for Development
IFRC	International Federation of Red Cross and Red Crescent Societies
INP	Integrated Nutrition Programme
IPM	Integrated Pest Management
KASA	Knowledge, Attitudes, Skills and Aspirations
KZN	KwaZulu-Natal
LRAD	Land Redistribution for Agricultural Development
M&E	Monitoring and evaluations
MFP	Massive Food Programme
Msbmv	Msobomvu
MTEF	Medium Term Expenditure Framework
MV	Modified Variety
NEDA	Nkonkobe Economic Development Agency
NGO	Non-Governmental Organisation
NGP	Non-Governmental Programme
Ngthy	Ngcothoyi
PGDP	Provincial Growth and Development Plan

PTP	Primary Target Phase
RDP	Reconstruction and Development Programme
SG	Social grants
SGB	School Governing Body
SHFPP	Siyazondla Homestead Food Production Programme
SPPM	Scientifically Protections and Preventions Materials
SPSS	Statistical Package for the Social Sciences
Stats SA	Statistics South Africa
STP	Secondary Target Phase
WARD	Women in Agriculture and Rural Development
WMDG	World Millennium Development Goals

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CHAPTER 1

Introduction

1.1 Background of the study

People living in rural areas are easily distinguished and characterised by their strong form of rural culture and norms and traditional strategies of livelihood. The way they do things is closely related to nature and also in response to available resources and existing conditions. According to Mundi (2006), a rural area is a location with low population density, small size and relative isolation, where the major economic activity is agricultural production, and where people are relatively homogenous in their values, attitudes and behaviour. Obidike (2011) points out that nowadays rural farmers account for the greater part of the population of any developing country. The major source of income and food is derived through agricultural activity, which is practised from small to large scale, subsistence farming, emerging farming and commercial farming.

According to Talukder *et al.* (2003), home gardens are one of the most ancient food production practices that are commonly practised throughout the world. Peasants and people living in rural areas describe very well the nature of rural livelihood as they are based in a farming environment, especially those in subsistence farming at household level for food production. According to FAO (1995), a home garden is a farming system which combines different physical, social and economic functions on the area of land around the family home. Home gardening is the cultivation of a small portion of land which may be at the back of the home or within walking distance from the home (Olajide-Taiwo *et al.*, 2010). The activities and practices of this nature occur throughout the world in different methods: in back yards, in pots, alongside fields and roads, wherever available soil and space can be found, gardens can

grow (AVRDC, 2013). According to Krishnal *et al.* (2012), home gardening is one of the strategies used in securing food for people by the people. The significance of home gardens to rural livelihoods is appreciated throughout the world (Fernandes and Nair, 1986).

Therefore in the process of securing any farming practice successfully, land is granted, taken and regarded as the most important resource for any farming activity. The land for use has to be authorised and secured in order to practise any farming activity. Land-tenure systems vary from one society to another. Ngemntu (2010) highlighted that there are many types of land tenure systems in South Africa, through which one engages in order to access land. According to FAO (2002) these land tenure systems are categorised into *private*, *communal*, *open access* and *state ownership*. Open access and communal land tenure systems are the most predominant tenure systems for household food producers in rural areas. In some communities land is owned by a tribe or kinship group, and each family has the right to use as much land as it needs to feed itself. It cannot sell or rent that land to anyone else, and there may be restrictions on the uses to which the land can be put. In other societies individuals can buy land and do what they like with it.

Gilimani (2005) observes that an African rural household survives by home production for home consumption (HPHC), which is one of the highest agricultural activity practices in regions dominated by rural areas. Lehohla (2013) states that the number of households engaged in agriculture in South Africa was 2,9 million in 2011 and these agricultural households are mainly located in Kwa-Zulu Natal (24,9%), Eastern Cape (20,7%) and Limpopo (16,3%). People living in rural areas are challenged by numerous factors including socio-economic and physical factors. The rural sector deserves immediate and considerable attention.

Among the strategies used by government to fight challenges such as food insecurity (hunger, poverty, ill health) and unemployment, there are numerous agricultural programmes for different farming activities. Programmes introduced by the Eastern Cape Department of Agriculture include a livestock development programme, the Massive Food Programme, and Siyazondla Homestead Food Production. The Siyazondla programme is for households and homes that are particularly vulnerable. It supplies and provides inputs and implements to farmers to secure household food, income and nutritious vegetables.

1.2 The problem statement

According to Baiphethi and Jacobs (2009), South Africa is self-sufficient in food production at the national level. However, about 14 million people are said to be vulnerable to food insecurity and 43% of households suffer from food poverty (Machethe, 2004). These indications also reflect South Africa, in a global context, as a country that is food secured, but on the ground level, which predominantly consists of rural areas, the opposite seems to be true. This means that nationally South Africa is food secure, but locally, which includes rural areas, it is challenged by food insecurity, poverty, low income generation and hunger. Population estimates indicate that about 47.1% of South Africa's population live below the poverty line (Armstrong *et al.*, 2013). According to Chivhinge (2011) South Africa, like any other developing country in Africa, is battling against food insecurity, ill health, poverty, unemployment and crime.

In the past, rural households produced most of their own food, but recent studies have shown an increase in dependence on market purchase by both urban and rural households, in some cases reaching 90% of the food supplies (Baiphethi and Jacobs, 2009). This indicates that

most rural households purchase a larger proportion of food from markets than what they produce themselves. There has been a shift from production to consumption.

Nkonkobe local municipality is made up of the following major towns: Alice, Fort Beaufort, Seymour, Middledrift and Hogsback. Nkonkobe Local Municipality is part of the Amathole District in the Eastern Cape Province (Nkonkobe Economic Development Agency, 2013). It is predominantly of rural and the majority of the population live in villages and on farms. Therefore, the study looks at rural areas, specifically at farmers involved in and benefiting from the Siyazondla programme and those farmers eligible for the programme. Yusuf *et al.* (2013), citing Vengayi (2009), maintain that the Nkonkobe local municipality has been identified as having challenges of poverty, a high unemployment rate and poor agricultural production. Supporting this, Nkonkobe Economic Development Agency (2013) notes that the Nkonkobe local municipality has a high unemployment rate (58%) and poverty levels (85%) of the total population live below the poverty line of R1 500 per month. According to the Nkonkobe Economic Development Agency (2013), in 2011 the population of the area was about 135 660, living in 27 716 households.

Finding appropriate and effective ways of reducing the prevalence of food insecurity in South Africa at provincial levels remains a major challenge to the development of rural livelihood. Food challenges will continue to be a foreseeable constraint if no further developmental strategies and steps are taken to overcome these challenges. According to the Nkonkobe Economic Development Agency (2013), the local economy (employment) is mainly dependent on government and community services, whilst the agricultural sector is dominated by forestry and citrus production although the citrus production has experienced a decline in recent years. Home gardening is one of the possible interventions for enhancing

food security for the poor, and should be considered in the context of a broader national food security strategy (Marsh, 1996).

“Siyazondla” is isiXhosa, which means “We feed ourselves”. Due to the numerous social and economic challenges of the Eastern Cape, various programmes have been developed to fight these problems; and Siyazondla is one of those programmes. The Siyazondla homestead food programme was initiated as a strategy of ensuring food security and providing self-employment (generation of income). Therefore, programme impact is measured in terms of economic impact and social impact.

According to the Provincial Growth and Development Plan of the Eastern Cape (2004), the districts and local areas with the highest poverty and high unemployment rates are to be beneficiaries of the Siyazondla homestead food programme, which is a gardening production programme. The programme is the Department of Agriculture’s effort to curb poverty, starvation and underdevelopment (Kukard, 2008). Therefore this study is aimed at evaluating and assessing an overview impact of Siyazondla homestead food production programme in food security and poverty alleviation in selected communities of Nkonkobe local municipality of the Eastern Cape Province.

1.3 Research objectives of the study

The main objective of this study is to assess the role of Siyazondla Homestead Food Production Programme (SHFPP) in food security and poverty alleviation in selected rural communities of the Nkonkobe municipality of the Eastern Cape.

1.3.1 Specific objectives

The specific objectives of the study are:

- To outline the anticipated benefits of the SHFPP.
- To identify the criteria used to select beneficiaries of the SHFPP.
- To determine the role of agricultural extension in building farm capacity and general activities.
- To assess the achievements of the SHFPP in terms of household income and availability of food.

1.4 Research questions

The study seeks to answer the following questions:

- What were the anticipated benefits that SHFPP recipients experience and gain from the programme?
- Which procedure was used to select beneficiaries of the SHFPP?
- What role did agricultural extension played in building farming capacity and general services?
- What are the benefits gained by the recipients of the SHFPP at household level in the study area?

These research questions were then further scrutinized, dissected and described. This comes of as a results of some other questions, might be broad and needs to be further explained for understanding.

1.4.1 Research question 1: What were the anticipated benefits that SHFPP recipients experience and gain from the programme??

Beneficiaries of the programme are provided with inputs and equipment for farming. The inputs and equipment include seeds, seedlings, tools (spades, forks, wheelbarrows, buckets, rakes) etc. The inputs of Siyazondla programme changes from time to time. These resources are intended for use in the production process. Agricultural extension workers are also involved in the production process. According to Bembridge (1991), agricultural extension practitioners are judged on how successful they meet the goals of the Department of Agriculture. Agricultural extension practitioners serve as tools for the Department of agriculture to accomplish its goals and objectives. Agricultural workers operate in a multidisciplinary environment and their activities are multidimensional. Their role includes changing knowledge, attitudes, skills and aspirations (KASA) of farmers. This will improve farmers' independent decision-making ability as well as giving them a sense of ownership.

People usually become involved in a programme with various expectations. The skills and knowledge gained by recipients are measured and evaluated in both short and long time periods during the course of practice of agricultural activities. Experience gained by programme beneficiaries is measured based on skills, knowledge and information learned on the programme as well as beneficiary management of agricultural activities, adaptability to changing environment, particularly in terms of agricultural sustainability. The goal is that from these small agricultural programmes, capable home garden producers and potential benefiting individuals are developed into successful business farmers and breadwinners.

1.4.2 Research question 2: Which procedure was used to select beneficiaries of the SHFPP?

In most developing countries, the majority of people who are poor, hungry and unemployed are found in rural areas. Therefore, in some government initiatives there are certain programmes that are designed for specific individuals, as a result of previous experience, existing living conditions or likely expected conditions. Each programme thus has a format, structure and method to be followed for better programme implementation. Like any other programme, the SHFPP has its own grounded structures that are followed and used in order to select and identify beneficiaries. The beneficiaries of the programme are selected by the agricultural officers but some times are in-conjunction with the social workers, non-governmental organisation and also rural head masters. The programme within the municipality is implemented by the department of agriculture (Drdar), Department of social development and Neda. The beneficiaries of the programme are easily identified, as it involves different stakeholders and uses different criteria. Therefore, farmers being part of the programme, indicates that do meet the requirements. This question seeks to find out what procedure was followed to select beneficiaries of the programme.

1.4.3. Research question 3: What role agricultural extension played in building farming capacity and general services?

There are different roles, responsibilities and activities that agricultural extension are assigned to operate, implement and functioned to, for different programmes. They serve different role of the department of rural development and agrarian reform. Each programme has an approach that it needs to tackled. This is the same, as for the case of the programme Siyazondla, whereby agricultural extension workers, are to function different roles and activities. The researcher in this question will attempt to find out the role and activities that

agricultural extension workers are doing or functioning in the implementation of the programme.

1.4.4 Research question 4: What are the benefits gained by the recipients of the SHFPP at household level in the study area?

Here the researcher will seek and to understand in what ways had the SHFPP impacted people of the beneficiary areas. Did the programme achieve its goals, objectives and priorities? Did the programme beneficiaries gain and achieve anything out of the programme being implemented? Lastly, has the programme positively changed the lives of the beneficiaries and non-beneficiaries in the selected areas?

1.5 Definition of concepts

❖ Vulnerability

There are a number of ways that livelihoods of people are challenged in nature. For example, the area where people reside can influence their lives and livelihoods. However, households with many livelihood assets are generally more able to preserve their lives and property in the face of shocks than households with fewer assets (Carloni and Crowley, 2005). According to the IFRC (1999), vulnerability is defined as the diminished capacity of an individual or group to anticipate, cope with, resist and recover from the impact of a natural or man-made hazard. Therefore, people can be physically, socially and environmentally vulnerable. Vulnerability means the susceptibility of people and communities exposed with their social, economic and cultural abilities to cope with the damage that could occur (Sadaka *et al.*, 2013). Carloni and Crowley (2005) argue that livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain its capabilities and assets both now and in the future, while

not undermining the natural resource base. The participants of the programme Siyazondla become the beneficiaries of the programme when they are vulnerable or susceptible to social, economical, physical and environmental. Therefore, the programme aimed at to improve the standard of living.

❖ **Food Security**

Food security is a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (FAO,1996). It is often defined based on the four pillars of food security, which are *food availability, food utilisation, food stability and food access*. According to Khanyile (2011), food security exists when the issue of poverty is being addressed. The opposite of food security is food insecurity, which exists when people do not have adequate, physical, social or economic means to access food. Food insecurity is therefore a by-product of poverty and hunger.

❖ **Poverty alleviation**

Poverty can be defined as a pronounced deprivation of well-being related to lack of material income or consumption, low levels of education and health, vulnerability and exposure to risk, no opportunity to be heard and powerlessness (World Bank, 2001:15). Poverty alleviation encompasses actions where available resources are used either to avoid or to diminish poverty. Poverty alleviation should not be confused with poverty relief and poverty reduction, although these terms are often used interchangeably. Poverty alleviation is aimed at reducing poverty in the lives of the vulnerable and the poor. Among the programmes used by the government, the Siyazondla Homestead Food Production Programme was initiated as a tool and strategy towards poverty alleviation in the Eastern Cape Province.

❖ **Home Garden**

According to FAO (1995), home garden may be defined as an integrated system which comprises different activities and programmes in a small-scale area of land. This area produces plants for home use and flowers for the beauty. It is there, a skill and an art of science to properly arrange flowers and plants, to produce, and to preserve for home uses. These home gardens are created and maintained by household members who live in the home. Home gardens are there serving different purposes and functions as they are performed throughout the world. According to FAO (1995), a home garden has a special significant importance, especially food, income and nutrition. Therefore, there is a wide range of different products that comes out in a homestead.

❖ **Agricultural programme**

The Oxford English Dictionary (2009) describes a programme as a planned series of future events, in detail or sets of related activities with a particular long term aim. The Collins English Dictionary (2011) defines a programme similarly, as a plan of actions aimed at accomplishing a clear business objective, with details of what work is to be done, by whom, when and by what means or resources that will be used. Therefore, agricultural programmes may be described as prepared agricultural activities, with goals and objectives to meet the needs of people. The need for programmes is a result of existing situational conditions, surveyed results and also for future expectations. Programmes are basically needed in order to act against existing challenges, improve situations, develop standards, and achieve the programme goals.

❖ **The Siyazondla Homestead Food Production Programme (SHFPP)**

According to Blaii-Mdolo (2009), the word ‘Siyazondla’ means ‘people to feed themselves’. This is an agricultural programme initiated by the Department of Agriculture to curb and fight against social challenges faced by the rural households, such as poverty, food insecurity and unemployment. The Siyazondla homestead food production programme (SHFPP) is a home-based initiative for the production of vegetable crops, such as spinach, cabbages, beetroot, carrots and onions, in a small area of land (garden), whereby participants receive production inputs for home gardening. Wide criteria and procedures are followed in order for participants to benefit from the programme. Participants benefit as a result of their socio-economic challenges (poverty, hunger, health status and unemployment). The limitations of the programme are on its production inputs, resources and quantity of participants forming part of the programme. There are very few inputs and resources of the programme such as garden tools (spade, wheelbarrow, seedlings, watering-cans and hoe) etc.

For the programme to function productively, efficiently and effectively, there has to be efficient co-operation between beneficiaries of the programme and officers, and also there must be closely monitoring and evaluation by agricultural advisory (extension) workers. The outcome and impact of the programme must be focused on solving the challenges that the programme seeks to achieve: food security, income and improved nutritious status in the household.

1.6 Significance of the study

This study can be considered as an important review of the strategy and a tool for curbing and minimising challenges faced by farmers in household production. The Siyazondla programme operates at both a household and a community level. Rural communities are most affected by

socio-economic challenges, and some of the challenges that are faced by the rural household can be dealt with through household production (employment, food security, income and nutrition). This will awaken the consciousness of rural farmers to be more concerned with the challenges they are facing in their daily lives. On the other hand, this programme, implemented by the Department of Agriculture, can assist agricultural officers, advisors and farmers to find better ways to effectively and efficiently implement the programme successfully.

1.7 Delimitation of the study

This study is based in the province of the Eastern Cape, South Africa, in one of the local municipalities, Nkonkobe Municipality in Alice, of the Amathole District Municipality. The Alice area is made up of more than twenty rural areas, but only three villages have been selected: Msobomvu, Ngcothoyi and Binfield locations of Alice. Geographically, these areas are close to each other and are within the surrounding area of Alice. Within each selected village, the targets are the people participating and benefiting from the Siyazondla programme and also individuals who were eligible but were not selected (non-beneficiaries). In other words, in each village the selection of participants was based on all individuals who are vulnerable and qualify as recipients of the programme, and those benefiting from the programme.

All the qualifying individuals were selected and divided into two groups: beneficiaries and non-beneficiaries. Therefore, not every member of the community would be selected and interviewed for data collection, but only those two groups were of interest and this has minimise the number of people used in the study. There were two groups of farmers of the

programme Siyazondla: the beneficiaries (experimental group) and non-beneficiaries (control group).

1.8 Outline of the thesis

This study is divided into six chapters, arranged as follows:

Chapter 2: This chapter provides a literature review relative to the subject. It provides a clear picture of the Siyazondla homestead food production programme. The Siyazondla homestead food production programme in the Department of Agriculture (DoA), fall under the agrarian transformation and food security. Agrarian transformation programmes and food security are also reviewed in this chapter.

Chapter 3: This chapter deals with the different types of home garden practices, their values and home garden achievements.

Chapter 4: This is the methodology chapter. It describes the selection and description of the study area, including factors such as climate, land, soils and water resources. This is the preliminary survey of the study area. It further deals with the study methods, strategies and research designs for the collection of data. The chapter covers the various steps the study used to conduct the research.

Chapter 5: This chapter presents the discussion of findings from analysed data of the study.

Chapter 6: The last chapter summarises key issues of the research, and makes some recommendations for policy making and possible implementation.

CHAPTER 2

Literature review

2.0 Introduction

This chapter deals on reviewing literature based on the programmes implemented by the former Department of Agriculture, now the Department of Rural Development and Agrarian Reform of the Eastern Cape Province. Many household farmers are challenged by socio-economic factors, especially those in rural areas. From the plans and strategies to counteract such problems, government initiated and formed different programmes for different beneficiaries, and the Siyazondla programme was one of these programmes. An agricultural sector could serve as the source and backbone for generating sufficient food for most African states and beyond. In the past, agriculture has played a crucial part in the development of people, ensuring better sustainability and the existence of humankind. To have better livelihoods, people need to have sufficient quality and quantity of food. For this reason, and because of social challenges such as poverty, hunger and unemployment, which become worse each day, certain departments in South Africa initiated, developed and implemented programmes such as Siyazondla.

This chapter begins by providing a broad perspective of prevailing conditions in the Eastern Cape. The first section reviews the Eastern Cape Agricultural development food programme for poverty alleviation. This is followed by certain agricultural programmes and their meanings, such as Siyazondla homestead food programme concepts, which are precisely and clearly defined.

2.1 The role of agricultural extension in the Nkonkobe local Municipality.

Creating enabling environment for effective management of extension and advisory service and also facilitating extension and advisory service to improve equitable agricultural productivity for food security, economic growth and development are some of the key performance areas of agricultural extension in the province of the Eastern Cape. The role of agricultural extension in the Eastern Cape is very important for farmers to gain access to promoted innovation and information about different and efficient agricultural practices. The department of rural development and agrarian reform, teams up and partners with a number of different organisation and stakeholders towards better livelihood of the farmers, such as Dohne Agriculture Development Institute (Research and innovations), Universities and Colleges (Research, Education and Community engagement and outreach), and also agents (NEDA). Therefore, the role of the department with agricultural extension as their agent and involvement is there to support farmers, promote and coordinate rural development and agrarian reform intervention. The following are the role and function performed by agricultural extension in the Nkonkobe local municipality.

2.1.1 Agricultural programmes implementation.

A number of agricultural programmes are implemented in the Nkonkobe local municipality, such as Massive food (Maize cropping programme) e.g Amagwali (50 ha), Amabhele (50 ha), and Gaga (50 ha). This programme is a departmental programme, for its function, and sustainability toward implementation, it is agricultural extension role to play a huge part programme. Programmes of this nature are initiated and started from starched, whereby farmers are involved in farming and other don't but having access to land. So, the role of agricultural extension, in bring such people together for one common goal and objective is very important towards growth of local economy and food security. One of the programmes

that is also implemented in the Nkonkobe local municipality, is the livestock development programme. This one can be specifically called ram exchange. The aim of the programme is to improve the quality of sheep in the province, more especially wool quality of emerging, small-scale and subsistence farmers. Farmers are organised that are rearing and producing sheep, and the shearing shed were built. Local farmers were now able to access and own quality sheep breed such Dohne Merino sheep. Agricultural extension officers serve as interlink of local farmers and producing agents. Agricultural extensions are there involved to such programme to maintain sustainability and to make sure that orders of programme are followed, obeyed and are managed properly. The ram needs to be maintained by also involving primary health care technician for them to implement their programmes such vaccination programme (sheep scab).



Farmers are receiving rams.

2.1.2 Establishing projects and forming co-operatives.

Situational survey is one of the key and important factors for agricultural extension toward making use of the acquired skill and knowledge. Programmes and projects are developed and implemented, and for that purpose there is no guarantee for one programme or project that is

implemented in one area, for next area will be successful. Agricultural extension workers are dealing with number of individuals of different characters. Dealing with such wide variation of human character, is important towards formation and developing of projects and co-operatives. The skills acquired such as human skill, conceptual skill and managerial skill plays a crucial role for projects formation. Agricultural extension as a servant of local farmers interlinks rural people and farmers with Neda for projects and co-operative formation and sometime for funding. It is for this reason, there is a number of projects and co-operatives formed within the Nkonkobe local municipality such as Umzamo projects (Broilers at Sheshegu), Bergplass Layers (Bergplass), Vukuqhakaze and Phumlani WARD (ward 13), and Lindokuhle poultry and Sophumelela veg (ward 15).

2. 1.3 Marketing of agricultural products

Programmes and projects are initiated, implemented, monitored and evaluated by agriculture extension workers with intentions. These programmes and projects are initiated with certain objectives such as food security and income etc. A gain toward every endeavour of farmers or farming environment motivates farmer to do well and more. Agricultural products in nature are perishable and the produce must reach market or consumed before they denatured or loose value. Agricultural extension workers are working hand-in-hand with agents for the marketing of produce of local farmers. They are working with agents (broker) such as Bkb for the market of wool production (Port Elizabeth), Maize and Beans production of Massive food production, whereby is marked within local farmers of the same and different area. This interlinks farmers and builds farmers' capacity with the local municipality. Neda (Nkonkobe Economic Development Agent), in conjunction with agricultural offices, are also working together for farmers to market their produce and accessing contracts.

2.1.4 Efficient use of natural resources

Agricultural resources in nature are scarce, and their availability needs to be kept and protected from exploitation and mistreatment. It takes some time for resources to be recycled and reclaimed. Agricultural extension and advisories are working hand in hand with farmers and local people over use of agricultural resources such as land (soil, vegetation and water). Resources need to be effective and efficiently used for next generation. Land care programmes such as removal of alien plants (*Ukatyi*), and Donga reclamation are some of the programmes implemented within the local municipality to maintain and keep standard of veld in good conditions.

2.1.5 Assisting farmers in acquiring funding and resources

Agricultural extension advisory works with farmers at grass root level. Application for funding and certain resources is a process that takes some time to materialise. Farmers and rural individuals that have potential in farming are easily recognised by their local agricultural extension advisory. This facilitates the process of farmers in acquiring funding from different stakeholders and financial institution. A number of projects and programmes (Massive food programme) were funded by the Eastern Cape Rural Development Agency. These programmes wouldn't be effective and implemented, if only agricultural extension workers were not involved. The orange industry within the local municipality is receiving huge subsidy from different institution and also from the department of agriculture because of their economic impact. Therefore, enterprises that play huge impact towards growth of the economy of the Nkonkobe local municipality.

2.1.6 Training and visit of farmers

Training and visit approach is one of the approaches that was developed and formed, to induce farmers to increase production. Success of this is measured in terms of production increases. In this approach, farmers are visited and trained with necessary agricultural practices and methods of production. This approach is related with a top-down approach, whereby it is the agricultural officers, that disseminate and transfer knowledge and skill to farmers. Farmers are training with farming activities. Agricultural shows, information day and field visits, is whereby farmers are organised to acquire skill and information for farming. Another approach that the agricultural extension workers are using within Nkonkobe local municipality is the participatory approach. Amanzi for food learning network is one of educational network, that involves different stakeholders such as agricultural extension, Dohne research agents, Neda, educational institution (Fort hare University and Fort Cox College), whereby farmers are training on rainwater-harvesting.

2.2. Eastern Cape Department of Rural Development and Agrarian Reform poverty alleviation programmes.

According to Williams *et al* (2008), a number of initiatives have been developed and targeted in former homeland areas including the implementation of the integrated Household Food Production Programme (HFPP), i.e. Siyavuna (KZN), Siyazondla (EC), operation Qumithuli (dry land maize cultivation or field crops), New Massive Food Programme (medium to large scale commercial farmers (area greater than 50 ha)), Green Revolution, and Resis (in Limpopo).

People from rural areas will continue to suffer from unemployment, hunger, poverty, chronic diseases if no planned strategies are implemented. According to Eastern Cape Department of

Agriculture and Rural Development (2010), of the total Eastern Cape population of 6 648 600, there are 4 529 000 people suffering from poverty, 2 553 000 from chronic hunger, hence 78 research projects were developed and implemented, whilst 1 458 848 beneficiaries were assisted with R425m over the past five years to enhance food production. According to Chivhinge (2011), the 2002 IFSS South Africa reported that households in the Eastern Cape were the poorest in the country with 70% or almost one million of the 1.33 million households spending less than R1 000 per month and about 100 000 households spending more than R3 500 per month on food. According to Eastern Cape Department of Agriculture and Rural Development (2010), the Eastern Cape is not self-sufficient in terms of food production due to non-sustainable use of natural and other related resources. This confirms the Eastern Cape as a poverty-stricken province, and strict measures had to be developed in order to prevent the situation from spreading to other provinces.

Poverty in the Eastern Cape is exacerbated by inadequate safety nets, weak disaster management systems, inappropriate farmer support services and lack of purchasing power (Chivhinge, 2011). In the process of alleviating poverty and its associated challenges, certain agricultural programmes have been initiated. These include programmes such as the Siyazondla Homestead Food Production Programme (home gardens and community gardens), Siyakhula (small-scale) and Massive Food Production (large and wide fields of cultivation). Infrastructural programmes include CASP (Comprehensive Agriculture Support Programme) where livestock programmes include livestock improvement. These programmes were developed under the authority of the Green Revolution Programme to meet the Millennium Development Goal of food security and also to slow down the spread of poverty in the Eastern Cape. The Green Revolution programme focused on farmers by providing

production materials for agricultural activities such as fencing, water dams, boreholes, deep tanks, tractors and other implements.

2.3 Siyazondla homestead food production programme (SHFPP)

2.3.1 An overview of the Siyazondla programme

The Siyazondla food programme is a homestead food production programme targeting the poor, vulnerable and food-insecure households who have access to a small piece of land (garden) (Makara, 2010). SHFPP is closely related to certain non-governmental programmes (NGPs) such as Xoshindla (fighting poverty) and Vukuzenzele (wake-up and do it yourself). Programmes of this nature aim to help poor households to become self-sufficient by producing food on their own. Siyazondla was initiated as an Eastern Cape Province strategy for food security and it is an effort to curb poverty, reduce hunger and provide self-employment. The programme was initially formed to operate in backyard garden and surrounding home space, so a minimum of approximately 12m x 12m of land is required. As emphasised, training people in basic farming and promoting use of backyards for agricultural purposes could help address food security problems (Kwaru and Gogela, 2002).

Each programme has its own priorities, visions and mission, and targets different individuals and potential beneficiaries. Siyazondla is ultimately aimed to be a programme to operate in home gardens throughout South Africa. For this reason, SHFPP is mainly focused on the following objectives (Makara, 2010):

1. Demonstrating effective training and extension service,
2. Building decision-making and management capacity, and
3. Guaranteeing food security for rural and urban people.

Rural people require skills for agricultural production, and this is one focus of Siyazondla. The role of the agricultural extension advisory service in Siyazondla is to bring about agricultural resources, disseminate useful agricultural information (skills and knowledge) to the people, and monitor and evaluate programme progress.

2.3.2 Target beneficiaries of the Siyazondla programme

Generally, the point of departure for Siyazondla is from the allocation of production resources (inputs) and the targeting of individuals (participants and beneficiaries). In the programme, beneficiaries are divided into two groups: the Primary Target Phase (PTP) and Secondary Target Phase (STP). Apart from the Eastern Cape, the Siyazondla programme is also carried out by other national, provincial and district governmental departments, such as Social Development and Health Department, the private sector and Non-Governmental Organisations (NGOs). This is why there might be some slight difference in terms of target group and selection of participants for the programme.

2.3.2.1 Primary beneficiaries

The focus of Siyazondla is based on a small piece of land which is approximately 12m². In it, agricultural crops are grown in backyards as home gardens. Therefore, the primary target groups for this programme are the vulnerable and susceptible household's, chosen based on factors such as socioeconomic and physical factors. These are briefly discussed in the next sections.

Physical factors. These factors refer to conditions and health status of individuals, especially families and household members affected by chronic diseases such as AIDS, HIV and TB. Hellen Keller International (2010) referred to home food production programmes (HFPP) as

having the potential to improve dietary intake and nutritional status of women and young children and likely to improve household food security and nutritional status of all household members. People suffering from diseases can hardly participate in social activities such as employment and other farming activities because of their physical body weaknesses. These practical activities are essentially supposed to keep them active. Homestead food production will also assist in the nutritional status of rural people, in that they will have access to fresh produce to boost their immune systems.

Social factors. These are factors that are based on living conditions such as severe disadvantageous backgrounds, both in communities and households. The programme also aims to lower the high unemployment rate of the Eastern Cape, and to become an effective tool and strategy for the provision and development of self-employment to child-headed families, orphanages and unemployed breadwinners.

Economic factors. Economic factors include the ways from which households have low, poor or short forms to generate income. This occurs whereby households are highly dependent on social government grants which do not adequately meet their needs and demands of households, and then tend to be unemployed and having no other means of income. Families with a high number of individuals who are not obtaining or receiving anything from any source such as government grants or are unemployed (no bread-winner) are the main target groups. The aim is for every household to have at least basic foodstuff. On the other hand, the programme is also there for families that do not meet the standard minimum social grant income that is provided by government.

2.3.2.2 Secondary beneficiaries

Apart from primary beneficiaries of Siyazondla, there are also secondary recipients being assisted by the programme. Their selection is based on the following characteristics:

1. Size of land where agricultural activity will operate, and
2. Number of recipients (group and clubs).

Comparing the size and space of land that primary and secondary participants use for agricultural activities, the secondary participants are operating on larger pieces of land. These are community-based garden projects, rather than backyard gardens like the primary beneficiaries. In some communities, one large piece of land may be used collectively, with subdivision of plots owned by individuals. According to Blaai-Mdolo (2009), the Impumelelo Isezandleni Community Garden and Poultry Project, which is composed of a group of farmers in the Ndakeni Village of Mbhashe Local Municipality, is one of the agricultural projects that benefited from Siyazondla. In some cases, small co-operative projects are developed and being supported by Siyazondla. Joshi (2011) holds that working as a group increases outputs: more resources are jointly used and are executed in an unbiased way.

2.3.3 Funding procedure and criteria used for production resources

Planning and budgeting are the first priority for sustainable agricultural activities. For programmes to operate effectively, available funds, resources and materials; properly planned structures; implementations; monitoring and evaluation are important factors. According to the Nkonkobe Municipality Annual Report of 2007/2008, an allocation of R820 000 was set aside and budgeted for Siyazondla. Nkonkobe local municipality consists of 21 wards, and each ward is made up of approximately 5 villages to 12 villages. Farms are also included as areas because there are people living there. Only 16 wards were funded by the Siyazondla

programme, and 15 to 20 households were selected in each villages or farms. Allocation and budgeted standard amounts of R2 000 were set aside for first time applicants, participants and recipients for the purchase of production inputs. Beneficiaries were selected in consultation with ward councillors, with the assistance of social development, through their indigent families' database (Nkonkobe Municipality Annual Report, 2007/08).

The following year, activities and programme progress are monitored and evaluated. This is done by the programme advisors (extension-workers), who offer support for programme sustainability and development. The role of an agricultural extension officer is a multi-disciplinary service, and for this particular programme, they offer different activities such as resource allocation, skill and information, support and facilitating services, monitoring and evaluation.

2.3.4 SHFPP inputs and farm implements

The funding and grants received by participants and beneficiaries are used for purchasing of basic and primary starter packs for backyard gardens such as garden tools and production inputs. According to De Klerk (2007), farm implements and production inputs for Siyazondla include wheelbarrows, forks, spades, horse-pipes, fertilisers, seeds, seedlings, water-harvesting equipment and material (water storage tanks) and garden fencing materials. Talukder *et al.* (2000) point out that access to necessary inputs for gardening from a local sustainable source is an important element for successful gardening. These include basic agricultural tools, materials and production inputs that are important for effective home-based food production. Figure 2.1 shows an agricultural extension officer disseminating inputs to farmers and beneficiaries of Siyazondla.



Figure 2.1: Beneficiaries of the Siyazondla programme receiving materials and inputs from an agricultural extension officer

Source: Nkonkobe Municipality (2009)

2.3.5 Impact of the Siyazondla programme.

Participants and benefiting families of the Siyazondla food programme are expected to grow and consume freshly produced crops from their backyard home garden. According to Talukder *et al.* (2010), home gardening has been shown to be a source of additional income, because the household can sell a portion of the garden's produce. Homestead/household food production also generates additional income for household members through the sale of surplus food products from the home gardens and/or animal husbandry (Talukder *et al.*, 2010). Producing what would otherwise have been bought from markets saves income for families, which can be used to provide other household needs such as clothing, food, savings (income), investing for education and saving inputs for the next production activities.

Households and small-scale subsistence farming operate with low and scarce resources. But being able to grow and produce crops provides rich nutrients, as well as quality and quantity

animal products. Another benefit of the programme is that sick individuals have the opportunity to consume fresh healthy farm produce capable of boosting their immune system. Thus, some money spent on drugs is saved.

Vegetables and other crops produced in household gardens are produced through organic farming, without or with minimal use of fertilisers or other agricultural chemicals. Examples of such organic means are the use of compost, straw, sawdust and animal manure. This improves the management strategy of farms, and reduces the cost of production for the farmer.

According to Mashiri *et al.* (2009), the aim of Siyazondla was not only to improve nutrition levels (particularly for people living with HIV/AIDS and/or TB) and strengthen household food supplies, but also to support surplus production where possible and feasible. The Siyazondla programme in other areas turned unemployed rural dwellers to emerging farmers who established small entrepreneurial businesses (nurseries, greenhouses and rural hawkers) as small community markets. The 2007/08 Annual Report of Nkonkobe Local Municipality pointed out that beneficiaries that produced a surplus were able to sell their products to the surrounding communities and village hawkers.

2.4 Agrarian transformation and food security programmes in the Eastern Cape

According to the Eastern Cape Province (2005) document of the provincial growth and development plan for 2004-2014, with a summary of PGDP programmes for MTEF 2004-2007, conceptualised programmes in different programme areas include programmes to fight poverty, human resource development programmes, infrastructure programmes, agrarian transformation and food security programmes. Siyazondla forms part of the agrarian

transformation and food security programme area, which also includes the Massive Food Programme, Integrated Nutrition Programme and Integrated Agricultural Infrastructure Programme. The next section describes some of the programmes related to the Siyazondla programme that is planned for use for social and economic development of people in the Eastern Cape.

2.3.1 Massive food programme (MFP)

The MFP is defined as a rural economic development initiative that targets grain food production through subsidising input supplies, mechanisation, marketing and agro-processing by means of a conditional grant scheme (Makara, 2010). This initiative can be divided into different aspects such as rurality, economic development, grain production, grants, inputs, mechanisation and marketing. These are discussed in the following sections.

2.4.1.1 Rurality

The programme focuses on disadvantaged black people of South Africa, especially those from the former homeland areas, to encourage them into involvement in agricultural production. Tregurtha (2009) states that, for project implementation, a target size of land needed must be greater than 50 hectares, whereas for the Siyakhula programme less than 50 hectares of land is used for production. According to the ECDA (2005), in communal lands, the required space of land is 50 hectares for project implementation. The availability of land from rural areas is highly reasonable and possible but the challenge is accessing those lands. Kwaru and Gogela (2002) found that the major issue causing food insecurity is the abandonment of arable lands by those who have rights of utilisation. There are many people who have a passion for farming but are limited by lack of land, while there are others who possess unused arable lands but are not eager to give their lands to those who are in need (Kwaru and Gogela, 2002). Land tenure is also important in rural development interventions

that use a rights-based approach to programming (FAO, 2002). The land tenure issue restricts access to land even though people want to be part of the programme, but on the other hand, land rights are essential in some cases in order to prevent exploitation and over-use of land. These cultural and socio-economic factors have a negative influence in the development of rural areas.

2.4.1.2 Economic development, grants and mechanisation

As the name “*Massive food*” implies, this programme clarifies from the beginning that it aims to upgrade and uplift the standard of living for those in rural areas through a huge amount of food production. It is focused on small-scale rural farmers, to maximise the economy of scale of the province. These projects operate by providing funds and grants to small-scale farmers. This programme focuses on promoting black small-scale farmers and capacity building of emerging farmers. Therefore, to achieve economies of scale, it was necessary to introduce funds and grants. One advantage of small-scale rural farmers is their use of traditional methods of operation, such as animal-drawn power (oxen, donkeys and horses), for mechanisation. The MFP’s mechanisation process uses contractors for its field work such as in conventional tillage (ploughing), fertilisation, and calibration (spraying of chemicals).

2.4.1.3 Grain production

The programme aims at growing maize on unoccupied, available areas that are no longer used. Maize (*Zea mays L.*) is the most important grain crop in South Africa and is produced throughout the country under diverse environments (Du Plessies, 2003). Maize enterprise has long been a traditional form of maintaining food security in different households. Currently, maize production remains the primary enterprise of the programme while it is planned to introduce other crops and livestock enterprises in the future.

The MFP assisted 11 000 farmers operating through 424 farming entities that planted 15 000 hectares of maize and other food crops that yielded 50 000 tons of maize during 2006 (Nkwinti, 2007). Figure 2.2 is a map of the Eastern Cape Province identifying potential regions for growing maize.

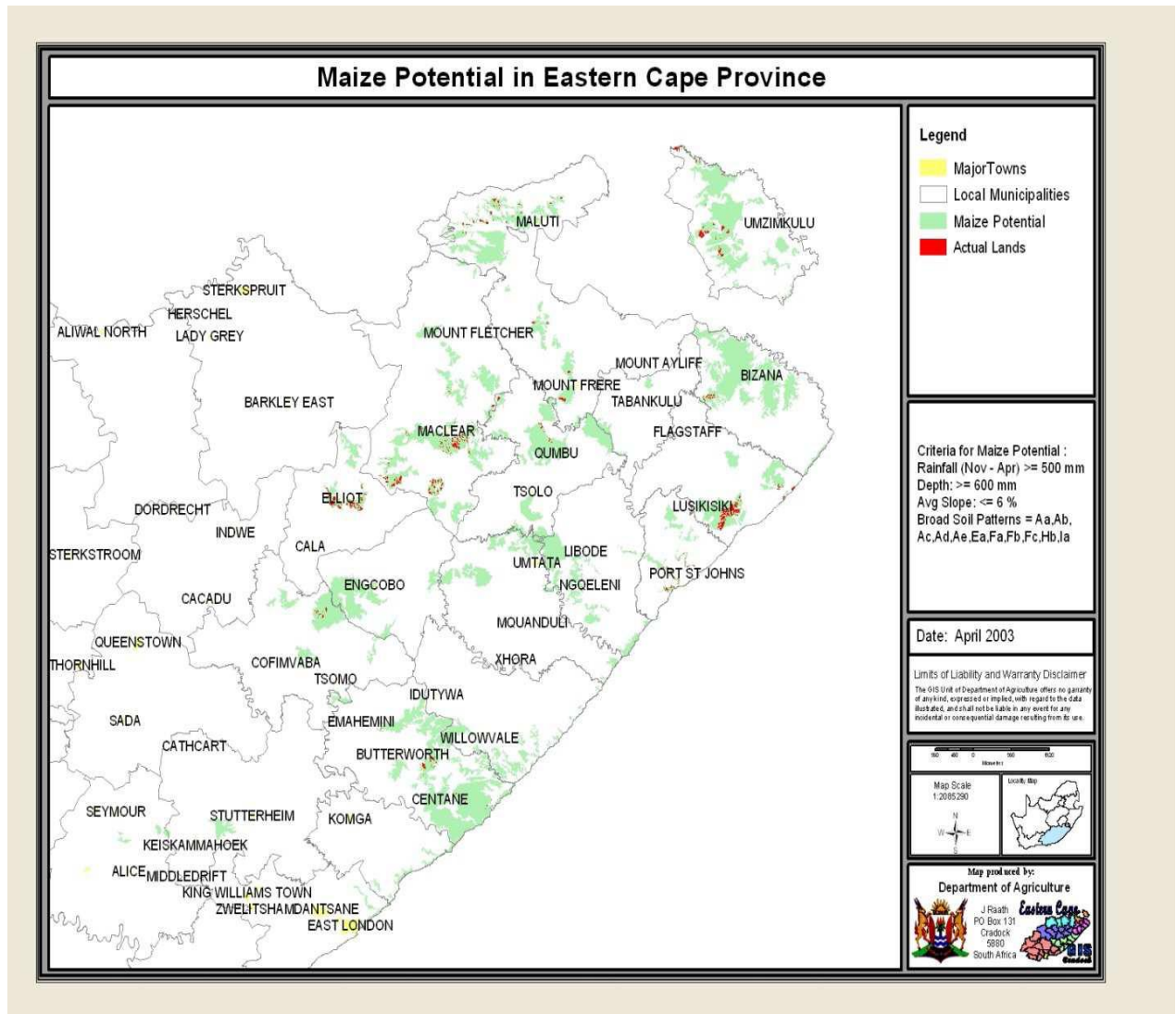


Figure 2.2: Maize potential in the Eastern Cape

Programmes and projects are driven by objectives and goals. According to Abdu-Raheem and Worth (2011), the objectives of MFP were to:

- (i) Increase availability of food in the Eastern Cape through maize production. The programme aims to create availability of food amongst many poor rural communities.
- (ii) Encourage access to new markets through infrastructure, credit and training support. This would in future build rural farmers into commercial farmers and impact positively on the economy of the country.

2.4.2 Integrated agricultural infrastructure programme

A backing programme for progression is a necessary strategy and tool to support existing planned programmes for sustainable development. An integrated agricultural infrastructure programme focuses on supporting already existing programmes such as Siyazondla and MFP. This is a broad, multi-purpose programme to link different departments. The programme links rural areas with municipalities for road construction, and in some cases links different programmes, e.g. Siyazondla and CASP.

2.4.3 Integrated Nutrition Programme (INP)

Food security is met when all four aspects – food sufficiency, food availability, food access and nutrition – are achieved. According to the Health System Trust (undated) the integrated nutrition programme (INP) was initially formed in 2002 as a community-driven project aimed at fighting malnutrition, hunger and poverty in South Africa. The programme specifically targets children and families who are at nutritional risks, patients affected with TB and AIDS/HIV, pregnant and breast-feeding mothers. The goal of the programme is to promote food security by empowering communities to become self-sufficient in terms of their food and nutritional needs (Health System Trust, undated). Such a programme assists the Siyazondla programme in maintaining available food at both community and household levels. In a broad context, socio-economic and cultural problems are being dealt with

simultaneously. Problems of malnutrition are addressed through the project via nutritional education and household nutrition projects (Health System Trust, undated). Growing different varieties of crops and vegetables in a garden signifies food diversification, and an available means for all the required nutrients for a healthy and balanced diet.

2.5 Common and general challenges, adaptation and possible alternatives for successful programme implementation

Programmes and projects are likely formed or initiated as a result of negative existing situation or living condition. These are done to act against that situation for the better. Therefore, this is by so meaning, programmes are born to solve existing or foreseeable challenges, but programmes themselves are also challenged by both internal and external environments. The external and internal challenges include programme participants, facilitators, resources and materials, social factors and environmental conditions. According to Marsh (1996), the following are the common challenges of household food production programme and mitigation (improvement) steps that can be taken.

2.5.1 General challenges in homestead food production

Table 2.1: General challenges faced in homestead production

Common challenges	Mitigating steps
Lack of community involvement in the design and planning	Employ participatory approaches
Promotion of technologies and species appropriate for local needs and resources, e.g. high costs, high seasonal variability/risk, not culturally acceptable /palatable, too labour intensive, not compatible with existing garden or farm system	Perform formative research and design programmes based on findings

Exclusive focus on fruits and vegetables for micronutrient intake, limited focus on animal protein and income for nutrition	Integrate animal protein and income generation if local conditions are conducive
Creating dependency on monetary incentives e.g. free seed, tools, fencing materials, even cash	Introduce cost-sharing
Weak extension officer technical and nutrition capacity	Provide training or identify NGOs to close gaps
Lack of focus on sustainability beyond programme duration, failure to institutionalise via local government, NGOs, village-based groups	Design intervention to deliver via local channels so sustainability is more likely
Lack of collaboration and coordination between agriculture and health sector staff to ensure consistency in the dissemination of nutrition messages	Build partnership amongst key sectors

Source: Marsh (1996)

2.5.2 Detailed challenges in homestead food production

Challenges of homestead production can also be specific. The most challenging factors of homestead food production according to FAO (1995) are shown in Table 2.2.

Table 2.2: Detailed challenges occurring in homestead production

Stage of food system	Typical problems in the food system
Home garden land	Shortage of land
	Unsure tenure
	Infertile land
	Shortage of water
Clearing the home garden	Too few people to clear the land
	Hand tools which limit the amount of land cleared
	Late land preparation because of bad planning

Planting the home garden	Limited variety of crops
	Cash crops grown instead of food crops
	Crops planted wrongly
	Poor seed distribution
	Limited inputs
	Limited extension advice
	Women farmers are not contacted by extension services
	Limited family labour
Harvesting the home garden	Stealing of crops
	Labour shortage
	Late pest damage
Home storage and preservation	Inadequate on-farm storage
	Producers sell most food
	Pests or mould destroy food
	Lack of equipment
	Insufficient knowledge of food preservation
Food distribution and marketing	Markets far from food-producing areas
	Poor roads
	Shortage of lorries and spare parts
	Shortage and high cost of fuel
	Inefficient marketing system
Buying	Lack of money
	Too many debts
	Not enough money budgeted for food
	Poor-value foods bought
	Healthy foods difficult to get
Food preparation	Parents not knowing the right foods to cook
	Lack of fuel
	Lack of mother's time
	Shortage of equipment
	Shortage of water
	Low-prestige foods not used
	Food values lost in cooking
Sharing within the family	Children not getting adequate share of food
	Too many children
	Taboos on certain foods for children or mothers
	Bigger children eating faster

	Poor appetite
	Lack of information on children's needs
Eating	Loss of appetite through illness
	Infrequent feeding
	Lack of variety in foods
	Increased nutrient requirements through illness

Source: FAO (1985)

2.6 Extension involvement

Extension refers to out-of-school education services for the members of the farm family and others directly or indirectly engaged in farm production to enable them to adopt improved practices in production, management, conservation and marketing (Oladunni, 2011). Extension is a non-formal educational function that applies to any institution that disseminates information and advice with the intention of promoting knowledge, attitudes, skills and aspirations, although the term "extension" tends to be associated with agriculture and rural development (Rivera and Qamar 2003). The function of agricultural extension is therefore to ensure that programme activities are planned, implemented and also evaluated in the most appropriate manner. Therefore, the form of support that they receive is to ensure sustainability and rural development by encouraging household beneficiaries to come and be involved in practices of agricultural activities for their own benefit.

According to FAO (1995), the local agricultural extension will be able to help identify plants and to assess the soil and other technical aspects. An agricultural extension officer has to serve as the facilitator for ensuring that these individual households are effectively accessing agricultural information and skills for effective agricultural production. Programmes of this nature that accommodate limited households have the potential of developing social role models, as individuals who are not involved or indirectly benefiting from the programme are

there to copy from what others are doing. Figure 2.3 is an example of how agricultural extension officers show and teach beneficiaries of the programme.



Figure 2.3: Extension workers showing garden principles to farmers

Source: Nkonkobe Municipality, Annual Report Financial year 2009-2010 (2009)

2.6 Conclusion

As indicated in this chapter, several agricultural programmes have been implemented in the Eastern Cape Province for food security and poverty alleviation. Among these programmes under the section of agrarian transformation and food security programmes in the Eastern Cape, are the Siyazondla homestead food production programme, together with MFP, INP and also integrated agricultural infrastructure programme. The main focus of the chapter was on an overview of the Siyazondla programme, analysing the beneficiaries of the programme, funding uses, inputs and farm implements.

The next chapter analyses home garden practices and their potential as a viable food security measure for rural people.

CHAPTER 3

Home garden practices

3.0 Introduction

This chapter reviews the literature behind homestead food production in home gardens. The review is directly based on the form and types of home garden being formed and established in certain parts of the world as a result of many activities and practices that are being done within these small pieces of land. The availability of land around households can be used as a medium to produce food for household. The food that is produced from these areas can ensure that there is enough food produced both at household and community levels.

This section is geared towards an analysis of home garden practices and the potential of home gardens as a viable food security measure for rural people. There are different variations and distinguishing properties that characterise a small piece of land as a garden. The following section is based on these characteristics of home gardens throughout the world.

3.1 Characteristics of home gardens

Table 3.1: Characteristics of home gardens

<u>Characteristics</u>	<u>Home garden</u>
Function	<ul style="list-style-type: none">• Subsistence-household needs• Multi-purpose• Seasonal food and nutrition supply• Easy access to fresh harvests for home cooking and local food culture• Site for introduction, experimentation and domestication
Size	<ul style="list-style-type: none">• Variable in size and design as determined by choice of species (crops versus trees)• Larger than a kitchen garden• Often linked with large agro-ecosystems
Diversity	<ul style="list-style-type: none">• Species richness• Home for unique species and varieties• Site for conservation of rare species

Composition	<ul style="list-style-type: none"> • The layers consist of root crops and herbaceous layer-leafy vegetables and crops • Annual and perennial crops • Intermediate and tall layers of busy fruits, forestry, fodder, wood fuel, etc. • Composition changes with altitude
Features	<ul style="list-style-type: none"> • Multi-layer canopy structure • Both traditional cultivars and Modified varieties (MV) present • Mixed of annual and perennial crops to meet regular supply of diverse food • Meets ecosystem services and functions associated with other biodiversity • Common in subsistence farming and remote areas • Mostly organic based • Provides goods and services of community interest
Value	<ul style="list-style-type: none"> • Food security and income • Dietary diversity and health • Quality food • Cultural, religious and spiritual significance • Aesthetic value • Ecosystem support and health • Conservation of unique/rare species
Ecosystem service	<ul style="list-style-type: none"> • Habitats for pollinators and associated biodiversity • Copes with vulnerability by managing pests and disease • Supports nutrient recycling • Carbon sequestration • Water and soil retention • Regulation of local hydrological processes • Detoxification of noxious chemicals
Government focus	<ul style="list-style-type: none"> • Not a priority area for research and development

Source: Gautam *et al.* (2006)

3.2 Types of garden

Many different types of gardens are formed throughout the world. There are also wide variations in which gardens and home gardens are described and categorised. A home garden is a small system of household plant production (Cherry and di Leonardo, 2010). Gardens can be categorised and differentiated according to their size, origin, location, country, practices, purpose and format. For example, English gardens and Dutch gardens differ from Japanese gardens. Gardens also vary in size, from small gardens (10m²) to bigger gardens (1 hectare).

Therefore there is no specific size for gardens. Farmers use the specific space of land for different purposes. The following are some of the general gardens found throughout the world:

- (i) Home (home garden, kitchen garden, backyard, small space garden);
- (ii) Community (plot ownership, group, developed gardens);
- (iii) School (school garden, student involvement, plot);
- (iv) Urban areas gardens (growing flowers, urban garden parks); and
- (v) National parks and industrial gardens, (My Agriculture Information Bank, 2011).

These gardens can be arranged formally, informally or a combination of formal and informal. Formal gardens are sophisticated gardens reflecting both art and science and requiring high management, skill and maintenance (My Agriculture Information Bank, 2011). In the presence of agricultural extension workers and the implementation of the Siyazondla programme, it is expected that gardens should be in a formal style and method due to the sophistication and management practices involved.

Informal gardens, on the other hand, are not based on calibration and accuracy of farming activities, but they are just space of land, that is used for producing households with their necessary food requirements. Informal gardens may have the following characteristics: no properly formed seedling rows (broadcasting/ no accuracy); planting of mixed seedlings within the same plot; plots may be in the form of zigzag.

It is also important to know where exactly these gardens are functioning and operating in order to find a gap where Siyazondla and other programmes would be suitable and for what kind and form of gardens.

3.2.1 Home gardens

The home garden is an ancient method of food production that is commonly practised throughout the world Talukder *et al.* (2003). Whether they are known as home, mixed, backyard, kitchen, farmyard, compound or homestead gardens, family food production systems are found in most regions of most countries worldwide (Marsh,1996). According to Landon-Lane (2004), gardens have been established next to homes since prehistoric times, and their importance and impact have been recognised throughout the world. In other words, people have been involved in gardens for a long time.

To differentiate this form of agriculture from other practices and activities, Talukder *et al.* (2000) characterised a home garden as having the following characteristics: it is near the house, close to resources (water source), uses low costs of inputs, production is primarily for household consumption, uses mainly indigenous crop varieties, and it is managed by family members. From a village point of view, it is that small area of land that surrounds a house which provides suitable and good conditions for practising gardening activities. This is an area that is not only used for the production of food but also a developed space made beautiful by growing flowers around the home.

3.2.2 Community gardens

These are gardens at community levels whereby certain members of a community are involved for the production of food as a collective group. The activities in community gardens are the same as in home gardens and include preparing of seedbeds and planting of seedlings as individuals or groups on the same piece of land. The individual member on the same operational field has full independence compared to a group or collective members. The importance of working as a group helps in a number of ways, such as when applying for

funds and in joint decision-making. Community gardens play significant roles in ensuring food security and alleviating poverty (Umdoni Municipality, 2009).

3.2.3 School gardens

School gardens are established around a school to beautify the area and also often include a nutrition garden for educating children in the nutritional importance of fruits and vegetables (My Agriculture Information Bank, 2011). Farming activities are done by students with the assistance of teachers. In some cases community members are involved in areas which are not being used by students or their teachers. Among skills development programmes and strategies used by government and the private sector for poverty alleviation was the introduction of the 4H Programme to schools, where students are involved in gardening at school. The skills and knowledge acquired by students from these programmes can be useful in both the short and long term.

3.3 Basic management practices of home gardens for sustainable use of available resources

Agricultural practices are viable as a result of planned procedures and implemented principles. An understanding of basic practices involved in preparation and managing of these gardens is crucial for sustainability. The following factors have the potential to result in better organised and improved garden yields: surrounding environment (climate and weather), history of the area (previous and present practices on the site), resources (available and future), and timing for growing of crops etc. In most gardens, soil management, water supply, crop management, control of pests and diseases are practiced, and these practices are crucial towards the results and impact of the Siyazondla programme.

3.3.1 Soil management (preparation)

The soil supplies plants with nutrients for growth and development, and must have all the nutrients necessary for plant growth, and a structure that keeps plants firm and upright (FAO, 1995). Most nutrients are naturally recycled from the soil through plant roots and back to the soil through fallen leaves and other organic matter (FAO, 1995). The physical and chemical characteristics of soil indicate its potential for production. For example, soil structure must have characteristics such as water holding capacity, drainage, infiltration and colour. The soil structure must hold enough air and water for plant roots, but must allow excess water to drain away (FAO, 1995).

Soil should not be prepared for planting when it is too wet or too dry, because this breaks and affects the soil structure. Heavy farm implements such as tractor and mouldboard ploughs also affect the physical characteristics of soils. The way the soils are prepared is an essential factor which needs much consideration before anything can be done. Owusu (2010) points out that different types of tillage practices and methods are used by farmers in preparing the soil, including zero tillage, conservational tillage, conventional tillage, and strip tillage. Conservational tillage, zero tillage and strip tillage are suitable practices for home gardens as the whole surface of the soil is not excessively exposed to environmental factors such as wind, precipitation and sunlight, which have both negative and positive effects on the physical and chemical characteristics of soil. In large scale garden, costs are also reduced and minimises when practising conservation tillage. Conventional tillage disturbs soils and exposing to wind and water. In most cases, the more farmers are involved in practising conventional tillage, the lower the depth of soil, especially in sloping areas. This further necessitates use of sophisticated and management practises such as building contours banks etc.

3.3.2 Water management (irrigation)

For a plant to function effectively and maintain all of its chemical processes, it requires water and dissolved nutrients from the soil. Water is an abundant resource on the earth's surface, as it covers 75% of the earth, but it is the scarcest resources in terms of its availability and quality for use. Water constitutes the largest part of the plant. According to the FAO (1995), about 90% of a plant's weight comes from water. Water plays a critical and crucial part in a plant's establishment, growth and yield. There are many ways, strategies and methods through which water is supplied for home gardens, where home producers can choose from and use. Some are traditional methods, while others are scientific and require high management skill. Table 3.2 shows some effective conservation practices.

Table 3.2: Factors influencing water storage on land

<u>Soil Surface</u>	<u>Factors</u>	<u>Reason</u>
Above soil surface	(i) Weeding	➤ Weeds compete with growing plants for nutrients
	(ii) Shading	➤ Creates suitable environment for pests and diseases
	(iii) Mulching	➤ Keeps and hold moisture for a longer period ➤ Water losses through evapo-transpiration
Below soil surface	(i) Organic matter	➤ Organic manure, material and compost retain moisture

Source: FAO (1995)

3.3.3 Crop management

Although home-based food production might seem a simple task, this form of farming requires skill, knowledge, and experience to perform most effectively. Crop management refers to how crops are handled on the field and off the field of planting. This includes storing harvested seed and yields, preparing seedlings before planting, and protecting the crop from pests and diseases. There are many different methods and types of crop management that are suitable for home gardens and these differ from one area to another. Farmers have to practice

varieties of farming systems because of their location and the type of crop that is being produced. Crop management practices differ with regard to the type of cultivar (its resistance to various factors, such as climatic condition, weeds and pests) cropping systems (cropping practices) and crop growth stages. It is important to diversify the area surrounding a cultivated area by growing different types of crops, as this will have a beneficiary effect both from an environmental and a household point of view.

3.3.4 Pests and diseases

Growing crops are threatened by various pests and diseases. Pests are those organisms that are injurious to man's interest; diseases are deviations from normal health i.e. any process which disrupts an animal from functioning normally. Prevention of diseases and protection of growing plants is better than cures or treatments done when plants are already affected. Pests and diseases have serious negative impacts on growth of plants. They suck and chew parts of the plant and affect both the external and internal parts of plants, affecting the final product which is the yield (poor products). A good farmer must know how to manage pests and diseases of crops and, to do this, he or she must understand what pests and diseases are (FAO, 1995).

The use of different control methods is recommended such as physical (monitoring), chemical (sanitation using chemicals), biological (resistant cultivars) and cultural (cropping system). Pests and diseases can be effectively controlled by using an Integrated Pest Management system (IPM), where the control methods are used in combination or together. The first step is to be aware of the causes of pests and diseases, then treatment and adjustment follows. Generally, when handling chemicals to control pests, it is important to follow the instructions, rules and guidelines. The rules include: avoid spraying in windy conditions, do

not eat or smoke while spraying, follow the chemical prescription measures, wear protective gloves, and keep the chemicals out of reach of children.

3.4 Actions and adaptable measures used by home garden farmers

Certain factors are crucial when it comes to preparing soil for planting. The following activities and principles should be considered:

3.4.1 Use of essential tools for soil preparation

Basic garden tools which are essential for soil preparation include spade, fork, rake etc. The Siyazondla programme values the importance of having garden tools. If a home garden is to be planted for the first time and the land is still covered with vegetation, it is necessary to clear only the areas to be planted (FAO, 1995). These tools are mostly for these activities.

- Spades function as multi-purpose tools, for clearing vegetation, cultivation and opening of furrows.
- Rakes have a number of uses: clearing rubbish and dead vegetation from the nursery, levelling gravel paths and general tidying up (Burger, 2008). The soil should be “fined” with all foreign materials (large structured soil and unconsolidated materials) taken out of prepared space before seeds and seedlings are planted.

3.4.2 Preparing soil for planting

Preparing soil for planting is done by clearing vegetation (sanitation) and refining the soil by breaking up large particles of soil. Breaking of soil structure depends on the type of crop to be planted. This process is recommended for small seeded crops which are lost within the soil profile through drainage to deeper layers of soil. Clearing of unwanted growing vegetation on the area to be planted controls and manages weed population. Using different methods is the most effective strategy. Weed presence minimises seed emergence and lowers plant

population as seeds and seedlings will compete for factors such as light (Sunlight), nutrients and water which are essential for plant growth.

3.4.3 Sloping land forms

Sloping lands encourage loss of fertile top soil by running water. Planting seedlings across sloping lands helps to minimise soil erosion, by wind and water. It is important to avoid clearing the whole surface area where vegetation is growing, as it expose soil to water and wind erosion. Vegetation is important to the soils as it adds organic material to the soil, serves as temperature buffer, and also serves as host material for small organism that helps in decomposition. This means that farmers must follow strip and conservational tillage. Building of contour lines and levelling the surface on sloping land is advisable and encouraged. Contour lines and benchmarks are prepared at the end of every structured area for cultivation. These contour lines functions for soil preparation and also for irrigation purposes.

3.4.4 Cropping systems suitable for home gardens

Sanusi (2010) refers to a cropping system as a pattern used to describe where crops are grown in a given area over a period of time. This includes technical management of resources that are being utilised. Sanusi (2010) further describes cropping systems as forms of production that are interested not only in the types of crops grown but also in how those crops are distributed on the field at any given time and how the distribution changes over time. Cropping systems may be looked at in four ways: (i) the distribution of crops in time, (ii) the distribution of the crops in space or on the field, (iii) the level of management and resources utilised to produce the crop, and (iv) the type of crops grown. According to Sanusi (2010),

these factors have a direct link with the production of food in households, and are described below.

- (i) *The distribution of crops in time.* This is based on how the crops are allocated over a certain period. In other words, the systems that are being used are crop rotation and monoculture. Each system has its own advantages and disadvantages, but following rotation of crops in one area of land is proven to be more successful than following a monoculture production.
- (ii) *The distribution of the crops in space on the field.* Many types of different crops are grown on the same piece of land. These are the ways in which crops are allocated and delivered. Distribution can be either intercropping (multiple crops) or sole cropping (one crop grown). Seeds and seedlings are planted in the most appropriate manner: broadcast or planted. It is important for farmers to change crops, by growing different types of crops for different reasons. This has an advantage to sustainability, refer to table 3.3.
- (iii) *The level of management and resources utilised to produce the crop.* Home-based food production is a traditional practice, and widely used by peasant farmers, mostly in rural areas. Home gardens function as family-based food production, whereby household individuals are involved in making the process productive by carrying out different activities, such as cultivation, planting, irrigation and harvesting.
- (iv) *The type of crop grown.* The type of crop variety that is grown plays a major contribution and impacts positively on the development of home gardens. Some crops improve nutrient status by fixing nitrogen and adding organic matter to the soil. For example, growing of maize in one season followed by bean crops in the next season improves the nitrogen content of the soil, as beans add or fix nitrogen back into the soil. Therefore, by planting and growing one and the same type of crop on a piece of

land affects the productivity of the soil. There are many different types of plant variety that household farmers could select and choose from as they are not restricted to any type of plant variety.

Table 3.3: Advantages and disadvantages of cropping systems

<u>Cropping system</u>	<u>Disadvantages</u>	<u>Advantages</u>
Monoculture	Grown plants: <ul style="list-style-type: none"> – Serve as host for pests and diseases – Deplete soil nutrients 	<ul style="list-style-type: none"> – Permits maximum concentration of production.
Crop rotation	<ul style="list-style-type: none"> – Requires high management – Requires too much labour 	<ul style="list-style-type: none"> – Effective means of controlling weeds, diseases and pests – Reduces erosion – Improves organic matter – Improves physical characteristics of soil

Source: Sanusi (2010)

3.5 Key strategies for developing and maintaining success in home gardens

A home garden works best when individuals have land to practice agricultural activities. These areas are in abundance in rural areas compared to urban areas. Although there are agricultural lands in urban areas, these occupy little land due to the density of population. Regardless of the size of land, any space that is available around households may be used for home-based food production. Car and tractor tyres, old baths and large tins may be converted to store soil and grow plants.

Home gardening has become an important part of cultural heritage, which denotes specific farming practices at different localities (Bagson and Beyuo, 2012). Home gardens are therefore a traditional activity of household production. It is important to build on the traditional methods, indigenous technical know-how and also to work with experienced individuals: by so doing, development and production of backyard gardens can be improved.

Building on indigenous technical know-how should also include the styles of garden and type of crop variety and animal breeds. Predominant types of crops and vegetables that can be grown in any area include maize, potatoes, cabbages, spinach, beetroot, carrots and onions. Different areas around the world create home gardens based on traditions, culture and art of science for producing food. There is no single method and strategy for practising home gardens as the gardens vary in nature.

In nature, resources are scarce; therefore available resources should be used effectively and efficiently at all times. Exhausted resources are denatured, deteriorated and thus lose value, and this will impact negatively on future generations. The availability of resources for home gardens also supports community stability. It is important for extension officers to work in groups and with opinion leaders in villages for technical training purposes. This increases the chances of new technologies being adopted and adapted as opinion leaders have experience of village activities and are good at persuading and influencing others.

Rural people are bound with culture and traditions including the culture of extended families. Home gardens are a family activity of producing food at household levels. Regardless of one's gender or status in the village and the type of work one is doing, one can still produce food from the available space in the backyard. This is not an individual activity but involves the whole family, including members of the extended family. Planning and implementing such programmes at village levels, including women and children, should be a target. Women are the gate-keepers for food security. In the past, women have played a bigger part in production of home-based food. Home gardens are small family investments, both within villages and at household levels. Adequate programmes for planning, implementation, monitoring and evaluation should be put in place to ensure improvement in the production

processes. Farmers involved in the production process should feel and perceive the values and impact of producing food from their garden, backyard or homestead.

These gardens should function effectively in the most efficient way, and meet the farmer's needs and goals. In the process of practising small-scale household gardening, there must be some achievements so as to encourage those who are not involved in order to maximise the capacity of farmers and serve as encouragement and motivation for existing farmers.

3.6 The value of household garden food production

No matter what the factors or determinants of home garden production may be, different household food producers from various production areas of the world are practising agriculture in their backyards close to their homes for different purposes, aims, goals and objectives. Their social, cultural, economic status and physical allocation determines the different characteristics of production activities and production outcomes. People living in rural areas are more of a family union, sharing their produce, bartering and exchanging products, living in dyadic environments (Usadolo, 2011).

3.6.1 Home gardens as a source of nutrition

Malnutrition can be a threat to urban and rural dwellers at different times and for different reasons (Boon, 2009). Under-nutrition and malnutrition are health problems that can affect mental, physical and emotional well-being (Olajide-Taiwo *et al.*, 2010). Home gardens can be used to achieve nutritional security of people suffering from malnutrition and under-nutrition through growing and consumption of fresh fruits and vegetables from the garden (Olajide-Taiwo *et al.*, 2010). For improved nutritional status, families and household individuals who are in possession of land for growing crops and rearing animals are able to obtain sufficient nutrients for themselves and their families.

Growing vegetables in home gardens is the most direct way for many rural and urban poor families to obtain a variety of nutrient-rich foods (AVRDC, 2013). Home gardens serve as a good source of micro-nutrients and macro-nutrients. Vegetables and fruits that are grown provide essential nutrients needed for good health. The most significant nutrients needed for better livelihood are minerals, carbohydrates, fats, and vitamins (A, B-complex and D). Households that have the means to produce and consume nutritional home-based food have lower chances of exposure to certain nutrition-related diseases such as kwashiorkor and goitre. A lack of sufficient micronutrients in the diet will result in deficiency diseases, which may even endanger people's lives (Krishnal, *et al* 2012).

Food is made up nutrients. The fresh fruits and vegetables produced provide nutritional elements such as:

- Carbohydrates (starch and sugars) which are derived from potato, maize (corn) and sweet potato;
- Proteins and fats (oils) derived from bean seeds (soybean), avocado and peanuts;
- Vitamins from fruits and vegetables (cabbage, spinach, amaranth, carrot, pumpkin, pineapple, tomato, watermelon and strawberry);
- Minerals (phosphorus, calcium, potassium, nitrogen, iron, sodium, zinc, copper, and sodium) are derived from peas, potato, spinach, cabbage, broccoli, green and red peppers, onions and cucumbers (FAO, 1995).

These nutrients are mostly necessary for different body activities, including growth, maintenance, fattening, production (animal feeding) and reproduction. This means that home gardens can become a good source of fresh produce, rather than household individuals

depending on the market in order to obtain fresh produce. This allows individuals to consume food having all the required elements for a balanced diet.

3.6.2 Home gardens as a means of food security

Home gardens have proven to be an effective approach to improved household food security (Helen Keller International, 2003). The food produced at household, family or community levels can play vital roles in providing the basic staple food for food security. According to Marsh (1998), home gardens contribute to household food security by providing direct access to food that can be harvested, prepared and fed to family members, often on a daily basis. Agriculture is thus regarded as a primary source of food for people living in remote rural village areas.

3.6.3 Home gardens as a source of income (economic contribution of home gardens)

Rural employment includes farming, self-employment, working in trade, small enterprises providing goods and services, and wage labour in agriculture (FAO, 2010). Agriculture, especially in rural areas, can be regarded as a good source of income from household level to a community point of view. Home gardens in rural areas are more of a subsistence type of farming, where households are producing enough food to meet the needs of individuals at household level. When the needs at households have been met, and there is surplus, then we can talk of selling. For example, vegetable crops (cabbages and spinach) and livestock products such as eggs, meat and milk can be sold to the local market for cash.

The income received from such sales might not come in the form of cash, but in different forms, depending on certain demographic factors in the particular area in question. In some cases, an income could be obtained by share-cropping and barter exchange, exchange using products, remuneration may also be offered in the form of materials. As more people are

involved in agricultural activities on their small piece of land, additional opportunities for small jobs and increased incomes are created. Such incomes can be used to pay for other household expenses, and assist in social and cultural activities of the community.

3.6.4 Impact of home gardens on the environment

A small piece of land can grow different plant varieties, hold high animal densities and carry different animal species. That small structured piece of land around homes that people are using for growing all forms of different types of crops has high potential for diversity and density. Nature has its own ways of recycling nutrients. Kitchen waste products such as vegetable peels, animal bones, animal manure, ashes and blood meal that are dumped by homes can be used for compost. When broken down to their simplest forms, these materials effectively decompose to serve as good material for use and re-use by plants. The biological activities, physical and chemical processes take place in such dump areas. The breaking down and decomposition of the waste improves the physical and chemical composition of the soil. Successful maintenance of soil fertility for better crop growth at homestead farms is partly due to the continuous use or decomposition of household refuse and livestock manure on the farm (Ndaeyo, 2007). Plants that are grown at home play a crucial role in the control of global warming and climate change, and also contribute to the balancing of atmospheric gases, such as oxygen and carbon dioxide, by releasing and absorbing them respectively.

Home gardens and their programmes should be appreciated throughout the world as a result of their impact and contribution towards better and sustainable livelihood. These gardens and programmes such as Siyazondla play a significant and crucial role in ensuring that there is enough food (food security), which is one of the challenges for most people living in rural areas.

3.7 Food security

Food security as a flexible concept had been defined and refined in a number of ways from mid 1970s to 2001. This concept of food security originated only in the mid-1970s, in the discussions of international food problems at a time of global food crisis (FAO, 2003). According to FAO (2003), in 1996, at the World Summit, food security was defined as 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. The initial focus was primarily on food supply problems: assuring the availability, and to some degree the price stability, of basic foodstuff at the international and national level (FAO, 2003). In improving food availability and ensuring its quality and quantity throughout the world, different organisations began to note the importance of food security. As time went by, the concept of food security gained recognition as a result of poverty, hunger and famine continuously affecting and spreading throughout the world.

3.7.1 Determinants and pillars of food security

FAO (2006) characterised food security as built on four pillars: food availability, food access, food utilisation and food stability. It can be concluded that by meeting all the four pillars, individuals can be regarded as food-secure. To understand food security, it is necessary to have a clear and precise understanding of the above concepts.

3.7.1.1 Food availability

According to FAO (2006), the availability of sufficient quantities of food of appropriate quality, supplied through domestic production or imports (including food aid) is important. Ensuring food security is not merely a matter of producing enough food to eat: food must be available to those who need it (IAASTD, 2008). Food availability is highly dependent on the

production of food: it refers to the physical presence of food that has been produced or manufactured. When food is produced at lower rates, food available at all times slowly diminishes.

In maintaining and keeping sustainable stable food for any length of time, certain procedures and proper conservation measures need to be observed and followed. This includes using acceptable production methods, processing and storage facilities. Home gardens have the potential of producing food throughout the year, but it is lacking production models, which hinders production and development of home-based food production. Factors such as lack of resources, production inputs, skills and information for farmers are some of the factors that need to be addressed, to effectively develop home gardens for food production. In dealing with such challenges, farmers have to adjust to existing environmental conditions.

3.7.1.2 Food access

Access refers whether individuals or household members have any means to acquire the type of food that they need in sufficient amounts. Access by individuals to adequate resources (entitlements) for acquiring appropriate foods for a nutritious diet is not guaranteed. Rivera and Qamar (2003) emphasise that access depends upon income available to the household, on the distribution of income within the household, and on the price of food. Access to food is possible by producing or earning some income for exchange for food. Food production at household level in rural areas is produced in home gardens and backyard spaces (kraals), where livestock is reared and crops are grown (fruits and vegetables). Household members also access food by exchanging, through barter exchange or at a market, their type of food for another source. Beneficiaries of the Siyazondla programme stand a good chance of being sources of food to certain families in the community.

3.7.1.3 Food utilisation

This is based on the consumption of food by household individuals. Food is consumed at different times during the day: morning, afternoon and evening. Effective food utilisation depends in large measure on knowledge within the household of food storage and processing techniques, basic principles of nutrition and proper childcare (Rivera and Qamar, 2003). People with skill and knowledge of producing food are better at handling and using food.

3.7.1.4 Food stability

To be food secure, the population, household or individual must have access to adequate food at all times. Scheduling and reshuffling livelihood activities may help to achieve sustainable food security. This may involve practising sustainable agricultural activities such as growing adaptable crop seeds and rearing livestock. Constant production and having enough food maintains stability.

3.8 Methods of accessing food

There are many ways and strategies in which food can be accessed at household level. Purchasing of food and own food production are the major strategies for accessing food, but there are other ones such as hunting or gathering, borrowing and grants (Kgaphola, 2003). According to Chipeta (undated), to secure food at household levels, farmers adapt to buying food, selling livestock, borrowing food, eating unusual food, reducing number of meals, engaging in small businesses, going to bed without eating, selling household assets for food, and working for food. To avoid harsh measures, it is important for farmers to plan in advance for the future, by investing in livestock production and crop production. Saving of financial capital is an additional means for farmers to cope with and adjust to unpredictable outcomes. Basically, most people from rural areas are involved in home gardens for social purposes

rather than economic concerns. This makes it easy for people not to produce, but to be highly dependent on others for food.

3.9 Food insecurity at household level

Food insecurity is still a great concern for many households in South Africa (Abdu-Raheem and Worth, 2011). Conditions of food insecurity are regarded as opposite to food security. According to FAO (2003), food insecurity exists when people do not have adequate physical, social or economic access to food. These conditions are also signified and characterised by situations where people are living in unbearable living conditions, affected by and suffering from chronic diseases. Many factors can result in food insecurity at a household level. The most important challenge in any issue is to know the cause and strategy to deal with it.

3.9.1 Dealing with food insecurity

According to Abdu-Raheem and Worth (2011), citing van der Berg (2006), South Africa is producing enough food to feed its population, which shows the value and impact of the programmes that have been implemented over the past years by different departmental and provincial sectors of government. Strengthening the use and implementation of these programmes will root out the negative effects and challenges faced by farmers who are the most dominant group in rural areas.

In cases where these programmes do not reaching the target individuals, vulnerable people are continuously challenged by socio-economic factors and physical factors and it is necessary to deal with such issues effectively. These challenging issues include poverty, hunger, unemployment and chronic diseases which are directly linked to food insecurity. It is therefore important to deal with the existing situation in an appropriate manner. Finding a

path out of food insecurity and poverty requires a multidisciplinary approach (World Bank, 2000). It takes multidisciplinary, integrated and comprehensive activities and involvement of different sectors to develop and uplift people's livelihood. Abdu-Raheem and Worth (2011) observed that there are four paths out of food insecurity: *agricultural path*, *multi-activity path*, *assisting path* and *exit path*. These are discussed in the following sections.

3.9.1.1 Agricultural path

More land is available in rural areas than in urban areas. Land in rural areas is largely available as the result of emigration to urban areas of people in search of employment, and also by the recruitment of labour from remote areas. This gap is the reason why large areas of land formerly used for agricultural production have been abandoned, causing a high dependence on the market, governmental funding and grants for food. In rural areas agriculture is the main form of generating income and also serves as source of food. Land as the natural resource (soil, water and vegetation), for agricultural practises. Therefore, land from rural areas is not a challenging factor as compared to other areas. it is there from the land that agricultural practices and production to occur. Programme such as Siyazondla can be easily implemented in areas where such resources are adequately and accessible.

3.9.1.2 Multi-activity path

This path uses many different activities to deal with food insecurity. The multi-activity path is more often beyond the agricultural development path, as it uses more off-farm income. It combines on-farm and off-farm activities to achieve food security, and it requires multidisciplinary activities to curb poverty and generate income. Farmers that are involved in the programme or participating can also participate on other activities that are happening at

village level etc. Therefore, farmers are not bind or tie by contract when they are involved to the programme Siyazondla. These activities improves better livelihood of farmer.

Programmes such as the Comprehensive Agricultural Support Programme (CASP) and the Reconstruction and Development Programme (RDP) belong to this form of pathway. It is important when tackling challenges of food insecurity to use different integrated strategies.

3.9.1.3 Assisting path

According to Abdu-Raheem and Worth (2011), this path refers to extremely poor households that depend on transfers as their primary source of income. Abdu-Raheem and Worth (2011) further explain that it includes households for which remittances are their permanent source of income. The assisting path links and assists the agricultural path with other non-agricultural paths in such a way that gives room for development and progress. Farmers can be involved in agricultural practices and programmes, on the other hand are involved to other activities that can generate income. The income generated might be useful for introducing inputs and resources of the programme Siyazondla.

3.9.1.4 Exit path

This pathway refers to the situation in which the rural poor migrate from their rural environment to urban centres for the express purpose of escaping poverty (Abdu-Raheem and Worth, 2011). This is a path when household individuals are overwhelmed by the challenge of poverty and see no other means to meet the required standard or level, and their only alternative or option is to permanently leave the place and move on to other places in search for a better livelihood. It could be the environment or the location that hinders farmer towards development. Relocating elsewhere and still involved to agricultural practises develops farmers.

3.10 Involvement of gender in home-based production

Monde (2012) defines gender as the set of characteristics (constructed, social and cultural), roles and behaviour patterns that distinguish women from men. Although gender and sex are often used interchangeably, the two concepts differ. Monde (2012) argues that the sex of an individual determines their biological traits, whereas gender deals with social and cultural constructs. Gender plays a significant role in developing agriculture, especially in least developed countries.

Gender mainstreaming is a current international approach to advancing gender equality and equity in society (Monde, 2012). Basically, gender mainstreaming seeks to accommodate both women and men into all plans and programmes for it to impact on both women and men in an equitable way. Women farmers play a significant role in ensuring food security at household levels. They are the backbone of the agricultural workforce. Women are also front-liners of agricultural production, especially in rural areas, even though their roles in development are greatly challenged by a number of negative factors (limited resource allocation, responsible for household chores). They are the most disadvantaged individuals in a society. Jamali (2009) observes that in most developing countries, both women and men farmers do not have access to adequate resources, but women are even more constrained because of their cultural, traditional and sociological factors. The proportion of women involved in agricultural activities ranges from 20% to 70%, a number that is climbing in many developing countries, especially where agriculture is geared towards export (IAASTD, 2008).

Women play an important role in the provision of food security at both the household and national levels (Hellen Keller International, 2003). Hellen Keller International (2003),

describes that women are involved in different aspects of agricultural production, including land preparation, material procurement, sowing, fertilising, weeding, thinning, irrigation, harvesting and seed processing. Although they contribute significantly and make a positive impact on food security, development and agricultural programmes, they still face some natural and social challenges. These challenges include floods, irrigation, drought, theft and lack of agricultural production inputs. Women end up producing crops with marginalised resources and are then channelled to domestic household chores. Women can maintain gardens and this should not hamper their other daily household activities (Hellen Keller International, 2010). In some cases women are relegated to production of vegetable crops and poultry, while men rear livestock and plant field crops. Based on the above factors, implementing the Siyazondla programme, would favour more women than men.

3.11 Conclusion

For rural people, opportunities for food and livelihood are very limited. One of the main sources of food for rural people is the home garden, which has become a major part of their economy and survival. Through home gardens, many have been able to access balanced nutrition, income, and food. There is potential inherent in home based gardens, and their benefits and advantages are numerous. It thus requires the efforts of developers to ensure more commitment, in terms not just of the initiation of home gardens, as in the case of the Siyazondla programme, but their implementation and evaluation for sustainability.

CHAPTER 4

Research methodology

4.0 Introduction

This chapter principally discusses the methodology used in the study. It begins by providing a detailed description of the selected area of study, and thereafter the methodology used for data collection, and the ethical considerations taken into account. The following are the sub-sections of the chapter: description of the study area; research design; ethical considerations; data collection method; study population; sample size and sampling techniques; instrument for data collection; method, and data analysis.

4.1 Description of study area

Alice is one of the areas that make up the Nkonkobe local municipality, together with Seymour, Fort Beaufort, Hogsback and Middledrift. According to Aspire (2013) the small town of Alice, which is one of the three communities selected for this study, is situated on the banks of the Tyhume River at the foothills of the Amathole Mountains in the province of the Eastern Cape. According to the Nkonkobe municipality: Annual Report of 2009/10, Alice is the legislative seat, while Fort Beaufort is the administrative seat of government. Aspire (2013) points out that the study area was established in 1852 by the Cape colonial government to be an administrative centre for the surrounding districts. Nkonkobe local municipality is the second largest local municipality in the region covering 3 725 km², and constituting 16% of the surface area of the Amatole District Municipality (Amatole District Municipality, 2006). The study was conducted on the Nkonkobe local municipality, from the beneficiaries and anticipated non beneficiaries of the same programme Siyazondla. The villages are Msobomvu, Ngcothoyi and Binfield.

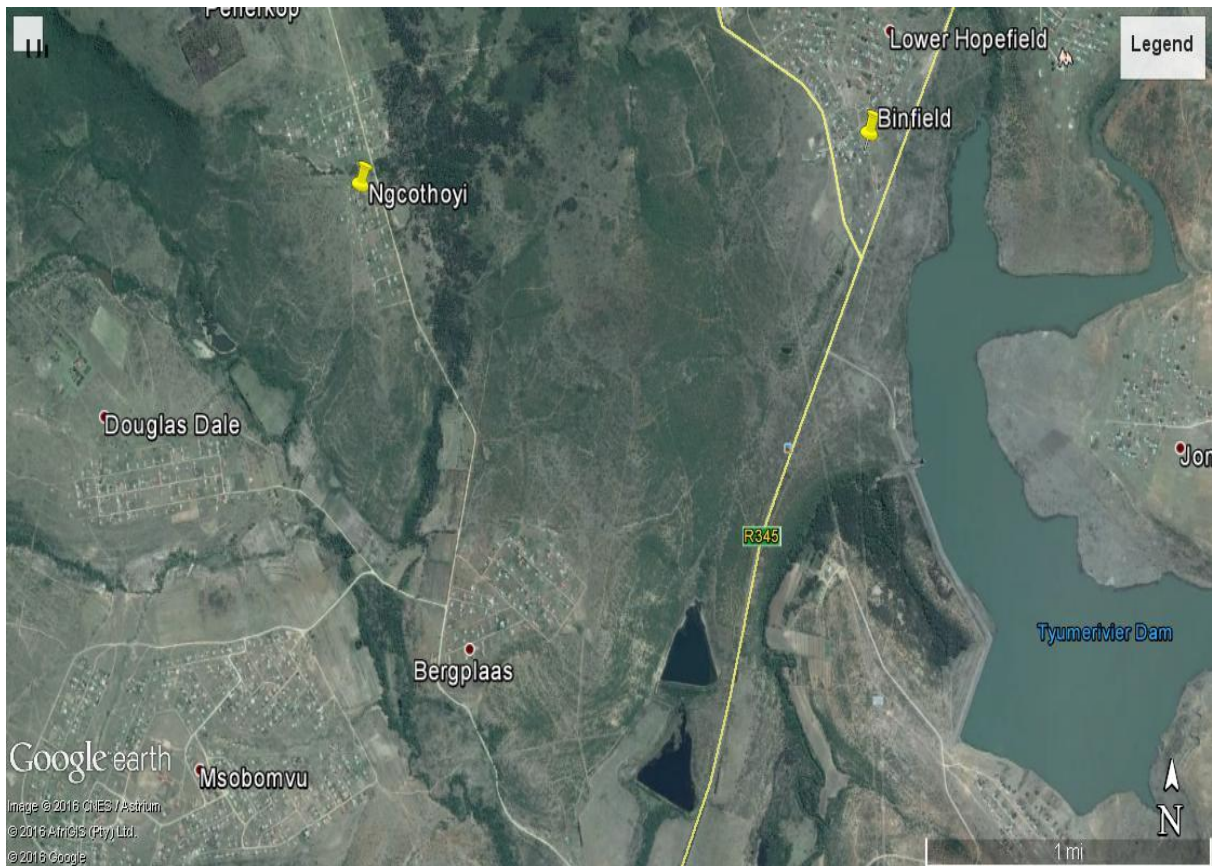


Figure 4.1: Map of the study area

4.1.1 Climate of the study area

According to Skillian (2011), the Alice area is a semi-arid region with an expected annual rainfall of 586 mm. According to Magni (1999), the climate of Nkonkobe Local Municipality can be described as mild. Rainfall is unevenly distributed throughout the municipality, as there are some variations. Alice area is dry and therefore, very few crops can be grown on such expected amount of rainfall, especially during the growth period, and so it is necessary to supplement the water supply through irrigation. An area tends to have high moisture availability through high humidity; frost and dew also add water availability to the growing plants. Binfield village is closer to the mountains, whereas Ngcothoyi village is surrounded by mountains and forest vegetation (trees).

According to the data collected from the Honey-Dale automatic weather station, Alice is characterised by having hot summer months and cold winter months (Skillian, 2011). During the cold winter months frost, dew, snow and high humidity occur, which is opposite to the conditions during summer months.

4.1.2 Land, soils and water resources

Ciskei and Transkei are the largest former homelands of the Eastern Cape province and of South Africa. Former homelands were controlled and ruled by chiefs and kings. As such, two of the three villages where this study took place are under the authority of traditional leaders such as chiefs, headmen and chairpersons.

Based on the study conducted by Ganyani (2011) the arable fields at Msobomvu location, are mainly clay loam soil types. According to AgriSETA (2006), soils dominated by clay loam are smooth when dry and sticky/slick when wet. Soils of this nature are not good for most agricultural activities. The agricultural potential of the Eastern Cape soils is limited by soil alkalinity in the western part of the province and acidity in the eastern part (Somoro, 2009). Soil determines plant growth, water availability and the type of vegetation, and the more the soil becomes degraded, eroded and conflicts overland ownership the more it holds back and hinders development, growth and production in small-scale farming and household production. People in rural areas are in control, possession and having authority over land use and they are capable of practising whatever form of farming activity that is suitable for that environment.

Most of the households in Alice access and depend on Grinaker dam for water. The area is mostly dominated by small streams, dams and rivers which serve as sources for irrigation to

cultivated areas and also for animal use (drinking). The largest and longest river within the study area is the Tyhume River, which supplies and supports small irrigation co-operatives situated along the side of river banks.

4.2 Research design and methodology

4.2.1 Research design

Having a good understanding of your research design is a principal tool to good and quality research. Camagu (2010), citing Collis and Hussey (2003), defines research design as the science of planning procedures for conducting studies so as to get the most valid findings. Research design is nothing else but a drawn structure, a blueprint of a detailed plan, an outline and a sketch of the research project. One can further define a research design as what a researcher is planning in order to collect data and analyse the findings and outcomes of the questions of the study. The list of beneficiaries of the programme Siyazondla will be collected from the officers of the department of agriculture. Non-beneficiaries of the programme Siyazondla, their lists will be collected from the chairperson, headmaster and also from the opinion leaders of these selected areas. Random sampling will be applied in cases, where numbers are over the required target number. This gives a room for every individual a chance of being selected and interviewed. The questionnaires will be used for data collected, and participants will be visited.

4.3 Data collection methods

4.3.1 Quantitative research method

“Quantitative research is the numerical representation and manipulation of observation for the purpose of describing and explaining the phenomena that those observations reflect” (Sukamolson, 2007). In quantitative research variables are measured, data and information

collected are weighed and hypotheses are verified. According to Sukamolson (2007), there are four types of quantitative research: survey research, correlation research, experimental research and causal-comparative research. This study uses the survey research type of quantitative research. “Survey research uses scientific sampling and questionnaire design to measure characteristics of the population with statistical precision” (Sukamolson, 2007). In the survey method of research, participants answer questions administered through interviews or questionnaires (Hale, 2011). Data and information collected is to analyse and tests hypothesis. When surveying a certain number of respondents undergoing scrutiny, the outcomes and effects are generalised for the whole sampled population.

4.3.2 Study population

Polit and Hungler (1999) define a ‘population as ‘the totality of all subjects that conform to a set of specifications, comprising the entire group of persons that are of interest to the researcher and to whom the research results can be generalised’. Depending on the point of focus, the population is normally represented by an organisation, community or village. For this study, the population is represented by the organisation, project and programme Siyazondla. The study population are all eligible and qualifying individuals for the programme Siyazondla, including both individuals who have benefited from the programme (beneficiaries). In summary, the study population is based on the organisation of the programme Siyazondla (beneficiaries) from the selected rural areas, which are Binfield, Msobomvu and Ngcothoyi.

Table 4.1: Number of qualifying individuals for the Siyazondla programme and the number of individuals benefiting in study area

<u>Study areas</u>	<u>Qualifying individuals</u>	<u>Beneficiaries</u>	<u>Percentage</u>
Msobomvu village	135	30	22%
Ngcothoyi village	79	20	25%
Binfield village	92	30	33%

4.3.3 Sample size and sampling techniques

A sample can be defined as a small package, quantity, group of people or objects representing the total population. Therefore, without analysing or collecting data and information from the whole population, a sample is used for summing up all objects on the same area. According to Shapiro (2002), a sample answers the question of whom to survey, interview, or include in a focus group. Shapiro (2002) further comments that sampling is a way of narrowing down the number of possible respondents to make the research manageable and affordable. Collis and Hussey (2003) states that, a sample is made up of some members of a population. There are certain factors affecting the decision to sample rather than using whole population: sampling is done for accuracy reasons and also because the population may be too large.

In order to minimise costs and time, there are certain strategies used by academics to manage samples. Two techniques of sampling in social science studies are probability and non-probability sampling techniques. With probability techniques, a sample is randomly selected from the population, which then serves as a representation of that particular environment. Probability sampling is the technique used for this study when selecting beneficiaries of the programme. Within probability sampling, the study also uses a random sampling, which is

explained in the next paragraph. The lists of beneficiaries were collected and then random sampling applied.

All eligible, qualifying, susceptible and vulnerable individuals for the programme Siyazondla from each village were selected. Due to a number of eligible non-beneficiaries of the programme, from the study areas, non-probability was employed. The available eligible non-beneficiaries of the programme were investigated and interviewed. Therefore, in these study areas, beneficiaries of the programme served as an experimental group, whilst non-beneficiaries were the control group. In each group, the sample size targeted was 15 individual farmers. This means, from each village 30 qualifying and eligible farmers of the Siyazondla programme, both benefiting and non-benefiting, were selected and used.

In cases where there were more than 15 qualifying individual members and households (where beneficiaries benefited and did not benefit from the programme), random sampling was employed as an alternative technique. In random sampling, numbers are chosen at random, as in a raffle, where each member has an equal probability of being chosen (Camagu, 2010). The total sample size of the study was 90 qualifying and eligible household heads from Msobomvu, Ngcothoyi and Binfield.

Table: 4.2 Number of individual interviewed in the study area

Study area	Sample Size		
	Siyazondla programme beneficiaries	Siyazondla programme eligible non-beneficiaries	Totals of villages
Msobomvu village	15	15	30
Ngcothoyi village	15	15	30
Binfield village	15	15	30
Total	45	45	90

4.4 Instrument for data collection

According to Taylor-Powell (1998), a questionnaire is a tool for eliciting information which can be tabulated and discussed. Questionnaires are a purposively set format of questions to collect information to be used to draw facts for future purposes. Questionnaires may include both open ended and closed ended questions. The reason for using both open-ended and closed-ended questions is because of their importance in understanding the perceptions and needs of individuals as well as the way they express themselves. Open-ended questions are also needed for obtaining information about the respondents, which helps to understand what exactly they are doing, rather than giving options as in closed-ended questions.

Questionnaires compare favourably with other types of data collection instruments, and prove to be the cheapest and easiest form of collecting data. The questionnaire was divided into sections; (i) household head information, (ii) household livelihood, and (iii) agricultural extension involvement and programme characteristics. This questionnaire forms, fully entail with questions that are used in answering of the objectives. All the objective results will come out from the sections of the questionnaire.

4.5 Procedure for data collection

A visit to the local agricultural extension office departments was made, to fully understand details of the Siyazondla programmes used within selected villages. The lists of the people benefited from the programme Siyazondla were collected from the Department of Agriculture extension officers. The lists of eligible non-beneficiaries of the programme Siyazondla were collected from the headmaster and the chairperson of villages. Thereafter, participants, beneficiaries and non-beneficiaries of the Siyazondla programme were visited in their homes.

The questionnaires were prepared in English and translated into isiXhosa for individuals who could not read or write or those in need of further explanation of certain questions.

The data was collected in face-to-face interviews, with the use of questionnaires. Farmers are sometimes reluctant and refused to participate in such activity of data collection process because of many other people (students) have been there before for data collection but never returned with their findings.

4.6 Ethical considerations

It is very important to gain access and permission to conduct any type of research study and this must be considered when planning the research. According to Polit and Hungler (1999), researchers need to exercise care that the rights of individuals and institutions are safeguarded in order to protect and preserve human rights, privacy and dignity, and also to prevent fraud or unfair treatment that might arise during the course of data collection. According to Ncube (2012), a research study needs to take account of the fundamental principles of research ethics, such as the respect of persons, obtaining informed consent, and protecting them from harm, maintaining confidentiality, and ensuring risk benefit and beneficence.

Before interviews are conducted with individuals, a target group or population, informed permission of all participants must be obtained. It is very important to gain authority from people such as chiefs, ward committees, chairpersons and local committees to gain access to their village level. Agricultural agents and local authorities of selected villages should be met halfway, in order to grant authority for the study is to take place. The Siyazondla programme as a small agricultural programme that is based on home garden food production and which operates with a limited number of recipients and resources, their rights and participation

could be easily uncovered and exposed. Therefore, certain measures are followed in order to avoid such mishaps. These are described below.

4.6.1 Respect of persons

In respect of recipient's rights, before the data is collected, the recipients are informed of their rights before commitment and participation. This activity should be seen as voluntary, where involvement is not forced or bribed, but awareness of the activity and outcomes is made clear. Participants have rights to protect themselves, and to know the information gathered during research and the results, findings and recommendations. When people are fully aware of their rights in any activity, they are free to participate, as long their rights are not violated.

4.6.2 Confidentiality

Before questionnaires are distributed, participants in the programme are assured that their confidentiality will not be disclosed in report findings. According to Mugabe (2011), citing Babbie and Mouton (2001), to ensure confidentiality of farmers is secured, the researcher must remove names and ages of the respondents from the questionnaires and replace them with identification numbers. Participants are assured that findings are only for study purposes and in an attempt to seek and find better and improved ways that would assist in development and to improve the researched programme.

4.6.3 Voluntariness

Targeting of individuals for data collection was based on the beneficiaries and non-beneficiaries of the Siyazondla programme, not by force, fraud, threat or bribery to persuade farmers to agree to selection and data collection. The principle behind voluntariness is that people should not be coerced or bullied into participating in the research. It is therefore a

matter of choice, willingness, freedom, right, perception and feeling to be involved in the research.

Before the random selection sampling was made, the purpose of the research was explained to the beneficiaries and non-beneficiaries of the programme, and it was explained that participants could withdraw from study at any time.

4.6.4 Risk of harm

According to Trochim (2000) harm can be both physical and psychological. None should be exposed to risk or harmed by their participation in the research activity. It is important to protect all participants and prevent them from being at risk of harm.

4.6.5 Anonymity

The list of people benefiting and not benefiting from Siyazondla was obtained from the participating villages. Participants remained anonymous throughout the course study: names were replaced with numbers in order to obviate any concerns that participants may have had about lack of anonymity.

4.7 Data analysis tool

Raw data of the questionnaire were coded and captured into an Excel computer programme for easy storing and organising of the data for analysis. Then after, the data was transferred to Statistical Package for Social Scientists (SPSS v.2.1.) because it is quick and fast processing ability data.

4.7.1 Descriptive analysis

Descriptive research basically describes “what is” (Oladunni, 2011). Descriptive statistics are used to describe the basic features of the data in a study (Trochim, 2000). As the name implies, ‘descriptive statistic analysis’ has to do with description, showing and summarising data based on observation (how things are seen). The unit of analysis employed for the study was descriptive tool. This is whereby the beneficiaries and eligible non beneficiaries of the programme Siyazondla were compared, and in some cases the respondents were group together and compare certain factors. Descriptive analysis uses the basic fundamental methods such as means, mode and medium, average, minimum and maximum. The main descriptive indicator that was employed was the frequency.

4.9 Conclusion

This chapter provided the existing situational analysis of the three study areas. The chapter also detailed the procedures under which the study was conducted. This includes understanding of the environment, population, sample size and considered ethics etc. Through this, raw data were collected and analysed. The results and findings form the basis of discussion as presented in the next chapter.

CHAPTER 5

Results and discussion

5.0 Introduction

This chapter presents and discusses basic findings from the survey done to evaluate the effectiveness of the Siyazondla homestead food production programme. Ninety farmers were interviewed from three selected communities: 45 of these benefited from the programme, whilst the other 45 farmers qualified for the programme but were not selected. These individuals are from: Msobomvu (Msbmv), Ngcothoyi (Ngcthy) and Binfield (Bnfld) communities. The finding and results that are presented in this chapter attempts meeting the set objectives of the study. These results also assist in answering the research the research question of the study.

5.1 Demographic characteristics of farmers

This section deals with household head's characteristics including age of respondents, level of education, gender and marital status. Therefore, demographic information is one of the aspects, which is likely to influence farmers' decisions on agricultural activities.

Table 5.1: Demographic characteristic of beneficiaries and non-beneficiaries of the Siyazondla programme (n=90)

<u>Beneficiaries</u>			<u>Non Beneficiaries</u>	
	No	Percentage %	No	Percentage %
Age				
≤ 19	1	2.22	0	0
20 – 35	6	13.33	7	15.56
36 -49	12	26.67	9	20.00
50 – 79	24	53.34	22	48.88
≥80	2	4.44	7	15.56
Gender				
Male	12	26.67	14	31.11
Female	33	73.33	31	68.89
Marital status				
Single	15	33.33	17	37.78
Married	12	26.67	12	26.67
Widower	2	4.44	2	4.44
Divorced	8	17.78	13	28.89
Widow	8	17.78	1	2.22
Educational Level				
No Schooling	4	8.89	9	20.00
Primary School	13	28.89	14	31.11
Secondary School	26	57.78	20	44.44
Tertiary	2	4.44	2	4.44

Table 5.1 shows the demographic information of farmers in the study area:

5.1.1 Age of household heads

In many societies, elderly people are treated with great respect, and their advice is listened to carefully. According to the findings, the largest percentages (53.34%) of beneficiaries and non-beneficiaries (48.88%) of the Siyazondla programme are from the age group 50-79 years.

People of the same age usually have similar interests and attitudes: young people tend to have different values, attitudes and aims in life from those of older people. This age group (50-79 years) can be regarded as the most active age group participating in homestead food production. Targeting household heads and farmers between the ages of 50-79 years is viable and has a better response. Comparing beneficiaries and non-beneficiaries of the programme in terms of age, as the individuals get older, they become more involved in homestead food gardening and take responsibilities within households, up until the children take over responsibilities from their parents. Another indication of the above finding is that, the programme consists of older people than other age groups. This in itself is not much of a problem because Siyazondla is meant for less active individuals in communities such as pensioners, people who due to age may not be able to engage in more productive or active economic activities such as agricultural production. According to Pushkarskaya and Vedenov (2009), older farmers tend to reduce the size of their farms as they become older (aged), while there is a low number of the youth involved in agricultural activities.

Piloting and implementing the Siyazondla programme in the form of projects and co-operatives, a number of youth might showed some keen interest and also involved themselves in different agricultural practices. This is by involving the same age group of youth in one active group or co-operation. Homestead food production is therefore one of the social food coping strategies for households headed by children. The groups least involved are the age groups of less than or equal to 19 years and over 80 years. Children less than 19 years old are teenagers, who are supposed to be under authority and guidance of their parents, but due to certain livelihood circumstances, some children are now heads of their family and breadwinners. The most suitable programme for age group less than 19 years old would be the 4H Programme School, which is an agricultural programme operating from schools under

the authority and supervision of teachers, with guidance and implementation from School Governing Bodies (SGB). According to Musemwa (2008), participation of youth is vital as they are the farmers of the future. In as much as the future lies with the youth, they should not be forced by negative livelihood factors.

Another reason why there were few people in the age group 80 years and above who were involved is because they are cared for by their children, recipients of social grants (old age pension) and are also old, and not very active for agricultural practices. Therefore, the age of the household head could be regarded as having an influence in determining whether or not individuals are to benefit from the Siyazondla programme and participate in agricultural practices.

5.1.2 Gender of household

Monde (2012) refers to gender as the social roles and relations between women and men. Gender is not strongly determined by differences of biological traits between women and men *per se*, but in this case, gender refers to sex. Gender is also an important factor for resource allocation, using resources, controlling resources and decision making. Programmes such as Land Redistribution for Agricultural Development (LRAD), Women in Agriculture for Rural Development (WARD), and Siyazondla Programme are to ensure that women in agriculture are empowered with sufficient agricultural skills and knowledge to engage in agriculture in order to alleviate poverty in their families and communities (Kalazani-Mtya, 2011).

The sample of households benefitting from the Siyazondla food programme was 26.67% males and 73.33% females, while non-benefitting members of the programme were 31.11% males and 68.89% females. From these findings, it is clear that females dominate in

household food production programme. Women are the dominant agricultural producers, traders and nutrition providers in most countries (Kehler, 2001). This may be an indication that women are more concerned with household food security, therefore gardens around the house will ease the existing emotional stress attached with the household responsibilities (Olajide-Taiwo *et al.* 2010).

5.1.3 Marital status

The strongest groupings in a community and society are often those based on relationships of birth and marriage within and between families. This is another level of demographic information and is called the marital status. The marital status clearly defines a person's livelihood: a married person cannot behave as a single one in terms of household responsibilities and commitments (Pote, 2008). This is the smallest of the groupings, which consists of a man and woman and children. In some societies, such families are independent and make their own decisions about where to live, where to farm and what crops to grow. These families will, however, usually have certain duties toward close relatives that they will be expected to fulfil, and these could restrict their freedom of action. In other societies, larger kinship groups may live together, own land in common or even take joint decisions about farming. When this happens the individual farmer may have little freedom of decision. An extension agent would need to find out who are the leaders and decision-makers of such groups, and work closely with them.

Table 5.1 indicates the results of the marital status of beneficiaries and eligible non-beneficiaries of the programme Siyazondla from the study areas. According to Olajide-Taiwo *et al.* (2010), when the majority of the population are adults with marital responsibilities, involvement in home gardening to make ends meet in the family will be high. In such

conditions, when there are two responsible household-heads, food and income should be safely secured and held.

These findings of the study indicate that women are the majority involved in homestead food production. The identified difference between widows is (20.00%) of beneficiaries and non-beneficiaries and widowers (8.80%) of both beneficiaries and non-beneficiaries is 11.2%. Therefore, in presence or absence of their spouse, women are still gatekeepers of homestead food production. According to Makara (2010), women usually do not choose to become household heads but due to the absence of a man, they have to play this role.

5.1.4 Level of education

One of the characteristics of an innovation is its complexity, hence the level of education highly influences the rate of adoption (Makara, 2010). Farming practice is both an art and a skill. The progression of a farmer's quality in practice of any agricultural activity is also influenced by the standard and level of education. The highest level of education of participants in the Siyazondla food programme is secondary school: 57.78% of benefitting members of the programme and 44.44% of non-benefitting members. Few beneficiaries and non-beneficiaries had no formal education (informal education). Education is the key to success and helps in seeking and finding opportunities and better offers.

5.2 Farming activities in household production in the study area

5.2.1 Land accessibility in the study area

It is important to deal with land acquisition, availability and accessibility when it comes to land tenure issues. Land acquisition refers to how people obtain land, and land access refers to the use of the land. The land that is available should be occupied in the right manner and effectively used for future purposes. There are many types of land tenure systems in South

Africa (Ngemntu, 2010). Ngemntu (2010) further argues that land tenure systems involve land bought, rented, communal land tenure, inheritance, lease, state land and share cropping. Other ways in which rural or communal people access land are through borrowing, socio-cultural agreements and also under certain individuality authority deeds such as chieftaincy, headmaster and community chairperson. This is why it is important to understand the procedures for land accessibility and use in rural areas, because land issues are vital and important, as well as very challenging.

More than half of the total people that are benefited and non benefited from the programme Siyazondla from the three villages acquired lands where they are practising their home garden through socio-cultural agreements such as chieftaincy (chief), inheritance (the way in which land and other possessions pass from one generation to the next) and communal land tenure. Accessibility to land from rural areas is socially driven, a system where resources are jointly shared, whereas in urban communities it is economically driven and privatised. Accessing land and using it is still governed and authorised by chiefs, headmasters or chairpersons. These are the people who grant rights to occupy, and guide and give orders over use of the available community resources. People are given an area of living, and then from that space of land they can establish, function and perform whatever form of agricultural practices are suitable for the environment, including rearing of animals and growing vegetable crops.

The least common ways of attaining and acquiring land from selected areas by farmers were through economical means such as renting, borrowing and buying land, which are the ways usually used in urban areas, where the space of land is limited as a result of the high population and industrialised society. Rural areas consist of large spaces of land unoccupied

by buildings, infrastructure and industries, but withheld under certain tenure systems. This is why there were fewer households who obtained land through buying (8.89%) and renting (2.22%).

In areas that are remote from big cities and are rural (traditional) in nature, such as the Eastern Cape, KwaZulu-Natal and Limpopo, more people tend to possess and own land through social and cultural ways. Owning and having title deeds over land use, helps farmers to establish all the activities involved in the production of homestead food fully, unlike being restricted by certain conditions and terms by the owner, which hinders the household's potential as it minimises the farmer's capacity and capability in farming practices.

Table 5.2: Land acquisition in the study area

Data	Beneficiaries		Non-Beneficiaries	
	Frequency	Percentage	Frequency	Percentage
Bought	4	8.89	0	0
Rented	0	0	1	2.22
Borrowed	5	11.11	2	4.44
Communal land tenure	21	46.67	13	28.89
Inheritance	7	15.56	7	15.56
Chieftaincy	6	13.33	22	48.89
Other	2	4.44	0	0
Total	45	100	45	100

5.2.2 Agricultural practices by farmers in the study area

According to the data collected by Lehohla (2013), of the total of 14 450 161 of households in South Africa, 2 879 638 are involved in agricultural production, thus the majority are involved in non-agricultural production. Lehohla (2013) further described the Eastern Cape as having the highest percentage of agricultural households (30.1%) owning livestock, whereas KwaZulu-Natal has highest percentage of agricultural households engaged in poultry

production (27.5%). The distribution of agricultural households across the provinces is influenced by a number of factors including landforms, vegetation, soils, socio-cultural factors, water and climatic conditions. The Eastern Cape Province is mostly suitable for livestock production and has great potential. According to Lehohla (2013), the province that has the highest percentage of households involved in production of vegetable crops is KwaZulu-Natal with (30.3%).

Different agricultural activities are performed under homestead food production system. Field crops and vegetables can have some distinguishable characteristics and similarities and are grown on land under different environmental conditions. Examples of vegetable crops that are mostly grown in homestead production systems are spinach, cabbages, tomatoes, carrots, pumpkins, African watermelons, green beans, green peppers, peas, beetroot and onions. Potatoes, maize, beans, sorghum and wheat are usually grown in large areas, but they are also grown in backyard gardens. From a commercial farming point of view, vegetables are mostly grown in large areas of land, communal projects and privately owned farms.

As Table 5.3 reveals, the majority of farmers are involved in livestock production, followed by vegetable and crop production and then by farmers involved in both practices (livestock and vegetable crops). This may be caused by factors such as farmers' perceptions, climatic potential and environmental suitability for livestock rather than vegetable crops production. The study also reveals that there was a marginal or minor difference of the people participating from the programme (26.67%), compared with those who did not benefit (28.89%). Whether farmers benefit from the Siyazondla programme or not, fewer farmers are involved in homestead garden than in livestock production. The Siyazondla programme supply inputs for home garden production such as seeds, seedlings and tools. Therefore, it has

marginal effect and low value, when it comes to resource acquisition for livestock production.

In some cases, farmers are involved in both practices, as rearing livestock and growing vegetable crops simultaneously of (mixed agriculture). Farmers who are vulnerable and eligible for the Siyazondla programme (24%) are more diversified in their attempts to find better ways out of their existing challenges. Therefore, one of the strategies when selecting participants for the Siyazondla programme is to support those who are participating in any form of agricultural practices in their respective communities and home gardens.

The study involves only farmers who are eligible to benefit from the programme and those who are benefiting. All the respondents (beneficiaries and non-beneficiaries) were involved in homestead production, either in livestock or vegetable production or both. This is also an indication that agriculture is alive in rural areas and the people love the land that feeds them. Agriculture in rural areas serves as the basic form of balancing social stability by way of food produced to meet the basic needs of households. Therefore, there is much that needs to be done to improve agricultural production in the study areas, especially in the growing of vegetable crops and encouraging participating farmers to rear livestock and grow vegetable crops.

Table 5.3: Household current agricultural practices involvement in the study areas

Data	Beneficiaries		Non-Beneficiaries	
	Frequency	Percentage	Frequency	Percentage
Livestock rearing	30	66.67	21	46.67
Crops and vegetables	12	26.66	13	28.89
Both enterprises	3	6.67	11	24.44
Total	45	100	45	100

5.2.3 Farming challenges faced by farmers in the study area

Table 5.4 shows general factors affecting both beneficiaries and non-beneficiaries of the Siyazondla programme at Msobomvu, Ngcothoyi and Binfield. The most challenging factors that limit farmers' full involvement in farming, both beneficiaries and non-beneficiaries of the Siyazondla programme, are: financial resources for farming (11%), marketing opportunities for produce for beneficiaries (20%), and irrigation water (20%) for non-beneficiaries.

Homestead gardens are challenged by certain factors which limit potential production of homestead gardens. In many and most of agricultural production levels and activities, for the programme and projects to function effectively, there must be some way of tracking costs. Farming is a risky business and has financial implications. It is not easy for farmers (benefiting and non-benefiting from the programme) to risk their available finance for the activities involved in the production of food in homestead gardens.

Another challenge that affects both the beneficiaries and non-beneficiaries of the programme is with marketing of the produce. Marketing can be defined as the exchange of goods and products between a farmer (producers) and consumers. Access to the market is one of the challenges faced by rural people. Subsistence farmers who produce food for home consumption are characterised by small-scale production, lack and shortage of production models, and being socially driven. Therefore, for such farmers to reach the market, they need first to secure food for the household, and thereafter they can seek opportunities elsewhere. According to Dixie (2005), the main role of agricultural extension in marketing is to improve farmers' understanding of marketing and how they can become more commercial and profitable by producing crops that are in demand by the market. Basically, extension officers

are concerned about to how improve and increase farm profit and income. It is not worth producing products that will end up rotten. Agricultural products are perishable, and this could result in a loss of value of products to the market.

The beneficiaries of the programme perceived that they also lack skills for farming (11.11%), and that inputs (15.56%) granted are inadequate. Bembridge (1991) states that “give a hungry man a mealies and he will consume a day and finishes it, but showing them how to produce he will consumed for the rest of his life”. In their educational practices to farmers, agricultural extension workers must be able to bring about changes in the attitudes, skills and knowledge of farmers: changing the skill of farmers by providing improved technology and frequently visiting them and updating them about new technology. According to Mbusi (2013), extension officers must play a role using the recently developed extension approach of participatory rural appraisal through discussions with farmers and empowering the farmers. All farmers involved in any programme or project had to own or developed sense of ownership, in initiation and implementation of the programme. They must be the managers of such initiation provided by the government for their livelihood. Participatory approached, has be used quite for some time, but through the pass of time there are some addition and innovation that are introduced, and omitted. This is by so meaning about, recent participatory extension approach. It is there important to change and improve with change of times.

According to Aliber and Hall (2010), small-scale farmers in South Africa have been subject to years of official neglect, despite numerous policies and programmes. Aliber and Hall (2010) argue that most black farming households receive little if any support, largely because available resources are highly skewed toward certain farmers over others.

Table 5.4: General limitations that hinder farmers in homestead food production

Data	Beneficiaries		Non-Beneficiaries	
	Frequency	Percentage	Frequency	Percentage
Finances for farming	5	11.11	5	11.11
Skills for farming (production)	5	11.11	3	6.67
Marketing opportunities for produce	8	17.78	9	20.00
Availability of inputs	7	15.56	3	6.67
Area of land available	4	8.89	8	17.78
Irrigation water	5	11.11	9	20.00
Fencing	1	2.22	1	2.22
Other	10	22.22	7	15.56
Total	45	100	45	100

5.3 The Siyazondla Homestead Food Production Programme

5.3.1 Programme accessibility in the study area

Household heads from different communities are challenged by livelihood problems, socio-economic, physical and cultural factors. In the process of distinguishing and simplifying them, household and individual farmers are seen living under the poverty line, there are high unemployment rates, child-headed families, illiteracy, disability and chronic diseases etc. In most rural communities, households struggle for survival and are in need of agricultural revival. Thus easy access of agricultural opportunities such as the Siyazondla programme is of immense benefit to their survival.

According to Figure 5.1, 64% of beneficiaries of the Siyazondla programme were identified through community commitment and engagement. This is the case where agricultural extension workers interact with all community stakeholders such as community leaders, influential farmers, social workers and people in general in targeting participants. Identification of people for the programme is made jointly by the officers and community

members. Another set of beneficiaries are those faced with social and economic factors (27%) and the physically disabled (2%). Interaction and participation, by attending agricultural extension meetings and farmers gatherings, help households to become aware of current agricultural programmes. The role of agricultural extension is to link farmers and researchers and to build capacity for effective and efficient production.

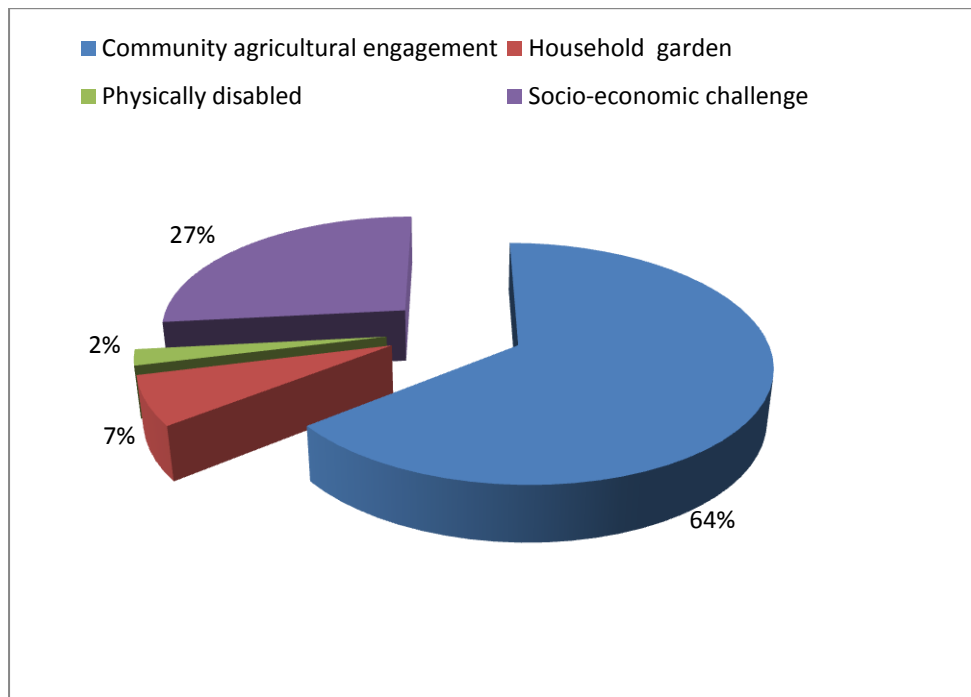


Figure 5.1: Selection criteria used to identify beneficiaries

5.3.2 Benefits of the programme in the study area

Generally, perception is defined as a way a person sees things, reacts and understands his/her surrounding. According to Prasad (2006) perception is an active process, whereby sensory reactions are related to relevant past experiences of an individual when confronted with stimuli and a more structured and meaningful picture is printed in the mind and is finally perceived as the object.

According to Hellen Keller International (2013), homestead food production equips women and smallholder farmers with the tools and skills to cultivate home gardens. The majority of farmers benefited from the programme by acquiring inputs, implements, skills and knowledge of farming. According to Figure 5.2, most of the respondents (55%) perceived programme initiatives as a form of providing farmers with agricultural inputs and implements (hoes, spades, wheel-barrows etc.). This shows that most of farmers who benefited from the programme received inputs and implements for them to actively become involved in production of their own food in their backyard and home garden. Although the implements provided are for agricultural functions, they can also be of use in other home activities. Another reason why most farmers perceived that the programme is for resources is because in some cases farmers only receive implements (tools such as shovels, spades, hoes and wheel-barrows), but no production inputs (seeds and seedlings). The benefits on the programme interconnect: farmers are supported with production inputs and implements, and during the course of practice of homestead production, extension workers are involved to pass on farming skills and knowledge to farmers. This happens by supporting farmers to grow quality and quantity of food from the gardens, as a form of meeting programme goals (food security, income).

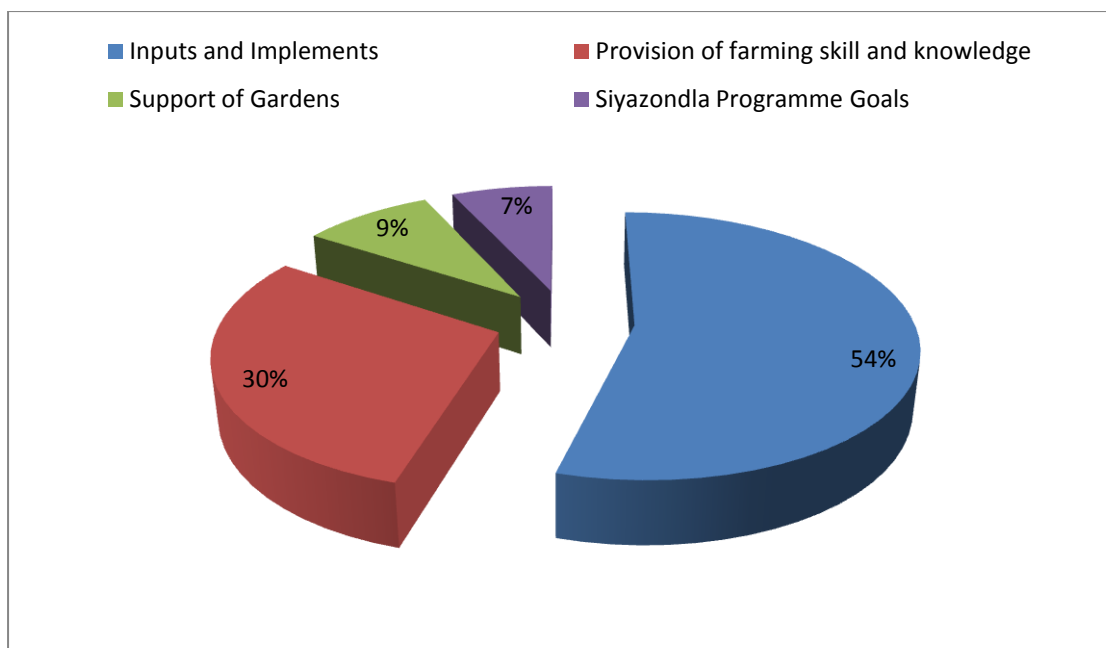


Figure 5.2: Perception of farmer's benefits of the programme

5.3.3 Anticipated benefits of the programme Siyazondla

Farmers are involved in household food production for different purposes and objectives. Whether farmers are the recipients of inputs and implements on the programme or not, it can be confirmed that there is a close relationship in terms of food produced and used by the farmers benefited from the programme and those did not benefited from the programme from the same community. Food security, skill and knowledge are the major concern and point of focus of the programme Siyazondla. The programme Siyazondla achieved its objectives from the beneficiaries of the study areas, and also there are some possible and anticipated benefits of the programme. This includes the following: Storing (food, inputs and seeds), exchange products (food produced), marketing, giving others for free and sharing (information, skill and food). Both beneficiaries and no-beneficiaries of the programme were interviewed and investigated with regard the anticipated benefits of the programme Siyazondla.

In figure 5.3 indicate non-beneficiaries (28%) of the programme Siyazondla tend to store food more than beneficiaries of the programme (25%). This is one of the methods used towards food security, to conserve food for future uses. The beneficiaries of the programme spend more food, more than their counter parts. More of the food produced by beneficiaries is spent on giving other people for free (28%) and also marketing (26%).

Agriculture in rural areas also serves as a way of generating income. Market of the produce is one of the platforms that are useful for the exchange of produce. This helps farmers to obtain and possess what they are not having. Agricultural produce requires facilities for storage. The more the produces remained within farmer's premises and without storing facilities lose value. Market, is one of the options that farmers can turn to for the produces of the products. Such developmental efforts, in a future, are like to develop entrepreneurs and also developing of freshly local produce market. Figure 5.3 indicates that both the benefiting (26%) and non-benefiting (24%) farmers from the programme are market oriented. Market oriented in a sense of selling produce within community. In addition, income generated from HFPP (Household/Home Food Production Programme) also increases household access to other high quality foods since most households used the surplus income to purchase more food for the household (Hellen Keller International, 2010). Household income increases as a result of homestead food production activities (Hellen Keller International, 2010).

The food produced, skill and knowledge gained by beneficiaries of the programme and also production inputs is also shared with other farmers (13%). This includes farmers benefited and also those did not benefit from the programme (18%). Farmers on the same projects and programme influence one another toward development. Programme and projects are likely to be developed, formed and initiated, as a result of these small programme such as Siyazondla.

This builds up better livelihood builds and better society, as it is minimises the rate poverty, malnutrition and other health related status.

Understanding of situational analyses based on livelihood structures and strategies (social, economical, physical, traditional and cultural), helps farmers to understand and know one another. The beneficiaries of the programme show better signs of humanity (“ubuntu”) towards their colleagues than those who were not beneficiaries. A human community is nothing if not a community of persons, and a healthy community is one in which all participate, to whatever varying degrees, in determining the nature and actions of the community (Usadolo, 2012).

The study also clarifies that when the beneficiaries of the programme are involved, participating and benefiting from the programme, a mark is left behind. Where beneficiaries are sharing their produce, they are doing it with open-handedness, big-heartedness, kindness and with generosity to the non-beneficiaries. This shows how Siyazondla has succeeded in establishing and building a better human community. Another striking discovery is the use of barter system, a system where one farmer exchanges his/her produce with another farmer.

Lastly, to remain sustainable, home gardens need to continuously introducing inputs or receiving inputs. Farmers become more diversified in production of homestead food (mixed farming), when they have different and wide objectives. This result to higher yields and more income generate. Therefore, more of the food produced by the beneficiaries is also shared with those that were not participating in the programme or having a low yield. As findings indicate, some of the produce is stored. Stored food allows people to consume nutritious food

during times of food stress, and also ensures food availability (food security) most of the time, as it minimises poverty (poverty alleviation).

In summary, among of the agricultural products produced within the program are perishable. So, both farmers benefited from the programme and non-benefited rely on spending and distribution of food rather than holding and keeping for longer. This helps farmers to access food produce returns from another when they are not producing or not having food. Lastly, the programme contributes towards food security and poverty alleviation.

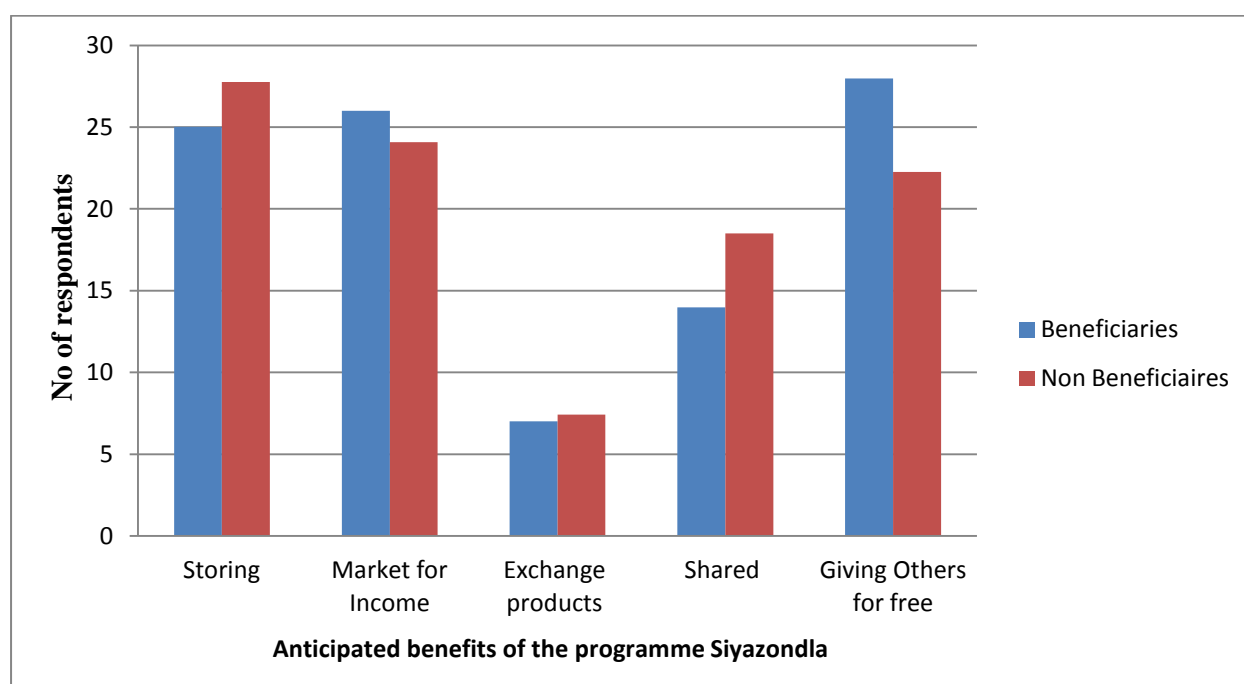


Figure 5.3: Anticipated benefits on the programme

5.3.4 Areas of achievements of Siyazondla from the study area

Food insecurity is one of the main challenges that affect people throughout the world, especially developing communities. Food security is one of the millennium development goals, and there must be adequate measures in place to achieve this. This is why homestead

gardening is considered an important endeavour. From the formation and initiation of Siyazondla, the programme was formulated in such a way to reach and meet specific objectives and goals of farmers. According to Blaai-Mdolo (2009), the Siyazondla and Siyakhula programmes had the following objectives:

- To address food insecurity in the province;
- To guarantee food security for rural and urban people; and
- To ensure supply and access to nutritious food all year round.

Benefits of food produced from homesteads are numerous, and this is why benefits from agricultural production such as homestead gardening are far-reaching. According to Hellen Keller International (2010), the benefits of HFPP are however not limited to improving food security and nutritional status, but also include the following:

- (i) income
- (ii) social status or stability (lower crime and death rate, creation of employment)
- (iii) skills and knowledge of farming which are parts of the programme objectives.

Some of the programme objectives were effectively met, whilst others are slowly improving. Programme beneficiaries perceive that by being recipients of the programme, their most achieved objective from the programme was food security (storing, access and nutrition: 70.05%), followed by income and health (4.95%) figure 5.4. The programme has played a huge role for vulnerable farmers in meeting homestead food production. Good nutrition results in better health, and this is one of the objectives that the programme is targeting. Food security goes beyond nutritional status and health condition: nutrition and health are part of food security, therefore the two are more or less bound altogether.

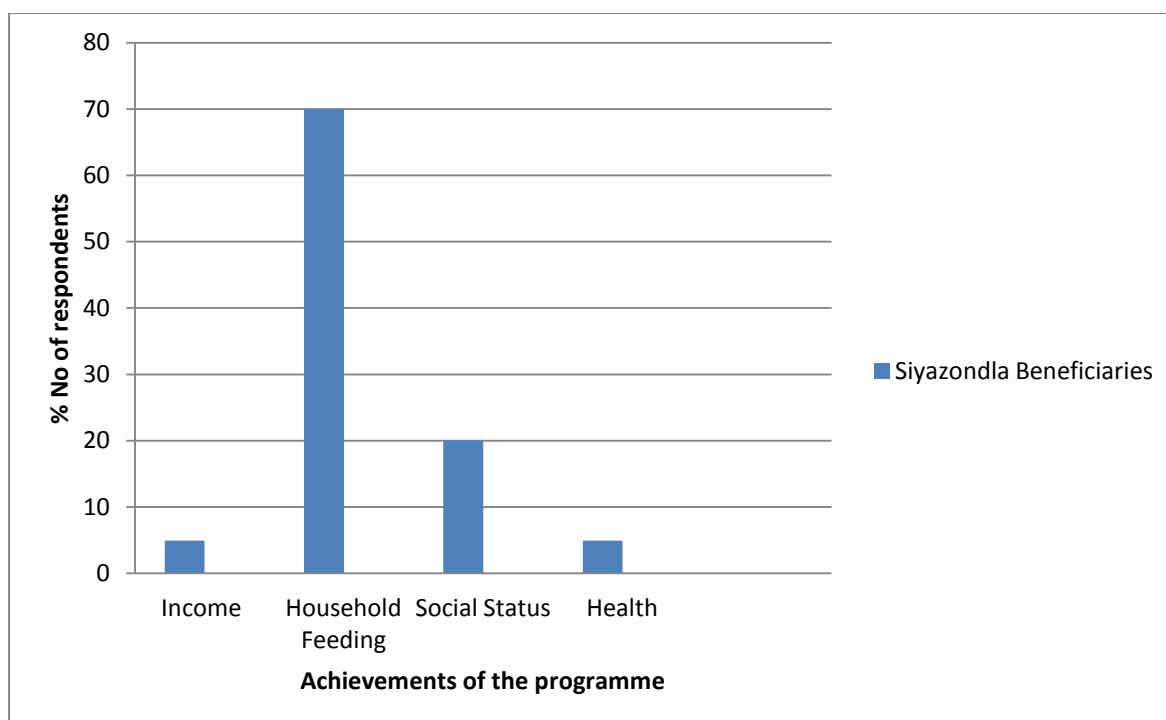


Figure 5.4: Achievements of the Siyazondla programme in the study area

5.3.5 Challenges within the Siyazondla homestead food production programme

There are certain challenges faced by household farmers in their course of agricultural production, including problems with marketing the produce, environmental factors, inputs and implements. Environmental factors include temperatures, rainfall, humidity, hail and sunlight. Different crops are suitable for certain environmental condition and climates. Another problem that challenges beneficiaries of the programme is the period of programme implementation (time of planting) 23% in figure.5.5. This is also related to environmental challenges, as the programme might be implemented during the times of climatic stress or when farmers are concerned with other issues (social, cultural and traditional): therefore, timing of programme implementation is important and has to align with farmer's needs.

(29%) farmers involved in the programme were challenged with inputs and implements for homestead production. It is not that farmers were reluctant, lazy, unwilling or unenthusiastic

to practise agriculture in the backyard garden, but they are challenged with resources to make it function.

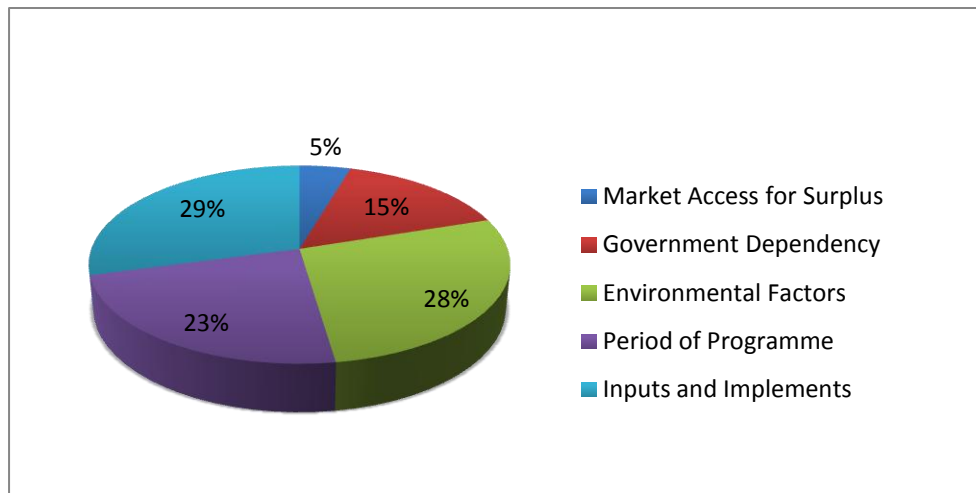


Figure 5.5: Perceived challenges within the Siyazondla programme

5.4 Agricultural extension service

5.4.1 Agricultural extension officers' role in the programme

Agricultural extension is a multi-discipline process, which deals with farming and improving the lives of the people at homes. This merges farms and homes because they work together and cannot be separated. According to Bembridge (1991), agricultural extension performs at least four major functions and roles in the process of rural development:

- (1) Transferring and disseminating effective information to local people and farmers;
- (2) Educating farmers (empowering);
- (3) Serving as facilitators for the best use of available resources; and lastly
- (4) Creating a behavioural attitude to accept the technology.

Agricultural extension and advisers connect farmers with researchers. This is a two-way process of bridging the gap of innovation between researchers and farmers. The role of agricultural extension is to deliver effective extension services such as improved technology

or technology transfer for all farmers, including small scale farmers, household farmers and commercial farmers. Providing such activities helps to increase the farm capacity of farmers at community levels. Figure 5.6 shows that 72% of farmers believed that agricultural officers assisted farmers with agricultural production practices, through conducting of demonstration such as preparation of soil before planting, weeding, planting of seedling, and irrigation. These skills and knowledge are required in order to achieve farmer goals and objectives, and at the same time it challenges their existing livelihood.

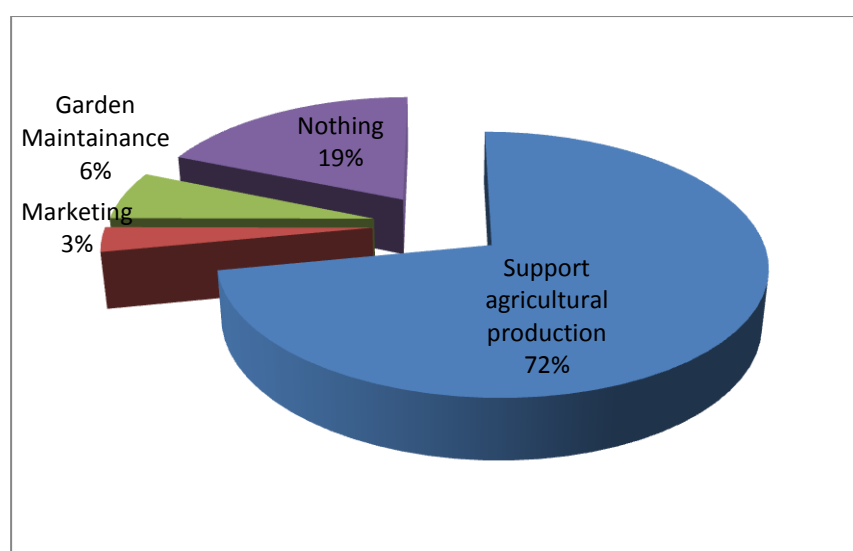


Figure 5.6: The role of agricultural extension in Siyazondla homestead food production programme

5.4.2 Satisfaction with the programme.

In terms of the satisfaction with the programme, there are few and little resources (inputs and implements) that are received by programme beneficiaries. According to Figure 5.7, 47% of beneficiaries and 30% of non-beneficiaries are satisfied with the existence of the programme. The satisfaction of beneficiaries for the programme could be traced to be the result of household feeding (food security), income (figure 5.4), skill and knowledge 30% (figure 5.2) that is offered by the programme. On the other hand, non-beneficiaries of the programme are

also satisfied, with the existence of the programme, having in mind that they will benefit from the programme, when it is implemented on the same area, and they are also benefiting from the programme beneficiaries, in things such as exchange of food. The benefits and advantages of being the participants of the programmes also soften non-beneficiaries of the programme. Comparing farmers, that are benefited and non-benefited from the programme, there are more farmers that are satisfied with programmes existence than those farmers that are not satisfied with programme existence. There was a slight difference between the perception of beneficiaries of programme (29%) and non-beneficiaries (26%) who are not satisfied with the food produced. Those that are unsatisfied with the programme as beneficiaries could be the results of the challenges within the programme. Finally, whether farmers benefiting from the Siyazondla programme or non-benefiting, they are satisfied with the programme implementation or existence as it meets their needs.

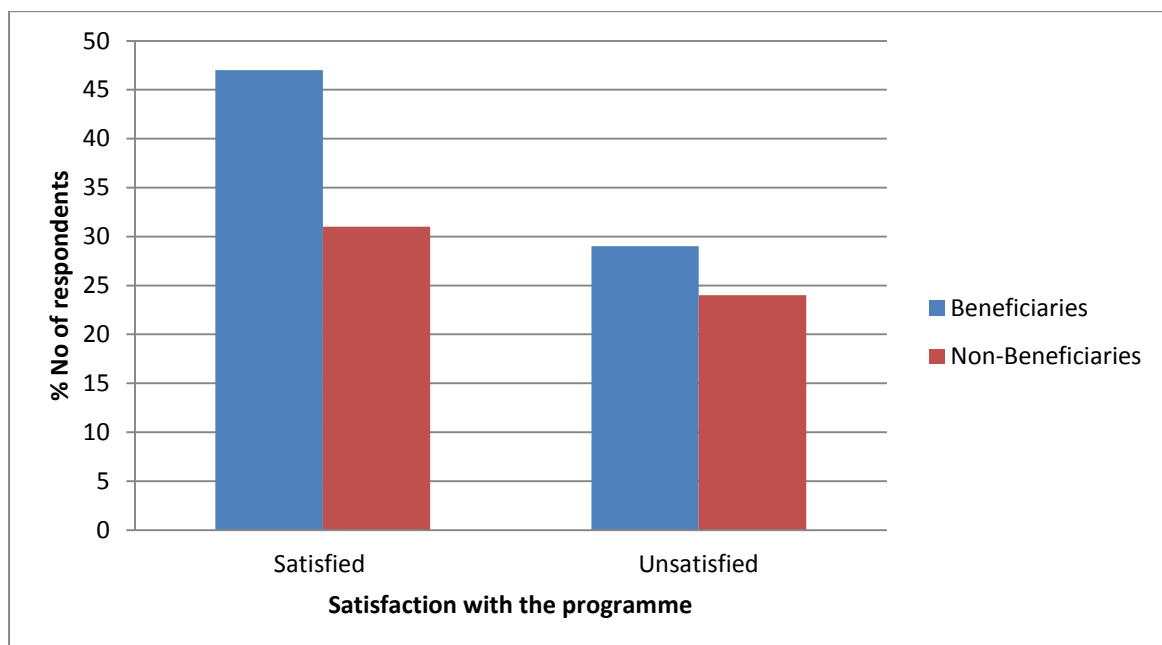


Figure 5.7: Food produce satisfactory

5.4.3 Farmers' perception of Siyazondla programme implementation

People living in rural areas are physically (resources), emotionally and socio-economically challenged. This makes their lives more harsh and unkind as livelihood conditions are not enhanced in their areas. Government initiatives such as the Siyazondla homestead food production programme are aimed at improving food security and rural livelihoods. Hence, adequate effort must be put to ensure not just the execution of such programmes, but their sustainability and continuous improvement.

According to Figure 5.8, whether for the benefiting or non-benefiting members of the Siyazondla programme, there seems to be a huge gap in terms of participants' perception of its existence and development. Five percent (5%) of programme beneficiaries perceive that their current benefits from the programme are not a solution for their livelihood challenges. They have felt the results of the programme. Farmers benefited from the programme are still challenged with other certain issue that needs to be address. It should be noted by beneficiaries of the programme, that no programme is jack of all trades, the objectives and goals of the programme were highlighted before anything else. Farmers expected too much than what the programme could be offering. This is a reason, why there are more farmers benefited from the programme, that are perceived by involving in the programme is not a solution towards better livelihood

The opposite is true, when it come to eligible non-beneficiaries of the programme, as they perceived that by being participants and beneficiaries of the programme, their problems and challenges would have been reduced and minimised. Therefore, the most outstanding response and results for non-beneficiaries is based on benefiting from the programme (38%), agricultural extension involvement, infrastructure and programme piloting (18%). Non-

beneficiaries of the programme perceived, though they are still not benefited from the programme but the presence of agricultural extension, availability and how the programme Siyazondla is piloted to beneficiaries is important for them. This could only be improved, if agricultural officers could increase their involvement (15%), as well as ensuring adequate monitoring programmes (17%) (planning, implementation and evaluation). On the other hand, non-beneficiaries believed that for the programme to satisfy their needs they must be beneficiaries of the programme (38%), where they will also have opportunity to receive agricultural inputs and implements.

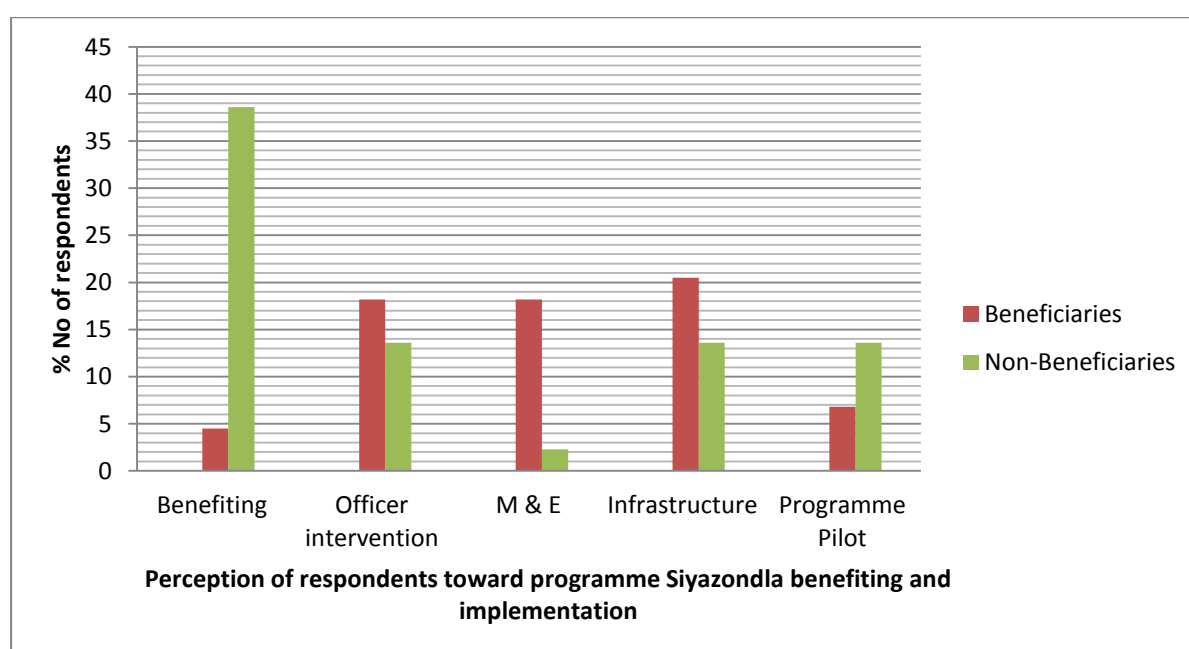


Figure 5.8: Perception of homestead farmers of the Siyazondla programme benefiting and implementation.

5.4.4 Perception of the sustainability of the programme

Based on the programme's potential, there were more beneficiaries (56%) than non-beneficiaries of the programme (40%) who strongly believed the programme would be successful in the long run. A programme like this, if well developed and improved, would

become very successful. This will however require appropriate leadership, good coordinators, diversified skilful officers and passionate farmers. Based on this, the following are some of the possible suggestions by beneficiaries and non-beneficiaries that will help the Siyazondla food programme achieve success. There should be monitoring and evaluation of the programme by programme recipients and agricultural officers. Beneficiaries of the programme should be responsible for their practices for them to have high yields of the produce. None of the programme beneficiaries thought or perceived that the programme was previously or presently a failure. The programme has made a huge impact in the lives of many who have benefited, directly or indirectly, from the Siyazondla programme.

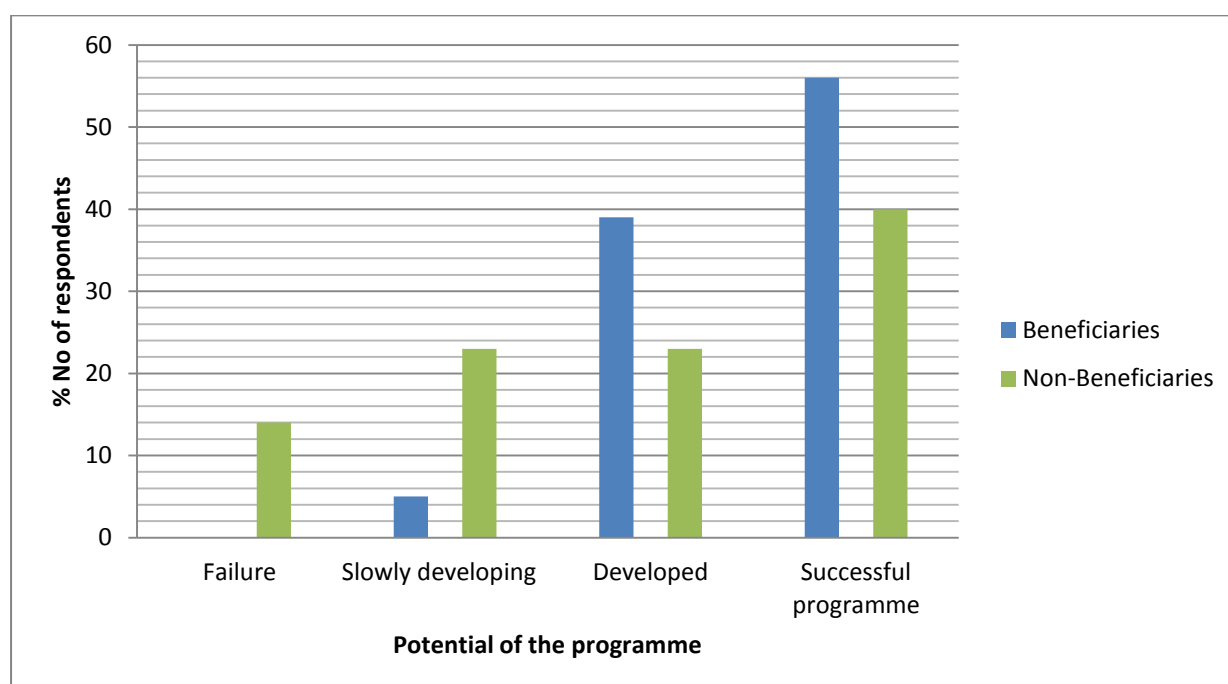


Figure 5.9: Farmers' perception of the programme's potential

5.5 Conclusion

According to findings in this chapter, the Siyazondla homestead food production programme supports mostly females of ages 50-79. The study also found that the programme supports the cultivation of vegetables, which is a cheap source of fresh foods that improved the nutrition

of the rural people. Findings suggest that the programme has a positive impact in reducing the challenges that rural homestead farmers are facing, as it improves their livelihood conditions in terms of generation of income, food security, and consuming of nutritious food. Beneficiaries also gained adequate skills and knowledge from the programme as it has developed proper awareness in decision-making for participants.

Eligible non-beneficiaries of the programme were also investigated in terms of programme implementation and their satisfaction, and the results were positive as farmers are gaining skill as they are copying strategies of farming and also benefitting from the farmers participating in the programme.

CHAPTER 6

Summary of findings, conclusion and recommendations

6.1 Summary of findings

Ninety households from Msobomvu, Ngcothoyi and Binfield communities were selected, comprising household heads who were both beneficiaries and non-beneficiaries of the Siyazondla homestead food production programme. The majority of respondents were in the age group 50-79 years, and the percentage of beneficiaries was 53.34% as against 48.88% non-beneficiaries of the programme. Age plays an important role in terms of how households participated in the practice of household food production as they are having household responsibilities. The percentage of married people in the study area was 26.67% for both beneficiaries and non-beneficiaries of the Siyazondla programme.

The findings indicate that land acquisition in the study area was largely through the communal land tenure system, administered by the authority of chieftaincy. The Eastern Cape Province was once a homestead area, and most of the people use land accordingly. Agricultural practices normally done in these homesteads are crops, vegetables and rearing of livestock. The Eastern Cape served as the major source of livestock production, when compared to crop and vegetable production. This is one of the provinces in South Africa that is challenged by poverty, hunger and high unemployment rate. Programmes and projects are continuously formed and put into practices to act against such challenged that the province counteracts with.

The inputs and implements received through participation in the Siyazondla programme serves as motivation for these people. Although farmers who practice vegetable crops are

challenged financially (capital for farming) (70%), farm inputs (tools and implements) (72%) are also a challenge. Financial resources have a direct influence on farmers' agricultural performance, to buy inputs and implements. This is why the Department of Agriculture introduced the Siyazondla food production programme. When the programme was introduced, it was highly accepted, especially due to farmers' socio-economic problems. Beneficiaries benefited from the programme as a result of community engagement (64%), and interacting with socially responsible individuals from the community has assisted many households to benefit from the programme.

The beneficiaries of the programme showed approval of the Siyazondla programme's existence in their area, as it has supplied and supported them in terms of provision of food to consume within their families, generating of income, consumption of fresh and healthy foods, as well as supporting other social activities. In as much as food security was achieved by beneficiaries of the programme (40%), more than other options such as knowledge and skill (4%) and income (2%), there is still room for improvement. Agricultural extension workers can play a huge role in the success of a programme such as assisting agricultural production activities. Farmers perceived extension workers played an important role through the demonstration programme organised to build farmers' skills for production. Farmers, especially the non-beneficiaries of the programme, perceived that agricultural extension workers have not done much for them. Findings further indicated that household production in homesteads satisfied both benefiting (47%) and non-benefiting (30%) farmers of the programme. The implication is therefore that the programme could exist in the future and have huge positive impact for development, improvement and upgrading of rural areas.

6.2 Conclusion

This study was motivated by a genuine desire to understand the condition and impact of the Siyazondla homestead food production programme that operates in Msobomvu, Ngcothoyi and Binfield. Most rural areas of South Africa (Eastern Cape, Kwa-Zulu Natal and Limpopo) are greatly challenged with high unemployment rates, low forms of generating income and people living below the poverty line, and homestead food production is seen as a helpful coping strategy against such challenges. Agriculture serves as primary source of development, especially for least developed areas. By initiating such strategies to support households, homestead food production will improve the livelihoods of the people. Several programmes and projects are continuously being implemented: however the challenges faced by households seem to persist. Household food production has a high potential to curb these challenges that hinder development and growth of rural people. Rural communities constitute the highest population of people in most developing areas. According to the findings of this study, much needs to be done. There must be adequate measures to uplift the living standards and conditions of the people benefiting from the programme.

Land accessibility and land use are two of the challenges that most rural people face when trying to better their livelihoods. Rural people access land in different tenure systems and the use of land has not interacted effectively with the challenges of food insecurity, poverty, and high unemployment. Household or homestead food production has great potential in contributing to food availability in rural areas, reducing poverty and improving household production. Homestead production potential would be possible where beneficiaries of any programmes are quantified, and programmes properly monitored.

The main objective of this study was to assess the impact of Siyazondla Homestead Food Production Programme (SHFPP) in food security and poverty alleviation in selected rural communities of Nkonkobe municipality of the Eastern Cape. The study focused mainly on the Siyazondla programme, agricultural extension, beneficiaries and non-beneficiaries of the Siyazondla programme. These four concepts are connected to one another. The impact (food security and poverty alleviation) of the programme was traced and based on comparing beneficiaries and non-beneficiaries of the Siyazondla programme.

In summary, below is an overview of how this study has sufficiently met with its earlier proposed objectives.

The first objective of the study was to outline or give an overview of the anticipated benefits of Siyazondla homestead food production programme. According to Makara (2010) and Blaai-Mdolo (2009), the Siyazondla programme aimed to achieve the following objectives: (i) guarantee food security; (ii) demonstrate effective training and extension service; and (iii) build decision-making and management capacity. Therefore, this is by so meaning, any other achievement and benefits from the programme are the anticipated benefits of the programme Siyazondla. A number of achievements were benefited out of the programme by the beneficiaries and non-beneficiaries of the programme from these selected villages. According to the findings of this study, programme beneficiaries confirmed that the first objective, to ensure food security, was being achieved by the Siyazondla programme in the study area. Food security was achieved by beneficiaries as they were able to grow more and sufficient food for household consumption and for storing for the future.

All this was made possible by the provision of inputs and implements, skills and knowledge, and monitoring and evaluation of the programme. The quality and quantity of food availability is as a result of support and facilitation. This helps farmers to gain improved and approved skills for better production. The support by subjecting implements and inputs provided a basic start for household involvement in homestead production.

Therefore, the programme on its own has met its own objectives, and also on the other hand there were also areas that could be highlighted as anticipated benefits of the programme Siyazondla such sharing of food (13%), figure 5.3, barter exchange of food and also whereby the beneficiaries were able to disseminate their skill and knowledge to those who did not benefit from the programme but eligible. This signifies that people are still holding-on, on their roots and their traditional livelihood strategies. This builds farmers and farming capacity, as well as building better human community. Agricultural produce of the programme are perishable and might lose value, but the beneficiaries of the programme are able to share the produce among other farmers and also give them for free without expecting gain (28%), figure 5.3. Though the inputs and resources of the programme were of limit, farmers were also able to generate income through effective and efficient use of available resources.

The second objective for the study focused on identifying the criteria used to select beneficiaries of the Siyazondla programme. There are wide criteria and several procedures to be followed in order for participants to benefit from the programme. The participants benefited as a result of their socio-economic challenges (poverty, hunger, health status and unemployment). From the study areas, the way the farmers were selected to benefit from the programme was based on the Siyazondla criteria. The criteria that the programme uses in

selecting beneficiaries for the programme is based on farmers and household's involvement and practising agricultural activities, people who are socio-economically challenged or physically disabled, and farmers who specialise mostly in homestead production. The selection of participation was done in conjunction with responsible leaders in the community (headmasters, chairpersons and opinion leaders) and also departments such as Department of Social Development. This is a good initiative to involve different sectors and stakeholders where different criteria are used for assessment, so that there is no bias or favouritism. This will help in auditing and scrutinising; the objectives of the programme were achieved and implemented. The beneficiaries of the programme need to be selected according to these programme criteria, whereby there are primary and secondary beneficiaries of the programme.

Therefore, more farmers benefited from the programme through community agriculture engagement and socio-economic challenges. In identifying beneficiaries of the programme involves different individual, such as farmers (community leaders, chairperson, and farmer's group) and governmental departments (agriculture/rural development and social development). Agriculture extension workers played a very crucial part and significant role in selecting of individual at ground level, as they are mostly interacting with them most of the time. The involvement of agricultural extension at ground level is so vital in developing and improving farmer's potential and farming quantity. Agriculture in rural areas serves as form of generating food and income.

The third objective for this study was to determine the role played by agricultural extension in the building of farming capacity, training and general services provided. Capacity building at all levels is crucial and critical. The role of agriculture extension is multi-disciple and they

serve different activities towards growth and development of farmers both in rural and urban area. The programme Siyazondla can be easily recommended and acknowledged as a successful programme, because of numerous achievements and reaching of their set objectives. This was all made possible by the presence, involvement and engagement of agricultural advisories in implementation of the programme. The skills and strategies used in dealing with implementing of the programme has improved better livelihood of rural individuals to developing farmers. The skills such as, in facilitating (support of garden activities), educating (disseminating useful information) monitoring and evaluation are the activities that made agricultural officers to have met and achieved the programme objectives.

It is there necessary for agricultural extension to use extension programming, when are dealing with any agricultural programme whereby there are concept such as, planning in the programme, implementing, monitoring and evaluation. Therefore, they could be effective, because they are the key in initiation of the programme, up until the programme is being done as evaluated (outcome and impact). The inputs and implements of the programme Siyazondla were transferred and distributed by the agricultural officers to the farmers. This is done for assurance that the resources reaches exactly the suppose farmer to benefit from the programme. Though, there are some shortcomings towards marketing of the produce by the beneficiaries of the programme, and it is something they could concentrate onward the future as the programme still functioning and operating.

The fourth objective for the study was to find out the achievements of Siyazondla homestead production programme in terms of household income and availability of food. What has been achieved by the farmers benefiting from Siyazondla? Many achievements were met as a result of programme implementation and initiation from the study areas, especially to

beneficiaries of the programme. The outstanding one was food security (access to enough food and nutrition all the time). Inputs and implements are also achievements that farmers gained and received as a result of being part of the programme. Other programme achievements include income, skills and knowledge of farming.

6.3 Recommendations

The purpose of this study was to contribute to the understanding of the impact and reviewing programme Siyazondla in food production programme with regard to food security and poverty alleviation in the selected areas of Alice (Msobomvu, Ngcothoyi and Benfield) in the Eastern Cape. The following are therefore recommended ways for improving on the food security and poverty alleviation aspects of the Siyazondla homestead food production programme and similar programmes in South Africa.

The role of agricultural extension officers in programmes such as Siyazondla is to facilitate, educate, evaluate and monitor such programmes for the beneficiaries. Farmers are thought necessary skill of producing crops and managing farming. This is a reason, why agricultural officers should work hand-in-hand with the beneficiaries of such programmes. Programmes of this nature, should not be taken as a linear programme or using the top-down approach, but as a two-way process, whereby participatory approach is emphasised. The role of beneficiaries is also to assist farmers to adopt newly innovation such as agricultural practices and therefore, had to be properly maintained in homestead production practices.

One of the shortcomings of the study is the lack of extension market orientation. Access to the market is one of the challenges faced by rural people. Food security, skill and knowledge for the farmers, and other objectives are met and achieved but when it comes to the market of

the produce becomes a challenge, therefore, if the extension workers could strengthen towards market orientation would be effective for the beneficiaries to market the produce, as this would assist in gain access to the market and gaining contracts.

Assuming everything is equal (*ceteris paribus*) in terms of comparing beneficiaries of the programme over non-beneficiaries of the programme, the Siyazondla programme has a high potential towards development and improvement of the livelihoods of the poor. Therefore, quantifying the numbers of beneficiaries and resources, and providing qualified and effective service to farmers should be seen as appropriate measures to help deal with the challenges of the poor in rural areas.

The following are therefore some of the recommended ways for better livelihoods for those in vulnerable conditions and benefited from the programme:

- Programme Planning
- Timing of programme implementation
- Agricultural education to beneficiaries
- Facilitation and influence of officers to the beneficiaries.
- Monitor and evaluate of the programme
- Graduating of homestead farmers

- **Siyazondla programme planning**

The programme Siyazondla must be properly planned, implemented, monitored and evaluated by the agricultural extension workers or any other organisation, department and organisation. This involvement would serve as the catalysis toward facilitating and ensuring programme development. It is important to plan with individual that are to benefit from the programme before inputs and resources would be subjected to them. This will ensure that the

programme was planned and implemented in the right manner and all procedures are followed.

- **Timing of programme implementation**

This is a situation analysis. This includes the soils, land, climate, topography and water etc. Programme and projects are doomed to inferior, not because they were not properly planned and implemented but also the time the programmes are implemented. Rural farmers are driven by social and cultural activities. Agricultural practices are driven by climatic factors, and farmers are challenged by these factors. Understanding times and crop seasons are essential for farmers to implement such programmes for them to achieve their objectives (higher yields).

- **Facilitation and influence of agricultural extension to the beneficiaries**

Agricultural extension workers act different practices to the programme Siyazondla. Participating and involvement in farmers practices is vital important. This is a good platform for them to disseminate necessary skill and knowledge to farmers. Furthermore, beneficiaries of the programme need to update their skills and knowledge of farming, as agricultural practices keep on changing, with new practices (innovation) and methods improving continuously.

- **Monitor and evaluate of the programme**

Programmes are smoothly implemented, when all the process and channels are properly followed. This assists in adjusting and controlling the programme towards effectiveness. Farmers must also gain sense ownership of the programme as it within a programme that seeks and attempts to improve their better livelihood.

- **Graduating of homestead farmers**

The programme Siyazondla is mostly assisting farmers that are producing food from the homestead. The benefited skill and knowledge by the beneficiaries must also expand skill to non-beneficiaries of the programme. This is by so meaning, those did not benefited from the programme must seek assistance to the beneficiaries. Though the programme is operating in homestead garden, forming groups, co-operatives and projects of beneficiaries and also introducing non-beneficiaries of the programme Siyazondla, builds farmers capacity.

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