SOCIO – ECONOMIC ASSESSEMENT OF STARTER PACKS IN POVERTY ALLEVIATION AT MAKHADO LOCAL MUNICIPALITY

by

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DECLARATION STATEMENT

I, **Magezi Daniel Maluleke,** hereby declare that the dissertation submitted for the degree Masters of Science in Agricultural Economics at University of Venda, by me, has not been submitted for a degree at this or other university and that this is my own work in design and execution and that all reference materials contained therein have been duly acknowledged.

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ABSTRACT

The study was initiated to assess how the starter packs distributed under the Comprehensive Agricultural Support Programme (CASP) by the Limpopo Department of Agriculture have been able to sustain home food production and improve the livelihoods of the rural recipients. The assessment involved a focus on the recipients' households, in terms of demographics, household income and expenditure, the challenges faced by households, household agricultural production and the perceptions by the extension officers regarding the CASP which was designed to alleviate poverty among the rural poor.

The methods used for data collection for the study were purposive and systematic sampling methods. The purposive sampling was used to select the extension officers who were involved in the distribution of CASP inputs in their respective areas of operation while systematic sampling was used to select 100 household recipients of the starter packs.

The survey results showed that the majority of the beneficiaries were female while the average recipients were middle aged although youth and elderly people were also involved. About 71% of the gardeners were found to be operational; while 29% were not operational. The challenges facing the beneficiaries include fencing, water shortage, lack of technical skills and market constraints.

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The sources of income among recipients were mainly from external sources (73%) as compared with internal sources (27%). The study further revealed that about 72% of the sampled households were found to be living below poverty level while 28% of the beneficiaries were found to be living above poverty level. This implies that start packs were able to alleviate the poverty of about 28% of the beneficiaries.

The identified challenges facing the beneficiaries are lack of water, of technical skills and marketing constraints. In terms of recommendations the problem of water access can be addressed by introducing water harvesting techniques, or introducing the indigenous vegetables that are tolerant to drought.

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LIST OF ACRONYMS

CASP	Comprehensive Agricultural Support Programme
CPI	Consumer Price Index
DOA	Department of Agriculture
DOAEE	Department of Agricultural Economics and Extension
FPS	Food Parcel Scheme
G	Gender
GDP	Gross Domestic Product
HFPP	Household Food Production Programme
HH	Household
IDP	Integrated Development Plan
IFSNP	Integrated Food Security and Nutrition Programme
IFSS	Integrated Food Security Strategy
ISRDS	Integrated Sustainable Rural Development Strategy
LRAD	Land Redistribution for Agricultural Development
MDB	Municipality Demarcation Board
MLM	Makhado Local Municipality
MSCAE	Masters of science in Agricultural Economics
NDA	National Department of Agriculture
NRF	National Research Foundation
PCE	Private Consumption Expenditure
PIL	Poverty Income line

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RESIS	Rehabilitation of Small holder Irrigation Scheme
RFS	Rural Financial Service
SA	South Africa
SADC	South African Development Community
SAYB	South Africa Year Book
SL	Sustainable Livelihoods
SPSS	Statistical Package for the Social Sciences
TVP	Total Value of Produce
VOPHC	Value of Produce for Home Consumed
VOPS	Value of Produce Sold
VOPD	Value of Produce Donated,
UN	United Nations
VDM	Vhembe District Municipality
WFP	World Food Programme
WPA	White Paper on Agriculture

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CHAPTER 1

INTRODUCTION

1.1. Introductory remarks

This chapter provides an introduction to the study. The chapter starts with the background to the study, which is followed by the problem statement, research objectives, research questions, hypothesis, materials and methods. The chapter also provides a concise overview of the research approach and study area. It is concluded by the delimitations of the study and chapter outline.

1.2. Background to the study

Poverty is a widespread phenomenon in South Africa. More than half of individuals in South Africa were living below the poverty income level of R587. 00, in 2001, unchanged from 1996 (Schwabe, 2004). According to Schwabe (2004), Limpopo and the Eastern Cape have the highest proportion of the poor, with 77% and 72% of their populations living below the poverty income line, respectively.

One of the ways that State responded to poverty reduction is through the provision of housing to improve the quality of life of all South Africans (Department of Housing 2004). The Department of Water Affairs and Forestry views its policies and programmes in the same light. The Department's 'Free Basic Water' policy provides 6000 litres of water per household per month and this is seen as a sufficient level to

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encourage healthy living' (Department of Water Affairs and Forestry 2001): In the Makhado Municipality area, where this study was conducted, poverty rates is 40% based on the income poverty line of R800 per household regardless of household size. (Hirschowitz, 2000). Various municipalities use different criteria for assessing which households are needy and thus unable to afford basic services. Even for those municipalities that use an income-based means test, there is a substantial variation. The Department of Local Government (DPLG) recommends using an income threshold of R800, but municipalities use a range of thresholds, varying from R800 to R2 400 per month per household (Kamilla Gumede, personal communication, January 2006). Urban poverty lines are characteristically set in a way that recognizes the higher prices paid, but pay no attention to the better quality obtained. As a result, urban households are counted as poorer than they really are, in relation to rural households (Deaton, 2001).

In response to the high levels of poverty among households in South Africa, the government initiated several strategic interventions. One typical example of such interventions is the Integrated Food Security and Nutrition Programme (IFSNP), which is embedded in the Comprehensive Agricultural Support Programme (CASP) through the Department of Agriculture (Department of Agriculture, South Africa, undated). The IFSNP provides food parcels and "starter packs for food production" (Department of Agriculture, South Africa, undated). The IFSNP food parcels are the responsibility of the Department of Social Welfare and the household food production is the responsibility the National Department of Agriculture. The "starter packs" for food production consist of agricultural production inputs and irrigation equipment that enable households to start backyard food production. Household food production is

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expected to result in improved livelihoods amongst the poor. The improvement would be brought about by a sustainable nutritional security and a saving on food expenditure.

1.3. Statement of the research problem

In the Vhembe District Municipality where Makhado Local Municipality is situated, CASP started the distribution of "starter packs" for food production in 2005. The total number of households that received the "starter packs" in Vhembe District were 980, and in Makhado where the study was conducted, the figure was 577 (Department of Agriculture, undated). Since the distribution of the "starter packs" no detailed study has been conducted to document how the recipient households utilized their allocated resources. An economic analysis of the benefits derived by the recipient's households has also not been conducted. It is the objective of this research to uncover these aspects.

1.4. Characteristics of the Limpopo Province and the Study area

1.4.1 General

Figure 1.1 Features Limpopo province of South Africa with different district municipalities consisting of Vhembe, Mopani, Capricorn, Sekhukhune and Waterberg. Vhembe district where Makhado local municipality is located being part of study area. It is the hub of agricultural produce which contribute about 30% of the national market, Gross Domestic products (GDP) (Mmbengeni and Mokoka, 2002).

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Figure 1.1: Limpopo Provincial map.

Source:http://ww.marula.co.za/Limpopoinfo.htm.

The main characteristic of this province is that it shares boundaries with three other countries, Botswana on the north western and western part, Zimbabwe on the north and Mozambique on the eastern part. The province serves as link to South Africa with the rest of sub Saharan Africa. It is one of the best producers of agricultural produce that are processed in Gauteng province. (Maliwichi. and Chauke, undated)

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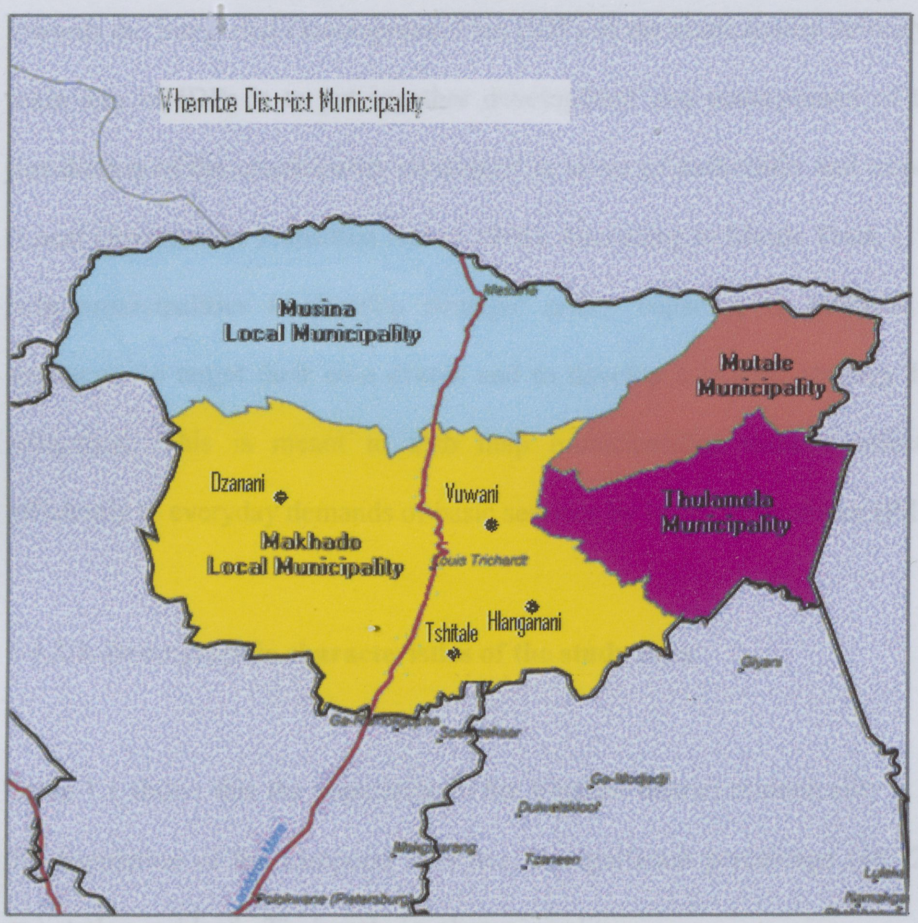

Figure1. 2: Vhembe District Municipality map.

Source: Municipality Demarcation Board (2006/2007).

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1.4.2. The study area

1.4.2.1 Location of the study area

The study was conducted at Makhado Local municipality, which is situated in the south western part of the Vhembe District, Limpopo Province, South Africa. The core service delivery innovations are the service centres which include the followings: Vuwani, Dzanani, Tshitale and Hlanganani. Vhembe District contributes more

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towards the Integrated Development Plan (IDP) of the municipality delivery plan. The main aim of IDPs is to put together development and management of the area of jurisdiction of the municipality concerned in terms of authorities and responsibilities (Local Government Transition Act of 1996). According to Mvula Trust, (1999), IDPs help municipalities to develop strategic policy capacity, to mobilize necessary resources, to target their own events and to develop a holistic strategy for poverty mitigation. This is meant to also help municipalities respond effectively and efficiently to everyday demands of basic services by local communities (Pillay, 2006).

1.4.2.2. Demographic characteristics of the study area

Table 1.1 shows that the population in the Vhembe district municipality is 22.75% of the population of the Limpopo Province. A significant percentage (48.72%) of the population resides in Thulamela local municipality.

Table 1.1: Demographic status of the population and total households in Vhembe District (2001 census).

Municipality	Population	Population as a % of district	Population as a % of province	No of household	Household as % of the district	Household as % of the province
Musina	39310	3.28	0.75	11577	4.37	0.98
Mutale	78922	6.58	1.50	17262	6.52	1.46
Thulamela	584563	48.72	11.08	126689	47.83	10.74
Makhado	497090	41.43	9.43	109360	41.29	9.27
Vhembe District	1199885	100.00	22.75	264888	100.00	22.45

Source: Municipality Demarcation Board report,(2002 – 2006).HH = household.

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The population distribution within the district is haphazardly spread across all local municipalities, ranging from 48.72 % for Thulamela local municipality to 3.28% for Musina local municipality

Table 1.2: Population distributions in terms of urban and rural households within Vhembe District.

Municipality	No of Rural households	Rural hh as % of district	Rural hh as % of province	No of Urban households	Urban hh as % of district	Urban hh as % of the province
Musina	6303	2.55	0.62	5275	29.79	3.27
Mutale	17103	6.92	1.68	155	0.88	0.10
Thulamela	118787	48.06	11.66	7911	44.68	4.90
Makhado	104987	42.47	10.31	4364	24.65	2.70
Vhembe District	247180	100.00	24.27	17705	100.00	10.97

Source: Municipality Demarcation Board report, (2002 - 2006) HH = household

About 24.27% of the rural households and 10.97% of the urban households in the province are located within the Vhembe District Municipality. The Thulamela Local Municipality is considered to be the largest municipality with both high populations for urban and rural inhabitants of 44. 68% and48. 06%, respectively. Thulamela local municipality constitutes 4.90% of urban and 11.66% of rural households in the province. The lowest percentage of urban households within the district is located in Mutale Municipality (0.88%) and the lowest percentage of rural households in the

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district is in Musina local municipality (2.55%). The main activities of the services delivered by municipalities to the different locations are part of the core functions as part of their responsibilities.

1.4.2.3 Water and Sanitation services

Table 1.3 explains how the water delivery capacity of the entire district looks like, which indicates a notable level of households that received water for domestic purpose. About 86, 26% of the households received water against 13, 64% backlog. Musina has the lowest percentage of backlog with regard to water service delivery level of 7, 67% compared to other municipalities which is above 11%. This indicates that more intervention is required to close the gap especially to areas such as Mutale and Thulamela local municipalities.

Table1.3: Water services distribution within local municipalities in Vhembe District.

Municipality	Water service level (Actual number of households)	HH with Water service level %	Water backlog (%) within municipality	Water backlog as (%) of District total	Water backlog as (%) of Province total
Musina	10689	92.33	7.67	2.46	0.34
Mutale	13474	78.06	21.94	10.49	1.46
Thulamela	107712	85.02	14.98	52.54	7.30
Makhado	96893	88.60	11.40	34.52	4.80
Vhembe District	228768	86.26	13.64	100.00%	13.90

Source: Municipality Demarcation Board, 2006/07. HH = household.

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Table 1.4 explains the high sanitation backlog levels for all municipalities, ranging from 13.75% to 56.14% amongst all municipalities. The sanitation levels when judged against the water service backlog, the sanitation figures are substantially high. The province should seriously think of the massive roll out of the sanitation programme to address the service backlog.

Within the district, 20.30% of households have access to sanitation. Just 13.75% of households in Mutale local municipality have access to service delivery (56.14%) households in Musina local municipality. This inequality illustrates the different service delivery capacity phase in the districts. The backlog in Mutale local municipality represents 7.05% of the backlog in the district and 1.70% of the provincial backlog. The information for Thulamela local municipality is high, (49.42% of the district backlog) when weighed against the other local municipalities within the district.

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Table 1.4: Sanitation services distribution within municipalities of Vhembe District.

Municipality	Sanitation service level (Actual number of households)	Sanitation service level %	Sanitation backlog (%) within municipality	Sanitation backlog as (%) of District	Sanitation backlog as (%) of Province
Musina	6499	56.14	43.86	2.41	0.58
Mutale	2373	13.75	86.25	7.05	1.70%
Thulamela	22355	17.65	82.35	49.42	11.89
Makhado	22547	20.62	79.38	41.12	9.90
Vhembe District	53774	20.30	79.70	100.00	24.06

Source: Municipality Demarcation Board, 2006/07. HH=households

1.4.2.4. Electricity provisions and refuse removal

Roughly, 61.25% of households in the Vhembe District Municipality have access to electricity. The distribution of electricity within local municipalities is unevenly spread with access ranging from 67.05 % in Makhado local municipality to 37.49 % in Mutale local municipality.

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Table 1.5: Electricity supplies to the communities within municipalities of Vhembe District

Municipality	Electricity service level (Actual number of households)	Electricity service level %	Electricity backlog (%) within municipality	Electricity backlog as (% of District)	Electricity backlog as (% of Province)
Musina	7205	62.24	37.76	4.26	1.02
Mutale	6471	37.49	62.51	10.51	2.53
Thulamela	75238	59.39	40.61	50.12	12.04
Makhado	73322	67.05	32.95	35.11	8.43
Vhembe District	162236	61.25	38.75	100.00	24.02

Source: Municipality Demarcation Board, 2006/07. HH= households

The uppermost backlog in electricity is in Thulamela local municipality, which represents 50.12% of the backlog for the district and 12.04% of the provincial backlog. The electricity backlog of the whole district represents 24.02% of the provincial backlog

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Table 1.6: Refuse removals within Vhembe district.

Municipality	Refuse removal level (Actual number of households)	Refuse removal service level %	Refuse removal backlog (%) within municipality	Refuse removal backlog as (%) of District	Refuse removal backlog as (%) of Province)
Musina	5792	50.03	49.97	2.45	0.58
Mutale	523	3.03	96.97	7,10	1.67
Thulamela	12009	9.48	90.52	48.64	11.42
Makhado	10790	9.87	90.13	41.81	9.82
Vhembe District	29114	10.99	89.01	100.00	23.49

Source: Municipality Demarcation Board, 2006/07. HH= households

About 10.99% of households in the Vhembe District Municipality have access to refuse removal. Generally 50.03% of households in Musina local municipality have access to the service, while only 3.03% has access in Mutale local municipality. The highest backlog in refuse removal for the district is in Thulamela local municipality, which represents 48.64% of the backlog for the district and 11.42% of the provincial backlog. The refuse removal backlog in the district represents 23.49% of the provincial backlog.

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1.5. Study objectives

The main objectives of the study were to gauge the extent to which the starter packs sustained home food production and the degree to which the backyard gardens have improved the livelihoods of the people.

The objectives of the study are to:

i. characterise the recipient households in terms of demographics with their livelihood and poverty status,
ii. document how the recipients utilized the "starter packs" for food production,
iii. document the challenges faced by households that received the "starter packs" in relation to vegetable gardening,
iv. determine the value of the garden produce and to what extent the produce improved the livelihoods and reduced the poverty status of the recipient households,
v. document the experiences and perceptions of the government officials on the "starter packs" (programme).

1.6. Research questions

The following research questions were formulated to guide the study:

i. What is the background of the recipients' households and how do they manage their livelihoods?
ii. How do recipients utilize their starter packs and to what extent are the gardens being used?

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iii. What challenges are faced by the recipient households with regard to the food gardens?

iv. What is the value of the garden produce and to what extent has it improved the livelihoods and reduced the poverty status of the recipient households?

v. What are the experiences and perceptions of the government officials (extension officers) with regards to" starter packs"?

1.7. Hypotheses

The study had some few hypotheses. Firstly, it was hypothesised that the "starter packs" will bring about sustainable household food production. The second was that the "starter packs" of the vegetable gardens will play a considerable role in improving the livelihoods of the recipient households. The intervention being new, it is also hypothesized that the recipients will face challenges in the operation of the gardens.

1.8. Delimitations of the study

The scopes of the IFSNP and CASP were wide ranging. The proposed study was set out to assess the component of the CASP programme that deals only with household food production gardens. This focused only on one aspect of the two programmes, which was the household food production that allowed an in-depth investigation. The study area was limited to the Makhado Municipality of Vhembe District in the Limpopo Province, South Africa. Time and financial constraints could not allow the study to cover the whole population of starter recipients in Makhado Local Municipality.

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1.9. Chapters outline

Chapter one is the introduction to this dissertation. It commences by providing a background to this study and goes on to introduce the research problem, research objectives, study area, research questions, approach and hypotheses, and the delimitations of the study .

Chapter two is the literature review of the dissertation, which defines the concepts of poverty, and also measures of poverty, provides an overview of the poverty status in South Africa, how the people of South Africa manage their livelihoods in rural areas it also sketches the policy reform, Integrated Food Security and Nutrition Programme (IFSNP); Integrated Sustainable Rural Development Strategy (ISRDS), Comprehensive Agricultural Support Programme (CASP) and concludes by defining the home gardens.

Chapter three outlines the research methods used to conduct the study provides details of the study area; research methodology including the study approach; sampling procedures; tools for data collection; practical data collection; data and poverty analyses and the chapter is concluded with ethical considerations.

Chapter four discusses the results of the study by describing the recipients and their households in terms of selected key demographic characteristics, including gender, age, occupation, education, household size, income, challenges faced by recipients and poverty status.

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Chapter five provides details on how the current study was carried out to measure the extent to which the starter packs sustained home food production and to what degree the backyard gardens advanced the improvement of the livelihoods of the recipients' households, and to further investigate the criteria used by government officials to identify the recipient households.

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CHAPTER 2

LITERATURE REVIEW

2.1. Introduction

This chapter deals with the review of literature that covers poverty, livelihoods in South Africa, measurement of poverty, overview of policy measures for smallholdings and emerging farmers and home gardens in South Africa.

2.2. Poverty

2.2.1. Defining the concept of poverty

Poverty has been defined in many ways by different scholars. Poverty is defined as the "inability of individuals, households or entire communities to command sufficient resources to satisfy a socially acceptable minimum standard of living" (Department of Social Development, 2003). Poverty brings about a lack of opportunities to live a quality life. Townsend (1979) as cited by Noble *et al.*, (2006) defines poverty as a lack of resources to obtain the types of diet, participate in the activities and have the living conditions and amenities which are customary or at least widely encouraged or approved in the societies to which they belong. May (1998) defines poverty as "the inability to attain a minimal standard of living, measured in terms of basic consumption needs or the income required to satisfy them". Poverty has been seen as a way in which there is a denial of opportunities and choices most basic to human

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development to live long, healthy and creative life and to enjoy a decent standard of living, lack of restrictions, dignity, self-esteem and respect to others (Paccoud, 1998). Poverty is also political because it narrates the allocation or distribution of resources, and reflects the impact of past and present policy choices (Meth, 2006). According to Townsend (1979), individuals, families and groups in the residents can be said to be poor when they lack the resources to obtain the types of diet, participate in the activities and have living conditions which are ordinary, or at least widely optimistic or approved, in societies to which they belong. Their belongings are so seriously below those commanded by the average family or individuals that are in effect excluded from ordinary living patterns, customs and activities.

Poverty is "pronounced deprivation of well-being" (World Bank, 2005).The conventional view links well-being primarily to command over commodities, so the poor are those who do not have enough income or consumption to put them above an adequate minimum threshold, World Bank (2005). This view sees poverty largely in monetary terms. Poverty may also be tied to a specific type of consumption; thus someone might be house poor, food poor or health poor, World Bank (2005). These dimensions of poverty can often be measured directly, for instance, by measuring malnutrition or literacy. The broadest approach to well-being (and poverty) focuses on the "capability" of the individual to function in society. The poor lack key capabilities, and may have inadequate income or education, or be in poor health, or feel powerless, or lack political freedoms World Bank (2005). In addition, the World Bank (2005) defines the poor as those who lack command over basic consumption needs, including food and non-food components. Therefore, the poverty line, as a result, is obtained by specifying utilization bundle considered adequate for basic

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consumption needs and then by estimating the cost of these basic needs. In other words, the poverty line may be thought of as the minimum expenditure required by an individual to fulfil his or her basic food and non-food needs.

Chambers (1988) differentiate five dimensions of poverty: 'poverty proper' being a lack of ample income or assets to create income; physical weakness due to under-nutrition, sickness or disability; physical or social isolation due to insignificant location, lack of access to goods and services, ignorance or illiteracy; vulnerability to crisis and the risk of becoming even poorer; and powerlessness within existing social, economic, political and cultural structures. It is also stressed at the outset that people are concerned about the "poverty proper". While money metric poverty measures probably provide the best single 'objective' alternative for poverty status, it does not suggest that other ways of assessing poverty are not important. The poor are not only concerned exclusively with adequate incomes and consumption, achieving other goals such as security, independence and societal participation may be just as important as having the means to purchase basic goods and services.

Perhaps the most broad approach to well-being (and poverty) is the one expressed by Sen (1983) as cited by World Bank, (2005) who argue that well-being comes from a "talent" to function in society. Thus poverty arises when people lack key capabilities, and have inadequate income or education, or are in poor health, or insecurity, or low self confidence, or a sense of powerlessness, or the absence of rights such as freedom of speech. Viewed in this way, poverty is a multi-dimensional phenomenon, and less amenable to simple solutions. For instance, while higher average incomes will certainly help reduce poverty, these may need to be accompanied by measures to

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empower the poor, or insure them against risks, or to address specific weaknesses (such as inadequate availability of schools or corrupt health services).

The World Bank (2005) demonstrates that poverty rates are relatively high among those families whose household heads either had no schooling or only primary schooling. Poverty rates then decrease with the attainment of upper secondary education and are almost zero if the household head is a university graduate. Surprisingly, the 1997 poverty profile of the World Bank (2005) reported that those whose household head had a technical/vocational or other form of education had a higher poverty rate than those with primary schooling. This is for reasons that are not entirely clear. This is a good example of a case where the poverty profile raises questions that require further examination. In an effort to break this intergenerational transmission of poverty (poverty that lays its own eggs), in the words of an informant quoted in a Chronic Poverty Research Centre Report (2004), some middle income countries adopted cash transfer programmes designed to bolster the nutrition, health and education of the children of the poor families.

2.2.2. Measuring poverty

Poverty lines offer a benchmark through which to compare the situation of individual households. The overall measures of poverty cannot be estimated without a poverty line Booysen (2003:10). According to Ravallion (1998), a convincing measure of poverty can be a powerful instrument for focusing the attention of policy makers on the living conditions of the poor. In other words, it is easy to ignore the poor if they are statistically indistinguishable. The measurement of poverty is thus necessary if it

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is to appear on the political and economic agenda. According to the World Bank (2005), there are four reasons for measuring poverty. Most significantly, to keep the poor on the agenda, for if poverty was not measured, it would be easy to forget about them. Secondly, one needs to be able to recognize the poor if one is to be able to target interventions that aim to reduce or alleviate poverty. Thirdly, to monitor and evaluate projects and policy interventions that is geared towards the poor. And finally, to evaluate the effectiveness of institutions whose goal is to help the poor and to assist countries to think clearly and systematically about how the position of the poor is.

Sen (1983, p.159) points out that if there is starvation and hunger, then-no matter what the relative picture looks like – there is clearly poverty. According to Woolard and Leibbrandt (2001), there are two approaches for measuring poverty by using a poverty line, i.e. the use of an absolute poverty line, and the use of a relative poverty line. An absolute poverty line corresponds to some bare minimum subsistence level below which survival is not possible in the long term (Woolard & Leibbrandt, 2001).

A relative poverty line reflects what is regarded by society as the minimum level of command over goods and services needed in order to be a fully integrated member of that society below which a person is considered poor. People living in that state are said to suffer from relative deprivation (Woolard & Leibbrandt, 2001). The needs of households differ due to their sizes and ages of members. Expressing income in terms of adult equivalent removes the effects of size and the composition of households on the adequacy of their incomes to meet basic needs (Carter and May, 1999). An adult equivalent in a household is calculated using the formulae determined by Carter and May, (1999).

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Adult equivalent = [n (A) +½n(C)] 0.9, whereby

The number of Adult equivalent in a household is equal to the number of adults plus half the number of children multiplied by 0.9 with adults being considered as people aged 15 years and older. A scale of 0.9 reflect that as household size increases, less money per individual member is required to achieve a particular living standard.

Households` adult equivalent income is calculated by dividing monthly household income by the number of adult equivalents. According to Woolard and Leibbrandt (1999), the choice of private consumption expenditure (PCE) per adult equivalent as an appropriate welfare measure has a strong theoretical basis as well as intuitive appeal. The question arises whether other popular poverty line definitions would select the same individuals as poor.

The following poverty definitions were tested: by different academic per capita consumption, household consumption, per capita income, per capita food expenditure per capita caloric intake, budget share of food expenditure (food ratio), and average educational levels of adult household members. These measures are reflected in Table 2.1.below.

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Table 2.1: Incidence of poverty amongst selected groups, by poverty measure (1993 data, South Africa) *arranged in terms of %

Indicator of poverty measure	Africans	Coloureds	Rural areas	Urban	Female-headed households
Per capita consumption	51.4	25.3	60.5	20.3	53.4
Total household consumption	51.8	21.1	58.2	22.5	52.1
Per capita income	51.6	19.2	59.5	21.3	52.4
Per capita food expenditure	49.6	35.2	56.3	24.4	49.9
Per capita caloric intake	42.5	57.2	42.4	38.0	44.2
Food ratio	50.9	20.5	57.8	22.0	51.9
Avg. adult education	49.9	27.8	56.5	24.1	43.8

Source: Woolard and Leibbrandt (1999)

As highlighted in Table 2.1, the rural areas are the most affected (60.5% poor using per capita consumption) compared to urban areas (20.3%) and coloureds (25.3%). The per capita consumption indicated poverty for both female headed and African households as 53.4% and 51.4% respectively. This indicates that people with the highest incidence of poverty per capita are female – headed household's 53, 4%s well as the people residing in the urban areas. Table 2.1 also gives more details about

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average adult education which reflects that the rural areas as well as the female headed households and Africans are the most affected at above 40%. The poverty level on the basis of income per capita for female headed households, Africans and residents of rural areas is above 50%, whereas the proportion of urban and coloureds that lived in poverty is below 20%.

2.2.3. Overview of poverty in South Africa

The poverty status in South Africa according to the 2001 census is shown in Table 2.2 below. **Table 2.2:** Poverty status by province and the amount of money required to close the poverty gap, South Africa, 2001 (from Schwabe, 2004)

Province	No of person (millions)	% of population in poverty	Poverty gap (R billion)
Eastern Cape	4.6	72	14.8
Free State	1.8	68	5.9
Gauteng	3.7	42	12.1
KwaZulu Natal	5.7	61	18.3
Limpopo	4.1	77	11.5
Mpumalanga	1.8	57	7.1
North West	1.9	52	6.1
Northern Cape	0.5	61	1.5
Western Cape	1.4	32	4.1
South Africa	**25.5**	**57**	**81.3**

Source: Schwabe, 2004 Poverty in South Africa

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According to the poverty status of 2001 in South Africa, at the national level more than 57% of individuals were living below the poverty income line (Schwabe, 2004). Limpopo and the Eastern Cape recorded the highest proportion of the poor as 77% and 72% of the populations respectively. The Western Cape had the lowest proportion of people living below poverty line (32%), followed by Gauteng (42%). Schwabe, (2004) estimated poverty rates for each municipality in South Africa. Majority of municipalities with the lowest poverty rates were found in the Western Cape. These included Stellenbosch (23%) and Saldanha Bay (25%).

The major city with the lowest poverty rate was Cape Town (30%). Pretoria and Johannesburg had somewhat higher rates of 35% and 38%, respectively, while Durban had a rate of 44%. The poorest municipality was Ntabankulu in the Eastern Cape, where 85% of its residents lived below the poverty line. Seven of the 10 poorest municipalities are located in the Eastern Cape while two are located in Limpopo and one in the Free State.

Schwabe (2004) has shown that poverty gap grew from R56-billion in 1996 to R81-billion in 2001 indicating that poor households have sunk deeper into poverty over this period. The poverty gap is an indication of how much money is required to eliminate poverty from the concerned households (see Table 2.2-poverty gap above).

In the Makhado Municipality area, where the study was conducted, poverty rates is 40% based on the 1996 poverty line of R800 per household (Hirschowitz, 2000). Rural households in South Africa engage in various livelihood strategies in order to

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generate income and escape poverty. The following section deals with the livelihoods of rural households in South Africa.

2.3. Livelihoods in rural areas of South Africa

The livelihoods approach is a way of thinking about the objectives, scope and priorities for development. Specific livelihoods framework and objectives have been developed to assist with implementation, but the approach goes beyond. In reality, it is a way of putting people at the centre of development, thereby increasing the effectiveness of development assistance (Department for International Development, 2001).

A livelihood is sustainable if it can cope with and recover from force and shock and maintain or improve its capabilities and assets both now and in future, while not undermining the natural resource base (Department for International Development, 2001). According to Swift and Hamilton (2001), livelihood is defined as the capabilities, assets (including both material and social resources) and activities required for a means of living". In other words livelihoods can simply be defined as the way people make life. According to the Department for International Development (2001), the range of analytical components that comprise a livelihood analysis can ensure that country-level development strategies are founded on an understanding of the livelihoods of poor people.

The conceptual framework that captures the Sustainable Livelihoods (SL) approach can help bring to light the particular policies and institutions that shape those

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livelihoods. The SL approach offers a way of addressing the whole range of policy issues relevant to the poor, such as access to finance, markets, and personal security as well as to health and education. For example, a sustainable livelihoods approach can help to gain insight into the factors contributing to poverty by identifying groups of poor people and analysing their livelihoods to ensure that important livelihood components and constraints are not overlooked, to emphasize issues of vulnerability and the dimensions of sustainability which national macroeconomic plans often fail to integrate adequately; help in the design of effective participatory consultation processes; highlight where and how government may intervene; and improving the linkages between micro-level realities and macro-level policies by analysing the impact of macroeconomic policies on the livelihoods of the poor, and by identifying those that discriminate against the poor(Swift and Hamilton,2001)..

Households in rural South Africa engage in many activities as part of their livelihood strategies. Activities such as agriculture, consisting of dry land cropping and rearing of livestock are the most common part of the rural livelihood strategy. According to May (1998), 26 % of rural households in South Africa had access to a plot of land for crop production, 24 % owned livestock, and 18 % owned agricultural equipment in 1998. The contribution of agriculture to the livelihoods of households in South African rural areas is small as shown in Table 2.3.

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Table 2.3: The contributions of various sources to household income in selected rural areas of South Africa

Source of income	**Rural Mbashe Municipality (Eastern Cape)**	**Koloni & Guquka (Eastern Cape)**	**Rural KwaZulu-Natal**	**Momane & Rantlekane, ,(Waterberg District Limpopo)**	**Sekuruwe and Ga – Molekane(Waterberg District Limpopo)**
	(%)	(%)	(%)	(%)	(%)
State grants	38.4	26.5	17.9	15.3	33.5
Remittances	10.7	10.5	16.4	51.6	30.9
Salaries and wages	30.0	33.3	53.6	7.6	18.8
Private pensions	2.6	-	-	-	0.0
Non-agricultural activities	9.9	17.8	5.3	17.6	9.6
Agricultural activities	8.5	11.9	6.8	7.9	7.1
Total	**100**	**100**	**100**	**100**	**100**

Source: May1998, Baber 1996, Van Averbeke et al., 1998 & Agricultural and Rural Development Research Institute, 2002 and Khosa 2003.

Table 2.3 shows that households in rural areas rely heavily on external sources of income for their livelihoods. The external sources included claims against the State in the form of old-age pension, disability and child support grants, remittances by people

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working elsewhere and salaries and wages. Sources internal to the village played a very minor role in rural livelihoods. Internal sources include agriculture and non-agricultural activities such as trading and provision of services.

2.4. Policy measures for smallholder farmers in South Africa, with a specific reference to household food production

2.4.1. Policy Reforms

According to the Department of Agriculture (undated), the agricultural sector strategy of 2001 refers to a number of policy reforms that have reshaped the agricultural sector over the last ten years and recommended strategic interventions for achieving the vision of a united and prosperous agricultural sector. As cited in the Department of Agricultural document, (undated), the strategies are clearly articulated in the White Paper on Agriculture 1995, BATAT document 1995, the Strauss Commission Report of inquiry into the provision of Rural Financial Services, September 1996, and the Strategic Plan for South African Agriculture, 27 November 2001.

In translating various policies into action, over the years, government developed a number of agricultural – related strategies to put its policy reforms into practice. These strategies are aimed at promoting household food security, household food production, farmer settlement and agricultural business development. The section that follows discusses the strategies related to household food production.

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2.4.2. Integrated Food Security and Nutrition Programme (IFSNP)

The South African government approved the Integrated Food Security and Nutrition Programme (IFSNP) in July 2002 as a component of the Social Cluster (South Africa Year book, 2006). The programme aims to achieve physical, social and economic access to safe and nutritious food for all South Africans, The target goal of the Integrated Food Security Strategy (IFSS) is to reduce the number of food-insecure households by half by 2015. One of the strategic objectives to reach this target is to increase domestic food production by providing support services to farmers (Northern Cape, Department of Agriculture and Land Affairs, undated). The Integrated Food Security and Nutrition Structure in the Limpopo Province was established in 2003 under the control of the Department of Agriculture as the lead department. Other participating departments include Social Services, Health and Education (South Africa Year book, 2006).

According to the Department of Agriculture (undated), The National Department of Agriculture has the basic responsibility of providing every citizen access to food on a sustainable basis. The Agricultural "Starter Pack" Programme, which was aimed at moving people out of the Food Parcel Scheme through growing their own food, was therefore initiated. By January 2006, a total of 33 137 households received agricultural "starter packs" (Department of Agriculture, undated). To this effect the National Department of Agriculture is to support the 244 000 food parcel beneficiaries to make use of the "Starter Packs" for Food Production" for their own benefits. It also supports individual and community gardens to supply their produce for school nutrition and health care projects. It has also enhanced environmental

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sustainability and nutrition security. By mid-2006, South African provinces were being encouraged to phase out the Agricultural "Starter Pack" Programme and to replace it with the sustainable Household Food Production Programme (HFPP) that would concentrate on distributing starter packs and helping to develop and transfer suitable input, technologies, information, training and capacity-building South Africa Year book(2006). The Integrated Food Security and Nutrition Programme focuses mostly on the entire world. With regard to Household Food Production Programme (HFPP), more than 40 000 of the South African households that received agricultural starter packs. The starter packs were compost of irrigation equipment, seeds, fertilizers and chemicals. All beneficiaries received the same quantity of each.

According to Mazonde, (1999) as quoted by Kalibwani (2005), a nation's food security is achieved when it can guarantee both physical and economic access to food for all citizens over both the short and long term. In its broader viewpoint, food security should address the question of poverty within households. It does not make sense, to talk about food security when households lack resources to provide themselves with food, either through growing or purchasing it. It must be acknowledged, of course, that some households may grow food, but due to urgent financial needs end up, selling it and suffer from malnutrition just like people who do not have the means to grow food. In other words, although national statistics might indicate that the average family can achieve food security, aggregation can mask underlying inequality, which needs to be addressed for food security to be achieved in practical terms.

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2.4.3. Integrated Sustainable Rural Development Strategy (ISRDS)

Agricultural development is a vital element of the ISRDS. A successful agricultural sector will form an important component of integrated and sustainable rural development and vice versa (Department of Agriculture, 2001). All the three tiers of government have to contribute directly to this strategy by providing appropriate and integrated agricultural support services to the rural poor including new and emergent farmers. Women, young people and the disabled feature as the main targeted groups in this regard (Department of Agriculture, undated). The strategic intent of the ISRDS is to transform rural South Africa into an economically viable, socially stable and harmonious sector that makes a major contribution to the nation's Gross Domestic Product (GDP) (Department of Agriculture, 2001). The strategic plan is of the view that the sector plan regarded the ISRDS as the main catalyst in the promotion of the following areas:

Local economic development with particular concern focused on rural towns, service centres and villages. Strengthening the shape and role of agriculture and related industries in the Integrated Development Planning processes of especially rural local authorities. Special interest given to the backing of income generation and livelihood activities by women, the youth and disabled that are primarily geared to meeting the needs of the poor families and local market demands. Rural arrangement planning to accommodate new settlement partners that are just beginning since the removal of apartheid settlement laws and the down of the post 1994 democratic order. The strategy will benefit the rural poor generally, but particular efforts will be made to target women, young and the disabled.

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2.4.4. Comprehensive Agriculture Support Programme (CASP)

The primary aim of the Department of Agriculture with CASP is to ensure effective agriculture support and to streamline the provision of services to the four targeted different levels of clients within the farming continuum, i.e. the hungry, subsistence and household food producers, farmers and the general public (Department of Agriculture, undated). The implementation of CASP flows from the recommendations of the Strauss Commission report which recommended the financial "sunrise subsidies" and the adoption of "sunrise packages", considered as enabling mechanisms for the beneficiaries of the land reform programme who require loan financing. The purpose of the CASP is therefore to establish financing mechanisms – the "sunrise subsidies" to streamline and align service delivery within the three tiers of government and by creating enabling conditions for beneficiaries through the "sunrise ''packages. According to the Department of Agriculture (undated), it is not sufficient to provide prospective farmers with land and even capital without empowering them to manage their business efficiently and profitability in a competitive and often hostile environment. The National Department of Agriculture and Provincial Department of Agriculture have made many efforts, through participative workshops, questionnaires and various other means to obtain a comprehensive picture of the support needs of the targeted beneficiaries (Department of Agriculture, undated)

The CASP, as already mentioned above is targeted at supporting the four different clients within the farming continuum, and according to Department of Agriculture, (undated) these are:

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i. The hungry: giving advice and agricultural food packs to mitigate food crisis. Food parcels consist of food stuffs such as maize meal, beans, powder milk, soap and vegetables.

ii. Subsistence and household food producers: food production that includes the IFSNP for the provision of starter packs. The starter packs consist of irrigation equipments (drip irrigation system and tank), production inputs(seeds, fertilizers and pesticides), and implements (garden fork, hand hoe and spade)

iii. Farmers: farm level support to beneficiaries of the Land Redistribution for Agricultural Development (LRAD) sub – programme and other strategic programmes e.g. the rehabilitation of small holder irrigation schemes abbreviated as (RESIS).

iv. The General Public: to ensure that business and the regulatory environment is conducive to support agricultural development and food safety.

The four levels of clients are also assisted through the following six cost drivers or pillars (Department of Agriculture, undated):

(i) Information and Knowledge Management

(ii) Technical and Advisory Assistance and Regulatory Services

(iii) Training and Capacity Building

(iv) Marketing and Business Development

(v) On-Farm and Off-Farm Infrastructure and Production inputs. This is a cost driver that encompasses the "starter packs", which is the focus of the current study,

(vi) Financial assistance

The programme deliverable is the financing mechanism and the alignment of the support service that promotes, support and facilitates agricultural development of the

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targeted four levels of clients within the six pillars of support (Department of Agriculture, undated). The majority of the above mentioned are currently being addressed and the challenge that remains is adequate financing, coordination of services and the roll out plan.

2.5. Home gardens in South Africa

This study defines a backyard garden as the portion of land that is left for agricultural production after constructing a house(s) and other structures in the residential site. Residential sites are usually 0.5 ha and smaller (Bembridge, 1994, Mkile, 2001:43, and Khosa, 2003) and the size of a backyard garden is dependent on the space occupied by other structures on the plot. Agriculture that is practised on residential sites includes production of crops and micro-livestock (Environmental and Development Agency Trust, 1995). Although their study focused on crop production, Monde *et a*l (2000) also reported that households used their residential sites for micro – livestock production, involving the rearing of pigs and poultry. The primary reason for practicing agriculture on residential sites is to produce food for home consumption (Shackleton *et al*., 2001). Monde *et al*. (2000) investigated the use of residential allotments for agricultural purposes in Koloni and Guquka in the Eastern Cape. They reported that out of the 113 of 128 surveyed households in the studied areas, one or more plots were allocated to food production. . These plots ranged between 40m² and 1500 m^2 in size. Households grew maize, potatoes, pumpkins, cabbages, tomatoes, carrots, beetroot, onions, butternuts, beans, peas and Swiss chard on these plots. Households themselves consumed about three quarters of the garden produce, with the remainder being donated to friends and relatives.

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Khosa, (2003) study was initiated to evaluate, on-farm, the suitability of the Drum and Drip micro-irrigation system for vegetable production in rural home gardens. This technology was introduced to address the problem of child malnutrition ascribed, at least in part, to lack of vegetables in the diet of children. To describe the context in which this food security intervention occurred, and to link the study to the societal problem of chronic malnutrition, a household livelihood survey was conducted. It investigated the demographics, sources of income and expenditure, and agricultural production by households, and the food they obtained by means of purchasing and dry land agriculture. Based on the results of the study, several needs were identified.

The most important were the need to address the problem of lack and poor quality of water, and the chronic shortage of iron. There was also a need to devise a cropping calendar and a production system that would even out the supply of produce over the different seasons in the study area. Lastly, the study identified a need for the provision of a comprehensive training package on the use of the drum and drip system to produce vegetable production by means of the Drum and Drip micro-irrigation system.

2.6. Conclusions

This chapter reviewed literature related to poverty generally in South Africa and Limpopo in particular.. It particularly highlighted the measurement of poverty by the World Bank (2005) and reasons for measuring such poverty. The chapter revealed the

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spread of poverty in South Africa more especially in the Eastern Cape, Limpopo and the Free State provinces. It also revealed livelihood strategies adopted by households, comprising mostly of agriculture particularly dry land cropping and rearing of livestock. The Department of Agriculture's Comprehensive Agricultural Support Programme (CASP) was outlined. The contribution of the Integrated Food Security and Nutrition Programme (IFSNP) and the Integrated Food Security Strategy (IFSS) was also discussed. The chapter went on to reveal how the Integrated Sustainable Rural Development Strategy (ISRDS) and the Agricultural "Starter Pack" Programme could be replaced by the sustainable Household Food Production Programme (HFPP) that concentrates on distributing starter packs and helps to develop and transfer suitable input, technologies, information, training and capacity-building to beneficiaries. This chapter ended by providing definitions of backyard gardens and the partial use of residential sites for food production purposes.

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CHAPTER 3

METHODOLOGY

3.1. Introduction

This chapter deals with the research methods employed in carrying out the study. It starts off by providing information on the methodology, study approach, sampling procedures, tools for data collection, practical data collection and data analysis. The chapter is concluded by looking at ethical considerations that were observed during the course of the research.

3.2. Study approach

The study followed both the quantitative and qualitative research approaches. Specifically, the survey method of data collection was used. The data used in the study mainly consisted of the primary data obtained from recipients of the "starter packs" and extension officers of the Department of Agriculture (Limpopo Province).

3.3. Sampling

Two different sampling techniques were used for the recipients of the starter packs and the extension workers. For the recipients of the "starter packs", clustered systematic sampling was used and for the extension officers purposive sampling was used. Systematic sampling method was used to select particular respondents within a

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certain sample frame. While purposive sampling method was directed specifically at the extension officers involved in the distribution of CASP starter packs.

In practice, when sampling the recipient households, the villages that form part of the study were clustered into their respective service centres. All the households that received the starter packs were listed. In the four service centres of Makhado Local Municipality the households that received the starter packs were 557 in total. A sample of 100 households (which is about 18%) of the population was selected. Sampling was done per service centre aiming for 25 households, using systematic sampling as described by Trochim (2006). Systematic sampling requires that a sampling frame be constructed. This is done by numbering all the individuals that form the target group. In this case the individuals were recipient households. For example, the households that received the starter packs in the Dzanani area were all numbered (1 up to 134). The sample total population of 134 was divided by the sample size (25) to obtain the sampling interval which was 5. A number between 1 and 5 was selected randomly to obtain the first sampling unit from the households numbered 1 to 5. For this case, the number 2 was selected. Subsequent households included in the study were obtained by adding the sampling interval of 5 (7; 12, 17, 22, 27…) until 25 households were obtained. This technique was repeated for the three other service centres. Table 3.1 presents information regarding the number of households that fell within the sample and the number of sampled households as well as beneficiaries per service centre. Details of villages sampled from the respective service centres and the number of households appear on Table 3.1.

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Table 3.1: Sample distribution among villages in the various service Areas of Makhado Local Municipality

Service Area	Number of beneficiaries	Number of Villages In the service centre	Number of sampled Household
Vuwani	143	17	25
Dzanani	134	15	25
Tshitale	139	7	25
Hlanganani	141	10	25
Total	**557**	**49**	**100**

In sampling the extension workers for participation in the study, purposive sampling, which is a non-probability technique, was used. According to Trochim (2006), in purposive sampling, sampling is done with a purpose in mind. Usually there are one or more specific predefined groups being sought after. In the case of the current study, all the extension officers who were involved in the distribution of the "starter packs" were sought after to participate in the study. A total of 24 extension officers participated in the four service centres concerned. All of them extension officers at each service centre were interviewed. Table 3.2 presents the number of extension officers from the four respective service centres that participated in the current study.

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Table 3.2. Service centres and the respective number of extension officers that participated in the study.

Service area	Number of sampled extension workers
Vuwani	6
Dzanani	6
Tshitale	5
Hlanganani	7
Total	**24**

3.4. Tools for data collection

Two sets of questionnaire were designed and used for data collection. The first set consists of household questionnaires while the second set was designed for extension workers. The two sets of questionnaire contained both structured and open ended questions? The questionnaire for the recipient households sought to collect information as reflected in the study objectives. The questionnaire for the extension officers sought data on their experiences, perceptions and the manner in which the CASP "starter packs" have been disseminated Appendices A, p100 and B, p110 present the questionnaire for the recipient households and extension officers, respectively.

The interview schedules were pre-tested to establish their validity and reliability. Necessary changes were then effected after interviewing the first five respondents. One major change in the questionnaire for the gardens was the exclusions of data for

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the harvests from September 2007 on wards. Since the respondents found it difficult to project the yield likely to be obtained as some of the gardens had just been planted at the time of survey. Therefore, a decision was made to limit data of harvests to 2005 – 2006 periods.

3.5. Practical data collection

Field work for the current study was conducted between July 2007 and March 2008 by the researcher with the help of three enumerators. Before the field work started, enumerators were thoroughly trained on data collection processes and procedures, including ethical considerations.

Practical data collection for the sample recipient households consisted of reading out the questions appearing on the copies of the questionnaire and recording the responses thereof. A key respondent was the actual recipient of the garden inputs. In case the recipient was not found, an adult member of that particular household was considered for the interview. Interviews were conducted in the local languages of the respondents, with interpreters used where necessary, especially where the respondents were Venda speaking. The enumerators were selected on the basis of their working knowledge of the three main spoken languages in the study area, i.e. Tsonga, Venda and Pedi (Northern Sotho).

The data from the gardening households were collected mainly through the recall method, which is mainly used by Statistics South Africa in Household surveys (Lehohla, 2008). Using this method the respondents were asked to recall the

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information that is required. In cases where recalling was difficult, respondents were assisted with simple questions that could lead to the recollection of the required information. For example, whenever they failed to recall how much income they generated per month, they were then asked to state the sources. The income from each source was then easily estimated. In the home gardens, respondents recalled the information on the value of their crops by being asked of the units of harvests obtained and the respective prices of those units. The measurements were done only when estimating the sizes of the home gardens. The length and the width of the gardens were measured using walking steps. The number of steps per (5) five meters were divided by a similar distance in order to convert the walking steps into metres. A normal walking step was equal to about 0.6 of a metre. The length in metre was obtained by multiplying 0.6 m by the number of steps counted. Pictorial evidence was also collected.

During field work some setbacks were experienced. The major setback was the absence of sampled recipients. This happened in five cases in the Vuwani service centre. Time and financial constraints made it impossible to revisit the village to interview those households. This reduced the sample for Vuwani to 20 instead of 25 (See Table 4.1) resulting in a total overall sample of 95 households instead of 100, which was the initial target. In the analysis that deals with income, one questionnaire provided data that was below acceptable standard, reducing the sample to 94 house holds. In the entire survey, no problems were experienced with regard to refusal of any household to be interviewed. Data collection from the extension officers were collected differently from that of the recipients. The copies of questionnaire for the extension officers were handed to them for completion as all were literate and thus

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capable of completing questionnaires. This also provided free environment for them to provide responses.

3.6. Data analysis

The data collected for the recipient households were subjected to editing. That was followed by capturing the information on Microsoft Office Excel worksheets and analysing using the Statistical Package for Social Scientists (SPSS). A coding sheet was constructed in order to allow for conversion of words and explanations into numbers. The process of capturing was followed by analysis using mainly descriptive statistics (frequency tables and graphs) any of the analytical methods.

A technique prescribed by Poggenpoel, (1998) was used to analyse the data obtained from the extension officers. In this technique, patterns are identified and coded. These codes stand for words, phrases, sentences or whole paragraphs that may be connected or not connected to a setting. The data are read several times and statements which are similar or interrelated are placed in the same matrix in a table form. After identifying codes, the grouped data are read separately to identify themes for discussion. Themes are obtained from the different statements in the same group or coded data. Finally, the interviewed numbers are written along a particular category of statements in order to determine how serious the statement is. These texts are narrated under the themes /topics.

An absolute poverty line method was applied to analyse the poverty status of the recipient households. An absolute poverty line corresponds to some bare minimum

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subsistence level below which survival is not possible in the long term (Woolard & Leibbrandt, 2001). The adult equivalent income approach as discussed earlier was adopted. The issue of adult equivalence is clarifying how different households conform to the individuals income needs on the basis of age. So from this point one will determine for a particular household whether it is poor or not poor. A poverty line of R413 per month per adult equivalent used by Khosa (2003) in two rural settlements of Sekuruwe and Molekane in the Mokopane area in 2001 was adopted.

This poverty line was applied to the year of study by taking into account the inflation rate guided by the Consumer Price Index (CPI) supplied by Statistics South Africa. Based on the CPI, which has increased by about 20 % since 2001, the poverty line that was employed in the study area was R495 (=120/100x413) per adult equivalent per household. The number of Adult equivalence in a household = (no of adults + ½ no of children) ^0.9. in which, adults are individuals aged 15 years and older and 0. 9 is a scaling factor which reflects that as household size increases, less money per individual member is required to achieve a particular living standard. Households` adult equivalent income is calculated by dividing monthly household income by the number of adult equivalents.

The benefits of using the adult equivalent approach are that the differences in sizes of households and age are taken into account as opposed to applying a similar amount for all the households. Practically, adult equivalence is calculated as follows for a household of five consisting of three adults and two children.

Adult equivalent = [3 + (2/2)] ^0.9 =3.48

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If the household earns R2000 / per month it means that they have R574 per month per adult equivalent (R2000 / 3.48). According to the poverty line of R495, they are not poor. If the household earns R1500 / per month it means that they have R430 per month per adult equivalent (R1500 / 3.48). According to the poverty line of R495, they are poor.

3.7. Ethical considerations

The current study was conducted in accordance with the code of ethics of South Africa. Permission was sought from the sampled households before commencing with the interview. The sampled households were informed of benefits, if any, to be derived from their participating in the study. All information from the participating households was treated as confidential. Fictitious names were used in cases where names are needed, in order to hide the identity of the participants. The extension officers who participated in the study also participated voluntarily.

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CHAPTER 4

RESULTS AND DISCUSSIONS

4.0. Introduction

This chapter reports on the survey that was conducted with the aim of describing the recipients and their households in terms of selected key demographic characteristics, including gender, age, occupation, education, household size, income challenges faced by recipients of inputs and poverty status. .

4.1. Demographic characteristics of beneficiaries

4.1.1. Gender of starter packs recipients

In general, Table 4.1 illustrates that there was a little difference across the gender with regard to allocation of garden inputs to recipients in the sampled households. Nearly half (48 % of the total) recipients were males and 52% females. In the Vuwani service centre there was a notable difference in gender distribution of the recipients of the garden inputs. The majority of the recipients (65 % of the total) were females.

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Table 4.1: Distribution of gender of recipients of garden inputs in the Makhado Municipality,

Service centre	Male		Female		Total	
	Number per Service Centre	%	Number per service centre	%	Number per service centre	%
Vuwani	7	35	13	65	20	21,1
Dzanani	12	48	13	52	25	26,3
Tshitale	14	56	11	44	25	26,3
Hlanganani	13	52	12	48	25	26,3
All	**46**	**48**	**49**	**52**	**95**	**100**

n = 95(2007)

Gender plays a critical role when deciding on interventions like vegetable gardens. Traditionally, vegetable gardening is a domain of women who ensure that all the production is utilized for the needs of the households Nqgaleni and Makhura (1996), as cited by Khosa, (2003).

By contrast, in households where males are responsible for production, the produce may end up not benefiting the entire household. Therefore, interventions like the current one should be targeted at women so that they channel the benefits of the gardens to the entire household.

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4.1.2. Age of starter pack recipients

Table 4.2 reports the age of the recipients of the garden inputs based on the whole household members.

Table 4.2: Age distribution of household member's recipients within households in the Makhado local municipality,

Service Centre	Total number of people	< 15 yrs Children		15 - 35 yrs Youth		36 - 59 yrs Adults		> 60 yrs Elderly	
	Number	Number	%	Number	%	Number	%	Number	%
Vuwani	103	25	24.27	40	38.83	31	30.10	7	6.80
Dzanani	122	28	22.95	57	46.72	17	13.93	20	16.39
Tshitale	163	49	30.06	80	49.08	32	19.63	2	1.23
Hlanganani	142	42	29.58	63	44.37	28	19.72	9	6.34
All	**530**	**144**	**27.17**	**240**	**45.28**	**108**	**20.38**	**38**	**7.17**

n=530(2007)

With regard to Table 4.2 the majority of the members within the household circle that received the garden inputs belong to youth category. (Almost 45.3%, ranging in age between 15 to 35 years). The household members who are regarded as adults for the whole Makhado local municipality constitutes about 20.4%. The Dzanani service centre had a very large number of the elderly household recipient members at 16%.

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The elderly members; form a very small proportion of the households of Makhado local municipality at 7.2%.

Table 4.2.1: Age distribution matrix for recipients of garden inputs in the Makhado Local Municipality (years)

Service centre	**Summary statistics**			
	Mean	**Median**	**Mode**	**Range**
Vuwani	52	52	41	37 – 78
Dzanani	54	58	70	25 – 89
Tshitale	48	48	32	26 – 78
Hlanganani	49	50	50	25 – 69
All	**51**	**50**	**32**	**25 – 89**

n = 95 (2007)

According to Table 4.2.1 above, the sampled recipients of garden inputs in the Makhado Municipality ranged from 25 to 89 years. Most of the recipients were middle aged which means they were strong enough to do hard labour. The mean age of the recipients was 51, median was 50 and the mode was 32 years. In the Dzanani area the garden inputs were donated mostly to old people. In Hlanganani, most of the people that received the garden inputs were above 49 years. In Vuwani and the Tshitale areas the inputs were received by people in middle age. Allocating the inputs to older people poses a threat to the sustainability of the gardening in the sense that old people may not have sufficient strength to work including fetching water from long distances. They also find it difficult to learn the production of exotic vegetables. In such cases, the young people in the households had to be advised by elderly to take

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over the work. It was observed that old people appear not to be interested in generating income from farming. A study at Dzindi Irrigation Scheme, near Thohoyandou in the Limpopo Province showed that plots owned by pensioners were underutilized as compared to those owned by middle aged and young adults (Mohammed and Van Averbeke, 2006). This implies that age has to be taken into account when allocating intervention resources.

4.1.3. Education status of starter packs recipients

Figure 4.1 shows that educational levels of recipients differed amongst the Makhado municipality beneficiaries. In general, about a quarter (23 % of the total recipients) of the sampled population had no formal education at all whilst 31% managed to reach between grades 1 and 6. The other grades which are 7 – 9, 10 – 12 and above 12 were 25%, 10% and 12%, respectively. The different educational levels of the recipients suggest that a variety of educational techniques has to be used in training the recipients about gardening. The training techniques should cater for both the illiterates and the literates.

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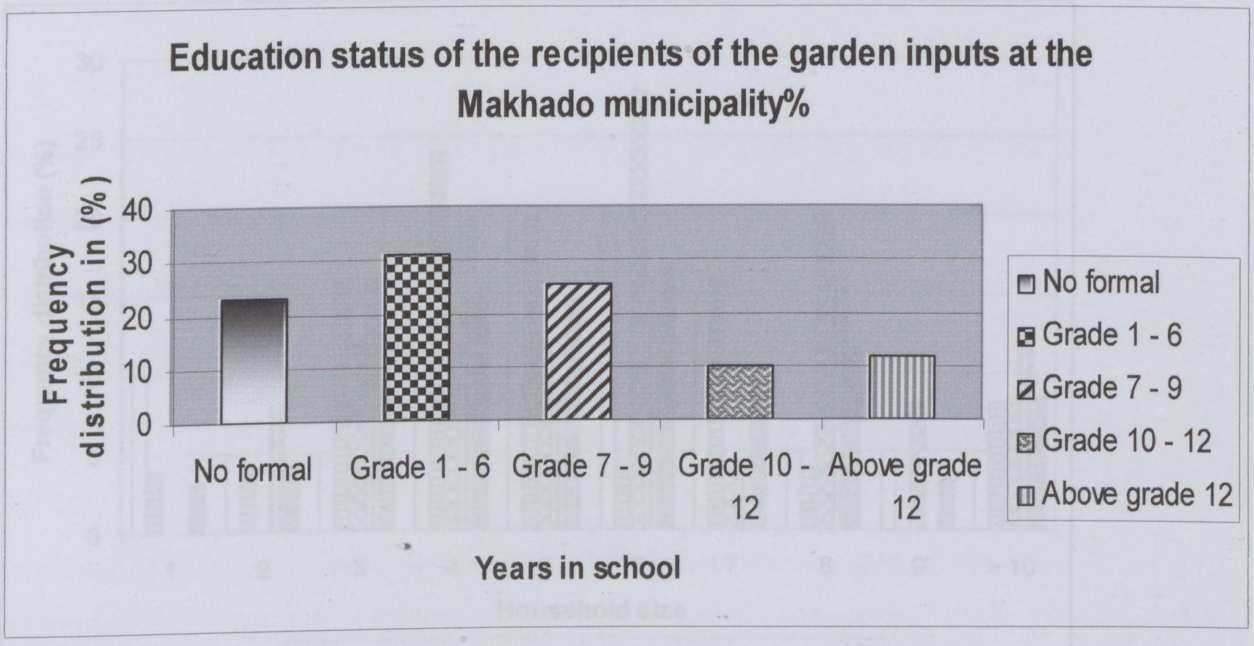

Figure 4.1: Education status of the recipients of the garden inputs in the Makhado Local Municipality.

4.1.4. Household sizes of the recipients of the starter packs

The distribution of household sizes of the recipients of the intervention resources was not evenly distributed, according to Figure 4.2 with an exception of Vuwani and Hlanganani, where there were a few households with one to two members.

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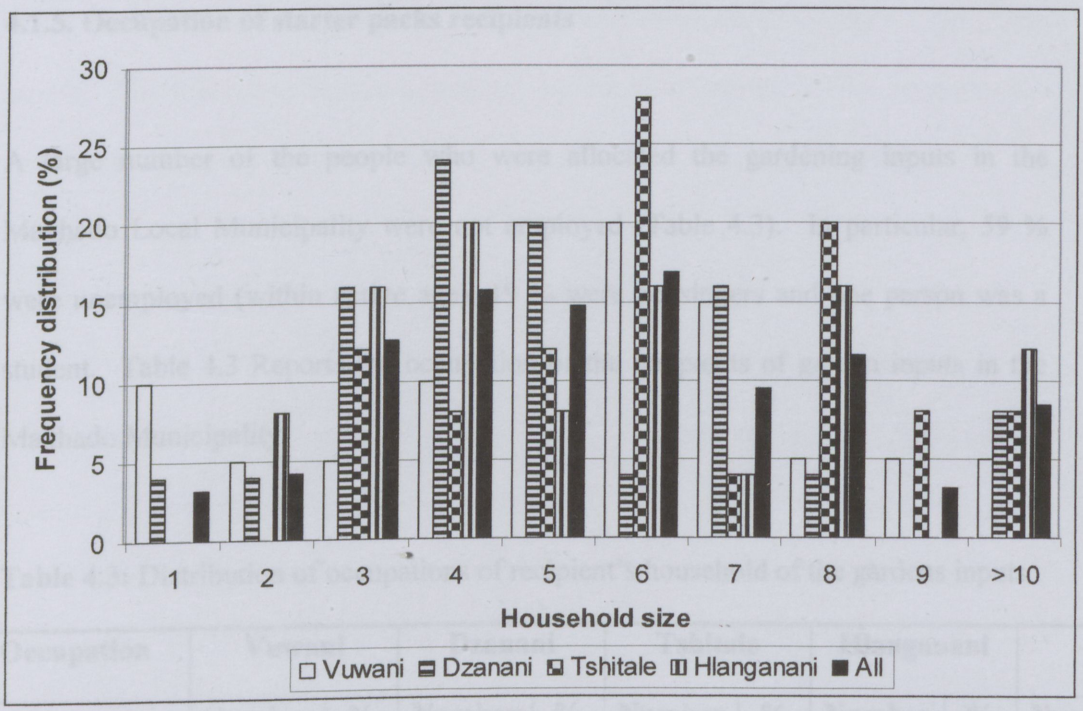

Figure 4.2: Frequency distribution of household sizes of the recipients of garden inputs in the Makhado area (N = 95, 2007)

The majority of the households in the surveyed service centres had household sizes varying between 3 and 8 members. There were few households with nine or ten and more than 10 members. Based on Figure 4.2, it is deemed necessary to consider household size when allocating resources for improving the livelihoods of rural communities. An increase in household size suggests that the needs of that particular household would be larger (Carter and May, 1999). However, the diversity of household sizes is not normally taken into account when the government donates resources for development.

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4.1.5. Occupation of starter packs recipients

A large number of the people who were allocated the gardening inputs in the Makhado Local Municipality were not employed (Table 4.3). In particular, 59 % were unemployed (within active age), 19 % were pensioners and one person was a student. Table 4.3 Reports the occupation of the recipients of garden inputs in the Makhado Municipality

Table 4.3: Distribution of occupations of recipient's household of the gardens inputs

Occupation	Vuwani		Dzanani		Tshitale		Hlanganani		All	
	Number	%	Number	%	Number	%	Number	%	Number	%
Unemployed	15	75	8	32	18	72	15	60	56	59
Employee	1	5	3	12	4	16	4	16	12	13
Student	0	0	1	4	0	0	0	0	1	1
Self employed	3	15	3	12	0	0	2	8	8	8
Pensioner	1	5	10	40	3	12	4	16	18	19
Total	**20**	**100**	**25**	**100**	**25**	**100**	**25**	**100**	**95**	**100**

Only 13 % of the recipients were reportedly employees and 8 % were engaged in self-employed activities. The number of the unemployed who received the garden inputs was noticeably higher in Vuwani (75 %) and Tshitale (72 %). The number of the employed was higher in Hlanganani (16 %), and Tshitale (16 %) and Dzanani (12 %). Pensioners who received the garden inputs were many in Dzanani (40 %) as compared to the other service centres. The higher rate of unemployment is attributed

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to the poverty which was one of the selection criteria when allocating the gardening inputs. Therefore, the figures appearing on Table 4.3 above do not represent the entire population of four service centres; it is only for responding households.

4.2. Assessment of vegetable gardens

The status of the utilization of the vegetable gardens was recorded. The gardens were categorized into operational and non operational. Those said to be in operation were either planted in 2007 or prepared for planting. Those regarded as non operational were those abandoned (not planted in 2007). Figures 4.3 and 4.4, illustrate operational and non-operational garden respectively. In Table 4.4, the status of operation of the gardens is reported.



Figure 4.3: An operational garden.

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The garden highlighted in figure 4.4 is one of the practical examples of the non operational. This relates to other challenges that was mentioned in item 4.6 faced by the household recipients.



Figure 4.4: A garden that was no longer operational by 2007.

Table 4.4: Operational status of gardens in the Makhado area during 2007 (n = 95).

Service centre	**Operational**		**Non operational**	
	Number	**%**	**Number**	**%**
Vuwani	14	70	6	30
Dzanani	18	72	7	28
Tshitale	15	60	10	40
Hlanganani	20	80	5	20
All	**67**	**71**	**28**	**29**

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During the time of the survey not all the gardens were operational. In total 67 (71 %) were operational in 2007. Nearly 30 % of the gardens had been abandoned. Ten of the 28 gardeners that had abandoned their operations cited lack of water as the main cause. Damage of the gardens by livestock was mentioned by seven of the 28 participants. Three participants mentioned the combination of lack of water and damage of crops by livestock as a problem that led them to stop their garden work. In the few remaining cases, recipients mentioned problems of weeds, with some recipients finding jobs elsewhere. In one garden, production never started. The recipient who did not start mentioned that he lacked information on how to produce the crops and failure to operate the irrigation system. The gardens were mainly planted twice per year, during winter and summer. Exotic vegetables dominated as they constituted the donated package. However, farmers added other crops of their choices including Chinese cabbage, maize and sweet potatoes. Chinese cabbage is an indigenized leafy vegetable mainly grown in the northern parts of South Africa. It belongs to the *brassica* family, but it does not form a head as compared to other *brassica* crops (Figure 4.5) below.

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Figure 4.5: A Chinese cabbage crop flowering in one of the gardens

The proportions of respondents growing a particular crop during winter 2006, summer 2006 and winter 2007 is reported on Table 4.5. The proportions were calculated using 67, which is the total number of gardens operational (See Table 4.4).

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Table 4.5: Proportions of farmers growing a particular crop during 2006 and 2007.

Crop	Winter 2006 %	Summer 2006 %	Winter 2007 %
Onions	1.49	0.00	37.31
Spinach	19.40	5.97	67.16
Green pepper	1.49	0.00	2.99
Cabbage	11.94	5.97	0.00
Chinese Cabbage	10.45	4.48	70.15
Green beans	1.49	8.96	25.37
Tomatoes	5.97	10.45	67.16
Butternuts	1.49	8.96	32.84
Carrots	5.97	4.48	49.25
Beetroots	11.94	5.97	79.10
Peas	1.49	0.00	0.00
Maize	2.99	17.91	0.00
Sweet potatoes	0.00	1.49	0.00

The frequency distribution of crops planted differed between the three seasons (Table 4.5) above. During the winter of 2006, main crops planted by many gardeners included spinach, beetroot, Chinese cabbage and cabbage. Tomatoes and carrots were also important during that period. During the summer of 2006, major crops planted included maize, tomatoes, butternuts and green beans, followed by spinach, beetroot and cabbage. The winter of 2007 did not differ much with that of 2006 in terms of important crops grown. The only exception was that the proportion of recipients

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growing particular crops increased. It was interesting to note the frequency of farmers growing Chinese cabbage increased noticeably, from 10.45% in winter 2006 to 70.15% in winter 2007. From the results on Figure 4.4, it is clear that the vegetable gardens are not sustainable because of lack of water for irrigation and lack of fencing as the main threats to the sustainability.

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Table 4.6: Mean income per month earned by households in Makhado Local Municipality (N = 95, 2007).

Sources of income	Vuwani		Dzanani		Tshitale		Hlanganani		All	
	(R)	%	(R)	%	(R)	%	(R)	%	(R)	%
External sources										
Salary / wages	340.00	29	150.00	8	768.00	37	884.00	43	550.00	31
Old Age Pen	348.00	30	761.25	41	69.60	3	243.60	12	351.70	20
Child grant	100.00	9	158.33	9	354.80	17	248.00	12	222.02	12
Disability grant	73.50	6	108.75	6	104.40	5	104.40	5	98.94	6
Remittance	103.35	9	43.75	2	92.00	4	98.00	5	83.69	5
Child maintenance	10.00	1	25.00	1	0.00	0	0.00	0	8.51	0
Sub-total of external	**974.85**	**83**	**1247.08**	**67**	**1388.80**	**67**	**1578.00**	**76**	**1314.86**	**73**
Internal sources										
Trade B/S	75.80	6	152.08	8	338.00	16	259.20	13	213.79	12
Trade M/S	24.00	2	31.25	2	27.20	1	80.00	4	41.60	2
Farming	23.53	2	251.25	14	107.97	5	0.00	0	97.87	5
Petty trade	70.00	6	168.75	9	208.80	10	52.00	3	127.34	7
Services	6.00	1	0.00	0	0.00	0	0.00	0	1.28	0
Sub-total of internal	**199.33**	**17**	**603.33**	**33**	**681.97**	**33**	**391.20**	**19**	**481.87**	**27**
Grand total Income	**1174.18**	**100**	**1850.42**	**100**	**2070.77**	**100**	**1969.20**	**95**	**1796.73**	**100**

Trade B/S = Buy and sell Trade M/S = **Make and sell**

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Generally, Table 4.6 shows that households that participated in the current study in the Makhado area depended largely on external sources of income for their livelihood. External sources contributed a staggering 73% to the total monthly household income, whilst internal sources of income only accounted for a meagre 27%. Of the external sources of income, a larger portion came from salaries and wages (31% of the total monthly income) and claims against the State in the form of old age pensions (29 % of the total income), with 12% of the total income claimed from the State in the form of child support grants. Disability grants and remittances contributed 6 and 5 % respectively. Of the 27% earned from internal sources of income, a large amount came from trade (14% of the total monthly income), which consisted mainly of buying and or making and selling of home products such as soft drinks, chickens, home-brewed liquor, snacks and other products. Farming, which consists mainly of rearing of livestock and growing crops both accounted only for 5% of the total monthly household income. Petty trade, which consists of piece jobs within the villages accounted for 7 % of the total monthly income. There were no clear disparities within the four service centres except for the fact that Vuwani showed a higher dependency on external sources (83 % of the total monthly household income).

With regard to the livelihoods, the findings of the current study are in line with other studies conducted in the rural areas of South Africa. In the previous studies rural households showed a serious dependency on external sources (May, 1998; Baber, 1996; Van Averbeke et al., 1998 & Agricultural and Rural Development Research Institute, 2002, Khosa 2003). However, the results of the current study indicate a modest

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dependency (5%) on remittances as compared to other rural areas that were surveyed. All in all, the findings of the current study confirms the trend that rural livelihoods in South Africa rely on transfers rather than own production

4.3. Allocation of produce

Table 4.7: Production, sales, donation and consumption of produce emanating from starter packs (Total)

Category	Vuwani (R)	%	Dzanani (R)	%	Tshitale (R)	%	Hlanganani (R)	%	Total (R)	%
Value of produce for home consumed	2533.7	38	5246.5	49	7315.5	25.3	8617.5	34.3	23813	33
Value of produce sold	3520	53	4938.5	46	20635	71.5	12261.3	48.8	41455	58
Value of produce donated	602	9	605	5	928.75	3.2	4254	16.9	6491	9
Total Value of produce	**6655.7**	**100**	**10790**	**100**	**28879**	**100**	**25132.8**	**100**	**71760**	**100**

The majority of the produce was sold to generate additional income. About 58 % of the produce was sold. At least 33 % of the produce was used for home consumption. A small proportion of the produce (9 %) was given as gifts to friends, relatives and neighbours. This enables the gardeners to ask for other foodstuffs in return. Some gardeners, especially those who expanded their gardens, saw vegetable gardening as a source of income through sales. This is what was anticipated from the intervention.

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Home consumption was also anticipated because it cuts on food purchases amongst the recipient households.

Table 4.8: Frequency distribution of income earned from the vegetable gardens in the Makhado area per annum

Income (R)	% of gardener households (%)
50	6.82
100 to 300	11.36
301 to 500	18.18
501 to 800	20.45
801 to 900	4.55
1000 >	38.64

The gardeners earned income ranging from R50, 00 to above R1000, 00 per year from their gardens, with an average of R1000.00 per year. A few gardeners (18% of all farmers that were in production, 67) earned less than R300.00. About 39% of the gardeners earned income in the middle range of the frequency as shown in Table 4.8 (between R301 and R800 per year). About 5% of the gardeners generated between R800 to R900 per year, whilst a large proportion of the gardeners (38, 64%) generated income in excess of R1000 per year. Gardeners who earned a high income were mainly those with abundant supplies of water, from their boreholes. As reported earlier they expanded their gardens to exploit all the unutilized places of their residential sites not utilized (see Figure 4.6). These gardeners become vegetable suppliers in their localities. Although the

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income generated from the gardens differed as indicated on Table 4.7 the gardens brought about a noticeable difference in the households of the gardeners.



Figure 4.6: An expanded garden.

4.4. Poverty level among households

In order to determine the extent at which the gardens addressed poverty, all the income earned by each gardener household was added to the income earned by their usual sources of income. Poverty levels were re-analysed to compare with those appearing on Table 4.9, below. The income earned by the sampled households was converted into adult

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equivalent income per month following the procedures explained in Chapter 3 (section 3.6). The purpose was to construct a poverty analysis. A poverty line of R495.00 per adult equivalent per month was used. Households earning above R495.00 per month per adult equivalent were considered not poor, households earning below R495.00 were considered poor, and households earning R247.00 (half of the poverty line were considered as ultra poor. Table 4.9 reports the poverty status of the sampled households in the Makhado area primarily based on the entire Municipality and respective service centres. In Table 4.9 emphasize the setback that was recorded during the field work where one questionnaire provided was below acceptable standard as results reducing household to 94 instead of initial 95 sampled size.

Table 4.9: State of poverty amongst households in four service centres of the Makhado Local Municipality.

Service centre	None poor		Poor		Ultra Poor		Total	
	Number.	%	Number.	%	Number.	%	Number.	%
Vuwani	1	5	9	45	10	50	20	21.3
Dzanani	11	46	8	33	5	21	24	25.5
Tshitale	7	28	7	28	11	44	25	26.6
Hlanganani	7	28	10	40	8	32	25	26.6
Total	**26**	**28**	**34**	**36**	**34**	**36**	**94**	**100**

n=94(2007)

The garden inputs were mainly targeted to the poor. Accordingly, poverty was very high among the sample households. More than two third (72%) of the households fell below

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the poverty line. Of these 72%, half (36%) were classified as poor and the other half as ultra-poor. Only 28% of the households were not poor. The fact that poverty is high among the sample household is caused by the fact that the intervention was targeted to the poor. It is possible that some households were allocated the garden without adequate information that they were not poor. Poverty was more severe in the households in Vuwani, followed by Tshitale and Hlanganani. The poverty rate that has come through the current study was higher than the country's average of 2001, which was 57% and almost equal to that of the whole province of Limpopo (77%) (Schwabe, 2004).

In order to determine the extent to which the gardens addressed poverty, all the income earned by each gardener household was added to the income earned by their usual sources of income. Poverty levels were re-analysed to compare with those appearing on Table 4.9

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Table 4.10: Comparison of poverty rates with the usual sources of income and additional income from the gardens

Poverty Status	Income from usual sources		Total income after adding income from the gardens	
	Number	%	Number	%
None poor	26	28	29	30.85
Poor	34	36	39	41,49
Ultra poor	34	36	26	27,66
Total	**94**	**100**	**94**	**100.00**

Table 4.10 shows that adding income from the vegetable gardens addressed poverty to some extent. There was a 2.85% increase in households that are not poor. The number of ultra-poor households declined, leading to the number of households that were poor to increase from 36 to 41.49%.

Despite Table 4.9 shows that there was a slight improvement in poverty reduction (from 100% to 72%), The improvement is undermined by the fact that many of the households that were already not poor are the ones that made a considerable income from the gardens. For example, gardens with access to borehole water.

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4.5. Sources of water

The recipients used water from various sources including boreholes, taps, dams, river, harvested rain water and springs. The frequency distribution of use of these sources appears on Table 4.11, below.

Table 4.11: Sources of irrigation water for the vegetable gardens in Makhado

Service centre	Borehole (N)	Tap (N)	Dam (N)	River (N)	Rain water (N)	Spring (N)
Vuwani	1	19	1	1	0	1
Dzanani	8	18	1	1	0	1
Tshitale	6	14	0	3	1	1
Hlanganani	1	23	0	1	0	0
All	**16**	**74**	**2**	**6**	**1**	**3**

The majority (74 out of 95 gardeners) of households obtained their water from taps that is provided by the municipality. The supply was reported not to be convenient since sometimes there may be no water supply for three weeks. Another important source of irrigation water was boreholes, with at least 16 gardeners relying on this source. Other sources, rivers, dams, and springs were less important, used by less than 6 gardeners each. Reliance on tap water may pose a serious challenge because the water is meant for

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domestic use. Therefore, whenever water is scarce households without gardens may discourage use of water for irrigation purposes.

4.6. Challenges faced by recipients

4.6.1. Water

Water is a key factor in crop production, especially in the growing of exotic crops, which are less tolerant to drought conditions. Most of the gardeners mentioned lack of water for irrigation as a key challenge threatening their gardening. This was the case where farmers relied on other sources than boreholes. They found it difficult to fetch water from long distances whilst they had other jobs to do. Those who used tap water reported that the source was unreliable because water was not available all the time. This means that they had to watch their crops dying because of lack of irrigation water (Figure 4.7).

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Figure 4.7: Swiss chard wilted in one of the garden due to lack of irrigation water.

4.6.2. Fencing

Fencing also featured highly amongst the challenges faced by the gardeners. Most of the gardens were not fenced off against stray animals. The stray animals caused severe damage to the crops. In some cases some of the gardens were eventually abandoned due to this problem. In other cases, some gardeners used wood for fencing the gardens (see Figure 4.8) below. However, such a fence has to be revamped every year as it is not durable. Figure 4.9 illustrates the damage caused by chickens to one of the gardens.

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Figure 4.8: Fencing of the garden in one of the villages visited.



Figure 4.9: Damage caused by livestock on the crops planted in some of the gardens.

4.6.3. Irrigation system

About half of the gardeners (47 out of 95) were satisfied with the irrigation system supplied. The rest of the gardeners experienced challenges with the irrigation system,

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leading to some of them discontinuing its use. Challenges experienced with regard to the irrigation system were that it was slow; it did not cover the entire area that the gardener intends to plant and the blocking of drippers.



Figure 4.10: shows the irrigation system removed from one of the gardens.

4.6.4. Lack of knowledge

Other challenges mentioned by a few included a lack of knowledge to produce exotic crops. This led to gardeners using their own knowledge or knowledge borrowed from

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other crops they know. This, in some cases can result in poor yield as some practices are not suitable for exotic crops.

Lack of knowledge with regard to where and how the gardeners could obtain production inputs was also mentioned as a challenge by a few gardeners. Most of the farmers expected that they were to receive another batch of inputs from the extension officers when they have finished the first batch. Most of the farmers who expected continuous handouts were those who sold their produce. Therefore, they tended to have a sense of dependency in order to sustain their gardens

4.7. Perceptions of the extension officers on the "starter packs"

4.7.1. Introduction

Extension officers are expected to play an important role in assisting with allocation of the "starter packs" and providing technical support to ensure success of the gardens. Therefore it is important to explore their experiences and perceptions. This part of the study reports on the perceptions of the extension workers on the "starter packs". A total of 24 extension workers participated in the study. General information pertaining to age and educational status of the participating extension worker is presented and their perceptions on the intervention in question are also presented in the sections that follow:

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4.7.2. General information

The age of the extension officers who participated in the study varied from 38 to 56 years old with a mean, mode and median of 45, 46 and 46, respectively. This indicates that the extension officers in the study are of middle age. With respect to the level of education achieved, 23 extension workers responded. Nearly all the extension workers (21 out of the 23) who responded to the questions had a three year qualification in agriculture. Only one, which represents 5 % of the respondents, had a four year degree in agriculture. One extension officer reportedly had no qualifications in agriculture.

In addition to the "starter packs" and vegetable gardens, there were other CASP programmes that were taking place within the areas of the responding extension officers. These included the provision of materials for conservation of natural resources, provision of materials to the emerging farmers, renovation of dipping tanks for livestock farmers, grants for livestock producers, fencing of slag projects, drilling of boreholes and construction of reservoirs, poultry production, grazing camps, and fishery.

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4.7.3. Perceptions of extension workers on the CASP gardens

4.7.4. Allocation of the gardening inputs

One important aspect of allocating resources for intervention is the criterion that has to be used to identify the recipients. The success of the intervention strategy depends on the recipients. However, the purpose for which an intervention is intended dictates the criterion.

In the current study the criteria used to identify the recipients were similar amongst the extension workers. The major criterion was the poverty status of the household. Nearly all the extension workers mentioned this as the main criterion. In identifying the poor households, local institutions like the Civic Association or the Tribal authorities were requested to assist. In other cases a household's monthly income ranging from R200 to R800 per month was considered to be an indicator of poverty. Unemployment was also used as an indicator of poverty. *"When allocating the production inputs we considered the poorest of the poor"*, responded one of the participating extension officers.

The question that arises is how accurate was the identification of the poor households. As shown in the literature review, poverty is measured differently using the relative and the absolute methods. The relative way, which was dominant in the allocation of inputs in the study area, local institutions were used to identify the poor households. Since this relative method is merely based on expectations of what a household should be in

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possession of, there is likelihood that some selected households were above the poverty line. This suggests that there is a need for baseline information of the villages before allocating resources for intervention. The local institutions should also have access to these records. The second major important criterion mentioned by the extension officers was interest and participation in home vegetable gardening. With regard to interest and participation in gardening, some extension officers mentioned that *"They gave the production inputs to the interested farmers", (people who had planted vegetables in their back yards).* That is, the intervention to people who showed interest and are already involved in production, improved their chances of success in such a livelihood engagement. This was evident in the vegetable gardens that were visited in Tshakhuma, and Vuwani service centre. As observed during fieldwork, vegetable gardening appeared to be an important part of the livelihoods in the areas. Many other households had vegetable gardens in the Tshakhuma and Ha-Mutsha areas.

However, the irony of the matter is that interest may sometimes not be interrelated to poverty. Therefore, it is important that when planning poverty elimination strategies, it should be recognized that poverty stricken households are diverse and thus need different strategies. Preliminary studies are needed to profile the households and identify their livelihood tactics and priorities. This will lead to interventions that are relevant to the households. For example, in one of the participating households that earned their living from making and selling home-brewed liquor, the garden appeared to be tempering with their time as they had to allocate time to fetch water from a long distance. As a result, the household put priority on the liquor enterprise and left the plants unattended.

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Availability of water was another criterion mentioned. Availability of water for irrigation meant that the recipient household had a borehole in the homestead. As with interest or participation in gardening, this criterion was in conflict with poverty. In many cases, households with boreholes tended not to be poor. These households were involved in gardening, which guaranteed their success. Despite the intention of the intervention targeted the poor, allocating the inputs to those households that had boreholes and not poor was justifiable as they utilized their inputs efficiently and in a sustainable way. These households could sell vegetables to the poor households and generate additional income to uplift their status. Another criterion mentioned was enough space for providing for the garden. This criterion was mentioned by a few extension workers. Generally, residential spaces in rural household areas have enough space for gardening (Khosa, 2003 and Monde, 2000). Therefore, this criterion was met by almost all households in the rural areas.

Three extension officers mentioned fencing as another aspect that was considered. Despite having been mentioned by a few extension workers, fencing is the main infrastructure in vegetable gardening as revealed in section 4.2 of the study and shown by Khosa, (2003). However, only the not poor households can afford to erect durable fencing for their residences. In addition, the residential gardens need to be fenced off to protect households from free ranging livestock.

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Most of the extension workers felt that allocation of the garden inputs was fair because many stakeholders were involved in order to identity the beneficiaries. The stakeholders involved included the local institutions, tribal authorities, local municipalities and Department of Social Welfare. Only in four cases out of the 24 reported there was no consultation with other stakeholders when identifying the benefiting households. These extension workers felt that the process of allocating the garden inputs was not fair because other stakeholders were left out.

The majority of the extension officers (83%) felt that there was a need to improve the way in which the "starter packs" were distributed. This involved strengthening co-ordination with other stakeholders when identifying beneficiaries. Stakeholders such as the Department of Health and Social Welfare could assist the extension workers in identifying poor households. Most extension officers felt that the inputs should be given to only those households that were interested and have access to water because success is more likely amongst such households. Four extension workers felt that the government policy needed to be understood and adhered to with regard to allocation of the inputs. About four extension workers were happy with the status quo of allocating the inputs, thus no change was necessary.

4.8. Sustainability of the gardens

The extension workers held different perceptions on how the vegetable gardens could be sustained. The most common perception was that recipients should be encouraged to be

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self-reliant instead of dependent on the government. This could be achieved through training the farmers on production and ensuring that the produce is adequate to generate income for purchasing inputs. Instilling a sense of ownership was needed. Some of the extension officers felt that regular visits to recipients for the purpose of advice were necessary to sustain the gardens and also to bolster their confidence. Some extension officers mentioned that, *the recipients should be taught to be self-reliant and that farmers must sell some of the produce and purchase own inputs. Farmers should also receive regular training and visits for advisory purposes.*

Extension workers mentioned interest and access to water for irrigation as key aspects in the sustainability of the gardens. Their perception was that lack of water for irrigation threatened the smooth running of the gardens because; water is one of the most important input in crop growing. This issue was in line with the limitations mentioned by the recipients (see section 4.2.3). Two extension workers saw a continuous supply of inputs as a means of sustaining the gardens. A small numbers of extension officers responded to the issue of whether the vegetable gardens were sustainable. Those who responded felt that the gardens were not sustainable due to reasons mentioned above.

4.8.1. General thoughts on the "starter packs"

The general view of the extension officers on the "starter packs" was that they were helpful to the poor. Some also thought that the income of certain households was raised

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above the poverty line. For that reason, the extension officers felt that more starter packs should be distributed.

4.8.2. Summary of findings

The findings on the evaluation of the vegetable gardens show that the participating households responded differently from the interventions. The gardens that were constructed ranged from 34 to 1500 m^2, with a mean of 386 m^2. The crops were planted in the gardens twice per year, during winter and summer. The crops planted included mainly the exotic crops supplied as part of the package. Maize, sweet potatoes and Chinese cabbage were also included amongst the crops planted.

During the time of the survey (2007, September) nearly 30 % of the gardens were not operational, raising a concern for their sustainability. A number of factors were found to explain why for the gardens stopped functioning and continued to be a threat to those that were still functioning. The major factors included a lack of water for irrigation, poor state of fencing of the gardens against stray animals. Lack of knowledge on the production of exotic crops was also another limitation. Recipients appeared not to be well versed with regard to crop protection and nutrient supply. The last factor that threatened the sustainability of the gardens was an attitude of dependency for the supply of production inputs. The majority of the recipients expected continuous handouts from the Department of Agriculture. Apart from the other challenges, the recipients experienced problems with the irrigation system. The irrigation system was too small to

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cover the entire planted area in some of the gardens. The irrigation system tended to clog and as a result the problems led to the irrigation systems being removed in many of the gardens that were visited. When the irrigation systems were removed, more water will be required as drip irrigation is known for its efficiency.

The produce from the gardens was allocated to home consumption, sales, and donations. A larger portion of the produce (close to 58 %) was allocated to sales. It was expected that most of the produce would be allocated to home consumption, with only the surplus being sold. However, income generation appeared to be of high priority since many households were poor. The inclusion of men as recipients might have contributed to the high sales of vegetables as discussed in section 4.3. The participating households generated income ranging from R50 to more than R1000 per year. More than 40 % of the participating households generated income in excess of R900 per year. This indicates the gardens made a notable contribution amongst the participating households. When a scenario was built by adding the income earned from the gardens to the usual sources, the proportion of none poor households was increased from 28% to 31%. Households categorized as poor increased from 36% to 41% of the total households and the ultra poor household declined from 36% to 28 %. The conclusion arising from this discussion is that the gardens played a meaningful role in addressing poverty. However, there are a number of constraints that threatened the sustainability, leading to a need for solutions.

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4.8.3. Conclusion on the part of extension workers

Generally, the extension officers felt the problem of lack of water for irrigation need to be addressed to make the vegetable gardens sustainable. The "starter packs" are good but the problem is the lack of water" asserted one of the extension officers. The extension officers pointed out that interest and commitment in gardening needed to be considered before the inputs are handed out to the respective beneficiaries. There was a feeling amongst a few extension officers that the programme of "starter packs" was top-down. Therefore, the recipients did not form part of the planning of the programme. Although this was a perception of a few extension officers, involvement of the local community is an important aspect of technology development. When the beneficiaries are involved from the inception of the programme, it is more likely that the programme will suit their circumstances, leading to high rate of success and adoption and minimum shortcomings and surprises.

The survey conducted with the extension officers yielded important findings. With regard to the criteria followed when distributing the garden inputs, it was mentioned that poverty formed the central part of the criteria. However, the extension officers appear not to have adequate knowledge with regard to identifying poverty-stricken households. This led to reliance on relative ways of determining poverty, which can result in households that are not poor being selected. Therefore, a need arises to engage local institutions and extension officers in poverty alleviation/eradication programmes and to supply them with the necessary baseline household data. Interest in vegetable gardening

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and access to water were other criteria identified. Fencing was considered in limited cases. The extension officers also felt that the process of allocating the gardening inputs was fair since many stakeholders participated. In terms of sustainability, the extension officers perceived the gardens not to be sustainable. They attributed many factors that threatened sustainability of the gardens, including an attitude of dependency syndrome amongst the recipients, lack of interest in gardening, lack of water for irrigation, lack of knowledge in the production of exotic vegetables, and the poor state of fencing against livestock. Despite the limitations that the extension officers perceived to be hindering the progress of the vegetable gardens, there was a general feeling that the programme is very helpful to the recipients. However, there was a need to involve local households in planning so as to avoid the shortcomings that affect the gardens.

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CHAPTER 5

5. SUMMARY OF FINDINGS AND POLICY RECOMMENDATIONS

5.1. SUMMARY OF FINDINGS

This study was carried out to measure the extent at which the "starter packs" given to sustained home food production and to what degree the backyard gardens advanced improvement of the rural households. It investigated the criteria used by government officials to identify the recipient's households.

The survey was conducted with an aim of describing the recipients and their households in terms of selected key demographic characteristics, including gender, age, level of education, household size, and income. The results of the survey showed that gender distribution amongst the recipients was unequally distributed between male and females, vegetable gardening is however a domain of women thus making women more likely to succeed as compared to men. With regard to age, the gardening inputs were sometimes allocated to very old people (up to 89 years old). Sustainability of such a garden is questionable when one looks at activities that have to be carried out. The level of education of the recipients was evenly spread consisting of those people who were illiterate and literates. .

This implies that training programmes, if any, have to be provided, to all suitable recipients. Most of the recipients tended to be unemployed, in line with the intention of

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the programme. The household sizes of recipients differed between one and twelve people per household. This suggests a need to consider household size when allocating the inputs and size of the area need to be cultivated, simply because small area with need smaller resources as compared to bigger areas. With regards to livelihoods, the sampled households showed a heavier reliance on external sources of income, including social grants and thus confirming the findings of previous studies. At least 73 % of the income earned by the sampled households in the Makhado Municipality was from external sources, with state transfers and wages and salaries being the main contributors. The majority of the households (72 % of the sampled households) that participated in the study were poor. This figure complies with the programme as poverty was one of the criteria considered when allocating the gardening inputs.

Results from evaluation of the vegetable gardens suggested that some of these gardens are not sustainable. During the time of the survey (2007, September) nearly 30 % of the gardens were not operational, indicating that the gardens were not sustainable. A number of factors were identified as being the causes for none sustainability of these gardens. These factors include lack of water for irrigation, poor state of fencing of the gardens. Lack of knowledge on the production of exotic crops and poor management also need to be taken into consideration. Recipients appeared not to be well informed about crop protection and nutrient supply. The last factor that threatened the sustainability of the gardens was the attitude of the beneficiaries as the majority of the recipients expected continuous handouts from the Department of Agriculture. Apart from the mentioned challenges, the recipients experienced problems with the irrigation system. The irrigation

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system was too limited in capacity to cover the entire planted area in some of the gardens. Some irrigation systems also tended to clog hence in some gardens, the irrigation systems were being removed. When the irrigation systems were removed, vegetable output would inevitably drop.

The vegetable gardens were found to make a meaningful financial contribution to the participating households. The participating households generated income ranging from R50 to more than R1000 per year. More than 40 % of the participating households generated income in excess of R900 per year. This indicated that the gardens made a notable contribution to improve the quality of life of the participating households. When a scenario was built by adding the income earned from the gardens to the usual sources, the proportion of none poor households was increased from 28 to 31 %, households categorized as poor increased from 36 to 41 % of the total households and the ultra poor households declined from 36 to 28 %. This shows that vegetable gardens played a meaningful role in reducing household poverty. The survey conducted with the extension officers revealed some important findings. With regard to the criteria followed when distributing the garden inputs, it was evident that poverty formed the central part of the criteria. However, the extension officers and local institutions appear not to have adequate knowledge of what determines poverty-stricken households. This led to reliance of relative ways of determining poverty, which can result in households that are not poor being selected. Therefore, a need arises to educate the local institutions and extension officers on poverty and to supply them with the necessary baseline household information. Interest in vegetable gardening and access to water were other criteria used

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for selection as these two factors guaranteed garden sustainability. Fencing was considered in limited cases. Most extension officers felt that the process of allocating the gardening inputs was fair since many stakeholders participated in the process.

In terms of sustainability, the extension officers perceived the gardens not to be sustainable. They attributed many factors that threatened sustainability of the gardens, including an attitude of dependency amongst the recipients, lack of interest in gardening, lack of water for irrigation, lack of knowledge in the production of exotic vegetables, and poor state of fencing against livestock. Despite the limitations that the extension officers perceived to be hindering the progress of the vegetable gardens, there was a general feeling that the programme is very helpful to the recipients. However, there is a need to involve the local households in planning this project in order to avoid the shortcomings that affect the garden performance.

5.2. CONCLUSIONS

This study has revealed that some beneficiaries of the garden projects have improved their income generation and employment opportunities through their participation in these projects. The projects have therefore improved their livelihood and invariably reduce their household poverty levels. The sustainability of these projects will depend on full commitment of participants and the support of the local municipalities, extension officers and other stakeholders

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5.3. Policy recommendations

A thorough inspection of the communities is required in order to ensure that programmes consider the local circumstances. A multidisciplinary team is required to conduct the scans and the intended target should be involved in the process. A careful study on the diversity of poor households will lead to relevant intervention as opposed to a standardised programme. Interest and participation in vegetable gardening needed to be considered as key when identifying participants for intervention that relates to gardening. The problem of access to water can be addressed by introducing water harvesting techniques, or introducing indigenous vegetables that can tolerate water scarcity. In terms of integrated sustainable rural development strategy, all spheres of government need to contribute directly by way of providing the necessary resources. They can assist in drilling of boreholes to the respective poor households which can also cap against water challenges. Planning grazing area of livestock can be considered to avoid the problem of damage of crops by livestock. This can contribute towards organic fertilizers to be available to the crops. Introducing indigenous vegetables will enable the gardeners to have continuity because they have established knowledge around these vegetables.

Therefore, collection of seeds and production is not expected to be a problem simply because Department of Agriculture through its extension officers are there to assist with the production of seeds as part of their task. However, all these solutions need to be tested before their implementation. The problems with regard to the irrigation system need to be addressed in order to solve the problem of lack of water. The sizes of the

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garden used by beneficiaries are very critical in the production process. In fact it should be considered as an important factor while distributing starter packs instead of following allowing the current arrangements where beneficiaries are receiving equal share in terms of production inputs, it should be differentiated on the size of each household's garden.

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APPENDICES.

APPENDIX A

Questionnaire for assessment of the socio-economical status of households involved in CASP home gardens.

Section 1: General information

Household sample no.	
Village	
Gender of recipient	
Date	
Interviewer	

Section 2: Demography

Member number	Gender	Age	Education	Occupation
1. Head				
2. Spouse				
3.				
4.				
5.				

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Section 3: Sources of household Income

Source	Cycle	Amount/ cycle	Amount / month
	Daily /Weekly or monthly	R500 over 3months	R500 /3 =166,67
Salary / Wages			
Trade (buy and sell)			
Trade (make and sell)			
Old-age pension			
Child support grant			
Disability grant			
Remittance			
Child maintenance			
Farming			
Petty trade (peace jobs)			
Services			
Other sources, specify			

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Section 4: Utilization of gardens

1. When were production inputs and the irrigation system delivered to you?

Month:…… .. / Year:……

2. When did you start planting?

……

3. How many seasons have you planted to date?

……..

4. What kind of crops do you grow in each season?

……

……

……

……

5. How long did you use donated inputs in your garden?

……

6. If inputs donated are finished what is the current source?

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.....

.....

7. Size of garden

Width:..... / length:.....

8. Do you think the backyard garden is going to be sustainable, yes or no give reasons for your answer?

.....

.....

9. List any other problem that makes your gardening difficult.

.....

.....

.....

.....

.....

10. How were you selected to receive the starter packs?

.....

.....

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Data to be collected from survey and on farm measurements

Table 4.1 Data for 2005/2006.

Plot	Area of garden (*l* x *w*)	Crop	Unit / container	Units or containers obtained	Price per unit (R)	Mass per unit (kg)	Total income	Allocation		
Example								Home	Sold	Donate
1/1	23m x 12 m	Tomatoes	5 l bucket	10	15	5	150	5	3	2
		Swiss chard	Bunch	20	2	0.560 kg	40	15	2	3

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Data to be collected from survey and on farm measurements

Table 4.2 Data for 2006/2007

Plot	Area of garden (*l* x *w*)	Crop	Unit / container	Units or containers obtained.	Price per unit (R)	Mass per unit (kg)	Total income	Allocation		
Example								Home	Sold	Donate
1/1	23m x 12 m	Tomatoes	5 l bucket	10	15	5	150	5	3	2
		Swiss chard	Bunch	20	2	0.560 kg	40	15	2	3
		Onions	5 l bucket	15	25	7	300	10	3	2
		Cabbage	1 head	40	5	4				

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Section 5: Challenges faced by recipients

Do you face problems concerning supply of production inputs?

.....

If yes, list the problems in order of importance

.....

.....

.....

.....

.....

Do you face problems regarding lack of knowledge concerning production?

.....

If yes specify which knowledge is lacking

.....

.....

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Do you face problems with regard to the irrigation technology?

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.....

If, yes specify.

.....

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.....

.....

.....

Which sources of water do you use for irrigation?

.....

.....

.....

.....

.....

.....

Do you find these sources adequate and convenient?

.....

.....

.....

.....

List any other problem that makes your gardening difficult.

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How were you selected to receive the starter packs?

.....

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APPENDIX B

Questionnaire for extension officers.

Name of Extension Officer .....

Extension ward .....

Age of Extension Officer .....

Level of Education .....

Section 1. Extension Officer Exposure to CASP

1. What type of intervention is CASP involved with?

.....

.....

.....

.....

.....

.....

2. What are the criteria used to allocate backyard garden inputs in your area?

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.....

3.Was there any collaboration with other departments or the local municipality when such being done.....

4. Was the process of allocating starter packs fair or not explain?

.....

.....

.....

.....

5. What other aspects were considered during distribution?

.....

.....

6. How are you going to hand out the starter packs in future? Please give details.

.....

.....

.....

.....

.....

7. How are starter packs sustained. (Once finished) and how do you plan to assist them in making sure that they are sustainable?

.....

.....

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8. Sustainability of the garden is always anticipated, what are your views regarding this statement.

.....

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9. What are your general comments about starter packs?

.....

.....

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APPENDIX C

Service centres, villages and number of households sampled.

Name of Service Centre	Name of Villages	Number household heads to be visited
Hlanganani		
	Lwalani	3
	Njhakanjhaka	3
	Kurhuleni	4
	Ntshuxi	2
	Majosi	3
	Rhungulani	3
	Mtsetweni	1
	Chavani	3
	Tiyani	3
Vuwani	Hanani	1
	Tshivhulana	1
	Tshitungulwana	1
	Tshimbupfe	1
	Vhangani	3

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	Vyeboom	2
	Tshakhuma	3
	Tshino	1
	Malonga	1
	Dehoop	1
	Tandavhalwa	1
	Tshiphuseni	1
	Mukhoro	1
	Mavhina	1
	Magweni	1
Tshitale	Muila	4
	Madadzhi	4
	Nthabalala	3
	Mpheni	4
	Masakona	1
	Mulima	5
	Mashamba	1
Dzanani	Midoroni	2
	Ramenkonste	1
	Manavhela	1
	Madodonga	1
	Makhathi	1

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	Ramantsha	2
	Muraleni	2
	Madombidzha	2
	Tshiozwi	2
	Mamiuka	2
	Smokey	3
	Matidza	1
	Tshivhavha	2
	Tshiswenda	2
	Tshigodini tsha ha – mapila	1
TOTAL		95

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