

**EVALUATION OF THE CONTRIBUTION OF ILIMA-LETSEMA  
PROGRAMME TO FOOD SECURITY AND POVERTY ALLEVIATION  
IN MIDVAAL LOCAL MUNICIPALITY OF GAUTENG PROVINCE,  
SOUTH AFRICA**

By

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## DECLARATION

I TSHIDI MOKGADI NKGUDI hereby make a declaration that “EVALUATION OF THE CONTRIBUTION OF ILIMA-LETSEMA PROGRAMME TO FOOD SECURITY AND POVERTY ALLEVIATION IN MIDVAAL LOCAL MUNICIPALITY OF GAUTENG PROVINCE, SOUTH AFRICA” is my work and is original. All the sources that I have used in this dissertation were cited accordingly. I confirm that this dissertation has not been submitted at any other university.

Signed: 

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**Date: January 2019**

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## **DEDICATION**

This dissertation is whole-heartedly dedicated to my Mom Mamatime Elizabeth “Queen” Nkgudi for inspiring me to be a better person and achieve more in life.

## ABSTRACT

In 2008, the South African government introduced the Ilima-Letsema Programme (ILP) to create sustainable agricultural activities and improve the food security of farming communities. The impact this programme has had at the grassroots level has, however, not been thoroughly investigated. The purpose of this study was to evaluate the contribution of this programme to food security and poverty alleviation in the Midvaal Local Municipality of Gauteng, in South Africa. The objectives were to determine the socio-demographic characteristics of the beneficiaries; the impact of the programme on agricultural production; what factors influenced that impact; the food security status of the beneficiaries (with reference to availability, access and stability); and the contribution of the programme to net income, poverty alleviation and job creation. To this end, the study employed a quantitative research approach and survey design. Data were collected from 196 beneficiaries of the ILP through face-to-face interviews using a structured survey questionnaire. SPSS v. 24 was used to analyse the quantitative data. Descriptive statistics (mean, standard deviation and standard error of mean) ordered logistic regression, binomial test and Wilcoxon signed ranks test were applied. The socio-demographic results revealed that more males (53.6%) than females benefited from the ILP, with 60.7 per cent aged 51 years and above. About 43.4 per cent owned the land they farmed on, with an average farm/plot size of 4.4 ha. The respondents' average annual income was R47 513.59, with 75 per cent relying on income earned from farming to sustain their livelihoods. The ILP was found to contribute significantly to the agricultural production (crop and livestock) of the beneficiaries, with only farming experience having a positive and significant ( $p < 0.05$ ) impact. As regards the contribution of the programme to food security, the food availability of 55.6 per cent of the respondents improved, with 76.5 per cent reportedly producing food throughout the year, after receiving support. In addition, 52 per cent had access to food, and 54.5 per cent had the necessary farming experience to continue producing food, resulting in food stability. The results of the Wilcoxon signed rank test indicated that the ILP played a significant role in uplifting the beneficiaries from the upper-bound poverty line, creating job opportunities and improving income. Although the study was conducted at the local level, the findings showed that the programme improved the livelihoods

of the farmers. For that reason, it was recommended that government increase the budget allocation for the programme and make it more inclusive, to enable most farming communities to benefit from it.

**Keywords:** agricultural production, food security, Ilima-Letsema Programme, poverty alleviation

## SEPEDI ABSTRACT (KAKARETŠO)

Ka 2008, mmušo wa Afrika Borwa o tsebagaditše Lenaneo la Ilima-Letsema (ILP) go hlola mešomo ya temo ya go ya go ile le go kaonafatša tšhireletšo ya dijo ya ditšhaba tše di lemago. Khuetsšo yeo lenaneo le le bilego le yona maemong a fase, le ge go le bjalo, ga se ya nyakišišwa ka botlalo. Maikemišetšo a nyakišišo ye e be e le go sekaseka seabe sa lenaneo le go tšhireletšo ya dijo le phedišo ya bohloki ka Mmasepaleng wa Selegae wa Midvaal wa Gauteng, ka Afrika Borwa. Maikemišetšo e be e le go laetša dibopego tša sošio-temokrafi ya baholegi; khuetsšo ya lenaneo go tšweletšo ya temo; ke mabaka afe ao a tutueditšego khuetsšo yeo; maemo a tšhireletšo ya dijo a baholegi (ge go bolelwa ka khwetšagalo, phihlelelo le tielelo); le seabe sa lenaneo go letseno la nete, phedišo ya bohloki le tlhomo ya mešomo. Go fihla mo, nyakišišo e šomišitše mokgwa wa nyakišišo wa khwanthithethifi le tlhomo ya nyakišišo. Datha e kgobokeditšwe go tšwa go baholegi ba 196 ba ILP ka dipoledišano tša go dirwa ka sebele go šomišwa lenaneopotšišo la nyakišišo leo le rulagantšwego. SPSS v. 24 e šomišitšwa go sekaseka datha ya khwanthithethifi. Dipalopalo tša go hlaloša (bolela, phapogo ya maemo le phošo ya maemo ya magareng), poelomorago ya dithulaganyo ya maemo, teko ya dikarolo tše pedi le teko ya maemo a saennwego ya Wilcoxon di šomišitšwe. Dipolelo tša leago le palo ya batho di utulotše gore banna ba bantši (53.6%) go feta basadi ba hotšwe ke ILP, ka diphesente tše 60.7 tša mengwaga ye 51 le go feta. Diphesente tše e ka bago tše 43.4 ke beng naga yeo ba lemago go yona, ka palogare ya bogolo bja 4.4 ha polasa/poloto. Palogare ya letseno la ngwaga ka ngwaga la bakgathatema e be e le R47 513.59, ka diphesente tše 75 tše di ithekgilego godimo ga letseno leo le hweditšwego temong e tšwetšapele boiphedišo bja bona. ILP e hweditšwe e na le seabe se segolo go tšweletšo ya temo (dibjalo le diruiwa) ya baholegi, ka maitemogelo a bolemi fela ao a nago le khuetsšo ye botse le ye bohlokwa ( $p < 0.05$ ). Mabapi le seabe sa lenaneo go tšhireletšo ya dijo, khwetšagalo ya dijo ya diphesente tše 55.6 tša bakgathatema e kaonafetše, ka diphesente tše 76.5 tše go begilwego gore di tšweletša dijo ngwaga ka moka, ka morago ga go amogela thekgo. Go tlaleletša, diphesente tše 52 di kgonne go fihlelela dijo, gomme tše 54.5 di be di na le maitemogelo ao a nyakegago a temo gore ba tšwele pele go tšweletša dijo, moo go dirago gore dijo di be gona. Dipolelo tša teko ya maemo ao a



saennwego ya Wilcoxon di laeditše gore ILP e kgathile tema ye bohlokwa mo go ntšheng baholegi ka gare ga bohloki bjo bogolo, go hlola dibaka tša mešomo le go kaonafatša letseno. Le ge nyakišišo ye e dirilwe maamong a selegae, dikutullo di bontšhitše gore lenaneo le le kaonafaditše mokgwa wa balemi wa bophelo. Ka lebaka leo, go šišinywa gore mmušo o oketše kabo ya tekanyetšo ya lenaneo le go le dira gore le akaretše bohle, go kgontšha bontši bja ditšhaba tše di lemago gore di holege go lona.

**Mantšu a bohlokwa:** tšweletšo ya temo, tšhireletšo ya dijo, Lenaneo la Ilima-Letsema, phedišo ya bohloki

## TSHIVENDA ABSTRACT (MANWELEDZO)

Nga 2008, muvhuso wa Afrika Tshipembe wo d̄ivhadza Mbeknyamushumo ya Ilima-Letsema (ILP) u itela u sika mishumo ya zwa vhulimi i sa nyethi na u khwinisa tsireledzo ya zwiliwa zwa zwitshavha zwa vhalimi. Masiandaitwa a mbekanyamushumo iyi kha vhuimo ha fhasi, fhedzi, ha athu vhuya a sedzuluswa nga vhuronwane. Ndivho ya ngudo ho vha u ela u dzhenelela ha mbekanyamushumo iyi kha tsireledzo ya zwiliwa. Ndivho ya ngudo iyi ho vha u ela u dzhenelela ha mbekanyamushumo ya tsireledzo ya zwiliwa na u fhelisa vhushai kha Masipala Wapo wa Midvaal ngei Gauteng, kha la Afrika Tshipembe. Zwipikwa zwo vha u vhona zwitaluli zwa demogirafi na matshilisano a vhavhuelwa; masiandaita a mbekanyamushumo ya zwa vhubvedzi ha zwa vhulimi; vhuimo ha tsireledzo ya zwiliwa ya vhavhuelwa (ho sedzwa u vha hone, u swikelela na vhudziki); na u dzhenelela kha mbekanyamushumo ya mbuelo ya nethe, u fhelisa vhushai na u sika- mishumo. U swika zwino, ngudo dzo shumisa maitete a thodisiso dza khwanthithethivi na nyolo dza tsedzuluso. Data yo kuvhanganyiwa u bva kha 196 vha ILP nga inthaviwu vho livhana zwifhatuwo nga u shumisa mbudzisombekanya dzo dzudzanywaho. SPSS v. 24 yo shumiswa u saukanya data ya khwanthithethivi. Mbalombalo dza thalutshedzo (u bva kha muelo wa vhukati, wo linganelaho na vhukhaki ho linganelaho ha vhukati) u humela murahu ha nzudzanyo ho tevhekanaho, thesite dza bainominala na thesite dza vhuimo dzo sainiwaho dza Wilcoxon dzo shumiswa. Mvelelo dza demogirafi na matshilisano dzo dzumbulula uri vhanna vhanzhi (53.6%) u fhira vhafumakadzi vho vhuvelwa u bva kha ILP, hu na phesenthe dza 60.7 dza vhukale ha miñwaha ya 51 na u fhira. Phesenthe dza 43.4 ndi vhañe vha mavu, hu na mbalotahikati ya bulasi/puloto ya muelo wa 4.4 ha. Mbalotshikati ya mbuelo ya ñwaha wa vhafhinduli yo vha i R47 513.59, hu na phesenthe ya 75 yo disendekaho nga mbuelo i wanalaho u bva kha zwa vhulimi u itela u kona u tshila. ILP yo wanala i khou dzhenelela vhukuma kha mveledziso ya zwa vhulimi (ha zwiliñwa na zwifuwi) zwa vhavhuelwa, vhane vha vha na tshenzhelo ya zwa vhulimi fhedzi ine ya vha na masiandaitwa mavhuya mahulwane ( $p < 0.05$ ). Mayelana na u dzhenelela kha mbekanyamushumo ya tsireledzo ya zwiliwa, u wanala ha zwiliwa kha phesenthe dza 55.6 ya vhafhinduli ho vha khwiñe, hu na phesenthe dza 76.5 vha tshi khou bvedza zwiliwa ñwaha wothe, nga murahu ha u

wana muvhigo. Nthani ha izwo, phesenthe dza 52 dzo kona u swikelela zwiliwa, phesenthe dza 54.5 dzi na tshenzhelo ya zwa vhulimi yo teaho na u bvelaphanda na u bveledza zwiliwa, zwine zwa disa vhudziki ha zwiliwa. Mvelelo ya thesite dza vhuimo dzo sainiwaho dza Wilcoxon dzo sumbedza uri ILP yo shuma mushumo muhulwane kha u takula vhavhuelwa u bva kha vhuimo ha vhushai hu hulwane, ha sikwa zwikhala zwa mishumo na u khwiṅisa mbuelo. Naho ngudo yo itwa kha vhuimo hapo, mawanwa o sumbedza uri mbekanyamushumo yo khwiṅisa matshilo a vhalimi. Nga ṅwambo wa izwo, hu themendelwa uri muvhuso u engedze nyavhelo ya mugaganywagwama u itela uri i vhe ine ya katela zwinzhi, na u konisa zwitshavha zwa vhalimi zwinzhi uri zwi vhuwelwe vhukuma u bva kha izwo.

**Maipfi NDEME:** vhubveledzi ha zwa vhulimi, Mbekanyamushumo ya Ilima-Letsema, u fhelisa vhushai

## LIST OF ABBREVIATIONS AND ACRONYMS

ABET	Adult Based Education and Training
ARDRI	Agricultural and Rural Development Research Institute
ASIP	Agricultural Sector Investment Programme
CAES	College of Agriculture and Environmental Sciences
CAP	Common Agricultural Policy
CASP	Comprehensive Agricultural Support Programme
CPA	Communal Property Association
DAFF	Department of Agriculture, Forestry and Fisheries
DoA	Department of Agriculture
DPME	Department of Performance, Monitoring and Evaluation
DRDLR	Department of Rural Development and Land Reform
EC	Eastern Cape
EPWP	Expanded Public Works Programme
EU	European Union
FAF	Fortalecimento da Agricultura Familiar
FAO	Food and Agriculture Organization of the United Nations
FISP	Farm Input Subsidy Programme
FNS	Food and Nutrition Security
FPL	Food Poverty Line
FRCP	Fund for Rural Catastrophe Programme
FS	Free State
FSPs	Farmers Support Programme
GCRO	Gauteng City Region Observer
GDARD	Gauteng Department of Agriculture and Rural Development
GHS	General Household Survey
GP	Gauteng Province
GVA	Gross Value Added
HFG	Homestead Food Garden

HFIAS	Household Food Insecurity Access Scale
HRSC	Human Science Research Council
IDP	Integrated Development Plan
KZN	KwaZulu Natal
LP	Limpopo Province
LBPL	Lower-Bound Poverty Line
LRAD	Land Redistribution for Agricultural Development
LRP	Land Reform Programme
MAFISA	Micro Agricultural Financial Institutions of South Africa
MDA	Ministry of Agrarian Development
MEA	Ministry of Economic Affairs
MP	Mpumalanga
NC	Northern Cape
NDA	National Department of Agriculture
NDP	National Development Plan
NFA	Nkonkobe Farmers Association
NPLs	National Poverty Lines
NW	North West
OHOG	One Home One Garden
OLR	Ordered Logistic Regression
OMAFRA	Ontario Ministry of Agriculture, Food and Rural Affairs
ORMP	Ontario Risk Management Program
PAA	Programa de Aquisição de Alimentos da Agricultura Familiar
PAPs	Poverty Alleviation Projects
PLAS	Proactive Land Acquisition Strategy
PSRIP	Programme of Support to Rural Insurance Premium
RADP	Recapitalization and Development Programme
RDP	Reconstruction and Development Programme
RESIS	Integrated Revitalisation of Irrigation Schemes
RSA	Republic of South Africa

SAIRR	South African Institute of Race Relations
SAP	Structural Adjustment Programme
SARPN	Southern Africa Regional Poverty Network
SIEHFS	Siyakhana Initiative for Ecological Health and Food Security
SPS	Starter Pack Scheme
SPSS	Statistical Package for the Social Sciences
Stats SA	Statistics South Africa
TIP	Targeted Inputs Program
UBPL	Upper-Bound Poverty Line
UK	United Kingdom
UNISA	University of South Africa
WB	World Bank
WC	Western Cape
WFS	The World Food Summit
WTO	World Trade Organisation

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# CHAPTER 1: ORIENTATION OF THE STUDY

## 1.1 Introduction

The dissertation is organised into five (5) chapters. The first chapter (chapter one) discusses the orientation of the study, followed by chapter two which present literature review of the concepts related to the study. In chapter three (3), research methodology used to conduct the study is presented. The results and discussions of the study are outlined in chapter four (4). In the last chapter (chapter five), conclusions and recommendations of the study are presented.

## 1.2 Background

Compared to other middle-income countries in the world, South Africa has the highest rate of income inequality and absolute poverty (Altman *et al.*, 2009). The South African government committed to halving poverty between 2004 and 2014 (Du Toit *et al.*, 2011). However, income inequality and absolute poverty levels are still high in the country despite government's efforts (Meiring, 2018; World Bank, 2018).

According to Stats SA (2015b) positive progress has been made to address extreme poverty using various tax systems since the beginning of the year 2000. However, income disparity, poverty and poor quality of life remain prevalent because people do not have access to services critical to escaping poverty (Stats SA, 2015a). Majority of South African households are food insecure, whereas South Africa is regarded as food secure (De Cock, 2013). In addressing poverty and food insecurity, the government through the National and Provincial Departments of Agriculture introduced various farmer support programmes such as Land Care Programme, Comprehensive Agricultural Support Programme (CASP), Micro Agricultural Financial Institutions of South Africa (MAFISA), Ilima-Letsema Programme,



Recapitalization and Development Programme (RADP); and Fetsa Tlala Integrated Food Production Initiative.

Apart from food security programmes at national level such as CASP and others, Provincial Departments of Agriculture have also initiated various agricultural programmes. For example, Gauteng Department of Agriculture and Rural Development (GDARD) initiated household food security programme named one household-one food garden-one starter pack programme (Siyasondla Homestead Food Gardens). The Gauteng homestead food garden programme came into existence in 1997 and was one of the projects identified as government response to poverty, hunger and malnutrition (Tlalang, 2016). The programme was not only initiated to mitigate household level food insecurity, but also to improve the nutritional status of families and household income through sales of surplus produce from homestead gardens (Bahta *et al.*, 2018). One Household-one food garden-one starter pack programme provide seeds, fertilizer, agricultural training and financial advice to cooperatives and households. The purpose of this programme is to promote food production at household level for home consumption and selling to local markets (Mthembu, 2010). Tlalang (2016) found that homestead food garden programmes significantly reduced household food insecurity in Gauteng Province. Furthermore, “One Home One Garden” (OHOG) programme in Maphumulo Local Municipality in KwaZulu-Natal, played a significant role in food security, by enabling households to be food secure (Ngema *et al.*, 2018).

In Gauteng, Siyasondla Homestead Food Gardens Programme made valuable contribution towards alleviating food insecurity and poverty for many beneficiaries (Siyakhana Initiative for Ecological Health and Food Security (SIEHFS), 2012). In Sedibeng District, CASP had a positive impact on agricultural production. The increases in yield and the number of animals enabled the beneficiaries to create employment opportunities and earn more income (Phatudi-Mphahlele, 2016). In addition, RADP created employment in KwaZulu-Natal and Mpumalanga, which enabled those employed in the supported projects to provide for their families (Ellenson and Madhanpall, 2014).

On the other hand, Ilima-Letsema Programme was initiated in 2008 with the aim of boosting household food production, predominantly targeting subsistence and smallholder farmers, although commercial farmers were also included. The programme aimed at encouraging communities and vulnerable households to produce their own foods for consumption and sale, with the view of commercialising of some farmers over time (Greenberg *et al.*, 2018). Ilima-Letsema supports an average of 70 927 farmers per year with production inputs such as fertilizers, seeds, seedlings, breeding animals and poultry, feeds and medication, machinery and equipment and irrigation infrastructure (DAFF, 2017b; Greenberg *et al.*, 2018). Despite the popularity of the programme in Gauteng Province, there is still limited information on its impact on food security and poverty alleviation, particularly in Midvaal Local Municipality. Therefore, the purpose of this study was to explore how Ilima-Letsema Programme has addressed food security in poor households to alter the status of the beneficiaries and to lift them from the poverty trap.

### **1.3 Problem statement**

According to Oxfam (2014) South Africa is 'food-secure' as a country, because it can produce sufficient calories to feed its population of 53 million people. At a national level South Africa is considered as food-secure, but this does not mean that everybody is food-secure at household level (Ngema *et al.*, 2018). Even though the country is food secure at national level, a large proportion of the households are food insecure (Masuku *et al.*, 2018). South Africa experiences both chronic poverty and chronic food insecurity at household level (Alemu, 2015; Ngema *et al.*, 2018). Although the country has made positive progress since 1994, quarter of the population suffers from hunger regularly; in addition, more than half of the population live in risky circumstances that expose them to hunger (Oxfam, 2014). In responding to the prevalence of food insecurity and poverty, the government of South Africa introduced various farmer support programmes. The programmes are aimed at financing resource poor communities to create sustainable agricultural activities, build capacity, train farmers, create jobs, reduce inequality, promote food and nutrition security and alleviate poverty at household level (Du Toit *et al.*, 2011). Most

of the research conducted on farmers support programmes has focused on Land Care Programme (Aliber 2002; DoA, 2005; DAFF, 2017a), CASP (DoA, 2004; DoA, 2005; Antwi and Nkwe, 2013; DAFF, 2013; DPME, 2015b; Mafikaneng, 2015; Xaba and Dlamini, 2015; Maoba, 2016; Phathudi-Mphahlele, 2016), MAFISA (DAFF, 2010; DPME, 2014; DPME, 2015c), RADP (DRDLR, 2013; Ellenson and Madhanpall, 2014; DPME, 2015a; Mabuza, 2016) and Fetsa tlala intergrated food production initiative (Zuma, 2013; NFA and ARDRI, 2015; Greenberg, 2018). However, little research has been done on the impact of the government programmes at household level. Majority of studies focused on poverty and food insecurity in general without proper linkage to agriculture at a household level (Du Toit *et al.*, 2011). Given the above scenario, it is necessary to evaluate the contribution of Ilima-Letsema Programme and its impact on improving food security status for the alleviation of poverty in poor communities since was introduced in 2008.

## **1.4 Aim and objectives of the study**

### **1.4.1 Aim of the study**

The aim of the study was to evaluate the contribution of the Ilima-Letsema Programme to household food security and poverty alleviation in Midvaal Local Municipality of Gauteng Province, South Africa.

### **1.4.2 Objectives of the study**

The objectives of the study were to:

- determine the socio-demographic characteristics of the beneficiaries of Ilima-Letsema Programme;
- determine the impact of Ilima-Letsema Programme on agricultural production by:

- ascertaining the factors influencing the impact of the programme on agricultural production;
- assessing the food security status of the beneficiaries with reference to availability, access and stability and;
- determining the contribution of the programme to net income, poverty alleviation and job creation.

## **1.5 Significance of the study**

In South Africa, the strategic framework for action to attain food security was first delineated in the Reconstruction and Development Programme (RDP), which acknowledged food security as a basic human need (Baiphethi and Jacobs, 2009). According to Ngidi and Hendriks (2014) the government recognised that food security is a prerequisite for sustained economic growth and poverty reduction. That is why the government initiated several agricultural food security programmes to address food insecurity and poverty alleviation. Mayathula-Khoza (2013) reported that 81.5% of the people in Gauteng Province were food secure, while 12.6% of the residents had no adequate access to food, and 5.9% had severe or no access to food. Gauteng City Region Observer (GCRO) indicated that Midvaal Local Municipality has a poverty index) of 12.52%, which is the lowest compared with other municipalities. Looking at the above scenario there is a need to conduct a study on the evaluation of the contribution of Ilima-Letsema Programme to food security and poverty alleviation in Midvaal Local Municipality. This study will enable the government to align the current farmer support programmes so that they fully address food insecurity and poverty alleviation in the country. It will also play a significant role in the development of new farmer support programmes and policies that will improve food security to uplift poor communities from the poverty trap.

## **1.6 Hypotheses**

The null hypothesis of the study are as follows:

- H<sub>0</sub>: Ilima-Letsema Programme did not positively improve agricultural production of the beneficiaries;
- H<sub>0</sub>: Ilima-Letsema Programme did not positively contribute to poverty alleviation; using Food Poverty Line (FPL), Lower-Bound Poverty Line (LBPL), and Upper-Bound Poverty Line (UBPL) measures;
- H<sub>0</sub>: Ilima-Letsema Programme did not significantly contribute to job creation; and
- H<sub>0</sub>: Ilima-Letsema Programme did not significantly improve net income of the beneficiaries.

## 1.7 Study delimitation

The basic definition of food security “*refers to the ability of individuals to obtain enough food daily*” (Du Toit *et al.*, 2011). Internationally food security is defined as the ability of people to secure adequate food. Food security has more than 200 definitions; this study has used the Food and Agriculture Organisation (FAO) definition that states: “*food security is a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life*” (FAO, 2010).

Food security is further divided into four (4) important dimensions, namely, food availability, food access, utilization and stability (FAO, 2006b). For the purpose of the study only three dimensions of food security, namely availability, access and stability were explored. Although the theme of the study was about agricultural support programmes, this study focused on Ilima-Letsema Programme. The reason for choosing the programme was that it deals specifically with food security and food production at household level; and it has supported more than 10 000 beneficiaries since it was established in South Africa (DAFF, 2017b).

## **1.8 Limitations of the study**

The limitations of the study were unwillingness of the respondents to participate, responding to questions that required records for finances (sources of income and net farm income) and production (yields and number of animals sold). Some respondents were sceptical about revealing accurate figures relating to net income and sources of income; this was avoided by guaranteeing the confidentiality of the information provided during the interviews. Most of the respondents were uncomfortable to respond to the questions in English; as a result, they were allowed to respond in their own language for this reason, some information may have been left out or wrongly interpreted into English. Where farmers were visited in their homes, interviews were sometimes interrupted by domestic issues, as a result, some interviews were prolonged.

## **1.9 Chapter summary**

Chapter one presented introduction, background of the study, problem statement, aim and objectives of the study, significance of the study, hypotheses, delimitation and limitations of the study.

## **CHAPTER 2: LITERATURE REVIEW**

### **2.1 Introduction**

This chapter provides a review of literature about research conducted in disciplines related to the current study. The chapter consists of seven main sections (2.2 to 2.8). Section one provides the background on the socio-demographic characteristics of farmers receiving government support programmes. Section two presents the importance of agricultural support programmes in developed and developing countries including South Africa. Section three explores agricultural support programmes in South Africa. Section four explains the impact of agricultural support programmes on agricultural production. Section five presents the contribution of agricultural support programmes to food security (availability, access and stability). Section six covers the role of agricultural support programmes in alleviating poverty and the final part summarises the chapter.

### **2.2 Socio-demographic characteristics of the beneficiaries of farmer support programmes**

Socio-demographic characteristics are defined by sociological and demographic factors such as gender, age, marital status, average size of family race, income and education, (FAO, 2017; Stone, 2018). In South Africa, beneficiaries of government support programmes are mostly previously disadvantaged groups, land reform beneficiaries and those who acquired their land privately (DAFF, 2012). Majority of the beneficiaries who receive support are smallholder farmers. This group forms 50% of the world's poor, and among them is 20% of rural people who have no access to land (Chitaga-Mabuga *et al.*, 2013). Since 1994, the government of South Africa has made effort to develop policies and programmes to improve the agricultural sector by supporting poor and more vulnerable farmers especially female farmers (Hall *et al.*, 2003). The socio-demographic characteristics of the beneficiaries of farmer support programmes differ by area and type of programme.

### **2.2.1 Gender**

The research shows that farmers who benefitted from Land Reform Programme in Marselle farming community in Eastern Cape were female and male black people at the ratio of 3:2, respectively (Tshuma, 2013). This showed that female beneficiaries were more than male beneficiaries. However, in Gauteng Province 58.6% of beneficiaries were males compared with 41.4% females who benefitted from the homestead food garden programmes (Tlalang, 2016). The study conducted by Phatudi-Mphahlele (2016) reported that in Sedibeng District Municipality in Gauteng Province, 74.4% male and 25.6% female farmers were supported through CASP. Onyango (2010) found that in Orange Farm, Gauteng Province most (79%) urban farmers who benefitted from government support programmes (household food security programme) were male in comparison to 21% females. However, in a study conducted by Maoba (2016), it was found that 38.5% of male and 61.5% of female small-scale farmers received CASP support through Ekurhuleni Metropolitan Municipality and Sedibeng District Municipality of GDARD. This shows that the gender of beneficiaries of government farmer support programmes differed by area and programme type.

### **2.2.2 Age**

It is important to consider age of the beneficiaries of government support programmes because it helps to determine whether farmers become more experienced and productive as they age (Tshuma, 2013). Tshuma (2013) found that in the Marselle farming community 40% of the beneficiaries of LRP were  $\geq 65$  years, followed by 35% who were 55-65 years, 22% were 40-55 years and 2.5% were less than 40 years. In the City of Tshwane Metropolitan Municipality, Mafisicaneng (2015) also found that most (72%) of the farmers who were supported through CASP were aged  $\geq 40$  years, whereas 28% were below  $\leq 40$  years. In Ekurhuleni Metropolitan Municipality and Sedibeng District Municipality about 50% of the smallholder farmers who received CASP were 41-50 years, 46.2% were  $\geq 51$  years and 3.9% were between 36-40 years (Maoba, 2016). The age groups of the beneficiaries of poultry-based Poverty Alleviation Projects (PAPs) in Enhlanzeni District, Mpumalanga Province, were  $\leq 35$  years (13%), 36-50 years (37%) and 51-60 years (39%) (Dube



*et al.*, 2018). This clearly showed that youth participation in farming was less, since most of the beneficiaries of government farmer support programmes were  $\geq 40$  years old.

### **2.2.3 Marital status**

Marital status of the beneficiaries of government support programmes is considered because conflicts might arise during customary property inheritance, which might influence agricultural production negatively (Ngeywo *et al.*, 2015). For example, Kenyan customary laws rarely allow widows to legally inherit the land, as a result production declines because of conflicts which arise between the relatives of the deceased husband and his widow (Ngeywo *et al.*, 2015). Moreover, Tshuma (2013) reported that widowed females in South Africa were often unable to access resources that could boost their knowledge and productive capacity because they lacked collateral, since the assets were registered in their late spouses' names. This was very common when women were not legally married to their deceased husbands.

Maoba (2016) reported that 92.3% married and 7.7% single small-scale poultry farmers were supported through CASP in Ekurhuleni Metropolitan Municipality and Sedibeng District Municipality. In Sedibeng District Municipality, Phatudi-Mphahlele (2016) found that 51.9% married, 23.5% divorced, 16% widowed and 8.6% single farmers were beneficiaries of CASP. In Kenya, 74.3% of the Coffee farming initiative were married, 21% were widows and 4.7% were single or separated (Ngeywo *et al.*, 2015). The youths in Kenya were denied farming opportunities because they were perceived as irresponsible when they were not married (Ngeywo *et al.*, 2015).

### **2.2.4 Household size**

Tshuma (2013) thought that bigger households had advantage over the smaller ones with regard to agricultural production because large households had abundance of extra labour, farming knowledge and experience. When the household size increased the knowledge and skills of members was expected to increase. Adikwu

(2014) also indicated that bigger households often achieved higher production because they benefited more from family labour. Moreover, Phatudi-Mphahlele (2016) stated that the availability of family labour was dependent on the size of the households. However, the increase in household size increased food insecurity incidences (Omonona and Agoi, 2007).

Phatudi-Mphahlele (2016) found that the average size of the households of the beneficiaries of CASP in Sedibeng District was 5 members (actual is 4.8) with a minimum and maximum of 3 and 7 members, respectively. The average family size did not differ much from 4.17 of the beneficiaries of urban agriculture in Western Cape that ranged between 1 and 12 household members (Swanepoel, 2017).

### **2.2.5 Education**

Phezisa (2016) reported that education is a passport to victory, which enable people to pursue and discover opportunities and preferable offers. Farming practice is both an art and skills, farmer's standard and level of education have impact on the quality of practice of any agricultural activity. The author also stated that innovation is characterised by complexity, consequently the level of education influences the rate of adoption of agricultural innovations to a greater extent. Tshuma (2013) suggested that the recognition of existing skills appropriate for agricultural production is related to the level of education of the household's head. When beneficiaries of government support programmes are educated, they can easily minimise production losses, embrace new skills and adopt recent innovations compared with less educated farmers. Adekunle (2013) supported that by saying that people with higher level of education elucidated information much better.

Onyango (2010) reported that about 80% of the beneficiaries of household food security programme in Orange Farm, Gauteng Province had primary education. A study conducted in Kraaifontein, Cape Town Metropole by Swanepoel (2017) found 40.1% of the beneficiaries of household and community food gardens had primary

education (Grade 5-7), 20.3% had matric (Grade 12), 16.2% had junior primary (Grade 0-4), 9% had formal training certificate, 5.4% did not attend school, 4.5% had and diplomas and 3.6% had degrees, respectively. Dube *et al.* (2018) found that 45% of household heads of the poultry supported projects attended primary school, 44% had secondary education, and 11% never attended school. However, the circumstances were different in Ekurhuleni Metropolitan Municipality and Sedibeng District Municipality, where 53.8% of small-scale farmers who received CASP had tertiary education, and 46.2% attained secondary education (Maoba, 2016). On the other hand, Phatudi-Mphahlele (2016) also found that 16.9% of CASP beneficiaries in Sedibeng District had formal qualifications. This implied that the level of education of beneficiaries differed according to the area and the type of support they received.

### **2.2.6 Employment status**

In Orange Farm 35% of beneficiaries of household food security programme had casual employment, 32% were not employed and 30% had formal employment (Onyango, 2010). In Sedibeng District it was reported that 77.8% of CASP beneficiaries had formal employment apart from farming, and 28.2% were unemployed (Phatudi-Mphahlele, 2016). However, the study conducted in Marselle farming community, Eastern Cape showed that 75% of the beneficiaries of LRP were not employed because they were full-time farmers and pensioners, whereas 22.5% were employed full-time and 2.5% on part-time basis (Tshuma, 2013). This showed that employment status of the beneficiaries of government support programmes differed from one area to the other and from one type of programme to another.

### **2.2.7 Sources of income**

Social grants for old-age and child support, contribute significantly in reducing hunger, alleviating poverty and improving food security in poor households (Swanepoel, 2017). Among the sources of income of the beneficiaries of Integrated Revitalisation of Irrigation Schemes (RESIS) in Maraxwe village, which is under Tshiombo irrigation scheme in Limpopo Province, were 40% social grants, 37%

farming activities, and 23% formal employment (Thagwana, 2009). Swanepoel (2017) found that the main sources of income for the beneficiaries of household and community gardens in Langa, Cape Town Metropole, were 49% social grants, 30% part-time employment, 16% full-time employment, 8.6% forms of social grants, and 7.7% farming full-time. This implied that most of the beneficiaries of government support programmes depended on social grants as their main source of income, although the proportion differed by area and the type of programme.

### **2.2.8 Net or gross farm income**

Net farm income refers to gross farm income minus farm expenses and taxes; whereas gross farm income is about annual level of income received from farming activities before farm expenses, taxes, and withdrawals have been deducted (Penson *et al.*, 2015). In farming, net or gross income earned by the farmers differs seasonally; because in winter farm production declines (Adekunle, 2013). Swanepoel (2017) found that in Cape Town Metropole the beneficiaries of household community food garden programme had average annual net income of R48 400.50 compared with non-beneficiaries who earned R34 337.14 as their net income during the same period. In Sedibeng District beneficiaries of CASP had an average income of R487 530.70, while non-beneficiaries had R246 533.80 in the same period as their average income (Phatudi-Mphahlele, 2016). This showed that net or gross income was determined by the amount of financial support received from government, the type of farming enterprise and other factors.

### **2.2.9 Land ownership status and scale of operation**

When farmers own land they become more optimistic in investing in it because they hope that it would likely increase their productivity (Mafsikaneng, 2015). South African General Household Survey report for 2017 showed that, 66.8% of the households in South Africa own land on which they farm (Stats SA, 2017). Maoba (2016) found that in Ekurhuleni Metropolitan Municipality and Sedibeng District

Municipality, 76.9% of the small-scale poultry farmers who received CASP own land privately, while 23.1% farmed on state land. This was also reported by Phatudi-Mphahlele (2016) who said that the majority (61.6%) of CASP beneficiaries in Sedibeng District acquired their farmlands privately, compared with 38.4% who were allocated by land reform programmes. MafsiKANeng (2015) reported that 88.3% of the beneficiaries of CASP in the City of Tshwane Metropolitan Municipality had title deeds for their farmlands because they acquired them privately through government land redistribution programme, while 6.7% acquired land by leasing through Proactive Land Acquisition Strategy (PLAS), and 5% acquired land by leasing through Communal Property Association (CPA). South Africa has a very different agrarian structure unlike the rest of the continent. Large-scale commercial farmers dominate the sector, while smallholders are marginalised. The outcome is an agrarian structure which is dualistic, whereby large-scale commercial farms are occupied by white farmers, and on the other side, smallholder black farmers on small portions of land, where they produce food for home consumption and sales (Greenberg *et al.*, 2018).

In Malawi, agricultural land is scarce, which makes expansion unlikely in the central and south regions. Compared with other Sub-Saharan African countries, where land allocation is 0.4 people per hectare, in Malawi there are 2.3 rural people per hectare (Makombe *et al.*, 2010). Irohibe and Agwu (2014) found that in Kano State of Nigeria the average farm size is 2 hectares for an average household size of 9 people. Irohibe and Agwu (2014) conducted a study in Kano State of Nigeria and found that, the majority (89.2%) of the household heads owned land which they inherited from their parents. MafsiKANeng (2015) reported that about 51.7% of CASP beneficiaries in City of Tshwane Metropolitan Municipality farmed on  $\geq 100$  ha per person, while 48%.3 of beneficiaries had less than 100 ha collectively. In Sedibeng District, Phatudi-Mphahlele (2016) found that the average farm (plot) size of the beneficiaries of government support programme (CASP) was 132.78 ha, with a wide range of 2 ha and 600 ha. This showed that the size of land used for production differed among beneficiaries of government support programmes; some had larger farms while others had small plots of land.

### **2.2.10 Farming experience**

Once people have farmed for a long period, the art of mastering the techniques occurs, the knowledge gained over those years enables them to venture into different agricultural enterprises (Maoba, 2016). It is important to consider the farming experience of the beneficiaries on government programmes because it influences farm capability and productivity. In Ekurhuleni Metropolitan Municipality and Sedibeng District Municipality, Maoba (2016) found that farming experience of small-scale poultry farmers who benefitted from CASP varied. About 46.2% of the beneficiaries had 3-5 years of farming experience, while 38.5% had 6-10 years, and 7.69% had 0-2 years of farming experience. Mafsihaneng (2015) reported that 60% of beneficiaries of CASP in the City of Tshwane Metropolitan Municipality had less than 10 years of farming experience, while 40% had  $\geq 10$  years. However, circumstances were different in Bushbuckridge North in the Ehlanzeni District, Mpumalanga, where 54% of the farmers had 5-10 years of farming experience; while 25% had 10-15 years, 17% had  $\geq 5$  year, and 3% had  $\leq 5$  years of farming experience (Dube *et al.*, 2018). Research findings from various scholars showed that farming experience of the beneficiaries of government farmer support programmes varies from one area to the other.

## **2.3 The importance of agricultural support programmes**

This section focuses on the importance of agricultural support programmes in developed and developing countries.

### **2.3.1 Developed countries**

The European Union (EU) recognises the importance of farmer support programmes because they help to grow the economies of its member states. This was evident when the organisation introduced the Common Agricultural Policy (CAP) to provide fiscal backing to farmers (Downing and Coe, 2018). The programmes brought

together national intervention programmes into one scheme to permit farmers to compete in the agricultural field, while shielding them against instability in agricultural prices to provide food security. The author further state that the United Kingdom (UK) government provides nearly £4 billion of support annually to farmers and market safety nets through direct CAP subsidies. The subsidy enabled the UK to utilise almost 72% (17.5 million hectares) of agricultural land, which increased total farm output by 41%, and raised income from £1,683 million to £5,743 million per annum, and created employment for 474 000 people in the agricultural sector (Downing and Coe, 2018).

### **Netherlands (Dutch)**

The Ministry of Economic Affairs (MEA) reported that in 2014 the choice of group submissions for agri-environment-climate measures programme was introduced by European Union Rural Development Regulation; however, the Dutch government decided to implement the measure for joint applications only by introducing a new scheme which supported environmental cooperatives instead of individual applicants (Bijman *et al.*, 2017). Bijman *et al.* (2017) reported that this farmer support programme increased the market share of five cooperative milk processors by 80%, enabled the country to produce 95% of all fruits and vegetables with multiple cooperatives producing 75 % of the total domestic production. Cooperatives in the Netherlands perform well and have a large market share in terms of the share of total farm production and in terms of the number of organised farms.

### **Canada**

In Canada, the overall objective for farm-support programme is to assist the Canadian agricultural sector to be profitable, sustainable, competitive and innovative (OMAFRA, 2017). As a result, in 2007 the Ontario Risk Management Programme (ORMP) was introduced to mitigate losses caused by increased costs and/or lower market prices for grain commodities (Hedley *et al.*, 2017). In 2011 the programme was expanded to cover livestock, fruits and vegetables; and 99% of direct payments

were paid in time to enable farmers to continue producing food and feeding the nation.

### **2.3.2 Developing countries**

The agricultural sector faces a multitude of market failures, which usually curb the growth and development of the sector especially in developing countries. However, government policies and support programmes in developing countries are improving these conditions (Mueller and Mueller, 2016). The developing countries reviewed in this section are Malawi, Zambia, Brazil and South Africa.

#### **Malawi**

Some countries try to solve the problem facing food security by initiating various programmes. For example, in Malawi subsidised credits and general price subsidies were used in 1970s and 1980s with the aim of stimulating food crop production. The subsidies were successful, they enabled the country to produce enough staple food and attained a high degree of self-reliance on maize as their staple food. In the early 1990s Malawi Government abolished the use of subsidies due to pressure from the World Bank (WB) to liberalize through Structural Adjustment Program (SAP). After that there were a series of acute and unrelenting food crises up to 1998. Then the government reintroduced subsidies in 1998 through Starter Pack Scheme (SPS), which later changed to Targeted Inputs Programme, with the purpose of providing smallholder farmers with packages of fertilizers and seeds to plant maize (Chibwana *et al.*, 2011).

Chibwana *et al.* (2011) reported that in 2004/5 growing season there were poor climatic conditions which were accompanied by a downgrade of Targeted Inputs Programme. This resulted in low maize production nationally which caused acute food shortages and very high maize prices in Malawi. Food insecurity was already a stumbling block prior to 2004/05 growing season to the extent that donor communities had to help with food donations to circumvent famine. The government



introduced the Farm Input Subsidy Programme (FISP), which was implemented in 2005. The aim of the programmes was to increase access to improved production inputs such as fertilizers and enhanced seeds (Chibwana *et al.*, 2011). The objectives of FISP were to assist destitute, smallholder households attain food self-sufficiency and higher incomes. This was done through the provision of vouchers to farmers to purchase hybrid maize seeds and fertilizers (Mukozho, 2015).

The improved maize seeds and fertilizers in the FISP were beneficial. Farmers had higher yields (17%) of maize compared to those using traditional maize seeds without fertilizer. The subsidy programme was said to be a cost-effective way of feeding the country compared with the cost of using food aid. FISP moved farm households towards more food sufficiency successfully (Chibwana *et al.*, 2011). Mukozho (2015) also agreed that after the implementation of FISP Malawi became food secure to even afford to export maize to Zimbabwe and donated some maize to Lesotho and Swaziland (Mukozho, 2015).

## **Zambia**

Food security situation in Zambia was serious about 12 years ago despite the occasional surpluses the country produced during good crop years (SARPN, 2006). As a result, the Zambian government initiated the Agricultural Sector Investment Programme (ASIP) with the assistance of donors to warrant food security at national and household level through steady annual production of sufficient supplies of basic foodstuffs at affordable cost (Kalinda *et al.*, 2008).

## **Brazil**

Brazil plays a major role in global agricultural trade by accounting for 7.3% of global agricultural exports, it is rated as the third largest exporter of agricultural products around the globe (FAO, 2014). Although the country is ranked at the high level globally, it still needs the support of the Ministry of Agriculture, Livestock and Food Supply (MAPA) and the Ministry of Agrarian Development (MDA). These two

ministries focus on agribusiness development and market integration, sustainable development and support for family farming, respectively (FAO, 2014). Like other countries, Brazil also came up with agricultural programmes to solve the problem of poverty and food insecurity. The *Fortalecimento da Agricultura Familiar* (FAF) (strengthening family agriculture in English) was created to reinforce and encourage small-scale and family-based agriculture in order to increase incomes for rural household and improve the quality and quantity of food supply (Oxfam, 2010). The programme provides subsidized loan, training, technical assistance and insurance for small-scale and family farmers. The other programme, namely The *Programa de Aquisição de Alimentos da Agricultura Familiar* (PAA) buy local food products for government feeding programmes or for local food banks; this in return ensures stable market prices for products from small-scale farmers (Oxfam, 2010).

FAO (2014) reported that 84% of households in Brazil were involved in family farming, and contribute 38% of gross value agricultural production, which was considered very important. In Brazil, about 90% of the total food production comes from the south, south-east and the southern part of the central western region (Oxfam, 2010). The National Programme for Strengthening Family Farming (Pronaf) provides record low credits, rural extension, rural insurance and price guarantees to communities involved in farming, and about 30% of the National School Feeding Programme budget is ploughed directly into the purchase of family farm products. Furthermore, the Agricultural Activity Guarantee Programme (Proagro) was established to assist rural farmers to expand production and income by offering credit. Farmers pay low premiums since the government subsidises them. This enables farmers to meet their financial obligations when they face natural disasters, pests and diseases that affect their crops (FAO, 2014). Apart from that, the programme called *Proagro Mais* was established to grant agricultural insurance to family farmers at even lower costs. The programme was further boosted by Programme of Support to Rural Insurance Premium (PSRIP), which supported more than 40 000 farmers. The Fund for Rural Catastrophe Programme (FRCP) was also created to supplement insurance coverage (FAO, 2014). Because of all this farmer support programmes, today Brazil is rated amongst one of the top producers of

agricultural products such as chicken, beef, pork sugar, orange juice, soybeans, coffee, maize and cotton (Mueller and Mueller, 2016).

## **South Africa**

In South Africa, agricultural support programmes continue to play a notable role in poverty alleviation, food production, creation of employment and economic development (Xaba and Dlamini, 2015). Tshuma (2013) found that since the introduction of Farmers Support Programmes in South Africa, communities have experienced improvements in yields, and farmers can feed their families and generate income.

Ellenson and Madhanpall (2014) reported that 45% of Recapitalisation and Development Programme (RADP) funding was allocated to the sugar industry in KwaZulu-Natal and Mpumalanga provinces, where 177 farmers were supported, and the farms managed to create 1 338 permanent and 4 041 seasonal jobs. There has been a notable improvement in production, in terms of 7 628 ha planted in 2013-2014; and an increase of tonnage delivered from 401 775 in 2011-2012 to 783 641 in 2013-2014.

In South Africa, a large proportion (61%) of CASP beneficiaries were supported with production inputs, while a small proportion (39%) were not supported; farmers found the inputs indispensable for their farming operations (DPME, 2015b). Phezisa (2016) in Nkonkobe Local Municipality found that 70.05% of the beneficiaries of Siyazondla Homestead Food Production Programme achieved food security (storing, access and nutrition), 20% achieved social status, 4.95% extra income and 4.55% good health. The programme has played a huge role for vulnerable farmers in meeting homestead food production. In Gauteng Province, most (95%) of the beneficiaries of Siyazondla Homestead Food Gardens Programme reported that the training helped them to grow food, and the training harmoniously super scribed basic aspects of food gardening (SIEHFS, 2012).

## 2.4 Agricultural support programmes in South Africa

Agricultural support is pivotal to smallholder farmers globally. In South Africa agriculture is a mandate between national and provincial governments that means both governments can initiate programmes in agriculture, and conditional grants for provinces to fulfil national programmes (Greenberg *et al.*, 2018). The Department of Rural Development and Land Reform (DRDLR) has its own programmes to support farmers, and it is implemented directly by working with provinces, other departments and stakeholders.

In addressing food security and poverty, the government of South Africa through the National and Provincial Departments of Agriculture; DRDLR introduced various household farmer support programmes. These programmes are Land Care Programme, CASP, Micro Agricultural Financial Institutions of South Africa (MAFISA), Ilima-Letsema Programme, Redistribution and Development Programme (RADP) and Fetsa Tlala Integrated Food Production Initiative. **Table 2.1** summarizes some of agricultural support programmes in South Africa.

**Table 2.1:** Summary of agricultural support programmes in South Africa

<b>Name of the programme</b>	<b>Date of inception</b>	<b>Objectives</b>	<b>Amount spent since inception</b>
Land Care Programme	1998	Optimize productivity and resource sustainability so that there can be greater productivity, food security, job creation and a better life for all <sup>1</sup>	R 74 706 400 000 <sup>9</sup>
Comprehensive Agricultural Support Programme (CASP)	2004	Furnish agricultural support services, promote and facilitate agricultural development by assisting previously disadvantaged land reform beneficiaries and those who acquired their land privately <sup>3;4</sup>	R 11 849 000 000 <sup>10; 12</sup>
Micro Agricultural Financial Institutions of South Africa (MAFISA)	2004	To address financial needs of smallholder and agribusinesses by providing loans to enhance agricultural activities <sup>2;7</sup>	R314 000 000 <sup>7</sup>
Ilima-Letsema Programme	2008	To assist South African farming communities who are vulnerable by providing them with production inputs in a grant format in order to encourage optimum production; expend on infrastructure that unlocks agricultural potential <sup>6</sup>	R 3 054 788 000 <sup>10</sup>

Recapitalization and Development Programme (RADP)	2010	To provide financial assistance to distressed land reform farmers who received little or no support after they were allocated in 1994 and beyond; through setting them up in partnerships with experienced commercial farmers or experts in the sector <sup>5,11</sup>	R 836 000 000 <sup>8</sup>
Fetsa Tlala Integrated Food Production Initiative	2013	Promote food and nutrition security and to address basic causes of food insecurity, which continue to promote inequality and social segregation <sup>12</sup>	R 1 390 000 000 <sup>8</sup>

Sources: <sup>1</sup>DoA (2005); <sup>2</sup>DAFF (2010); <sup>3</sup>DAFF (2012); <sup>4</sup>DAFF (2013); <sup>5</sup>DRDLR (2013); <sup>6</sup>DPME (2013); <sup>7</sup>DPME (2015c); <sup>8</sup>McLaren *et al.* (2015); <sup>9</sup>DAFF (2017a); <sup>10</sup>DAFF (2017b); <sup>11</sup>Mabuza (2016); <sup>12</sup>Greenberg *et al.* (2018)

## **Land care programme**

In 1998 the National Department of Agriculture (NDA) initiated Land Care Programme with the aim of optimising productivity and sustaining resources so that there can be food security, improved productivity, creation of employment opportunities and a better life for all. The programme was controlled by NDA with provincial agricultural departments serving as provincial land care coordinators (Aliber, 2002). Land care is a community-based approach for sustainable land management, for marginalised communities with poor access to resources; in addition, the programme encourages sustainable land management practices that prevent land degradation in rural areas and create employment opportunities that uplifts rural people from poverty (DoA, 2005).

## **The comprehensive agricultural support programme (CASP)**

The CASP was launched in 2004 to impart post-support settlement to targeted land reform beneficiaries and previously disadvantaged farmers who acquired land through private means (DoA, 2005). The aim for CASP is to remit comprehensive services to subsistence, smallholder and previously disadvantaged commercial farmers through six pillars which include:

- information and knowledge management;
- technical and advisory assistance, and regulatory services;
- marketing and business development;
- training and capacity building;
- on-and off-farm infrastructure and production inputs; and,
- financial support (DPME, 2015b),

These pillars are presented in the CASP model used in South Africa. See **figure 2.1**

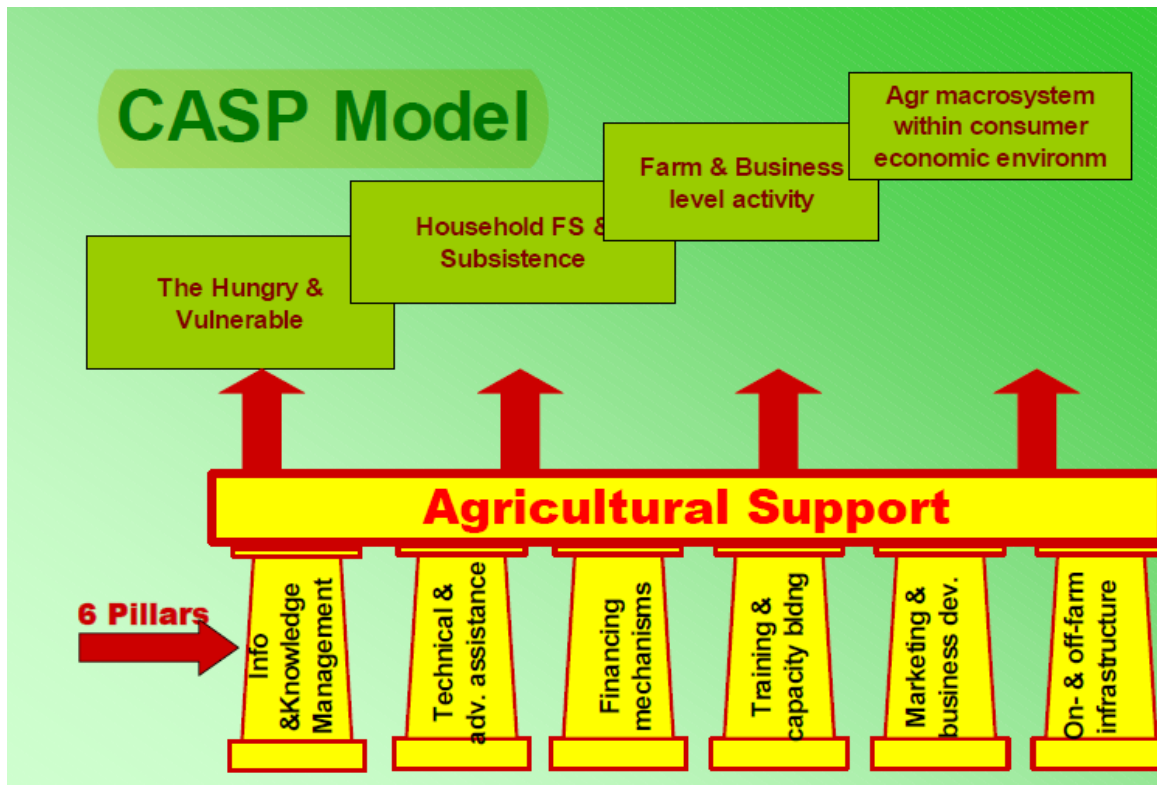


Figure 2.1: CASP model used in South Africa (DoA, 2004)

### Micro agricultural financial institution of South Africa (MAFISA)

MAFISA is a financial scheme which was established in 2004 with the aim of addressing financial service needs of smallholder farmers and agribusinesses by providing loans to enhance agricultural activities (DAFF, 2010). The loans were created for the purchase of production inputs such as fertilizers, seeds, pesticides, animal feeds and remedies; small equipment and implements (knapsack, spray, wheelbarrow and spades). MAFISA represents the financial pillar of the Comprehensive Agricultural Support Programme (CASP) which has 6 pillars which are divided into two segments, namely, loan and grant segments. MAFISA is the loan segment, which provides production loans and is managed by DAFF through intermediaries. The scheme also aims to furnish smallholder farmers with cost-effective funding to empower and enable them to develop feasible enterprises (DPME, 2014).



## **Ilima-Letsema programme**

The Ilima-Letsema Programme was introduced in 2008 by Department of Agriculture (DoA). It is a government initiative that targets helpless farming communities through the provision of production inputs in a grant format in order to encourage optimum production (DPME, 2013). The primary aim of the initiative is to address the triple challenges of poverty, unemployment and inequality, through increased food production for vulnerable households with the emphasis on women and youth as well as smallholder farmers (Greenberg *et al.*, 2018). It also ensures that the surplus production has a market, thus increasing household income. The initiative is supported through It also ensures that the surplus production has a market, thus increasing household income. The programme provides production inputs, gardening starter packs, revitalisation of irrigation schemes, mechanization services, infrastructure that unlock the agricultural potential and revitalizing irrigation schemes (DPME, 2013).

## **The recapitalisation and development programme (RADP)**

RADP was launched in 2010 by government to assist emerging farmers who have received little or no support since 1994. Emerging farms are regarded as distressed, which means there was need for support and financial assistance. The distressed farms have the potential to become successful farms, and the RADP aims at assisting the owners through setting them up in partnerships with experienced commercial farmers or experts in the sector (DRDLR, 2013; DPME, 2015a). Mabuza (2016) found that some of the farms which the government has awarded to beneficiaries since 1994, did not achieve the expected levels of productivity, and others were not productive at all. The RADP aims at increasing agricultural production, food security, training of small farmers to become commercial farmers, and to create jobs in the agricultural sector. RADP also promotes the responsible use of land (natural resource management).

## **Fetsa tlala integrated food production initiative**

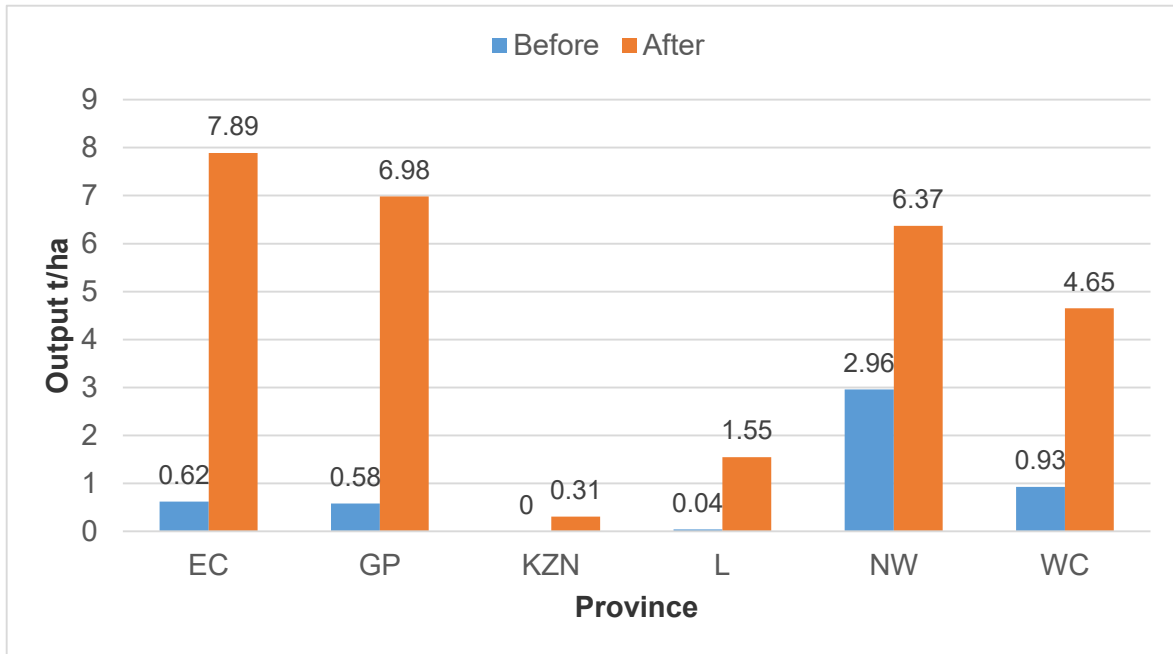
Food and Nutrition Security is identified as a key element for poverty alleviation, reduction of unemployment and inequality by 2030, as outlined in the National Development Plan (NDP). On the 11<sup>th</sup> of September 2013 the cabinet approved Fetsa Tlala Food Production Initiative together with National Policy on Food and Nutritional Policy Fetsa Tlala Food Production Initiative (Zuma, 2013). The aim of Fetsa Tlala Food Production Initiative is to facilitate a policy system that ensures that *“we have food on the table, promote food and nutrition security and to address structural causes of food insecurity, which continue to perpetuate inequality and social exclusion”* (Zuma, 2013). The thrust of Fetsa Tlala is to produce enough food to meet household food demand now and in future. Through Fetsa Tlala, all underutilized agricultural land must be put under production. It is aimed at encouraging every household to develop a food garden, revive household fruit trees, vegetable and livestock production (Greenberg, 2018).

## **2.5 The impact of farmer support programmes on agricultural production**

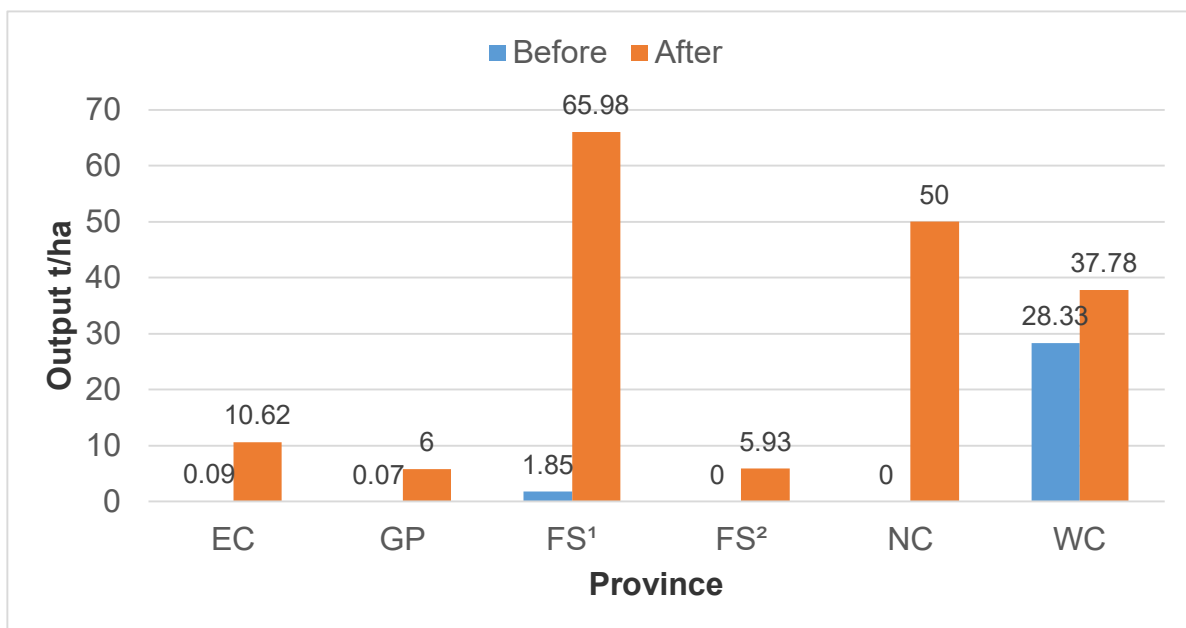
Norton *et al.* (2010) defines agricultural productivity as the degree of agricultural yield per unit of input (resource). Farmer support programmes have positive impacts on agricultural production. In South Africa, CASP beneficiaries recorded an increase in both crop and livestock outputs (DPME, 2015b). **Figure 2.2 and 2.3;** and **Table 2.2** present the crop (field crops and vegetables) and livestock outputs of CASP beneficiaries in South Africa.

\*EC=Eastern Cape, GP=Gauteng Province, KZN=KwaZulu Natal, L=Limpopo,

NW=North West, FS=Free State, WC=Western Cape, NC=Northern Cape and MP=Mpumalanga.



**Figure 2.2:** Vegetables output of CASP beneficiaries in South Africa.  
Source: DPME (2015b)



**Figure 2.3:** Other crops output of CASP beneficiaries in South Africa.  
Source: DPME (2015b)

\*Other crops data on EC, GP, FS<sup>1</sup> and NC is for maize, FS<sup>2</sup> wheat and WC apples  
# Crop output was converted from kilogram to ton per hectare

**Table 2.2:** Livestock outputs of CASP beneficiaries in South Africa.

Province	Livestock outputs (numbers)	
	Prior CASP	Post CASP
Eastern Cape	6 499	45 340
Free State	7 034	28 721
Gauteng	20 543	36 193
KwaZulu-Natal	18 868	23 379
Limpopo	9 214	92 465
Mpumalanga	400	30 368
North West	1 054	1 453
Northern Cape	1 846	5 155
Western Cape	1 907	3 820

Source: DPME (2015b)

In KwaZulu-Natal and Mpumalanga provinces the RADP funding had a positive impact on sugar industry by creating 1 338 permanent and 4 041 seasonal jobs (Ellenson and Madhanpall, 2014). In Sedibeng District farmers who were supported through CASP created between 1 and 4 jobs in their farms (Phatudi-Mphahlele, 2016).

## **2.6 The contribution of agricultural support programmes to food security**

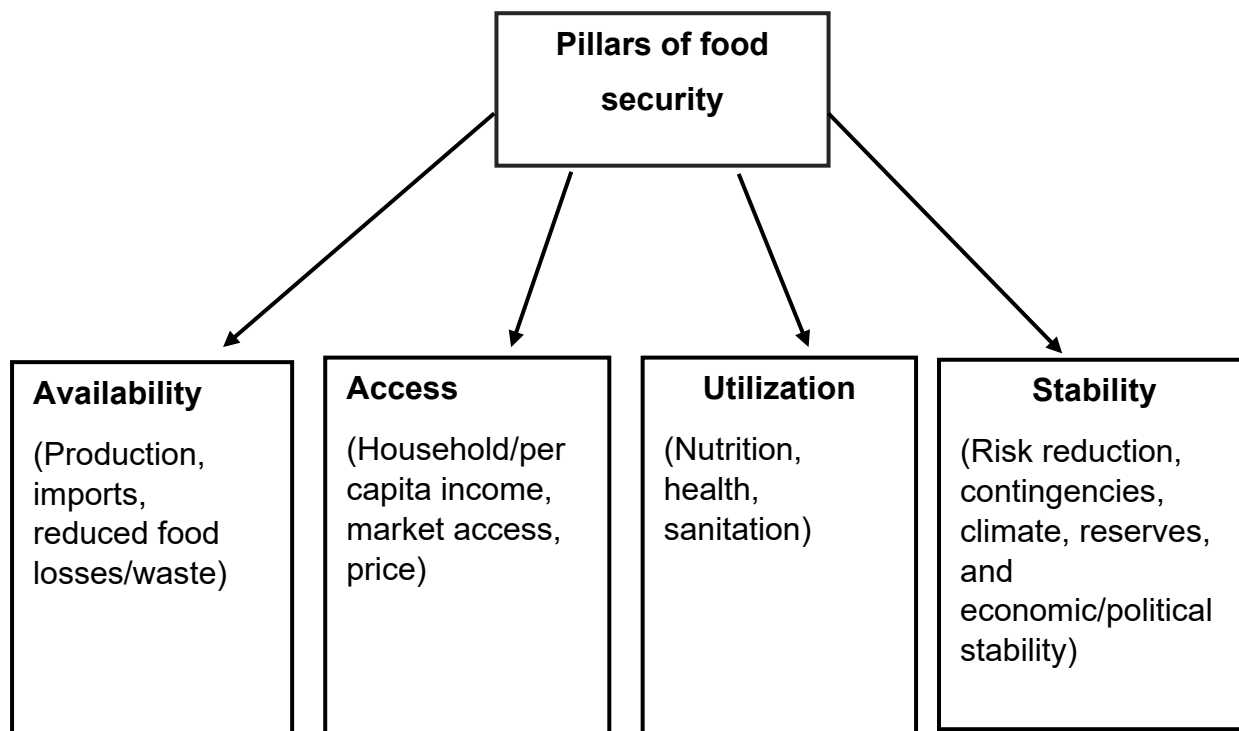
This section presents literature review about overview of food security, food security status in farming communities, and the contribution of agricultural support programmes to food access, availability and stability.

### 2.6.1 Overview of food security

The World Food Summit of 1996 affirmed that food security exists when all people have access to enough, safe, nutritious food always, to maintain a healthy and active life (FAO, 2006a). Food security “includes both physical and economic access to food that meets people’s dietary needs as well as their food preferences” (WTO, 2015). It is achieved, when adequate food (quantity, quality, safety, socio-cultural acceptability) is always available and accessible for and satisfactorily utilized by all individuals to live a healthy and happy life (Gross *et al.*, 2000).

Food security has four (4) dimensions or pillars, namely, availability, access, utilization and stability (FAO, 2006b). Availability is achieved when adequate food is available at people’s disposal. Access is ensured when all household members have enough resources to obtain appropriate foods through production, purchase or donation for a nutritious diet (Gross *et al.*, 2000). Adequate utilization is the ability of the human body to ingest and metabolize food (Gross *et al.*, 2000). Stability “refers to the temporal determinant of Food and Nutrition Security (FNS) and affects all three physical elements” (FAO, 1996). Food security is realised if all four dimensions are fulfilled (FAO, 2008).

Food availability “refers to the supply of food at local, national or international levels” (FAO, 1996). Food access “refers to the capability of individuals and households to obtain food and addresses the issues of purchasing power and consumption behaviour” (FAO, 1996). Food utilisation “refers to the biological availability of nutrients for use by the human body” (Gross *et al.*, 2000). Food stability “refers to the continuous assurance of adequate availability and accessibility of food”. **Figure 2.4** below shows the pillars of food security.



**Figure 2.4:** Food security pillars

Source: FAO (2006a)

The definition of food security has evolved since its introduction in the early 1940s. The common definition of food security was negotiated through an international consultation in preparation for the World Food Summit in November 1996 (Ngidi and Hendriks, 2014). Food security has played a central role in policies that have shaped the South African history since 17<sup>th</sup> century (Hendriks, 2013). According to Du Toit *et al.* (2011) the right to food is part of international and national laws. In South Africa food security received special attention after 1994 when the country became democratic. South African Constitutional law of 1996 outlines the right of access to enough food. In Section 26 and 27 it clearly indicates that every South African citizen has the right to enough food and social security (RSA, 1996).

After the democratic elections in 1994, Reconstruction and Development Programme (RDP) outlined the need to achieve food security as a basic human need, as a result the government reprioritised its budget to focus on improving food security conditions of the historically disadvantaged people in South (Du Toit *et al.*, 2011).

In South Africa, poverty alleviation has been one of the key issues since the end of apartheid in 1994 (Agupusi, 2007). Aliber (2002) reported that in 1995 on average, an adult lived on poverty line of R352 per month. South Africans who lived below the poverty line included 65% Africans, 38% Coloured, 5% Indians and 1% Whites. The data indicated that 72% of people below the poverty line lived in rural areas and 71% of them were poor. Agupusi (2007) explained that in 2005, 57% of South Africans lived below the poverty line, according to poverty and inequality data from Human Science Research Council. Aliber (2007) indicated that even though the data used was old, the proportions might have changed but the racial differentiation was still the same.

### **2.6.2 Food security status in farming communities**

According to De Kock *et al.* (2013), in Limpopo Province 14.8% of the people were food secure, 5.8% were mildly food insecure, 26.4% were moderately food insecure and 53.1% were severely food insecure. Sekhukhune District had the largest share of food secure households whereas the largest share of food insecure households was in Waterberg. Maruleng Local Municipality in Mopani District had about 65% of severely food insecure households and was the poorest district when average income levels were compared.

Despite government's investment in agriculture in Thulamela Local Municipality in Vhembe District, about 66% of the farming households were food insecure (Oni *et al.*, 2010). In contrast, Shabangu (2015) found that the majority (68%) of beneficiaries of Masibuyele Emasimini Agricultural Programme in Ehlanzeni District, Mpumalanga Province were food secure, while 32% of them were not. Bahta *et al.* (2018) found that in Gauteng Province 50.6% of Homestead Food Garden beneficiaries were food secure compared with 49.4% of them who were not. In Kano State of Nigeria Irohibe and Agwu (2014) reported that, about 74.2% of the farming households in rural area were food secure. Ahmed *et al.* (2017) reported that 78% of smallholder farming households in rural Pakistan were food secure, while 22% of them were not.

### **2.6.3 Contribution of agricultural support programmes to food security**

This section focuses on the three food security pillars, namely, food availability, access and stability. It presents literature on how agricultural support programmes have contributed to food security.

#### **2.6.3.1 Food availability**

De Kock *et al.* (2013) found that in Limpopo Province beneficiaries of Zero Hunger Programme did not have enough food available for about 1 to 4 months. About 13.2% of households experienced one month of hunger and 10.2% of them experienced two months of hunger. At a district level, Waterberg District experienced on average 3.1 months of hunger, and Mopani District experienced  $\leq 1$  month of hunger on average. January was the month in which the largest number of households (25.9 %) experienced hunger, followed by February (16.2 %), June (17.2 %), July (15.5 %) and December (15.2 %). In Sekhukhune District most of the households experienced a lack of food or money during January and February.

In South Africa, 57% of the CASP beneficiaries produced more food after participating in CASP and about 49% of them ate more regularly (DPME, 2015b). About 43% of CASP beneficiaries could afford more food and support poor families through job creation, while  $\leq 40\%$  ate more meat, had a more diverse diet and surplus food to sell since participating in CASP. This showed that CASP made a positive contribution to the food security status of about half of its beneficiaries. SIEHFS (2012), found that in Gauteng Province, Siyasondla programme contributed positively to food availability of 96% of the beneficiaries. About 93% of the beneficiaries ate food from their gardens once a week or more.



### **2.6.3.2 Food access**

In South Africa, between 40% and 57% of project managers indicated that food security improved after benefiting from CASP (DPME, 2015b). Tlalang (2016) reported that 67% of the Homestead Food Gardens beneficiaries in Gauteng Province were worried about inadequate food in their household, while 33% did not. Moreover 67.2% of them were unable to eat preferred foods, 61.8% often ate few food types, and 58% did not consume their preferred food types. Bahta *et al.* (2018) concurred with the fact that 67.2% of beneficiaries of Household Food Gardens in South Africa were unable to eat their preferred foods. This occurred often, as indicated by 66.4% of beneficiaries who were unable to eat their preferred foods and, 61.8% who often ate few food varieties. Bahta *et al.* (2018) also reported that 77.0% of the respondents often ate food types they did not want, 59.8% ate smaller meals more often. Moreover, 46.6% of the beneficiaries of Household Food Gardens went to bed without food, and 44.0% experienced hunger day and night (24-hour period). In Thulamela Local Municipality in Vhembe District, 73% of the beneficiaries of RESIS did not eat their preferred food types while 15% had insufficient food to eat (Oni *et al.*, 2010).

### **2.6.3.3 Food stability**

Oni *et al.* (2010) reported that in Thulamela Local Municipality in Vhembe District, there were instances where beneficiaries of agricultural support programmes had food instability which resulted in food insecurity at household level. About 40% had food instability due to high prices of food items, 32% had low household income and could not buy food. Most households (56%) substituted expensive food items with cheaper ones as a coping strategy to save money. However, some of the cheap substituted food items might have been substandard and of low nutritional value. In Emfuleni Local Municipality, 85.5% of farmers involved in urban agriculture were not concerned about food instability because they were familiar with gardening, which enabled them to sustain their production (Modibedi, 2018). Furthermore, the food stability of the beneficiaries was not threatened, since they were satisfied with the

quality of the food produced from their gardens. In addition, urban agriculture beneficiaries in Emfuleni Local Municipality reduced the intake of vegetables so that children could consume enough, they got their vegetables on credit, reduced daily intake of vegetables in their meals and borrowed money to purchase vegetables as part of their coping strategies in cases where production was low in community gardens.

## **2.7 Role of agricultural programmes in alleviating poverty**

This section presents literature review on poverty, overview of South African national poverty lines and how agricultural support programmes have reduced poverty levels in farming communities.

### **2.7.1 Definition of poverty**

Perret *et al.* (2005) defines poverty as the inability to achieve a fundamental standard of living, measured in terms of basic consumption needs or the income required to satisfy them. They linked poverty to exasperated potential due to asset deprivation, inability to afford decent health and education, and lack of power. Norton *et al.* (2010) noted that poverty is an inability to meet basic needs that results in poor people going hungry, with inadequate shelter, and limited access to health care. People in poverty become hopeless and distressed because of lack of opportunities and power (Norton *et al.*, 2010).

### **2.7.2 Overview of South African national poverty lines**

In South Africa, poverty level and patterns are reported statistically using poverty lines which were developed using an internationally accepted approach named the cost-of-basic-needs approach (Stats SA, 2018). Stats SA (2018) reported that there are three National Poverty Lines (NPLs), namely Food Poverty Line (FPL), Lower-Bound Poverty Line (LBPL) and Upper-Bound Poverty Line (UBPL). The poverty

measures were constructed using the cost-of-basic-needs approach which connects welfare and food, and serviced consumption. The NPLs are adjusted on an annual basis due to changes in the cost of living and household consumption patterns.

The current FPL or Extreme Poverty Line amount for South Africa is R547 per person per month Stats SA (2018). This is the amount that an individual requires to afford the minimum indispensable daily energy intake (Stats SA, 2018). It is further reported that LBPL is R785 per person per month, which refers to FPL plus mean amount attained from non-food household items, whose food expenditure is equivalent to poverty lines. The amount of UBPL is R1 183 per person per month, which is FPL plus mean amount acquired from non-food items whose household food expenditure is coequal to the FPL (Stats SA, 2018). **Table 2.3** below shows the National Poverty Lines for South Africa from 2006 to 2018.

**Table 2.3:** The national poverty lines for South Africa from 2006 to 2018

Year	Type of poverty line and amount in Rands		
	Food Poverty Line	Lower-Bound Poverty Line	Upper-Bound Poverty Line
2006	219	370	575
2007	237	396	613
2008	274	447	682
2009	318	456	709
2010	320	466	733
2011	335	501	779
2012	366	541	834
2013	386	572	883
2014	417	613	942
2015	441	647	992
2016	498	714	1 077
2017	531	758	1 138
2018	547	785	1 183

Source: Stats SA (2018)

### **2.7.3 The impact of agricultural support programmes in poverty alleviation**

In South Africa, the projects that were supported through CASP created more employment opportunities. The average number of full-time employment per project increased from 11 to 16, whereas the part-time jobs increased from 6 to 14 (DPME, 2015b). In KwaZulu Natal and Mpumalanga, Ellenson and Madhanpall (2014), found that 177 sugarcane projects which benefited from RADP managed to create 1 338 permanent and 4 041 seasonal jobs in sugar industry. Phatudi-Mphahlele (2016), reported that CASP supported projects in Sedibeng created a maximum of 4 jobs after receiving support from the programme. This is an indication that farmer support programmes uplifted farming communities from poverty by creating employment opportunities that provided incomes.

The incomes of project managers and other beneficiaries of CASP supported projects improved by 40% after receiving support from the programme, while that of owner-beneficiaries rose by 36%. Average nominal salary of a project manager increased from R1 035 to R1 488, and the maximum salary for a project manager ranged from R45 000 to R53 345 per month (DPME, 2015b). Phatudi-Mphahlele (2016) also reported that farmers who benefitted from CASP in Sedibeng district generated more income compared with non-beneficiaries. In addition, CASP supported projects had a total average farm income of R487 530.70, while non-supported projects generated average total farm income of R246 533.80, a difference of R240 996.90.

## **2.8 Chapter summary**

From the reviewed literature in the chapter, it was found that research has been conducted to evaluate impact of farmer support programme in various countries. The summary of the literature shows that socio-demographic characteristics of farmers who received government support programmes differs from one area to the other. This implies that government support programmes have supported farmers from different racial groups, age, gender, farm size, education level and others. The

review of the importance of farmer support programmes in both developed and developing countries showed that they improved the following: food security, agricultural production, land utilisation, income, food gardening and social status of the beneficiaries. In addition, the programmes enabled farmers to export their produce, create permanent and seasonal employment. With regard to agricultural support programmes providing funding, production inputs, machinery and infrastructural support in South Africa, about six programmes were introduced since the dawn of democracy in 1994. Some of the programmes introduced are Land Care, CASP, MAFISA, Ilima-Letsema, RADP and Fetsa Tlala Intergrated Food Production Initiative. Literature about the contribution of agricultural support programmes to food security showed that food availability, access and stability of the beneficiaries did not consistently improve after receiving support from the programme(s).

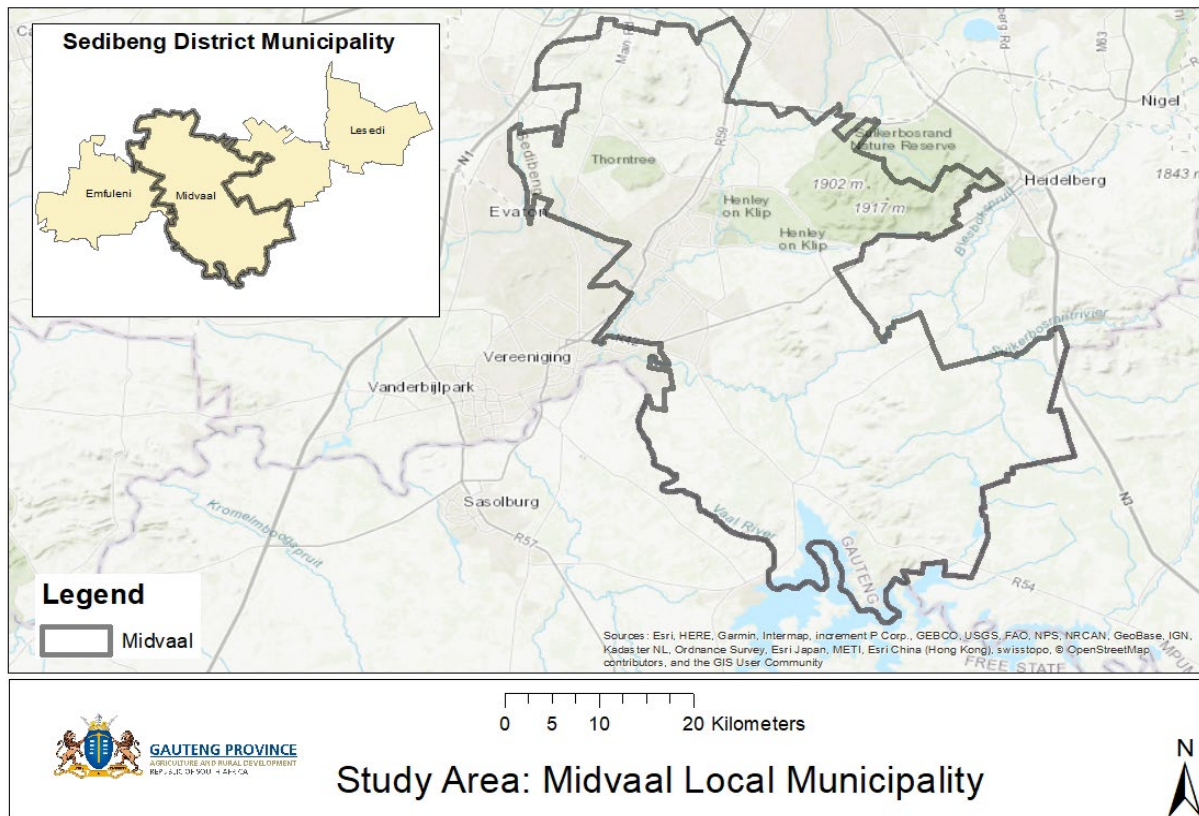
## CHAPTER 3: RESEARCH METHODOLOGY

### 3.1 Introduction

This chapter present research methodology used to conduct the current study. The chapter includes study area description, research approach and design, population and sampling procedures, data collection methods, validity and reliability, data capturing and analysis, and ethical consideration.

### 3.2 Study area description

The study was conducted in Midvaal Local Municipality in Sedibeng District Municipality, Gauteng Province in the Republic of South Africa. Midvaal Local Municipality covers an approximate area of 1 722 km<sup>2</sup> (IDP, 2018). It is one of the three local municipalities in Sedibeng District Municipality (**Figure 3.1**). The other two local municipalities are Emfuleni and Lesedi. The Midvaal Local Municipality is a Category B municipality as defined in the Municipal Systems Act 32 of 2000. It is in the southern part of Gauteng Province, and it borders Mpumalanga Province to the east and Free State Province to the south. In 2011, the Midvaal Local Municipality had a total population of 95 300 comprising of black Africans and White people. The municipality has 14 Wards and comprising of 29 852 households (Stats SA, 2011). The spatial arrangement of Midvaal municipality is mainly rural area with extensive farming, which constitutes approximately 50% of the total area of jurisdiction (IDP, 2018). Agriculture is the main employer of unskilled and semi-skilled labour and ensures that local communities within the municipality are food secure. It contributes 1.5% towards Gross Value Added (GVA) of Midvaal (IDP, 2018). **Figure 3.1** shows the map of Midvaal Local Municipality.



**Figure 3.1:** Map of Sedibeng District Municipality and Midvaal Local Municipality  
 Source: GDARD (2018)

### 3.3 Research approach and design

Survey research design and quantitative research approach were used in this study. The survey included beneficiaries of Ilima-Letsema support programme. A survey design was chosen because it could obtain more information from the large sample of the population (De Leeuw *et al.*, 2008).

### 3.4 Population and sampling procedures

A list of all (both active and non-active) community members who benefitted from Ilima-Letsema Programme in Midvaal since its inception in 2008 was acquired from GDARD. The beneficiaries were 4 080. However, it was discovered during the survey that some of the farmers' names were duplicated on the list, as a result the actual population size of beneficiaries was reduced to 3 080. There after a formula

by Yamane (1967) was used to determine the sample size. The formula is as follows:

$$n = \frac{N}{1+Ne^2}$$

Where;

n = required sample size

N = total population

e = margin of error (0.05)

**Solution:**

$$n = \frac{3080}{1+(3080)(0.05)^2}$$

$$= \frac{3080}{1+7.7}$$

$$= \frac{3080}{8.7}$$

$$= 354$$

**Therefore, n = 354**

According to the above calculations, the sample size for this study was supposed to be 354 when using a sample fraction of 11.5%; however, during the survey only 196 farmers were interviewed because some of the farmers were not willing to participate in the study. Simple random sampling technique was used to draw a sample of the beneficiaries of Ilima-Letsema Programme from different communities and wards. The advantage of random sampling is that it is simple and easy to apply when a small population is involved. Each unit, be it persons or cases in the accessible population has an equal chance of being included in the sample, because selection is made independently (Teddlie and Yu, 2007). Furthermore, the researcher does not need to know the true composition of the population beforehand.



## **3.5 Data collection instrument and methods**

### **3.5.1 Survey instrument**

A structured survey questionnaire or instrument was used to collect data. Sections of survey questionnaire were structured as follows:

#### **Section A: Socio-economic characteristics**

This section covered characteristics of the participants by looking at both socio-demographic (gender, home language, age, level of education and marital status) and socio-economic information (land acquisition methods, plot/farm size, household composition, employment status, sources of income, net or gross farm income, land ownership and farming experience).

#### **Section B: Agricultural production**

The farming typology, type of the support received, current farming status, increase or decrease in yield and size of the land, together with the impact of Ilima-Letsema Programme on agricultural production were addressed in this section.

#### **Section C: Contribution of Ilima-Letsema Programme to food security**

##### **C1: Food availability**

The survey questionnaire was developed to determine food production abilities for home consumption and for income generation purposes among the Ilima-Letsema Programme beneficiaries. Respondents had five options to choose from the frequency of occurrence displayed on Likert scale. The respondents were asked questions about their occurrence frequency using never (1), sometimes (2), half the time (3), often (4) and always (5) in a statement in the questionnaire. Likert scales

have various anchors, namely, agreement, frequency, quality, likelihood and importance, which make the survey accurate (Joshi *et al.*, 2015). Regarding the ability of the respondents to produce food during different months of the year, respondents had an option of making a tick.

## **C2: Food access**

Food access was captured using Household Food Insecurity Access Scale (HFIAS) measure, which assisted in assessing the degree of food insecurity in each respondents' family during the last 30 days. The HFIAS was developed in order to simplify both financial and technical costs of econometric methods (Masekoameng, 2015). According to Coates *et al.* (2007) HFIAS has nine generic questions about the occurrence of the condition in the last 30 days, where respondents had two options (yes or no) initially. If the response was yes, the respondent was asked about the level of frequency as a follow up question. If the answer was no, the respondent skipped the follow up question. For example, question 1a, asked the respondents if they have ever been concerned that some of their family members might not have adequate amount of produce in the last month? If the answer was "yes", at what frequency did food insecurity concern show? Frequently (many times in the last month), seldom (once or twice a month) and occasionally (1 to 10 times last month). HFIAS classifies households into three generally recognised access-related areas such as uncertainty, insufficient food quality and quantity (Farhadian *et al.*, 2015).

## **C3: Food stability**

The outcome of vulnerability, coping strategies, knowledge, experience, and farm/plot size, where cultivation practices, garden skills, quality and quantities of vegetables produced were determined in order to investigate food stability of Ilima-Letsema Programme beneficiaries. Respondents had yes or no as an answer. Furthermore, the impact of farming skills on food stability was determined using Likert scale with agreement anchor (very poor, poor, average, good and very good).

## **Section D: Contribution of Ilima-Letsema Programme to poverty alleviation and job creation**

The number of workers the farmer had pre and post support and annual net income pre and post support were determined. The purpose was to determine the contribution of the programme to poverty alleviation and job creation.

### **3.5.2 Primary data**

A structured survey questionnaire with closed questions was used to collect data from the beneficiaries of Ilima-Letsema support programme. The questionnaire was administered through face-to-face to enable the researcher to explain questions thoroughly to the participants. The respondents were interviewed at their plots/farms.

### **3.6 Validity and reliability**

Pilot study was conducted where about 30 participants were included. The purpose of the pilot study was to ensure that the data collection tool (the questionnaire) was reliable and capable of collecting valid information. The data collection tool was adjusted accordingly based on the results of the pilot study. The revised questionnaire enabled the researcher to collect relevant data required to attain the objectives of the study with maximum reliability and validity.

### **3.7 Data capturing and analysis**

Quantitative data was coded and captured in Microsoft Excel. Statistical Package for the Social Sciences (SPSS) version 24 was used to analyse quantitative data. The analysis included descriptive and inferential statistics. The level of significance was determined using  $p \leq 0.05$ . **Table 3.1** present data analysis methods used to achieve research objective.

**Table 3.1:** Data analysis methods used in the study to achieve research objectives.

<b>Number</b>	<b>Objective</b>	<b>Data analysis method</b>
1	To determine the socio-demographic characteristics of the beneficiaries	Descriptive statistics
2	To determine the impact of the programme on agricultural production of the beneficiaries by:	Descriptive statistics
2.1	Ascertaining factors influencing the impact of the programme on agricultural production	Ordered Logistic Regression (OLR) model
2.2	Evaluating food security status with reference to availability, access and stability	Descriptive statistics and Binomial test
2.3	Determining the contribution of programme to net income, poverty alleviation and job creation.	South African food poverty lines amount, Wilcoxon signed ranks test and T-test

### **Descriptive statistics**

Descriptive statistics included mean, minimum, maximum, mode, median, variance, standard deviation and standard error of mean.

### **Ordered Logistic Regression model description**

To determine the impact of Ilima-Letsema Programme to agricultural production of the beneficiaries, Ordered Logistic Regression (OLR) model was used to analyse data. The impact of Ilima-Letsema Programme on agricultural production was categorized as 0=No impact; 1=Low impact; 2=High impact; 3=Very high impact. OLR can predict a polychotomous ranked dependent variables as a function of explanatory variables that describe the characteristics of a unit, individual or economic agent (Gujarati and Porter, 2009; Gray and Kinnear, 2012). To determine

the factors influencing the impact Ilima-Letsema Programme on agricultural production, “No impact”, “Low impact”, “High impact” or “Very high impact”, the following OLR model defined regression equation was used;

$$Y^* = X'\beta + \varepsilon \quad (1)$$

Where;  $Y^*$ , the latent variable in equation (1), is not observable. What is observable is the polychotomous  $Y$ , defined by the following:

- $Y=0$  (No impact) if  $Y^* \leq 0$ ,
- $=1$  (Low impact) if  $0 < Y^* \leq \mu_1$ ,
- $=2$  (High impact) if  $\mu_1 < Y^* \leq \mu_2$ ,
- $=3$  (Very high impact) if  $\mu_2 < Y^* < \mu_3$

The  $\mu$ s are unknown parameters, were estimated with  $\beta$ . The  $\varepsilon$  in equation (1) is normally distributed across observations, with a constant mean and zero variance. The probabilities derived from equation (1) are:

- $\text{Prob}(y=0 | x) = \Phi(-x\beta)$ ,
- $\text{Prob}(y=1 | x) = \Phi(\mu_1 - x\beta) - \Phi(-x\beta)$ ,
- $\text{Prob}(y=2 | x) = \Phi(\mu_2 - x\beta) - \Phi(\mu_1 - x\beta)$ ,
- $\text{Prob}(y=3 | x) = \Phi(\mu_3 - x\beta) - \Phi(\mu_2 - x\beta)$ ,

Marginal effects show the change in probability of being a certain category when the explanatory variable increases by one unit. They are approximations of how much the dependent variable is expected to increase or decrease for a unit change in an explanatory variable. For continuous variables this represents the instantaneous change given for a unit increase and for dichotomous variables, the change is from zero to one. The marginal effects of the regressors ( $X$ s) on the probabilities are not equal to the coefficients. For the four probabilities, the marginal effects of changes in the explanatory variables are:

$$\frac{\delta \text{Prob}(y=0 | x)}{\delta x} = -\phi(x\beta)\beta$$

$$\frac{\delta \text{Prob}(y=1 | x)}{\delta x} = [\phi(-x\beta) - \phi(\mu - x\beta)]\beta$$

$$\frac{\delta \text{Prob}(y=2 | x)}{\delta x} = \phi(\mu - x\beta)\beta$$

$$\frac{\delta \text{Prob}(y=3 | x)}{\delta x} = \phi(\mu - x\beta)\beta$$

The base group is the "no impact" category. The higher categories are "Low impact", "High impact" and "Very high impact".

The above Ordered Regression Logit will be estimated as follows:

$$Y = f(x_1, x_2, x_3, x_4, x_5, x_6, x_7, -x_8, \dots, \mu) \dots (xx)$$

**Table 3.2:** List of dependent variables considered in the study.

<b>Dependent variable</b>	<b>Variable and value</b>
Y = Ilima-Letsema Programme	0=No impact; 1=Low impact; 2=High impact; 3=Very high impact
<b>Independent variables</b>	
X <sub>1</sub> = Gender	0=Female; 1=Male
X <sub>2</sub> = Age of participant	1=18-30 years; 2=31-40 years; 3= 41-50 years; 4=51 and above
X <sub>3</sub> = Level of education	1=Never been to school; 2=No formal Education, 3=Primary Education; 4=Secondary Education ;5=College Education; 6=University Education; 7=Other (Specify)
X <sub>4</sub> = Land acquisition	1=inherited, 2=Communal tenure; 3=Rented; 4=Purchased 5=Other (Specify)
X <sub>5</sub> = Farm size	Hectares (ha)
X <sub>6</sub> = Household size	Digits
X <sub>7</sub> = Main source of income	0 = Non-farming activities; 1 = Farming
X <sub>8</sub> = Farming experience	Number of years
X <sub>9</sub> = Number of supports received	Digits
X <sub>10</sub> = Farming area increased	0=No; 1=Yes
X <sub>11</sub> = Annual net income after receiving support	Digits

### **Description of binomial test**

Binomial test was used to analyse the contribution of Ilima-Letsema Programme to food access. According to Norušis (2006), the Binomial test compares the observed frequency in each category of a dichotomous variable (two possible values: yes or no, 0 or 1, and so on) with expected frequencies from the binomial distribution with a specified probability parameter, the tested variables should be numeric. In the study,

Binomial test was used to determine means, percentages and statistical significance between yes and no responses. The level of significance used in the Binomial test was 5% ( $p \leq 0.05$ ).

### Poverty line measures

The contribution of Ilima-Letsema Programme to poverty alleviation was determined by using the national poverty lines for South Africa from 2006 to 2018 as indicated in **Table 2.3** in chapter 2. The following formula by Stats SA (2018) was used:

$$\text{Food poverty line/person} = \frac{\text{Monthly net income of participants}}{\text{No. of household members}}$$

Three poverty line measures that were determined in the study were Food Poverty Line, Lower-Bound Poverty Lines and Upper-Bound Poverty Lines. The poverty line amount per person of all three measures was compared with the amount for South Africa in the year in which the respondents received support, against 2017, which was the year when the data was collected for the current study. Then the contribution of Ilima-Letsema Programme to poverty alleviation was analysed using Wilcoxon signed ranks test by looking at the poverty line amount pre and post receiving support. According to Mehta and Patel (2010) the Wilcoxon signed ranks test is commonly applied to matched pairs of data, such as when several individuals are being studied and two repeated measurements are taken on everyone. In addition, the Wilcoxon signed-ranks test is regarded as more powerful. The Wilcoxon Signed rank test model is used to compare data on the base of before and after (Antwi and Nkwe, 2013). The level of significance used in the Wilcoxon signed ranks test is 5% ( $p \leq 0.05$ ).

### T-test

The impact of Ilima-Letsema Programme on job creation and net farm income data were analysed using T-test. T-tests compare the values on some continuous variable for two groups or on two occasions (Hole, 2009; Maggio and Sawilowsky, 2013). The



number of jobs created by the respondents in the farm/plot before and after receiving support from Ilima-Letsema Programme were compared. The same comparison was applied on net farm income before (pre) and after (post) receiving support.

### **3.8 Ethical clearance**

The researcher applied for permission to conduct the study from GDARD and was granted permission. The researcher also applied for ethical clearance from the College of Agriculture and Environmental Sciences (CAES) Ethics Review Committee at the University of South Africa (UNISA). The research ethics clearance number allocated to the study was **2017/CAES/150**. Data collection commenced after the researcher acquired ethical clearance from both organisations. The preamble questionnaire was administered to participants addressing specific ethical issues including the right to withdraw participation in the study at any stage. Details regarding the entire study were fully disclosed to all participants to enable them to make informed decisions on whether to participate or not. An assurance was made to ensure anonymity when the results of the study were reported. This implied that the names of the respondents were not disclosed in the results used for the dissertation, reports, journal articles or other formal publications.

### **3.9 Chapter summary**

In summary, the study was conducted in Midvaal Local municipality in Gauteng Province, using quantitative research approach and survey design. Data was collected from 196 beneficiaries of the Ilima-Letsema Programme through face-to-face interviews using a structured survey questionnaire. Quantitative (numeric) data was analysed using descriptive statistics, Ordered Logistic Regression (OLR) model, T-test, Wilcoxon signed ranks test and Binomial test in the SPSS version 24. All the ethical clearance was granted by both UNISA and GDARD.

## **CHAPTER 4: RESULTS AND DISCUSSIONS**

### **4.1 Introduction**

This chapter presents the research results and discussions on socio-demographic characteristics of the respondents, the impact of Ilima-Letsema Programme on agricultural production, the contribution of Ilima-Letsema Programme to food security, and the contribution of Ilima-Letsema Programme to income, poverty alleviation and job creation in Midvaal Local Municipality.

### **4.2 Results**

#### **4.2.1 Socio-economic characteristics of the respondents**

##### **4.2.1.1 Demographic characteristics**

The demographic information that formed part of the research was about gender, home language, age group, marital status and the level of education of the respondents. The results of the demographic information of the respondents are presented in **Table 4.1**.

**Table 4.1:** Demographic information of the respondents (n=196)

<b>Variable</b>	<b>Frequency</b>	<b>Percent (%)</b>
<b>Gender</b>		
Male	105	53.6
Female	91	46.4
<b>Total</b>	<b>196</b>	<b>100.0</b>
<b>Home language</b>		
Southern Sotho	62	31.6
IsiZulu	61	31.1
Sepedi	15	7.7
IsiXhosa	15	7.7
Setswana	14	7.1
IsiNdebele	10	5.1
Tshivenda	4	2.0
IsiSwati	2	1.0
<b>Total</b>	<b>196</b>	<b>100.0</b>
<b>Age</b>		
18-30	10	5.1
31-40	27	13.8
41-50	40	20.4
51-60	51	26.0
>60	67	34.7
<b>Total</b>	<b>196</b>	<b>100.0</b>
<b>Level of education</b>		
Never been to school	34	17.5
No formal education	1	0.5
Primary education	32	16.3
Secondary education	63	32.1
College education	36	18.4
University education	19	9.7
Other (ABET)	11	5.6
<b>Total</b>	<b>196</b>	<b>100.0</b>
<b>Marital status</b>		
Single	35	17.9
Divorced	26	13.3
Widowed	39	19.9
Married	80	40.9
Other (Cohabitation)	16	8.2
<b>Total</b>	<b>196</b>	<b>100.0</b>

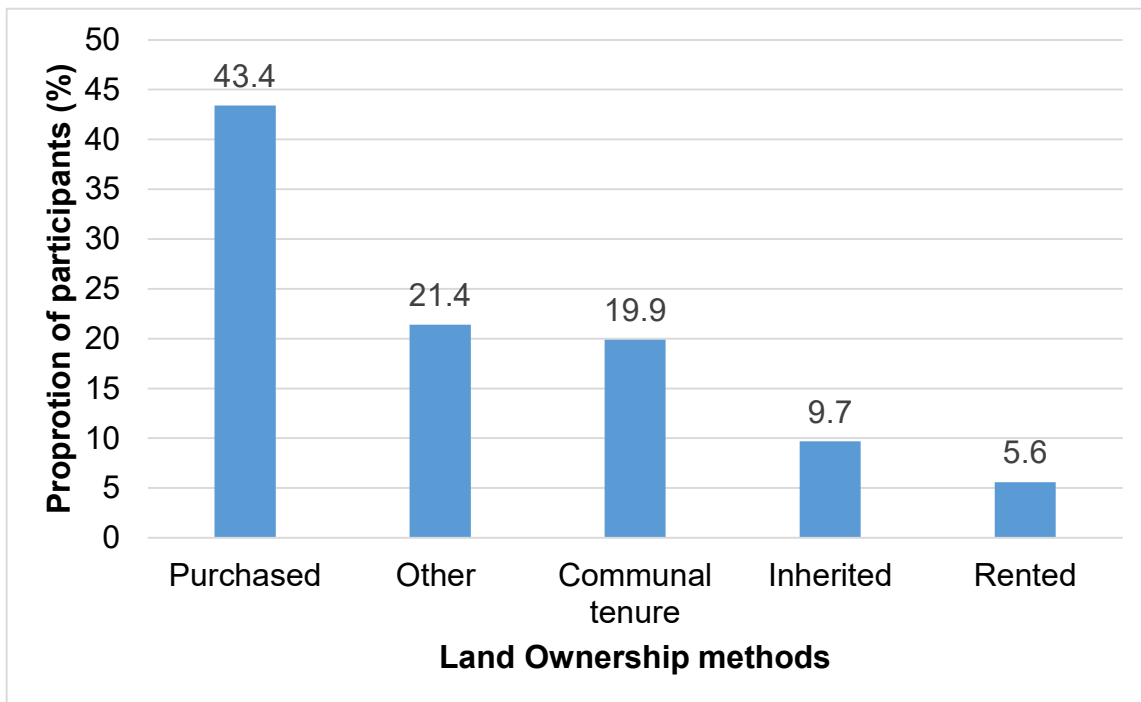
Source: survey data 2018

**Table 4.1** shows that 53.6% of the respondents were males, while 46.4% were females. This showed that men benefited more from Ilima-Letsema than females in Midvaal Local Municipality and were heads of most of the farming households in the study area. The results showed that 60.7% of the respondents were  $\geq 50$  years old, 20.4% were between 41 and 50 years, 13.8% were between 31 and 40 years and 5.1% were between the age of 18 and 30 years. It implies that youth participation in agriculture was minimal because very few benefited from Ilima-Letsema Programme in Midvaal Local Municipality. The main language groups were Southern Sesotho (31.6%) and IsiZulu (31.1%), while the other language groups formed smaller proportions. Even though Midvaal area has been predominantly occupied by Southern Sotho people, there are other tribes like Zulu, Ndebele, Venda and others who currently reside in the area; this shows that the study area is multilingual.

The results on the educational background of respondents showed that 66.6% have attained secondary to university education, with secondary education being dominant (32.1%) followed by college education (18.2%), while 17.3% have never been to school and 0.5% have no formal education. This implied that most of the farmers in Midvaal could read and write. A large proportion (40.8%) of the respondents were married, while 19.9% were widowed, 17.9% single people and 8.2% cohabited. The results showed that most of the farmers were in secure relationships since marriage was dominant, this will strengthen the fight against food security and poverty alleviation because the married couples will share the costs, work the land together and apply for support collectively.

#### **4.2.1.2 Socio-economic characteristics**

The variables that were included in the study were land acquisition methods, farm/plot size, farming experience, family composition, annual income from farming, and sources of income. **Figure 4.1** shows land acquisition status of respondents.



**Figure 4.1** Land acquisition status of respondents (n=196)

Source: survey data 2018

Results showed that only 43.4% of the respondents purchased the land they were farming on, followed by those who had Permission to Occupy (21.4%), communal land tenure (19.9%), inherited land (9.7%) and rented or lease to buy (5.6%). The land occupied under communal land belonged to the local municipality and it was allocated to the respondents for farming purpose. The results implied that private land ownership was higher than other land acquisition methods because 53.1% of the land was purchased or inherited by black farmers who benefitted from Ilima-Letsema Programme. Ownership of land contribute to food security and poverty alleviation farmers will not spend money renting land for cultivation purpose, as a result, they are more likely to develop their farms/plots if they own them. The results of farm/plot size of the respondents are presented in **Table 4.2**.

**Table 4.2:** Size of farm/plot of the respondents (n=193)

Item	Plot/farm size value
Mean	4.42
Std. error of mean	0.84
Std. deviation	11.79
Minimum	0.2
Maximum	90

Source: survey data 2018

Results in **Table 4.2** indicated that on average the farm/plot size was 4.4 ha with the range of 0.2 ha to 90 ha. The standard deviation of 11.79 was achieved, which showed that the variation in the farm/plot was high, and most farm/plot sizes were not close to the mean. A recorded standard error of mean was 0.84 which was low. The results implied that there were farmers who had access to more land whereas others did not. The family composition included variables such as the number of family members, the number of adults, the number of children and the number of working adults. **Table 4.3** presents the results of the family composition of the respondents.

**Table 4.3:** Family composition of the respondents (n=196)

Item	Value			
	Number of family members	Number of adults in the family	Number of children in the family	Number of adults working in the family
Mean	4.33	2.37	1.97	0.96
Std. error of mean	0.11	0.07	0.11	0.06
Std. deviation	1.46	0.98	1.48	0.82
Minimum	2	1	0	0
Maximum	9	6	6	3

Source: survey data 2018

The results in **Table 4.3** indicated that the average family size was 4.33, with the range of 2 to 9 household members. However, the variation was low as shown by the standard deviation of 1.46. On average there were more adults (2.37) than children (1.97) in the families of the respondents. This is a concern because on average the number of working adults in the family was 0.96 (1), which showed that there was high unemployment because few family members were employed. The standard deviation of all the variables of family composition ranged between 0.82 and 1.48. This showed that there was a small variation between family sizes, the number of adults, the number of children and the number of working family members. The standard error of means for all the variables of family composition were low, they ranged between 0.06 and 0.11.

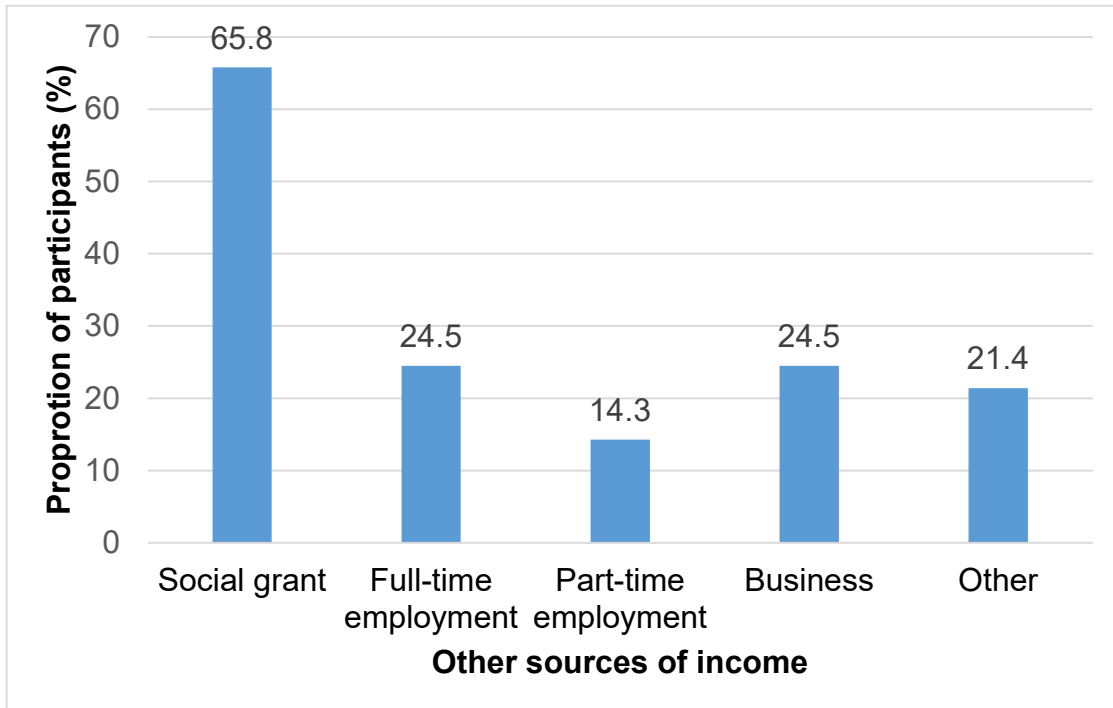
The main sources of income were also considered to determine the proportion of the respondents who relied solely on farming to make a living. The results of the main sources of income are presented in **Table 4.4**.

**Table 4.4:** Main sources of income of the respondents (n=196)

<b>Item</b>	<b>Frequency</b>	<b>Percent</b>
Farming	147	75.0
Non-farming	49	25.0
<b>Total</b>	<b>196</b>	<b>100.0</b>

Source: survey data 2018

The results in **Table 4.4** show that about three quarter (75%) of the respondents relied on farming as the main source of income, while 25% relied on other sources of income. This meant the livelihoods of most beneficiaries of Ilima-Letsema Programme (farmer support) depended on farming. Therefore, the programme was targeting farmers who really needed support to succeed in farming to make a living. The other sources of income included social grants, employment, businesses and other sources as presented in **Figure 4.2**.



**Figure 4.2:** Other sources of income of the respondents (n=196); Source: survey data 2018

A large proportion (65.8%) of the beneficiaries of Ilima-Letsema Programme received social grants as the second most important source of income after farming. This was followed by 38.8% of the respondents who earned incomes from full-time or part-time employment opportunities. Under the other sources of income 21.4% of the farmers earned incomes by collecting cans, bottles and cardboard boxes for recycling purposes, and renting of farmland and hostels on the farm/plot. This implied that apart from farming, the respondents relied more on social grants to make a living than other sources of income, although, the other sources of income also played a role in assisting the respondents to improve their livelihoods and food security status. **Table 4.5** presents the results of farming experience of the respondents.



**Table 4.5:** Farming experience of the respondents (n=196)

Item	Farming experience value
Mean	10.07
Std. error of mean	0.42
Std. deviation	5.92
Minimum	2
Maximum	30

Source: survey data 2018

Results presented in **Table 4.5** show that on average, the respondents have been farming for 10 years with a minimum 2 years and a maximum of 30 years. The variation in farming experience was slightly high as shown by a standard deviation of 5.92. The standard error of mean obtained was 0.42, which was low. The results showed that some of respondents have been involved in agriculture for <3 years, whereas others started farming about 30 years ago. It implied that Ilima-Letsema Programme supported farmers with different farming experiences that meant the programme was inclusive. Net income of the respondents in the previous year also formed part of the socio-economic characteristics of the respondents as presented in **Table 4.6**.

**Table 4.6:** Annual net income of the respondents in the previous year (n=196)

Item	Value of annual net income
Mean	47 513.59
Std. error of mean	7 727.43
Std. deviation	108 184.06
Minimum	0
Maximum	900 000

Source: survey data 2018

**Table 4.6** shows that the minimum annual net income earned by the respondents in the previous year was R0.00 and the maximum was R900 000, with an average of R47 513.59. The variation was very high as shown by the standard deviation of 108 184.06, because the incomes of most respondents were not close to the mean. A high standard error of mean of 7 727.43 was also achieved. The results implied that there were respondents who made a fortune from farming, while others did not earn any income at all. This was attributed to the fact that the respondents were farming for different reasons which included home consumption only, or home consumption and sales.

#### 4.2.2 Impact of Ilima-Letsema Programme on agricultural production

The impact of Ilima-Letsema Programme on agricultural production was determined. The variables included were farming typology, support received and the impact on crop and livestock production. Ordered Linear Regression was used to analyse factors that influenced the impact of the programme on agricultural production.

##### 4.2.2.1 Farming typology and support received

The results of farming typology of the respondents are presented in **Table 4.7**.

**Table 4.7** Farming typology of the respondents (n=196)

<b>Variable</b>	<b>Frequency</b>	<b>Percent</b>
Crops	101	51.5
Mixed farming	58	29.6
Livestock	22	11.2
Not farming	15	7.7
<b>Total</b>	<b>196</b>	<b>100.0</b>

Source: survey data 2018

The results in **Table 4.7** show that more than 90% of the beneficiaries of Ilima-Letsema Programme were involved in agricultural production with crop production as

the main activity (51.5%) followed by mixed farming with at 29.6% and livestock production at 11.2%. This implied that most of the respondents cultivated crops in the farms/plots (vegetables and field crops). Seven-point seven percent (7.7%) of the respondents were not involved in farming; this may be due to high rental costs for agricultural land and lack of financial support. This was not a surprise because the by-laws in Midvaal Local Municipality prevent smallholder farmers from keeping livestock, because of biosecurity issues especially those located near urban dwellings.

The type of support received by the respondents from Ilima-Letsema Programme included crop and livestock production inputs; equipments and infrastructure. **Table 4.8-4.10** presents the results of the type of support received from Ilima-Letsema Programme by respondents.

**Table 4.8:** Type of crop production inputs received from Ilima-Letsema Programme by respondents (n=196)

Support received	No		Yes	
	Frequency	(%)	Frequency	(%)
Seeds	37	18.9	159	81.1
Fertilizers	61	31.1	135	68.9
Garden tools	85	43.4	111	56.6
Other	120	61.2	76	38.8
Herbicides	175	89.3	21	10.7
Pesticides	175	89.3	21	10.7

Source: survey data 2018

The results in **Table 4.8** show that most (81.1%) of the respondents received seeds, while 68.9% received fertilizers. Moreover, 56.6% of the respondents received garden tools, and 43.4% did not receive any. A few (10.7%) of the respondents received herbicides and pesticides. This showed that farmers involved in crop production benefitted more from Ilima-Letsema Programme than those who are involved in livestock production. It also showed that Midvaal area was dominated by

farmers who were involved in crop production and Ilima-Letsema Programme assisted them according to the enterprises they chose.

**Table 4.9:** Type of livestock production inputs received from Ilima-Letsema Programme by respondents (n=196)

Support received	Frequency (%)		Frequency (%)	
	No	Yes	No	Yes
Animal medication	168	85.7	28	14.3
Broilers	178	90.8	18	9.2
Pigs	185	94.4	11	5.6
Layers	190	96.9	6	3.1
Goats	196	100	0	0
Sheep	196	100	0	0
Others	120	61.2	76	38.8

Source: survey data 2018

**Table 4.9** shows that a few (17.9%) of the respondents received livestock production inputs such as animals and feeds. About 9.2% received broilers, 5.6% pigs and 3.1% layers. Some (14.3%) of the respondents received animal medication, while 38.8% received other production inputs such as feed for piggery, broilers and layers. This showed that only a few farmers who were involved in livestock production were supported through Ilima-Letsema Programme. The low number of livestock farmers in Midvaal was due to the municipal by-laws that forbid farmers from keeping livestock near urban dwellings.

**Table 4.10** shows the results of the type of equipment and infrastructure received from Ilima-Letsema Programme by respondents in the study area.

**Table 4.10:** Type of equipment and infrastructure received from Ilima-Letsema Programme by respondents (n=196)

Support received	Frequency (%)		Frequency (%)	
	No	Yes	No	Yes
Garden tools	85	43.4	111	56.6
Irrigation system	184	93.9	12	6.1
Water pump	192	98.0	4	2.0
Implements	194	99.0	2	1.0
Fence	196	100	0	0
Borehole	196	100	0	0
Water tank	196	100	0	0

Source: survey data 2018

The results in **Table 4.10** show that 56% of the beneficiaries of the programme in the study area received gardens tool. A few (6.1%) of the respondents received irrigation systems, 2% received water pumps and 1% received farm implements. Water shortage was a challenge for these farmers, as result, some of them where more dependent on municipal water to operate their enterprises; that increased their water bills.

#### **4.2.2.2 Impact of Ilima-Letsema Programme on agricultural production**

The variables that formed part of the impact of Ilima-Letsema Programme on agricultural production were crop yields, quantity of livestock, farming status and change in farming area. The impact of the programme on crops and livestock production is presented in **Table 4.11**.

**Table 4.11:** The impact of ilima-letsema on crops and livestock production (n=196)

<b>Variable</b>	<b>Frequency</b>	<b>(%)</b>	<b>Level of significance</b>
<b>Crop yield increased</b>			
Not farming with crops	14	7.1	
No	64	32.7	<0.001
Yes	118	60.2	
<b>Total</b>	<b>196</b>	<b>100</b>	
<b>Number of livestock increased</b>			
Not farming with livestock	109	55.6	
No	32	16.3	0.033
Yes	55	28.1	
<b>Total</b>	<b>196</b>	<b>100</b>	
<b>Still farming after benefitting</b>			
No	15	7.7	
Yes	181	92.3	<0.001
<b>Total</b>	<b>196</b>	<b>100</b>	
<b>Farming area increased</b>			
No	130	66.3	
Yes	66	33.7	<0.001
<b>Total</b>	<b>196</b>	<b>100</b>	

Source: survey data 2018

The majority (60.2%) of the respondents who farmed crops, obtained higher yields after benefitting from Ilima-Letsema Programme, while 32.7% did not. The difference between the number of respondents who achieved higher crop yields and those who did not was highly significant at 1% and 5% level of significance, as shown in **Table 4.11**. This implied that Ilima-Letsema Programme has contributed positively to crop production in Midvaal Local Municipality. With regards to livestock farming, only 28.1% indicated that the number of their animals increased after receiving support from Ilima-Letsema Programme, while 16.3% said that they did not benefit. The contribution of the programme in livestock production was positive because there was statistical significance (sig. = 0.033) between the respondents who agreed (Yes

at 28.1%) and those who disagreed (No at 16.3%). This further indicated that Ilima-Letsema Programme has supported more crop farmers than livestock farmers. This was attributed to the fact that few farmers could practice extensive animal production in the study area because their farm/plots size were small, bad weather conditions and municipal by-laws, which did not allow livestock farming in peri-urban areas.

Most (92.3%) of the respondents were still farming after benefitting from the programme and only a few (7.7%) abandoned farming. Some (33.7%) of the respondents indicated that they increased their farming area after benefitting from Ilima-Letsema Programme. This showed that the programme enabled beneficiaries to sustain their farming enterprises, hence, they were still in production and able to expand their production. From a scale of operation point of view, the results in **Table 4.11** showed that the farming area of majority (66.3%) of the respondents did not increase. The statistical comparison of the number of respondents who agreed (Yes) or disagreed (No) with the question whether their farming area increased or not was highly significant (sig. < 0.001). This implied that Ilima-Letsema did not improve the farming area of the beneficiaries.

The impact of Ilima-Letsema Programme on agricultural production was assessed. An ordinal scale was used to measure the perceptions of the respondents on the impact of the programme on agricultural production. The scale ranged from no impact to very high impact. **Table 4.12** shows the impact of Ilima-Letsema Programme on agricultural production.

**Table 4.12:** The impact of Ilima-Letsema Programme on agricultural production of the respondents (n=196)

<b>Item</b>	<b>Frequency</b>	<b>Percent</b>
No impact	67	34.2
Low impact	47	24
High impact	33	16.8
Very high impact	49	25
<b>Total</b>	<b>196</b>	<b>100</b>

Source: survey data 2018

The results in **Table 4.12** shows that overall, 65.8% of the respondents believed that Ilima-Letsema Programme had an impact on their agricultural production, while 34.2% did not. The impact was highly or very highly perceived by a combined proportion of 41.8% of the respondents, while 24% had a low impact. Therefore, the real impact of the programme was perceived by 41.8% of the respondents.

#### 4.2.2.3 Factors influencing the impact of Ilima-Letsema on agricultural production

The impact of Ilima-Letsema Programme to agricultural production is shown in the model fitting information in **Table 4.13**.

**Table 4.13:** Model fitting information (n=196)

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept	678.3356	34.2		
Final	634.870	34.465	11	<0.001

Source: survey data 2018

A statistical significance p-value of <0.001 was achieved as presented in **Table 4.13**. This meant that the threshold could be predicted using this model since it was statistically significant. The results of the Goodness-of-fit of Pearson and Deviance are presented in **Table 4.14**.

**Table 4.14:** Goodness-of-fit (n=196)

Model	Chi-Square	df	Sig.
Pearson	587.072	574	0.344
Deviance	484.708	574	0.997

Source: survey data 2018

**Table 4.14** shows that the results of Pearson's chi-square were not statistically significant ( $p=0.344$ ) at 5% level of significance. Therefore, the model used for the analysis was not appropriate for the data. The Deviance chi-square was also not statistically significant ( $p=0.997$ ). Hence, the results of both Pearson and Deviance



(goodness-of-fit) measures may not always be the same. Pseudo R-Square is shown in **Table 4.15**.

**Table 4.15:** Pseudo R-Square

Cox and Snell	0.212
Nagelkerke	0.136
McFadden	0.51

Source: survey data 2018

**Table 4.15** presents the three pseudo R-squared values. The R-squared values in OLS regression did not have equivalence on logistic regression. R-squared values stated did not have the exact meaning as OLS regression because their analysis was insignificant.

The results of parameter estimate of the OLM of factors influencing the impact of Ilima-Letsema Programme on agricultural production are presented in **Table 4.16**.

**Table 4.16:** Parameter estimates of the Ordered Logistic Model (n=196)

Item	Frequency	Estimate	Std. Error	Wald	df	Sig.	95% confidence interval		
							Lower bound	Upper bound	
<b>Threshold</b>	No impact	-0.340	0.787	0.187	1	0.666	-1.882	1.202	
	Low impact	0.843	0.789	1.142	1	0.285	-0.703	2.388	
	High impact	1.753	0.781	4.827	1	0.028	0.189	3.316	
<b>Location</b>	Gender	-0.246	0.289	0.726	1	0.394	-0.812	0.320	
	Age	-0.230	0.123	3.483	1	0.062	-0.471	0.012	
	Educational	0.093	0.084	1.230	1	0.267	-0.072	0.259	
	Land acquisition	-0.059	0.110	0.290	1	0.590	-0.274	0.156	
	Size of plot	0.020	0.018	1.249	1	0.264	-0.015	0.056	
	Number of family members	0.009	0.095	0.008	1	0.929	-0.178	0.195	
	Main source of income	0.965	0.374	6.654	1	0.10	0.232	1.698	
	Years of experience in agriculture	0.081	0.030	7.132	1	0.008	0.22	0.141.	
	Number of supports received	-0.015	0.173	0.008	1	0.929	-0.354	0.323	
	Farming area increased	-0.007	0.145	0.000	1	0.988	-0.892	0.878	
	Annual net income after receiving support	1.940E-6	1.838E-6	1.124	1	0.289	-1.654E-6	5.552E-6	
	<b>Average</b>		<b>0.021</b>	<b>0.017</b>	<b>0.044</b>	<b>1</b>	<b>0.006</b>	<b>0.009</b>	<b>0.049</b>

Source: survey data 2018

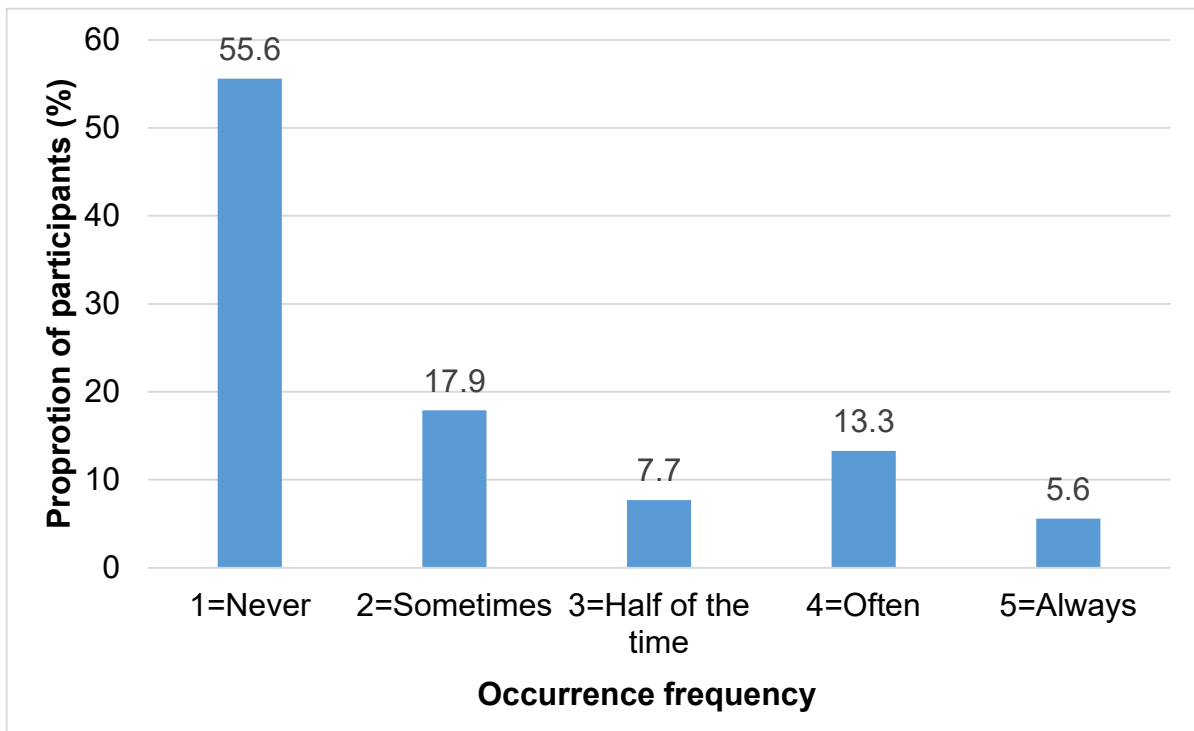
Of the eleven (11) selected variables in the Ordered Logistic Model, only six of them: education level, size of the plot, number of family members, main source of income, years of experience in agriculture, and annual net income after receiving support, positively affected agricultural production as shown in **Table 4.16**. The results meant that the agricultural production increased when their farming experience increased with all other factors held constant. It implied that experienced farmers produced more than the inexperienced farmers in the study area. In addition, the results showed that five of the selected variables (gender, age, land acquisition, number of support received, and farming area increased) negatively affected agricultural production of the respondents. However, none of them was statistically significant ( $p \geq 0.05$ ).

### **4.2.3 Contribution of Ilima-Letsema Programme to food security**

The contribution of the Ilima-Letsema Programme to food security was assessed. The three food security pillars of availability, access and stability were included in the study. The food security status was tested using different food security scales used and tested by other scholars in the past.

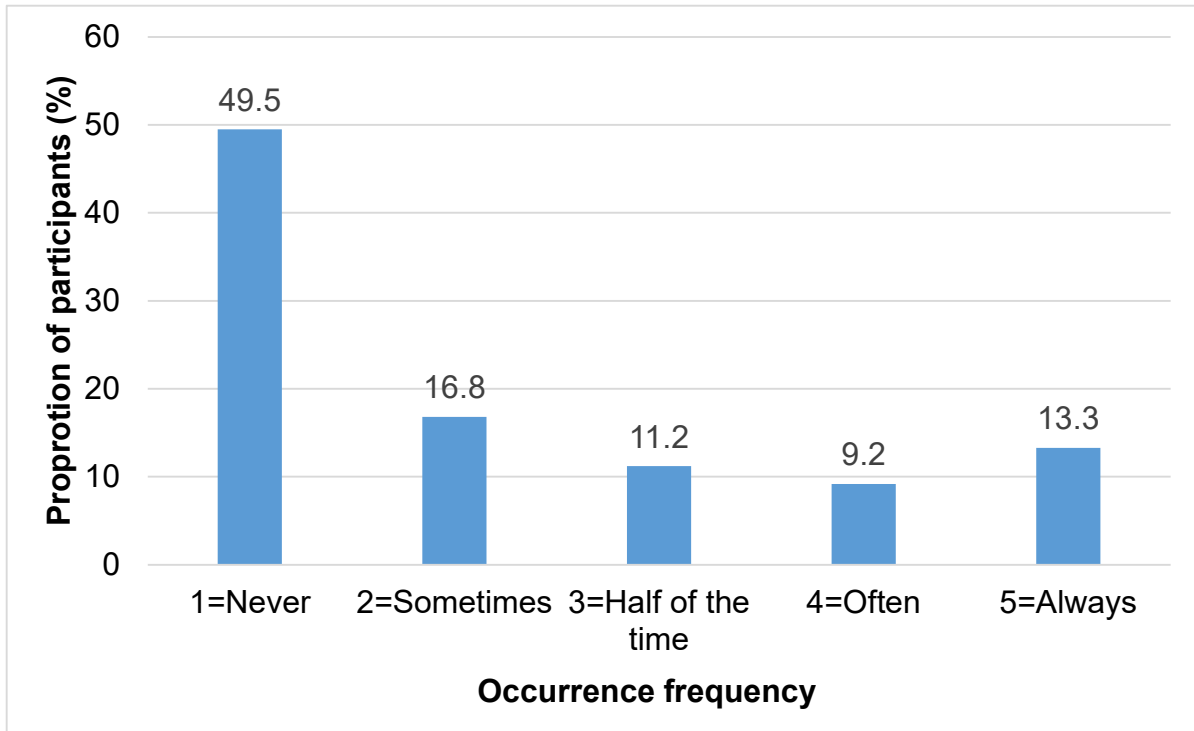
#### **4.2.3.1 Food availability**

The variables that formed part of food availability were the ability to produce food for home consumption and income generation purposes after benefiting from Ilima-Letsema Programme. The results of food availability are presented in **Figure 4.3 to 4.8**. **Figure 4.3** shows the level of agreement among the respondents with the statement: "I do not know where the next meal will come from due to unreliable production".



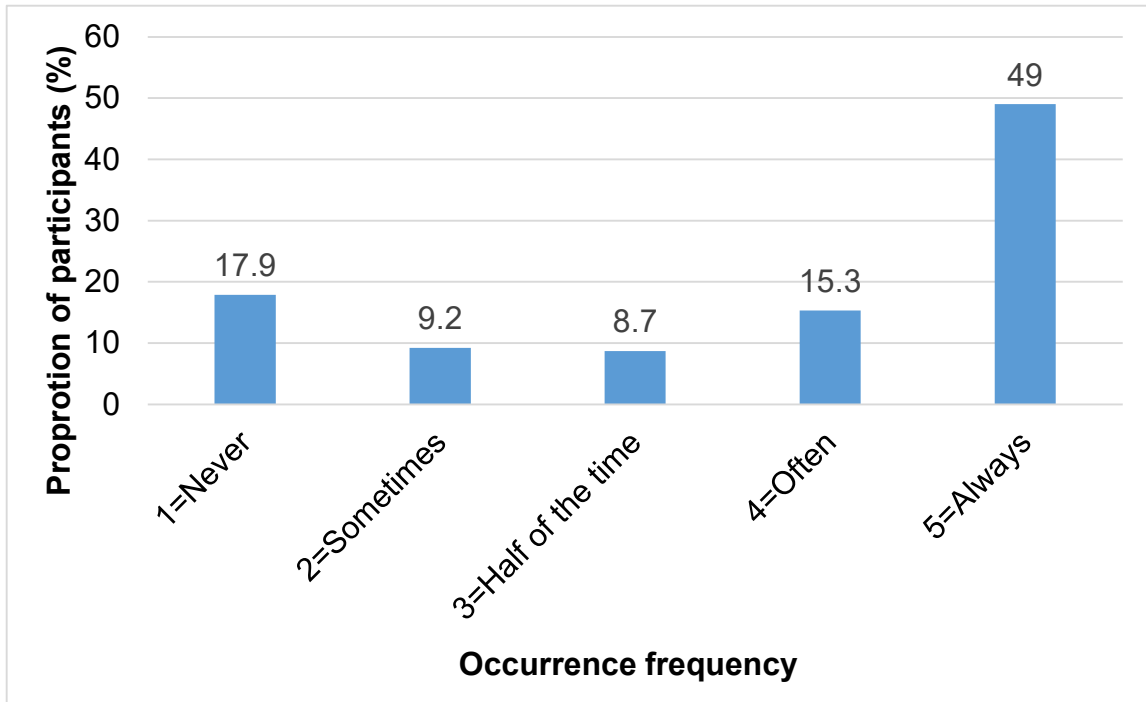
**Figure 4.3:** Level of agreement among the respondents with the statement: “*I do not know where the next meal will come from due to unreliable production*” (n=196)

The results presented in **Figure 4.3** show that 55.6% of the respondents were never worried about where their next meal would come from due to unreliable food production, compared with 18.9% of respondents who were continuously worried about where their next meal would come from. This showed that Ilima-Letsema Programme enabled most of the beneficiaries to have their daily meal without any worries. Therefore, the programme contributed to food availability. **Figure 4.4** shows level of agreement among the respondents with the statement: “The produce I get from the farm/plot is not enough to feed my family”.



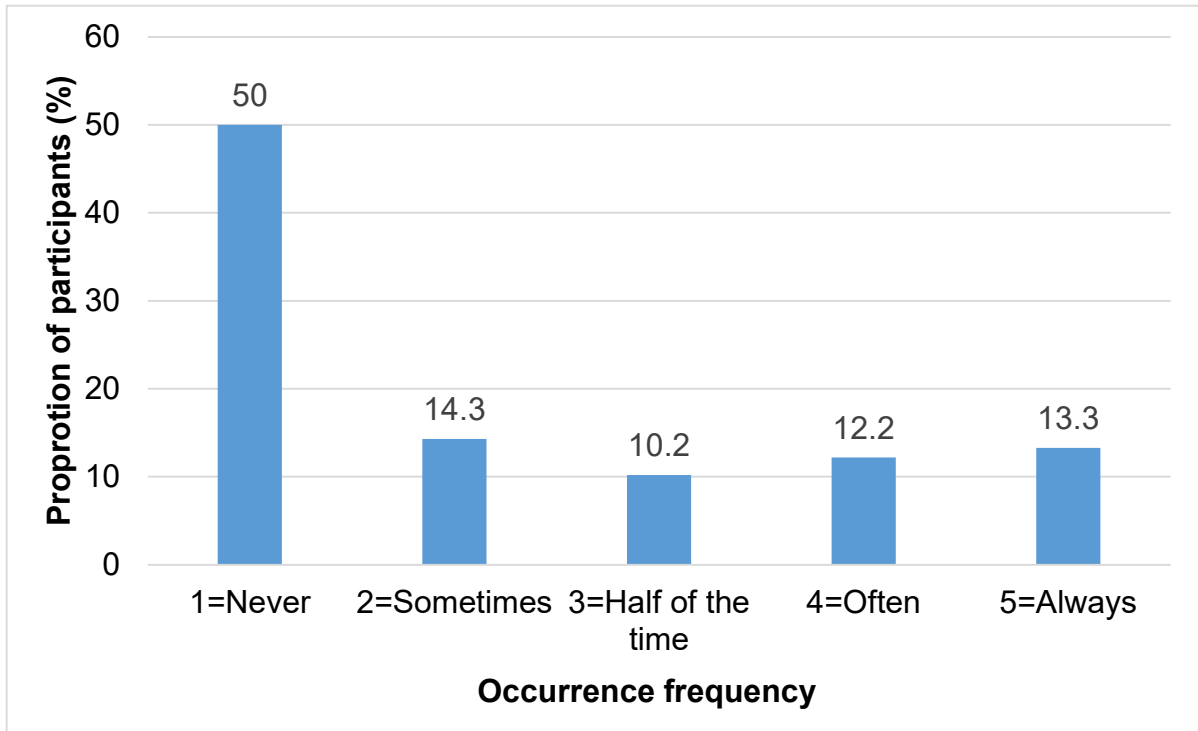
**Figure 4.4:** Level of agreement among the respondents with the statement: “*The produce I get from the farm/plot is not enough to feed my family*” (n=196)

About half (49.5%) of the respondents got enough produce from their farms/plots to feed their families, while 28% of respondents indicated that sometimes or half the time, they did not have enough produce to feed their families as shown in **Figure 4.4**. On the other hand, 22% said that they often or always did not produce enough food at all to feed their families. In general, the Ilima-Letsema Programme did not enable the other half (50.5%) of the beneficiaries to have food available to feed their families continuously. **Figure 4.5** shows whether respondents could eat more produce when the yields were high or not.



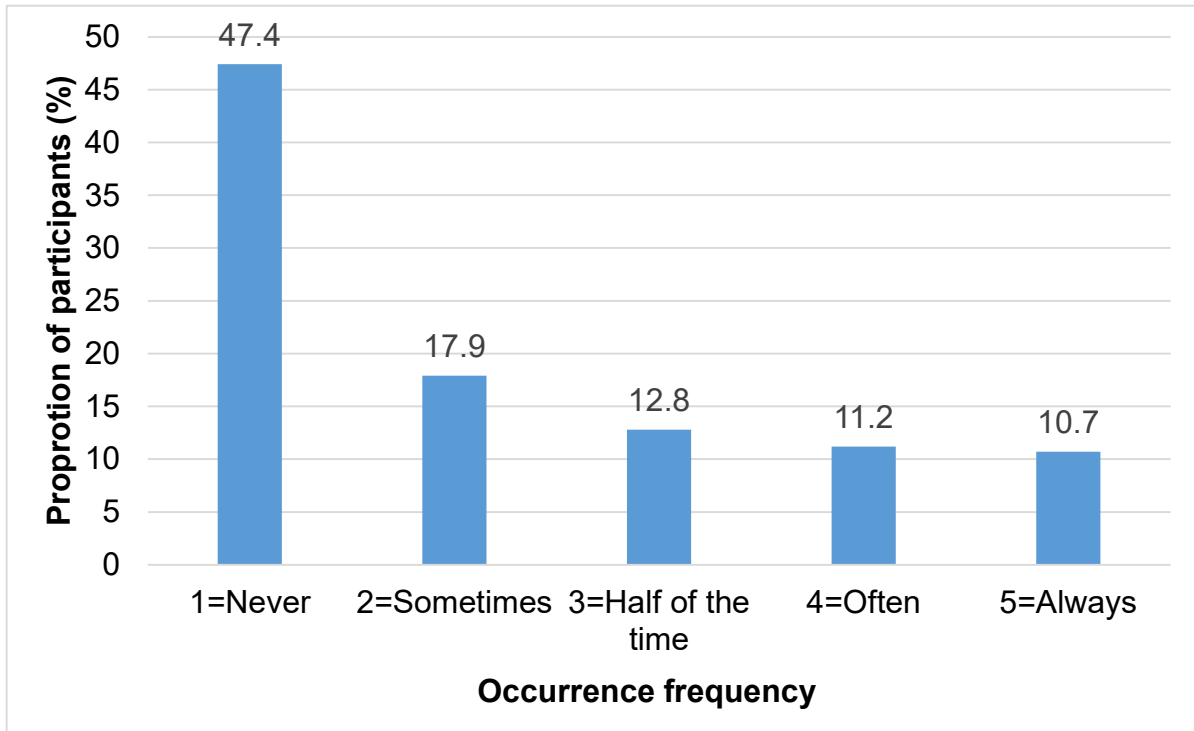
**Figure 4.5:** Level of agreement among the respondents with the statement: “I eat more produce because of the high yields” (n=196)

A large proportion (64.3%) of the respondents more often or always consumed more produce when the yields were high, while a small proportion (17.9%) of the respondents never ate most of their produce because of lower yields achieved as shown in **Figure 4.5**. This showed that Ilima-Letsema Programme enabled most of the beneficiaries to have high yields which enabled them to consume more produce from their farm/plot daily. Therefore, the programme contributed to food availability using the variable presented in **Figure 4.5**. **Figure 4.6** shows the level of agreement among the respondents with the statement: “I eat less produce because of low yields.”



**Figure 4.6:** The level of agreement among the respondents with the statement: “I eat less produce because of low yields” (n=196)

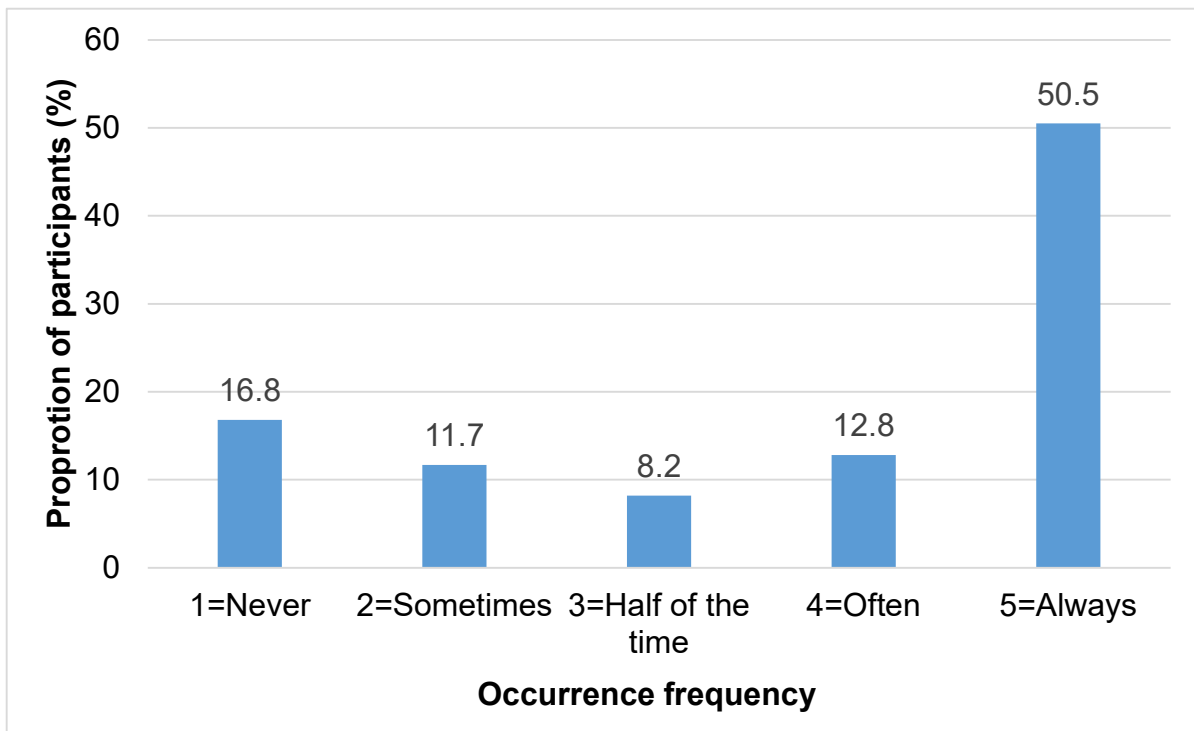
Results in **Figure 4.6** show that half (50%) of the respondents never consumed less produce because of the low production. Only a few (25.5%) respondents were continuously consuming less produce because of low production as shown by the proportion of often and always. The other respondents (24.5%) said that they sometimes or half the time ate less produce from their harvests because of low yields. This showed that the Ilima-Letsema Programme partially enabled the beneficiaries to achieve higher yields to feed themselves from their own produce. Therefore, the programme partially contributed to food availability with regards to eating less produce because of lower yields. **Figure 4.7** shows level of agreement among the respondents with the statement: “My family is not getting enough produce to eat”.



**Figure 4.7:** Level of agreement among the respondents with the statement: “My family is not getting enough produce to eat” (n=196)

The results presented in **Figure 4.7** show that 47.4% of the respondents were never worried that their household members would not consume enough produce harvested from their farm/plot. Some (21.9%) respondents more often or always did not have enough produce to eat, while 30.7% of the respondents experienced that sometimes or half the time. This showed that Ilima-Letsema Programme did not enable 47.4% of the beneficiaries to produce enough food for their household consumption. Looking at the variables presented in **Figure 4.7**, Ilima-Letsema Programme did not always enable most of the beneficiaries to have home produced food available for consumption. Level of agreement among the respondents with the statement: “I can afford to eat more produce every day” is shown by **Figure 4.8**.





**Figure 4.8:** Level of agreement among the respondents with the statement: “I can afford to eat more produce every day” (n=196)

About 63.3% of the respondents more often and always consumed more produce daily, 16.8% of respondents could not afford to consume more produce as shown in **Figure 4.8**. Some (19.9%) respondents consumed more produce sometimes or half the time. This showed that most of the beneficiaries of the Ilima-Letsema Programme could afford to consume more produce daily. Therefore, the programme contributed to food availability using the variable presented in **Figure 4.8**.

Food availability of the respondents during different months of the year was determined. The ability of the respondents to produce food during different months of the year is shown in **Table 4.17**.

**Table 4.17:** Ability of the respondents to produce food during different months of the year (n=196).

Months of the year	Frequency of occurrence (%)					Mean Score (MS)
	Never	Sometimes	Half the time	Often	Always	
	1	2	3	4	5	
January	8.2	2.6	3.6	1.5	84.2	4.51
February	7.7	2.6	3.6	2.0	84.2	4.53
March	8.7	2.0	2.0	2.6	84.7	4.53
April	10.7	5.1	3.1	4.1	77.0	4.32
May	25.5	5.1	3.1	3.1	63.3	3.73
June	46.4	2.6	2.6	1.5	46.9	3.00
July	45.9	2.0	2.6	1.5	48.0	3.04
August	38.3	4.1	3.1	1.5	53.1	3.27
September	9.2	1.5	1.5	4.6	83.2	4.51
October	8.2	1.0	0.5	2.0	88.3	4.61
November	8.7	0.5	0.5	1.5	88.8	4.61
December	7.7	0.5	1.0	1.5	89.3	4.64
<b>Average</b>	<b>18.81</b>	<b>2.47</b>	<b>2.09</b>	<b>2.28</b>	<b>74.24</b>	<b>4.19</b>

Source: survey data 2018

On average 76.5% of the respondents were able to produce food throughout the years after receiving support from Ilima-Letsema Programme as shown by the proportion of “often” and “always” in **Table 4.17**. This was also supported by the average annual mean of 4.19, which was more skewed towards “often” and “always”. More than 80% of the respondents produced enough food between September to March, compared with the other months of the year, especially during winter season. Although farmers produced less food during winter (May-July), some (52.7%) farmers managed to produce enough food to sell and feed their families. This indicated that on average, food shortage was less among the respondents during winter, although less than 50% of farmers had lower production in June and July. This was expected because winter in Midvaal area experiences frost, which inhibit vegetable production especially for farmers producing in open fields. This implied that not all respondents were able to produce food throughout the year. Overall, the results showed that Ilima-Letsema Programme contributed to food availability because on average, most (>75%) of the respondents produced food throughout the year. This implied that the food security status of the respondents improved from availability point of view after receiving the support from the programme. The issue of whether the amount of food crops they got from their farms/plots was enough to feed their families is illustrated in **Figure 4.14**.

#### **4.2.3.2 Food access**

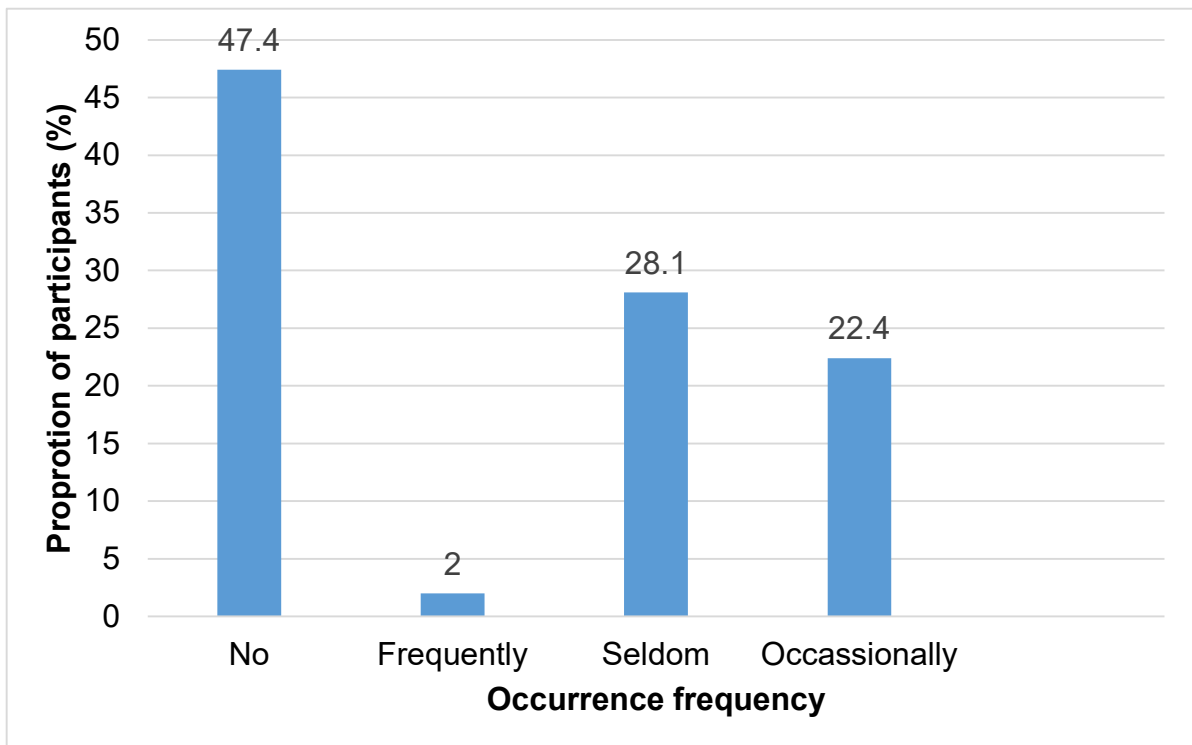
Food security pillar of access formed part of this study and was captured using the Household Food Insecurity Access Scale (HFIAS) measure. The HFIAS measure assisted in assessing the degree of food insecurity in each respondents’ family during the last 30 days. **Table 4.18** presents the results of binomial test results of the contribution of Ilima-Letsema Programme to food access.

**Table 4.18:** Binomial test results of the contribution of Ilima-Letsema Programme to food access (n=196)

Food access variable	Proportion of responses (%)		Mean	Level of significance (Binomial test)
	No	Yes		
Been concerned that some of their family members will not have adequate amount of produce in the last month.	47.4	52.6	0.53	0.520
In the last month were some of their family members unable to have types of food (vegetables, meat and eggs) they desire because of no money.	55.1	44.9	0.45	0.175
In the last month some of their family members forced to consume inadequate selection of food (vegetables, fruits, meat and eggs) due to no income.	90.8	9.2	0.09	<0.001
In the last month some of their family members had to consume the varieties of food (fruits, vegetables, dairy products, meat and eggs) that they did not need to consume because of no income to buy other food varieties.	83.7	16.3	0.16	<0.001
Some of the family members had to eat the kinds of food that they did not want to eat because of lack of resources to obtain other types of food in the last month.	52.0	48	0.48	0.617
In the last month some of their family members had to consume less meal per day as there was inadequate amount of food.	55.6	44.3	0.44	0.133
Any/some of the family members had to go a day (24 hours) without having meal as there was not enough food in the last month.	68.9	31.6	0.32	<0.001
<b>Average</b>	<b>64.8</b>	<b>35.3</b>	<b>0.35</b>	<b>0.206</b>

Out of the seven (7) questions that measured food access of the respondents, only three were statistically significant at 1% and 5% confidence interval, the other four questions were not statistically significant, as shown in **Table 4.18**. Most (90.8%) of the respondents disagreed with the question, which said that in the last month some of their family members were forced to consume inadequate selection of foods (vegetables, fruits, meat and eggs) due to lack of income. This was also supported by a mean score of less than one (actual is 0.09), which it meant that most of the respondents disagreed with the question because “0” represented “No”, and “1” represented “Yes” in the questionnaire, and the mean was skewed towards 0. The variation between the respondents was statistically significant ( $p < 0.001$ ), which means that the programme enabled the households of the beneficiaries to consume adequate food (vegetables, fruits, meat and eggs). On the other hand, the results showed that 83.7% of the respondents disagreed with the question. The variation among the respondents was statistically significant ( $p < 0.001$ ), with a mean score of less than one (0.16). The results implied that the programme had a significant impact in ensuring that family members consumed different food varieties they needed. About 68.9% of the respondents also disagreed with the question said that *“some of their family members had to go for a day without a meal because there was no enough food during the last month”*. The variation between “No” and “Yes” responses was statistically significant ( $p < 0.001$ ), with a mean score of 0.32. It implied that the programme had a significant impact in ensuring that the beneficiaries and their households had enough food daily.

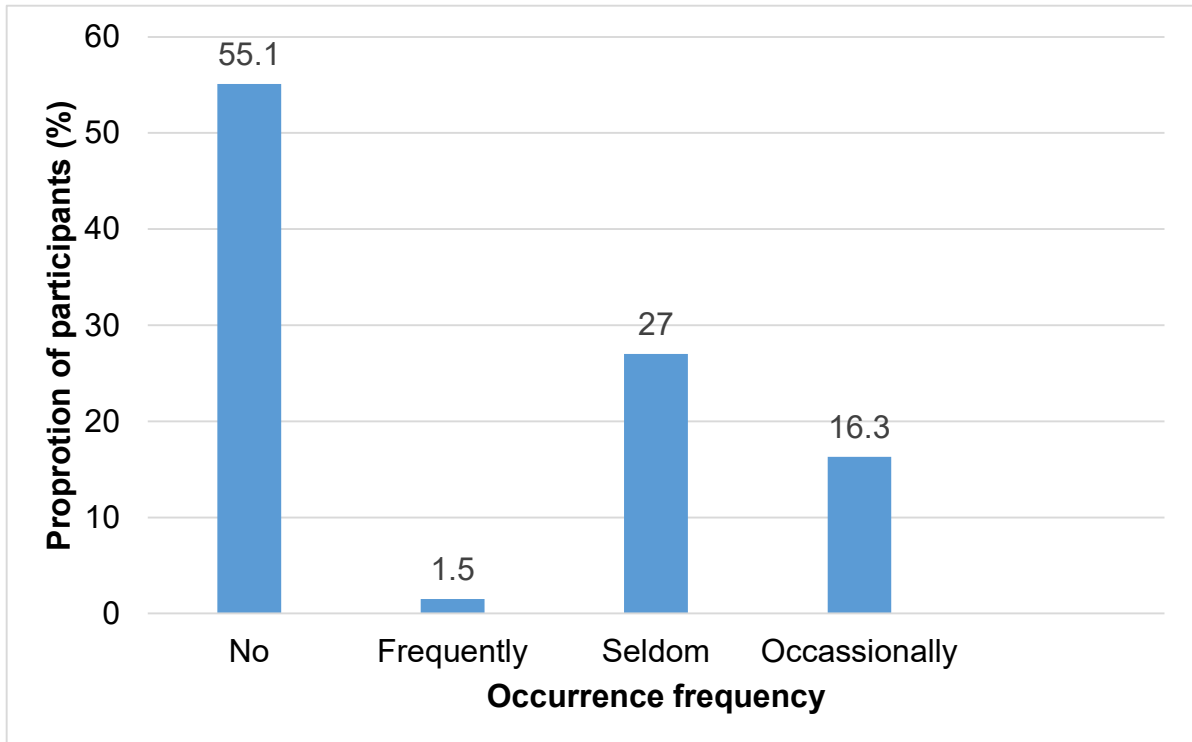
The responses to each of the seven HFIAS questions presented in **Table 4.18** are illustrated in **Figure 4.9** to **4.15**. **Figure 4.9** shows the level of agreement among respondents with the question: “Have you ever been concerned that some of your family members will not have adequate amount of produce in the last month?”



**Figure 4.9:** Level of agreement among respondents with the question: “Have you ever been concerned that some of your family members will not have adequate amount of produce in the last month?” (n=196)

The results presented in **Figure 4.9** show that a large proportion (52.6%) of the respondents were anxious that some of their family members will not have enough amount of food because of the low levels of production. The level of agreement was in three different categories: frequently (2%), seldom (28.1%) and occasionally (22.4%). This showed that small proportion 47.7% of the respondents were not anxious that their family members will not have enough amount of food because they did not produce enough food to feed their households.

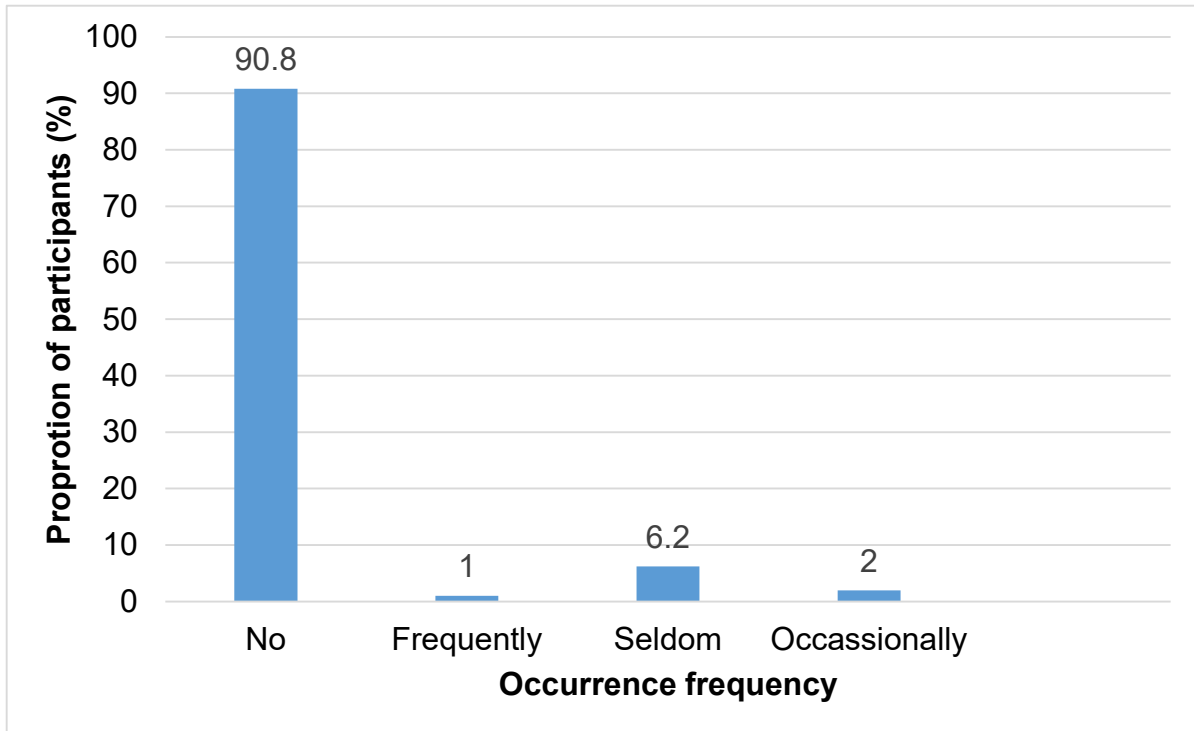
The level of agreement among respondents on the question: “In the last month were some of the family members unable to have types of food (vegetables, meat and eggs) they desire because of no money?” is illustrated in **Figure 4.10**.



**Figure 4.10:** Level of agreement among respondents with the question: “In the last month were some of the family members unable to have types of food (vegetables, meat and eggs) they desired because of no money?” (n=196)

The results in **Figure 4.10** show that 44.9% of the respondents said that their family members were unable to have the types of foods they desired because they did not have money to purchase them. In desperate conditions 1.5% of the respondents frequently failed to have the types of foods they desired, while 27% said that they seldomly experienced that, whereas 16.3% said that they occasionally ate undesired food types because of financial problems. The positive thing is that a large proportion (55.1%) of the respondents were able to eat a variety of foods they desired because they could afford them. Therefore, the Ilima-Letsema Programme empowered most of the beneficiaries to generate incomes, which enabled them to purchase a variety of foods. In conclusion, the programme contributed to food security of the beneficiaries using food access measure presented in **Figure 4.10**.

**Figure 4.11** presents the level of agreement among the respondents with the question: “In the last month were some of your family members forced to consume inadequate selection of food (vegetables, fruits, meat and eggs) due to no income?”

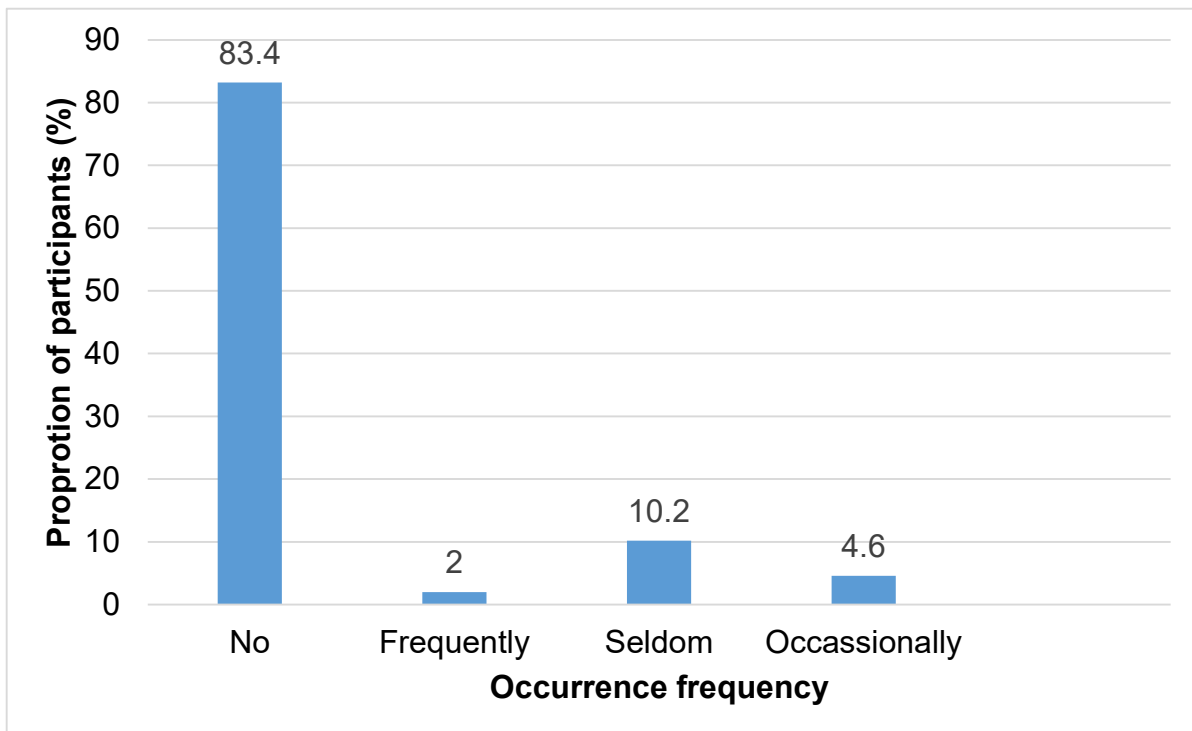


**Figure 4.11:** Level of agreement among respondents with the question: *“In the last month were some of your family members forced to consume inadequate selection of food (vegetables, fruits, meat and eggs) due to no income?”* (n=196)

Most (90.8%) of the respondents indicated that family members never experienced a situation where they were forced to consume inadequate selection of food due to lack of income, as shown in **Figure 4.11**. A few (9.2%) of the respondents said that seldomly, occasionally and frequently some of their family members were forced to consume inadequate selection of food (vegetables, fruits, meat and eggs) due to lack of income. This implied that only a small proportion of households were forced to consume inadequate selection of food because they did not have income. Therefore, Ilima-Letsema Programme enabled most of the respondents to access food of their choice.

**Figure 4.12** shows the level of agreement among respondents with the question: *“In the last month did some of your family members had to consume varieties of food (fruits, vegetables, dairy products, meat and eggs) that they did not choose due to lack income to buy other food varieties?”*

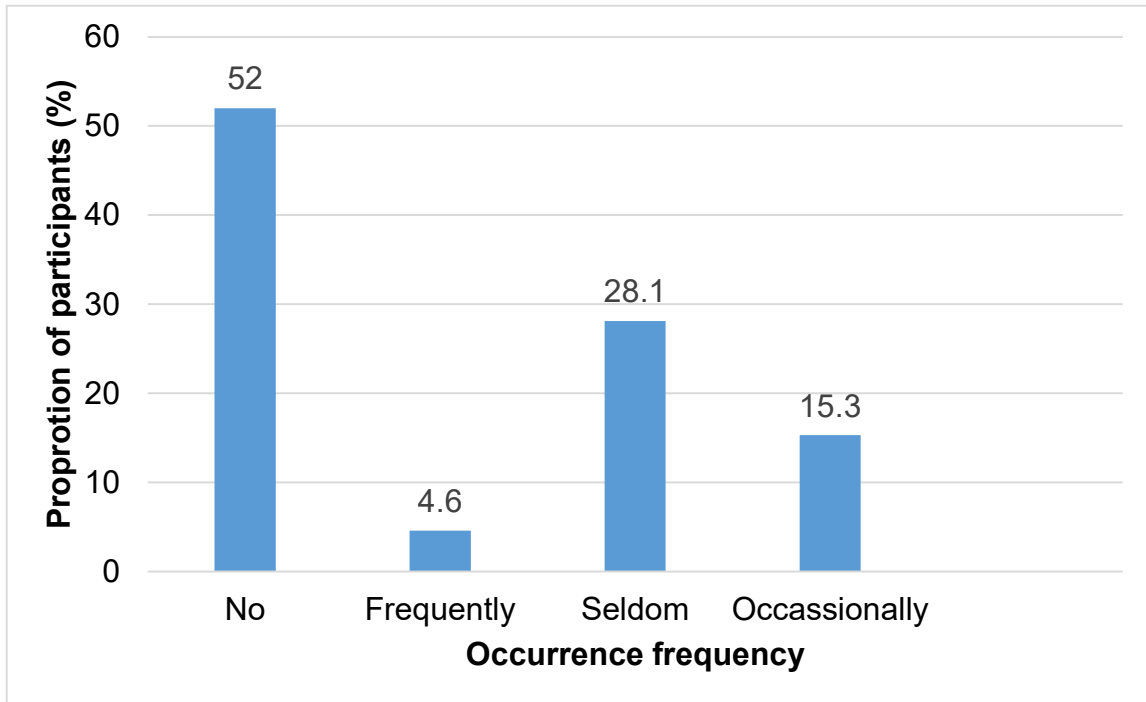




**Figure 4.12:** Level of agreement among respondents with the question: “*In the last month did some of your family members had to consume varieties of food (fruits, vegetables, dairy products, meat and eggs) that they did not choose because due to lack income to buy other food varieties?*” (n=196)

**Figure 4.12** shows that most (83.2%) of the respondents’ family members were not forced to consume food varieties that they did not choose to consume due to lack of income, while 10.2 % seldomly, 4.6% occasionally and 2% frequently consumed the food varieties that they did not choose to eat. That meant 16.8% of respondents’ family members were forced frequently, seldomly or occasionally to consume food varieties that they did not choose to eat due to lack of income. Therefore, the Ilima-Letsema Programme enabled most of the beneficiaries to generate incomes, which enabled them to buy other food varieties in instances where they were unable to produce them.

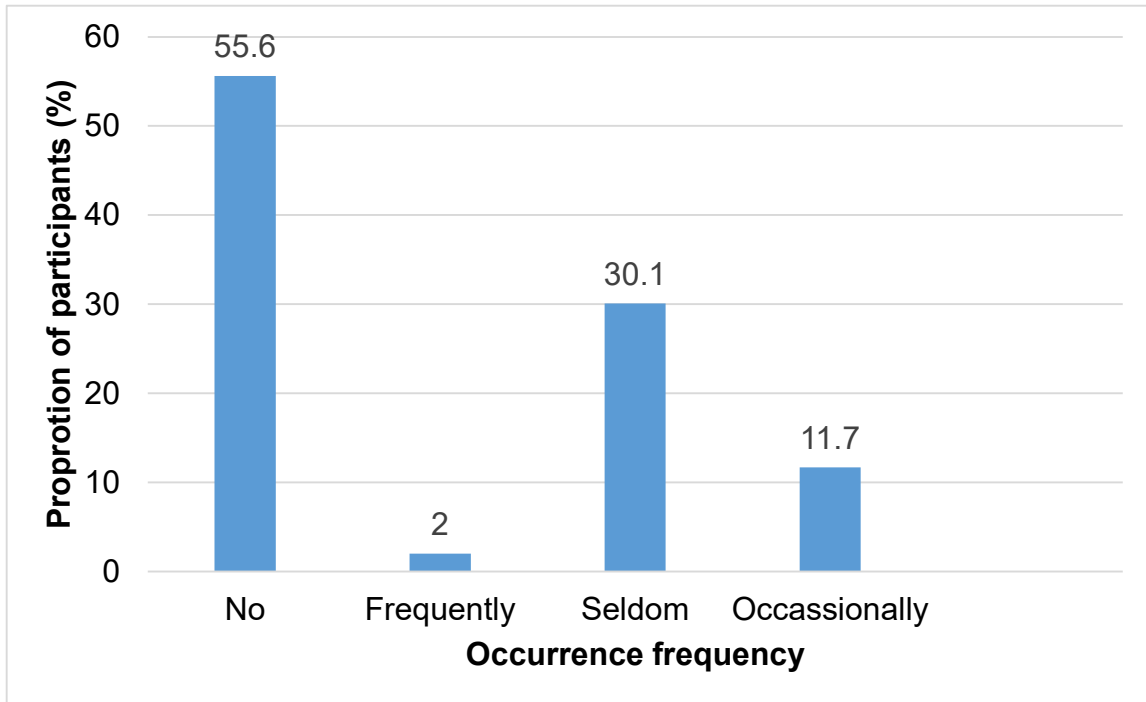
**Figure 4.13** shows the level of agreement among respondents with the question: “were some of the family members have to eat the kinds of food that they did not want to eat because of lack of resources to obtain other types of food in the last month?”



**Figure 4.13:** Level of agreement among respondents with the question: “Were some of the family members have to eat the kinds of food that they did not want to eat because of lack of resources to obtain other types of food in the last month?” (n=196)

About half (52%) of the respondents and their family members were never in a situation where they had to consume food that they did not want to eat due to lack of resources to produce food varieties of their choice, as shown in **Figure 4.13**. The level of agreement with the question was frequently (4.6%), seldomly (28.1%) and occasionally (15.3%). This showed that 48% of the respondents and their families consumed food varieties that they did not choose because of lack of resources to produce their desired food varieties.

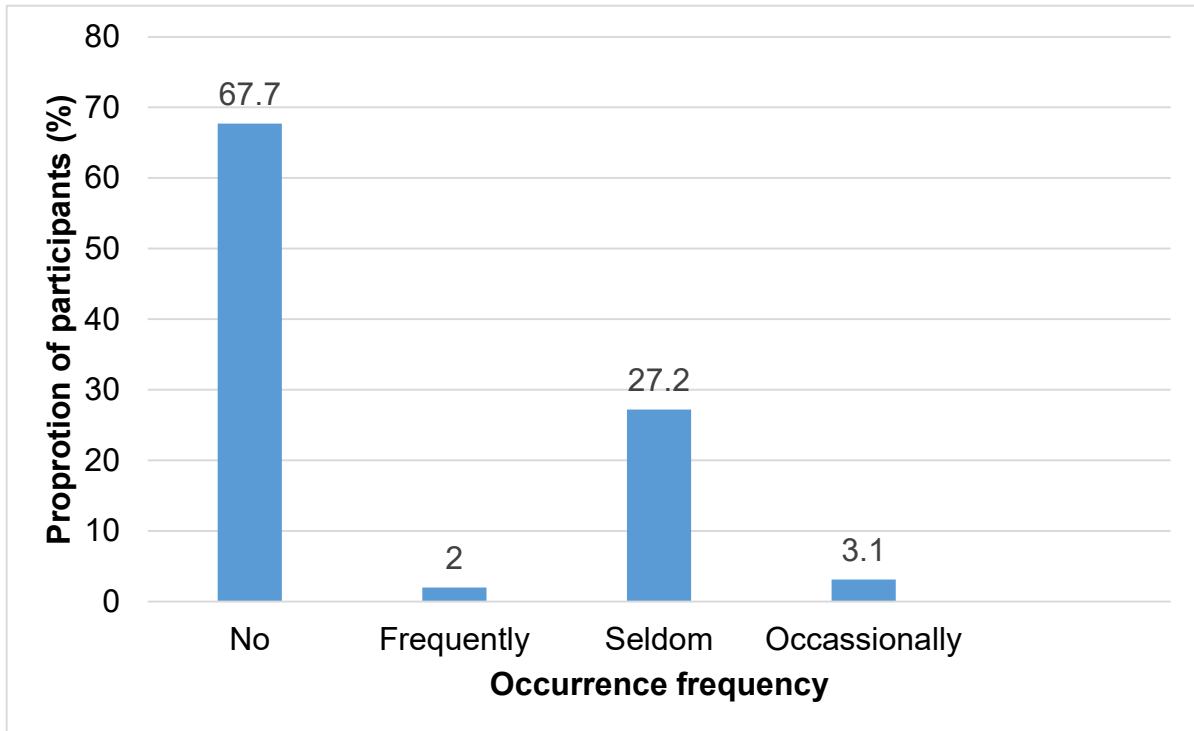
**Figure 4.14** shows the level of agreement among respondents with the question: “in the last month did some of the family members have to consume less meals per day because there was inadequate amount of food?”



**Figure 4.14:** Level of agreement among respondents with the question: *“In the last month did some of the family members have to consume less meal per day as there was inadequate amount of food?”* (n=196)

The majority (55.6%) of the respondents and their family members did not consume less meals per day because there was inadequate food, while 44.4% of the respondents were forced to consume less meals per day due to inadequate food, as shown in **Figure 4.14**. The situation varied from seldomly (30.1%), occasionally (11.7%) and frequently (2%). This implied that the support received by farmers from Ilima-Letsema Programme enabled about half of the respondents and their family members to consume adequate amount of food daily.

**Figure 4.15** shows the level of agreement among respondents with the question: *“Did any/some of the family members have to go for a day without having a meal because there was inadequate food in the last month?”*



**Figure 4.15:** Occurrence frequency among respondents with the question: “*Did any/some of the family members have to go for a day without having a meal because there was inadequate food in the last month?*” (n=196).

The results of the survey presented in **Figure 4.15** show that in the last month 67.7% of the respondents and their family members never spent a day without a meal due to insufficient food. However, that occurred to 32.3% of the respondents and their families who went without a meal for a day due to insufficient food. The level of agreement with the basic question was seldom (27.2%), occasionally (3.1%), and frequently (2%). This implied that most of the beneficiaries of Ilima-Letsema Programme and their family members were able to have meals daily after receiving support from the programme. Therefore, the programme enabled most of the beneficiaries to have adequate food access and food secure using this measure of food access.

#### **4.2.3.3 Food stability**

This section presents the outcome of the vulnerability, level of risks and the strategies adopted by respondents to cope with food shortages. Their knowledge, experiences and size of farm/plot play a role in sustainability of their farming

enterprises. Variables which were measured in this section were household decision-making, farming experience, current yield, ability to meet the dietary requirements of the household and the satisfaction with the size of the farm/plot at their disposal.

**Table 4.19:** Decision-making of the households on the type of food to be purchased (n=196)

Decision-making of households on the type of food to be purchased	Response (%)		Mean	Level of significance (Binomial test)
	No	Yes		
Person who prepares the meals daily	36.2	63.8	0.64	<0.001
The person who produces the food	73.0	27.0	0.27	<0.001
The person who buys the produce	20.4	79.6	0.80	<0.001

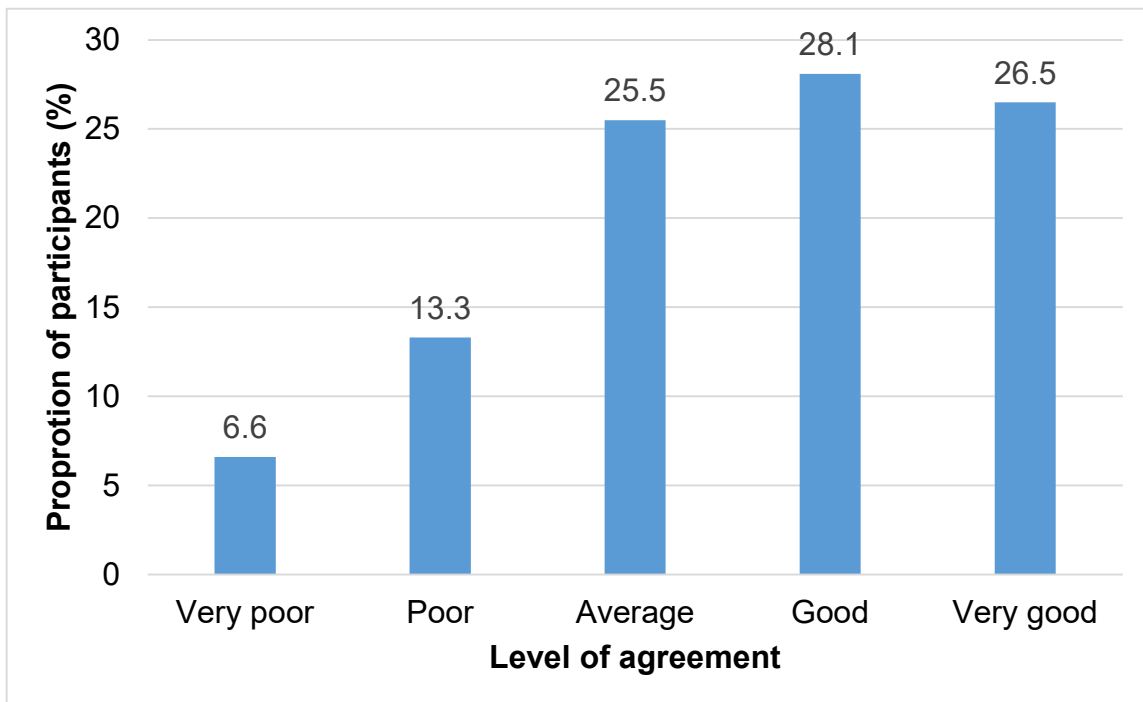
Source: survey data 2018

Most (63.8%) of the respondents agreed that the person who decided on what type of food to purchase was the one who prepared meals daily, which was supported by the mean score of 0.64, as shown in **Table 4.19**. This implied that most of the respondents agreed with the basic question. The variation between the number of respondents who agreed or disagreed with the question was statistically significant ( $p < 0.001$ ). This meant that family members who prepared meals daily played a significant role in decision-making on the type of food purchased for the household.

About 73% of the respondents disagreed that the producer of food was the one who decided on what type of food to purchase, which was supported by the mean score of 0.27, as shown in **Table 4.19**. The variation between No and Yes responses was statistically significant at 1%. It implied that household members who produced and purchased food did not influence decision-making on the diet of their family members. Most (79.6%) of the respondents agreed that the purchaser of food was the one who decided on what type of food to purchase. The mean score of 0.80 supported this. The variation between Yes and No responses was statistically

significant ( $p < 0.001$ ). It means that people who purchased food influenced the diet of their households significantly.

The farming skills of the respondents were also investigated to determine their impact on food stability of the respondents. **Figure 4.16** presents the farming skills of the respondents.

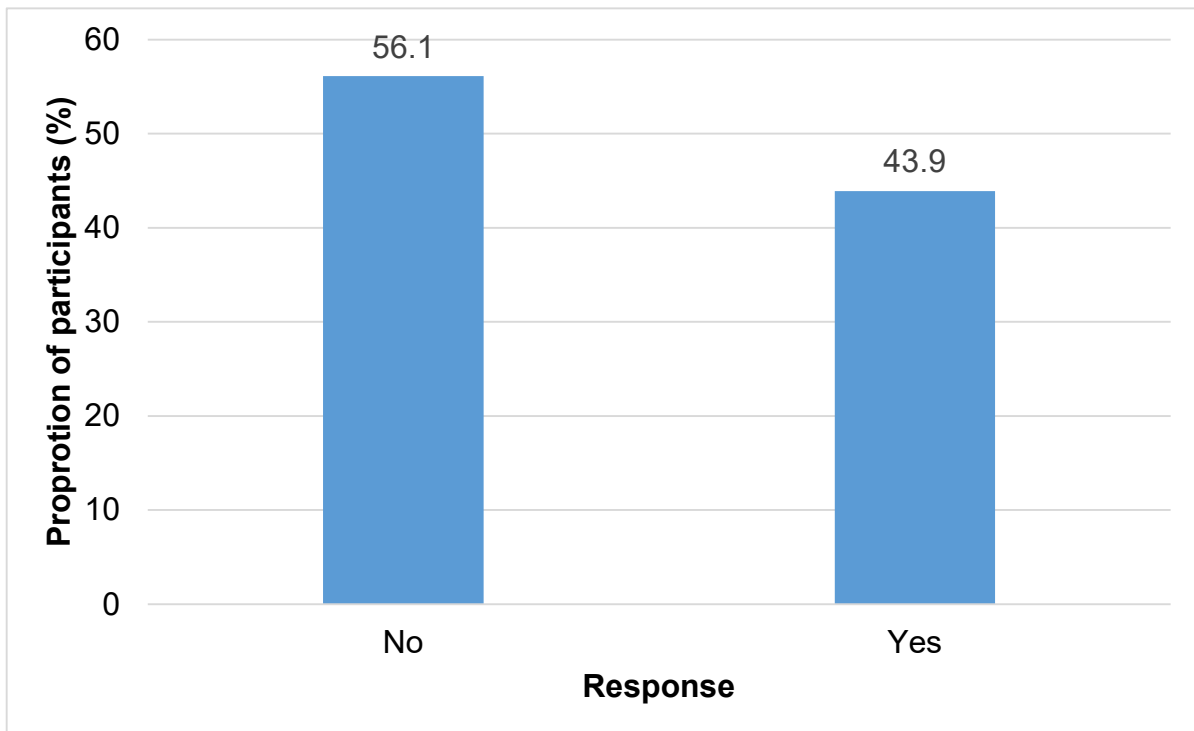


**Figure 4.16:** Farming skills of the respondents (n=196)

Source: survey data 2018

The results presented in **Figure 4.16** shows that 54.6% of the respondents indicated that their farming skills were adequate (good and very good), while 25.5% of the respondents perceived their farming skills as average, and some (19.9%) said that they lacked all the necessary farming skills. That implied their ability to produce sustainably hanged in the balance between success and failure. In general, the results showed that a large proportion (54.5%) of the beneficiaries of Ilima-Letsema Programme had the necessary farming skills to sustain their agricultural production, which was a positive indicator of food stability of the respondents.

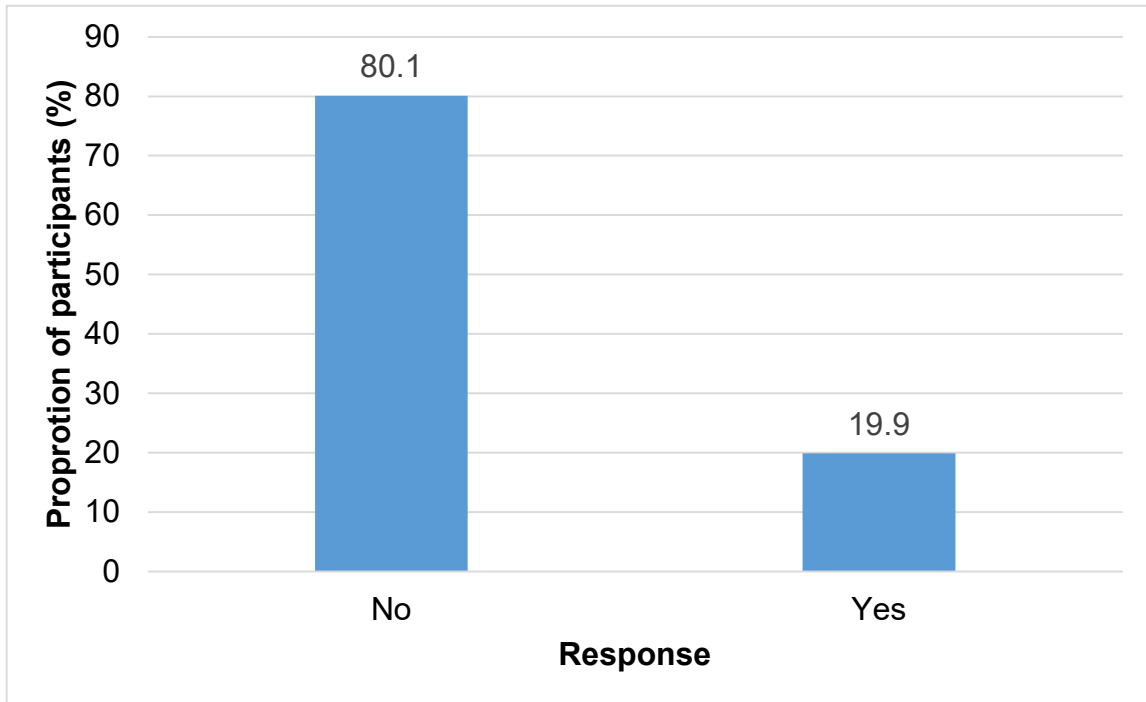
**Figure 4.17** presents the responses of the respondents to the question: “Are you satisfied with the quality of the produce you are getting from your farm/plot?”



**Figure 4.17** The distribution of the respondents on the question: “Are you satisfied with the quality of the produce you are getting from your farm/plot?” (n=196)

A large proportion (56.1%) of the respondents were dissatisfied with the quality of the produce they obtained from their farm/plot, and 43.9% were satisfied with the quality of the produce they obtained from their farm/plot as shown in **Figure 4.17**. This showed that majority of the respondents were not happy with the quality of their produce.

**Figure 4.18** illustrates the distribution of the respondents on the question: “Are you satisfied with your current yield after receiving support from Ilima-Letsema Programme?”

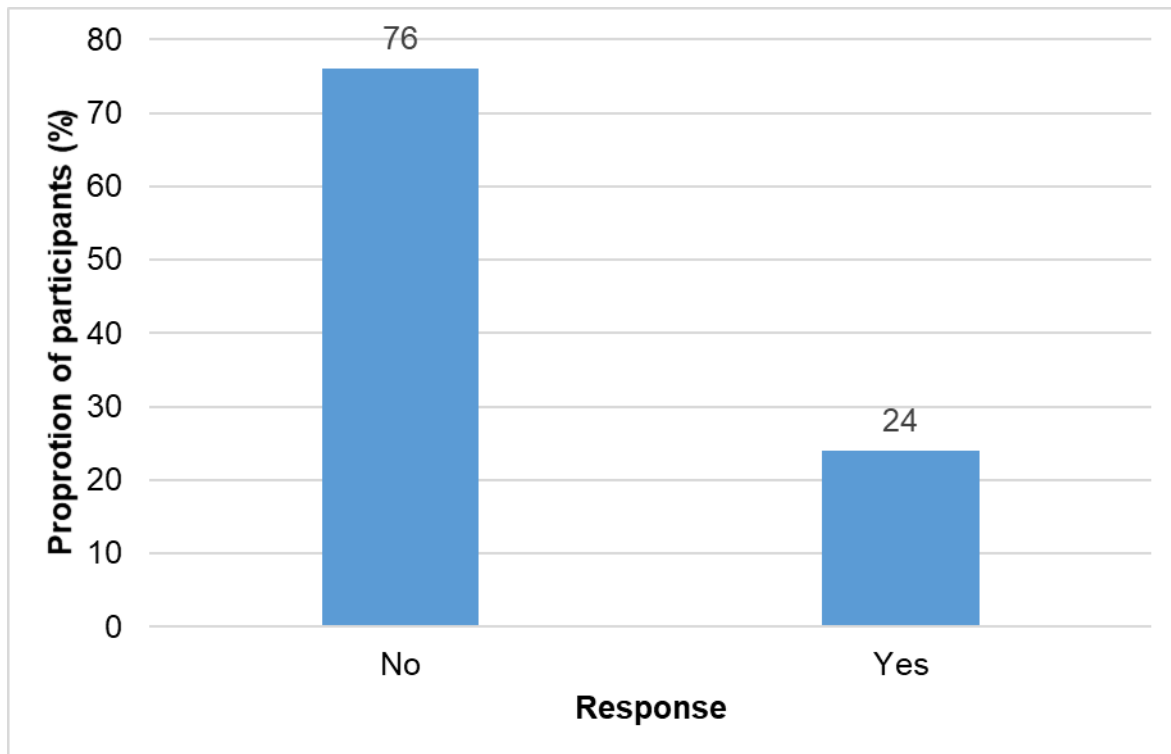


**Figure 4.18** The distribution of the respondents on the question: *“Are you satisfied with your current yield after receiving support from Ilima-Letsema Programme?”* (n=196)

Most (80.1%) of the respondents were not satisfied with the yield they attained from their farm/plot, while 19.9% of the respondents were satisfied as shown in **Figure 4.18**. The mean score of 0.20 was obtained in support of high level of disagreement since 0 and 1 represented No and Yes, respectively, in the survey questionnaire. The outcome of responses from respondents who disagreed or agreed was statistically significant ( $p < 0.001$ ). This implied that the programme did not significantly improve the yields and food stability of the respondents.

**Figure 4.19** shows the distribution of the respondents on the question: *“Are you satisfied with the size of farm/plot you are farming on?”*





**Figure 4.19** The distribution of the respondents on the question: “Are you satisfied with the size of farm/plot you are farming on?” (n=196)

The results presented in **Figure 4.19** shows that more than three quarter (76%) of the respondents were not satisfied with the size of their farm/plot; only small proportion (24%) were satisfied. The mean score of 0.24 is in support of high-level disagreement since 0 and 1 represented no and yes respectively in the questionnaire. The variation between the respondents who agreed and disagreed was statistically significant ( $p < 0.001$ ). The dissatisfaction with plot/farm size is likely to contribute to food instability of the respondents because they may produce insufficiently for home consumption and income generation to sustain their families.

To cope with food instability respondents should have coping strategies to assist them deal with the situation. **Table 4.20** presents coping strategies of the respondents with food instability.

**Table 4.20:** Coping strategies of the respondents with food instability (n=196)

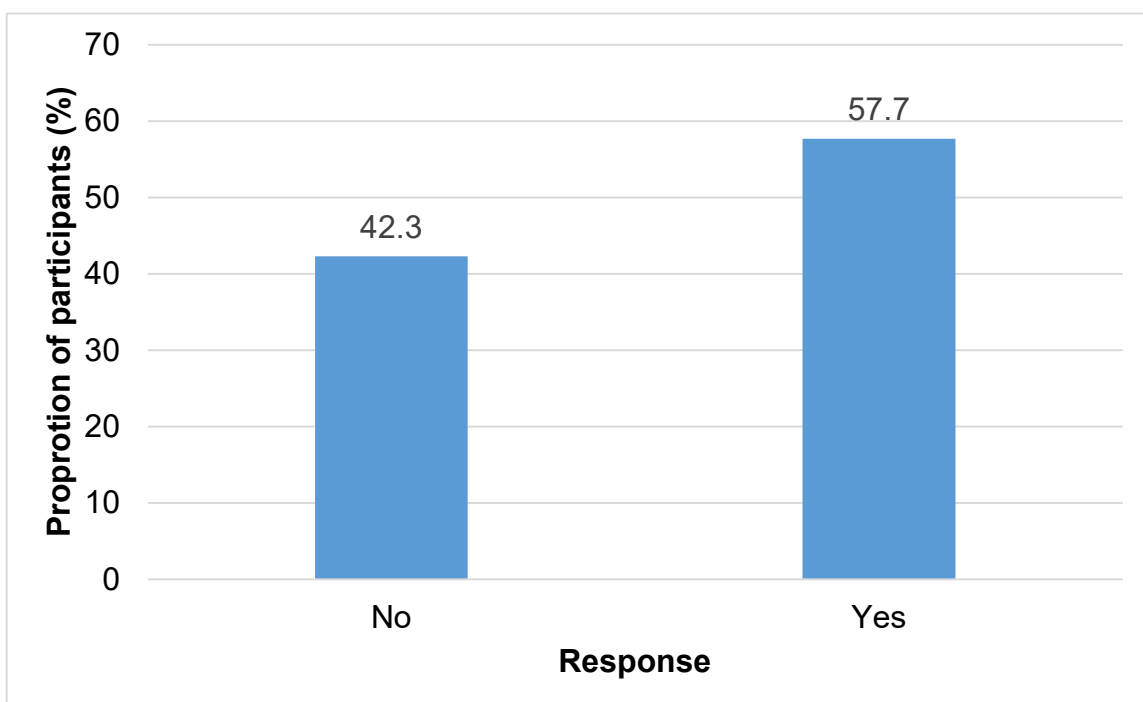
Coping strategy	Response (%)		Mean	Significance (Binomial test)
	No	Yes		
Reduce daily intake so that children can get enough	78.1	21.9	0.22	<0.001
Skip certain meals of the day	88.3	11.7	0.12	<0.001
Skip all meals for the whole day	79.6	20.4	0.20	<0.001
Depend on relatives, friends outside home to buy produce	58.2	41.8	0.42	0.027
Borrow money to buy food	82.1	17.9	0.18	<0.001
Buy on credit	85.2	14.8	0.15	<0.001
I do not have a plan	87.8	12.2	0.12	<0.001
Depend on government grants	49.0	51.0	0.51	0.083
Other	89.8	10.2	0.16	<0.001

Source: survey data 2018

The results in **Table 4.20** show that 88.3% of the respondents disagreed that to cope with food instability they skipped certain meals of the day, while 85.2% bought food on credit, 82.1% borrowed money to buy food, 79.6% skipped all meals of the day, and 78.1% reduced daily intake so that children can get enough, respectively. The level of disagreement is supported by the mean score that ranged between 0.12 and 0.22 since 0 and 1 in the questionnaire were represented by No and Yes, respectively. The difference between the number of respondents who agreed or disagreed with the five (5) variables was statistically significant ( $p < 0.001$ ) at 5% confidence interval. This implied that all the above variables played an insignificant role in ensuring that the respondents were food stable. On the other hand, 58.2% of the respondents depended on relatives and friends outside home to buy food in

order to cope with food instability. This was statistically significant ( $p=0.027$ ), which implies that relatives and friends outside home played a significant role in ensuring that the respondents bought food to cope with instability. About half (51%) of the respondents agreed that they depended on government grants to cope with food instability, with a mean score of 0.51 to support this notion. However, the impact of social grant was not statistically significant ( $p=0.083$ ) at 5% confidence interval. Surprisingly, about 87% of the respondents did not have a concrete plan to cope with food instability. Overall, the results implied that majority of the respondents were at risk of not consuming adequate food in an event they were unable to produce sufficiently in their farm/plot.

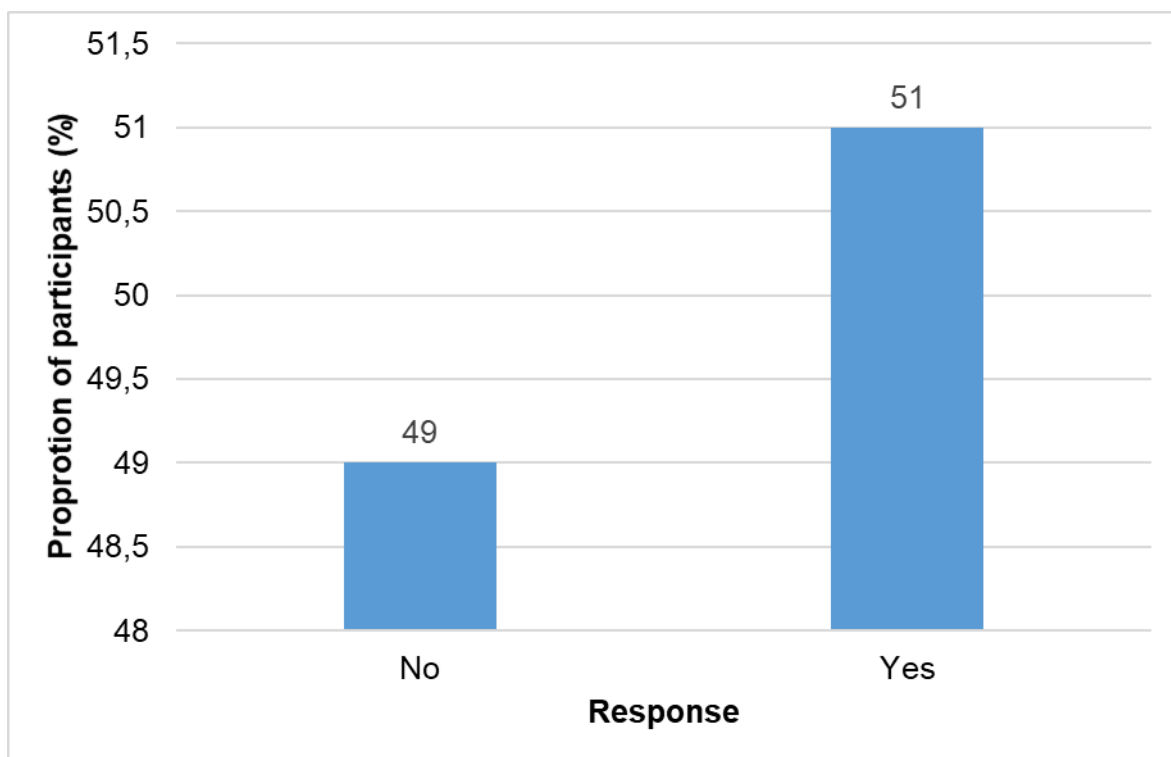
**Figure 4.20** shows the distribution of the respondents on the question: “Are you able to meet dietary requirements after receiving support from Ilima-Letsema Programme?”



**Figure 4.20** The distribution of the respondents on the question: “Are you able to meet dietary requirements after receiving support from Ilima-Letsema Programme?” (n=196)

The majority (57.7%) of the respondents were able to meet dietary requirements of their families after participating in the Ilima-Letsema Programme, while 43.3% were not. This implied that Ilima-Letsema Programme enabled majority of the respondents to provide enough food for their household members. Therefore, the programme played a positive role in ensuring that the beneficiaries had stable food supply.

Results of the distribution of the respondents to the question: “Do you always get enough food daily after receiving support from Ilima-Letsema Programme?” are presented in **Figure 4.21**.



**Figure 4.21** The distribution of the respondents on the question: “Do you always get enough food daily after receiving support from Ilima-Letsema Programme?” (n=196)

**Figure 4.21** shows that 51% of the respondents got enough food after participating in the Ilima-Letsema Programme, while 49% of the respondents did not. This showed that Ilima-Letsema Programme enabled more than half of beneficiaries to provide enough food for their households daily.

#### 4.2.4 Contribution of Ilima-Letsema Programme to net farm income, poverty alleviation and job creation

The contribution of Ilima-Letsema Programme to income, poverty alleviation and job creation were considered in the study. The variables which formed part of this section were number of workers, annual net income and poverty status of the respondents before (pre-support) and after (post-support) receiving ilima-letsema support.

##### 4.2.4.1 Job creation

This subsection presents the results of the contribution of ilima-letsema to job creation in the study area. T-test results of the number of jobs created by the respondents before and after receiving support from Ilima-Letsema Programme are presented in **Table 4.21**.

**Table 4.21:** T-test results of number of jobs created by the respondents before and receiving support from Ilima-Letsema Programme (n=196)

Variable	Mean	95% confidence interval of the difference		T-test	df	Significance (2-tailed)
		Lower	Upper			
Pre-support	0.52	-0.668	-0.158	-3.195	195	0.002
Post-support	0.93	-35518	-12032	-4.083	195	

Source: survey data 2018

**Table 4.21** depicts that before receiving programme support, the average number of people employed by the respondents was 0.52, and after receiving support the number increased to 0.93. The increase was statistically significant ( $p=0.002$ ) at 1% and 5% confidence intervals. This showed that Ilima-Letsema Programme significantly contributed to job creation in the study area.

#### 4.2.4.2 Net farm income

To determine the contribution of Ilima-Letsema Programme to net farm income of the respondents, t-test was used. The t-test results of net farm income of the respondents before and after receiving support from Ilima-Letsema Programme are presented in **Table 4.22**.

**Table 4.22:** T-test results of net farm income of the respondents before and after receiving support from Ilima-Letsema Programme (n=196)

Variable	Mean (in Rand)	95% confidence interval of the difference		T-test	df	Significance (2-tailed)
		Lower	Upper			
Pre-support	24238.27	-34517.99	-2032.64	-4.08	195	<0.001
Post-support	47513.59	-35518	-12032	-4.083	195	

Source: survey data 2018

The mean annual net income of the respondents was R24 238.27 before programme support and R47 513.59 after programme support as shown in **Table 4.22**. The change was statistically significant ( $p < 0.001$ ) at 1% and 5% level confidence intervals. This showed that the Ilima-Letsema Programme increased farm net income of the respondents significantly.

#### 4.2.4.3 Poverty alleviation

The contribution of Ilima-Letsema Programme to poverty alleviation was analyzed using Wilcoxon signed ranks test, by looking at poverty lines before and after receiving support from Ilima-Letsema Programme.

The analysis of the contribution of Ilima-Letsema Programme to poverty alleviation is shown in **Table 4.23**, at different poverty lines and level of significance using Wilcoxon signed ranks test.

**Table 4.23:** Results of Wilcoxon signed ranks test showing the contribution of ilima-letsema to poverty alleviation (n=196)

Type of poverty line	No percentage (%)		Yes percentage (%)		Mean		Significance (Wilcoxon signed ranks test)
	Before	After	Before	After	Before	After	
Food Poverty (FPL)	65.8	64.3	34.2	35.7	0.34	0.36	0.577
Lower-Bound Poverty (LBPL)	73.0	69.4	27.0	30.6	0.27	0.31	0.162
Upper-Bound Poverty (UBPL)	80.1	74.5	19.9	25.5	0.20	0.26	0.034
<b>Average</b>	<b>73.0</b>	<b>69.4</b>	<b>27.0</b>	<b>30.6</b>	<b>0.27</b>	<b>0.31</b>	<b>0.0258</b>

Note that monthly FPL = R547 per person; LBPL = R785 per person; UBPL =R1183 person

Source: survey data 2018

**Table 4.23** shows that 65.8% of the respondents were living under Food Poverty Line (FPL) before receiving support from Ilima-Letsema Programme, however, this decreased to 64.3% after receiving support. The change is also supported by mean score which increased from 0.34 before receiving support to 0.36 after receiving support. The change was not statistically significant ( $p=0.577$ ) at 5% confidence interval as shown by the results of Wilcoxon signed ranks test. This implied that Ilima-Letsema Programme did not alleviate poverty of the beneficiaries who were trapped in food poverty line.

Prior to receiving support from Ilima-Letsema Programme, 73% of the respondents were living below Lower-Bound Poverty Line (LBPL), but this was decreased to 69.4% after receiving support. The decrease in the proportion of the respondents altered the mean score from 0.27 to 0.31 before and after receiving support, respectively. The change was not significant statistically ( $p=0.162$ ). This implied that the programme did not uplift the beneficiaries from the lower-bound poverty line.

A large proportion (80.1%) of the respondents were living below Upper-Bound Poverty Line (UBPL) before receiving support, but this was reduced to 74.5% after receiving support as shown in **Table 4.23**. The change in the proportion of respondents resulted in an increase in mean score from 0.20 to 0.26. This change was deemed statistically significant ( $p=0.034$ ) at 5% confidence interval. This implied that the Ilima-Letsema Programme played a significant role in improving the poverty status and livelihood of the respondents and their households by uplifting them from the trap of Upper-Bound Poverty Line.

## **4.3 Discussions**

### **4.3.1 Socio-economic characteristics of the respondents**

#### **4.3.1.1 Socio-demographic characteristics**



The study revealed that 53.6% of the respondents in the study area were males, and 46.4% were females. Similar gender proportion was found in homestead food garden programmes in Gauteng Province, where most households were headed by males compared with female headed households (Tlang, 2016). The results were similar to a study conducted in Sedibeng District Municipality in Gauteng Province, which found that more males benefitted from CASP than females (Phatudi-Mphahlele, 2016). On the contrary, Maoba (2016) reported that in Ekurhuleni metropolitan municipality and Sedibeng district municipality, 61.5% of beneficiaries of CASP were females and only 38.5% were males. This implied that there was a balance of gender when it came to farmer support programmes, where both males and females were equally supported. This means that females were not getting enough support from governments agricultural support programmes; they are more likely to be vulnerable to food insecurity and poverty.

From age perspective, it was found that only 5.1% young people between the age of 18 and 35 years were supported through Ilima-Letsema Programme in the study area. This clearly showed that there was less youth participation in agriculture. Tshuma (2013) had similar findings in the study conducted at Marselle farming community in Eastern Cape, which showed that there was low youth participation in agriculture. This was attributed to the fact that youth prefer formal jobs with regular salaries than agriculture (Ngqangweni and Delgado, 2003). As a result, few young people benefitted from the programme.

The predominant languages in the study area were Southern Sotho (31.6%) and IsiZulu (31.1%), compared with SiSwati that was spoken by only 1% of the respondents, and was considered the least spoke language in the area. These findings were aligned with the prediction that most Southern Sotho speaking people resided and dominated the area South of Johannesburg (IDP, 2018). Similarly, Modibedi (2018) found that majority (59.4%) of the farmers in urban community gardens in Emfuleni Local Municipality spoke Sesotho and other South African languages.

The findings on educational background showed that 66.6% of the respondents attained secondary (32.1%) and tertiary education (18.2%). This indicated that majority of them had qualifications above matric level. In support of that Adekunle (2013) reported that people with higher education had the ability to understand and interpret information much better. However, the situation was different in Ekurhuleni Metropolitan Municipality and Sedibeng District Municipality, where Maoba (2016) found that small-scale majority (53.8%) of farmers who benefitted from CASP had tertiary education as their highest qualification.

From the marital status outlook, it was found that 40.8% of the respondents were married, whereas 19.9 % were single. Similar findings were reported in Sedibeng District by Phatudi-Mphahlele (2016), where a large proportion (51.9%) of CASP beneficiaries were married and only a few were single. Marital status of the beneficiaries of government supported programmes should be considered because fights might arise during cultural property inheritance processes, which might have a negative influence on agricultural production (Ngeywo *et al.*, 2015). It means that more than a third of the beneficiaries had spousal support which was necessary in decision-making (Ngeywo *et al.*, 2015).

#### **4.3.1.2 Socio-economic characteristics**

The findings indicated that 53.1% of Ilima-Letsema Programme beneficiaries owned the land they were farming on. This implied that private land ownership was the most common land acquisition method Midvaal Local Municipality. This was in accordance with South African General Household Survey (GHS) report, which stated that majority of households in South Africa own the land they cultivate (Stats SA, 2017). In addition, Mafsiakaneng (2015) found that a large proportion of CASP beneficiaries in the City of Tshwane Metropolitan Municipality owned their farmlands and had title deeds at their disposal. South African Institute of Race Relations (SAIRR) (2018) reported that in South Africa, about 72% of the land is owned by White people, whereas 4% is owned by black Africans.

The findings of farm/plot size showed that on average respondents had 4.4 ha with a range between 0.2 ha and 90 ha. A standard deviation of 0.84 and a standard error of mean of 11.79 were obtained. The results indicated that there was high variation in the farm/plot, which meant that some farmers had access to more land than others. On the contrary, Phatudi-Mphahlele (2016) found that in Sedibeng District the average farm/plot size of farmers supported by CASP was 132.78 ha with a range between 2 ha and 600 ha. Agrarian structure in South Africa varies from the rest of the African continent, where large-scale commercial farms occupy most of the countryside, while black farmers occupy small plots of land without support (Greenberg *et al.*, 2018). This was expected because most (38.4%) of CASP beneficiaries in Sedibeng District acquired land through the Land Reform Programmes (Phatudi-Mphahlele, 2016).

The results of the household size revealed that the smallest household size had 2 members and the largest household size had 9 members, with an average of 4.33 members. However, the variation was low as shown by standard deviation of 1.46. Moreover, there were more adults (2.37) than children (1.97) in the households of the respondents. On average the number of working adults in the family was 0.96 (1). This showed that there was high unemployment in the study area. Furthermore, Phatudi-Mphahlele (2016) indicated that the availability of family labour was dependent on the size of the households. The findings agreed with Swanepoel (2017) in Western Cape Metropole, who found that the beneficiaries of urban agriculture had an average family size of 4.3 members. On the contrary, Phatudi-Mphahlele (2016) found that in Sedibeng District households of CASP beneficiaries had 3 to 7 family members. According to Community Survey the average household size in South Africa has decreased from 4.5 in 1996 to 3.3 in 2016, with the largest households (3.9) in the Eastern Cape, KwaZulu-Natal (3.8), Limpopo (3.6) and Mpumalanga (3.5). Gauteng had the lowest household size of 2.7 family members.

About sources of income, the study found that 65.8% of the beneficiaries of Ilima-Letsema Programme received social grants as the second most important source of income after farming with 75%. Some (38.8%) of the respondents relied on the

income earned from full-time or part-time employment opportunities, and 21.4% earned income from other sources such as collection of cans, bottles and card boxes for recycling purposes or renting of farmland and backyard rooms in the farm/plot. This implied that apart from farming, the respondents relied more on social grants for a living than other sources of income. Other sources of income assisted the respondents to improve their livelihoods and food security status. Tshuma (2013) had similar findings in Marselle farming community in Eastern Cape, where it was reported that 75% of the beneficiaries of LRP were financially dependent on farming (full-time farmers) and social grants (pensioners). In addition, Swanepoel (2017) indicated that the main source of income of beneficiaries of household and community gardens in Langa in Cape Town Metropole was social grants. However, Phatudi-Mphahlele (2016) in Sedibeng District found that only 22.8% of CASP beneficiaries had formal employment apart from farming. The findings agreed with Modibedi (2018) who reported that in Emfuleni Local Municipality 78.7% of community gardens beneficiaries relied on farming, while 21.3% relied on social grants.

From farming experience perspective, the findings indicated that the respondents had 2 to 30 years of farming experience, with an average of 10 years. This showed that some of respondents were involved in agriculture for less than three years, while others started farming about 30 years ago. Hence, the variation was high. It implied that Ilima-Letsema Programme supported farmers with different farming experience that means the programme was inclusive. Phatudi-Mphahlele (2016) had similar findings in Sedibeng District, where farming experience of CASP beneficiaries ranged between 3 and 30 years, with an average of 8.5 years.

The findings on annual income showed that a minimum annual net income earned by the respondents in the previous year was R0.00 and maximum was R900 000, with an average of R47 513.59. The variation was very high, as shown by the standard deviation of R108 184.06. This implied that there were respondents who made their wealth from farming, whereas others did not earn income at all. This was attributed to the fact that the respondents were farming for different reasons, which

included home consumption and sale or both. On the contrary, Phatudi-Mphahlele (2016) found that in Sedibeng District the CASP beneficiaries had an average annual income of R487 530.70. This showed that net or gross income earned by the farmers differed from one season to the other, because during winter production of most smallholder farmers declined (Adekunle, 2013).

#### **4.3.2 Impact of Ilima-Letsema Programme on agricultural production**

An overwhelming majority (90%) of the respondents in the study area were involved in agricultural production with crop production as the dominant (51.5%) activity, followed by mixed farming at 29.6% and livestock production at 11.2%. This implied that a large proportion of the respondents cultivated crops in their farms/plots (vegetables and field crops). DPME (2015b) had similar findings in South Africa, where the majority of CASP beneficiaries were involved more in crop production than livestock production.

The finding of the study showed that CASP had a positive impact on agricultural production (DPME, 2015b). The findings revealed that out of 90% of the respondents who cultivated crops, 60.2% obtained significantly ( $p < 0.001$ ) high yields after benefitting from Ilima-Letsema Programme. This implied that Ilima-Letsema Programme contributed to crop production positively. According to Nkonkobe Farmers Association and Agricultural and Rural Development Research Institute (NFA and ARDRI, 2015) beneficiaries of Fetsa Tlala programme also obtained high yields in maize production as the result of the programmes support. In Sedibeng District CASP had a positive impact on vegetable and cereal production, which enabled them to generate more income from their production (Phatudi-Mphahlele, 2016).

With regards to livestock farming, more than half of them indicated that the number of their animals increased after receiving support from Ilima-Letsema Programme. The contribution of the Ilima-Letsema Programme to livestock production was also statistically significant ( $p = 0.033$ ). In Nkonkobe Local Municipality in Eastern Cape the

increase in maize yields enabled the Fetsa Tlala Programme beneficiaries to have more feed for their livestock, and thus, it also increased the number of livestock in the area (NFA and ARDRI, 2015). These findings agreed with DPME (2015b) that reported that in South Africa, CASP beneficiaries recorded an increase in both crop and livestock outputs. The contribution of the Ilima-Letsema Programme to both crop and livestock production in Midvaal Local Municipality was statistically significant, which implied that the programme had a positive impact on agricultural production.

### **4.3.3 Contribution of Ilima-Letsema Programme to food security**

#### **Food availability**

With regards to food availability, it was found that a large proportion (55.6%) of the respondents never had worries about where their next meal would come from due to unreliable production, but a few of them (18.9%) had such worries. On the contrary Masekoameng (2015) found that 54.5% of households in Sekhukhune District had challenges of food unavailability while 45.5% did not. The food access situation was different from what Masuku *et al.* (2017) found in uThungulu District in KwaZulu-Natal, where 17.2% of the beneficiaries of comprehensive food security programme had severe inadequate food access because of lack or insufficient basic infrastructure and poor roads, shortages of water and electricity and inaccessibility to markets.

The current study found that 49.5% of the beneficiaries Ilima-Letsema Programme had enough food to feed their families because they were getting enough produce from their farms/plots sustainably, whereas 50.5% of them did not. Similar findings were reported by Modibedi (2018) in Emfuleni Local Municipality, where 49.2% of farmers in urban community gardens were able to feed their families with vegetables from their gardens. However, SIEHFS (2012) showed that most (93%) of beneficiaries of Siyasondla Programme in Gauteng Province ate food from their gardens once a week or more, which contributed to food availability positively. In addition, 76.5% of the respondents were able to produce food throughout the year after receiving support from Ilima-Letsema Programme. Phezisa (2016) found that in

Nkonkobe Local Municipality, 55% of beneficiaries of Siyasondla Homestead Food production Programme were able to produce food throughout the year.

This current study further revealed that 64.3% of the respondents often or always consumed more produce because of high yields, while only 17.9% consumed less food because of low yields. In contrast, Modibedi (2018) found that about 51.6% of farmers in urban community gardens in Emfuleni Local Municipality consumed less vegetables because of low production.

### **Food access**

With regards to food access the findings showed that 52.6% of the respondents were anxious that some of their family members would not have enough food to eat because of low production. Similar findings were reported in a study conducted on Homestead Food Gardens beneficiaries in Gauteng Province, where 67% worries about inadequate food in their households, while 33% were more comfortable (Tlalang, 2016). In addition, Modibedi (2018) indicated that in Emfuleni Local Municipality 55.5% of the respondents were food insecure because they were unable to access food, whereas 45.5% were food secure. Masekoameng (2015) revealed that 81% of the respondents in Sekhukhune District had challenges of not being able to access balanced meals, which made them food insecure.

The current results showed that about half (52%) of the respondents and their family members were never in a situation where they had to consume food, they did not choose because of lack of production resources. On the contrary, Bahta *et al.* (2018) found that 67.2% of beneficiaries of Household Food Gardens in South Africa were unable to eat their preferred foods. On average Ilima-Letsema Programme enabled 64.8% of the respondents to have access to food. The findings were different from those reported in Taraba State of Nigeria, where 69% of the households were unable to produce food due to lack of resources, which lead to household food insecurity (Ike, 2015). Similarly, in Emfuleni Local Municipality 54.6% of the households were

unable to eat their preferred types of vegetables because of lack of production resources (Modibedi, 2018).

### **Food stability**

The current study found that 54.5% of Ilima-Letsema Programme beneficiaries had the necessary farming skills to sustain their agricultural production, which was a positive indicator food stability of the respondents. On the contrary, rural households in Sekhukhune District were susceptible and food insecure (Masekoameng, 2015). In Thulamela Local Municipality in Vhembe District Oni *et al.* (2010) reported that 72% of beneficiaries of agricultural support programmes had challenges of food instability due to high food prices and no incomes, which caused household food insecurity. Similarly, 87% of the respondents did not have concrete plans to cope with food instability in the current study. In contrast, most households in Thulamela Local Municipality in Vhembe District, beneficiaries of agricultural support programmes substituted expensive food items with cheaper ones as their coping strategy (Oni *et al.*, 2010). On the contrary, most (93.3%) of the household involved in farming in Nkonkobe Local Municipality in Eastern Cape Province had problems of food instability because of high food prices and high production cost (Matebeni, 2018).

On land size outlook, the results showed that 76% of the respondents in the current study were not satisfied with the size of their farm/plot, because they were very small, while a few of them (24%) were satisfied, most probably because they had larger farms. These findings were in contrast from the findings of Modibedi (2018) who reported that in Emfuleni Local Municipality, most (87.4%) of the respondents were content with the size of community gardens, and only 12.6% were not content with the vegetable garden size.

The current study found that (51%) of the respondents depended on social grants, while 41.8% depended on relatives and friends to cope with food instability. Similarly, Masekoameng (2015) found that most (81%) of the respondents in Sekhukhune District relied on social grants as a coping strategy, and on the other hand, 56.6% of



the respondents indicated that in instances of food insecurity they would rather borrow food or money to buy food as their coping strategy. On the contrary, Swanepoel (2017) indicated that 10% of household in Gugulethu and Mitchells Plain in Western Cape Metropole ate less desired food, reduced food consumption in favour of their children and borrowed money to purchase food to overcome food shortages. In Emfuleni Local Municipality 39.0% of farmers in urban community gardens skipped vegetable consumption for the whole day when they did not have vegetables from the community garden and a few (27.2%) of them said that they depended on social grants to purchase their vegetables (Modibedi, 2018).

#### **4.3.4 Contribution of Ilima-Letsema Programme to net farm income, poverty alleviation and job creation**

On job creation, the findings showed that on average there was an increase in the number of people employed by the respondents in the farms/plots, before (0.52) and after (0.93) programme support. The increase was statistically significant ( $p=0.002$ ), and it implied that Ilima-Letsema Programme contributed significantly to job creation. The job creation pattern was dissimilar to what DPME (2015b) reported on CASP supported projects in South Africa, where the average number of full-time jobs per project increased from 11 to 16, while the average number of part-time jobs rose from 6 to 14. According to Phatudi-Mphahlele (2016), CASP supported projects in Sedibeng District created 4 jobs after receiving support from the programme.

Regarding annual net farm income, the findings indicated that Ilima-Letsema Programme significantly increased net farm income of the respondents from R24 238.27 before support to R47 513.59 after support. The increase was statistically significant ( $p<0.001$ ) at 1% and 5% confidence intervals. Similarly, Phatudi-Mphahlele (2016) found that CASP supported projects in Sedibeng District generated more income compared to those that never benefitted from the programme, with annual average farm income of R487 530.70, whereas their counterparts generated R246 533.80. The total farm income differed by R240 996.90, which was statistically significant at 1% confidence interval level.

From poverty alleviation perspective, the results showed that 73% of the respondents lived under Lower Bound Poverty Line (LBPL), while 65.8% of the respondents lived under Food Poverty Line (FPL), before receiving support. However, this decreased to 69.4% and 64.3% for LBPL and FPL, respectively, which was not statistically significant. This implied that the Ilima-Letsema Programme did not alleviate or uplift beneficiaries from the trap of LBPL and FPL. With regards to Upper-Bound Poverty Line (UBPL) the findings indicated that 80.1% of the respondents lived below UBPL before support, which decreased to 74.5% after support. This change was deemed statistically significant ( $p=0.034$ ) at 5% confidence interval. This implied that Ilima-Letsema Programme played a significant role in alleviating poverty and improving the livelihoods of the respondents and their households by lifting them from the trap of Upper-Bound Poverty Line.

In contrast, Phatudi-Mphahlele (2016) indicated that half 50% of the respondents had perception that CASP reduced their poverty level, whilst 12% of the respondents disagreed with that. According to Wilkinson (2018) poverty lines in 2015 indicated that 25%, 40% and 55.5% of South Africans lived below FPL, LBPL and UBPL, respectively. There was a significant incongruence in poverty between population groups in South Africa, where white people had the lowest level of poverty, while blacks had the highest level of poverty. Van der Westhuizen (2015) reported that poverty is one of the challenges facing the South African government, where a large proportion (59%) of the population lives under poverty, and 20.2% of them live under FPL precisely.

#### **4.3.5 Factors influencing the impact of Ilima-Letsema Programme on agricultural production**

The current study found that the level of education, size of the farm/plot, household size, main source of income, experience in agriculture, and annual net income after receiving programme support had a positive impact on agricultural production. However, only experience in agriculture was statistically significant at 5% confidence level. Nyagaka *et al.* (2010) had similar findings on farming experience and

education level that had positive impact on the yield smallholder Irish potato farmers in Nyandarua North District, Kenya. However, in their study the impact of education level and experience in agriculture were significant and insignificant respectively at 5% interval level; that differs from the findings of the current study.

The findings of the current study are in accordance with what Minai *et al.* (2014) discovered that education level had positive coefficient and insignificant impact on the yields of coffee achieved by smallholder farmers who benefitted from Coffee Development Fund in Kirinyaga County, Kenya; this was also applicable at 5% confidence interval. However, in the same study it was also found that farm size had negative and insignificant impact on the yields of Irish potatoes; this contrasts with the current findings. In contrast to the results of the current study, Ogunkoya (2014) found that household size and years of experience had negative and insignificant impact on livestock (cattle and sheep) production in Free State, at 5% significance level. On the contrary, the authors revealed that education had negative and insignificant influence on livestock production in the same study; this differs with the findings of the current study.

The results of farm size and education level also differ with what Adesoji and Farinde (2006) discovered that both variables had a negative influence on crop production (yields of maize, cowpea, yam, rice and cassava) in Osun State, Nigeria; however, only farm size was statistically significant at 5%. However, the household size had positive impact, but it is statistically insignificant. This is in accordance with the results of the current research.

## **CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Introduction**

The purpose of this chapter is to summarise, conclude and provide recommendations based on the study findings to address the objectives. The general aim of the study was to evaluate the contribution of the Ilima-Letsema Programme to household food security and poverty alleviation in Midvaal Local Municipality of Gauteng Province. The study focused on the following objectives:

- to determine the socio-demographic characteristics of the beneficiaries of Ilima-Letsema Programme;
- to determine the impact of Ilima-Letsema Programme to agricultural production by:
  - ascertaining factors influencing the impact of programme on agricultural production;
  - evaluating food security status with reference to availability, access and stability; and
  - determine the contribution of programme to net income, poverty alleviation and job creation.

### **5.2 Conclusions**

The present study revealed that majority of farmers in the Midvaal Local Municipality were males; the predominant languages spoken by the respondents were Southern Sotho and IsiZulu, followed by other South African languages, and IsiSwati was the least spoken language. Youth participation in agriculture was low, this was shown by the low number of youths supported through Ilima-Letsema Programme. This could affect the future of agriculture in the Midvaal Local Municipality. About two thirds of the respondents attained secondary to university education, which implied that most farmers in Midvaal could read and write since they had attained good education.

Most farmers in the Midvaal Local Municipality were in secure relationships since marriage was dominant.

Most black farmers who benefited from Ilima-Letsema Programme acquired land privately, and the average farm/plot size was 4.4 ha, which ranged between 0.2 ha and 90 ha. The household size ranged between 2 and 9 members per household, with an average of 4.33 members. The variation was low as shown by a standard deviation of 1.46. There were more adults (2.37) than children (1.97) in the households, and on average the number of working adults in the households was 0.96 (1), an indication of high unemployment in the area. A large proportion of the beneficiaries of Ilima-Letsema Programme received social grants as the second most important source of income other than farming. Farming experience among farmers ranged between 3 and 30 years, which showed that Ilima-Letsema Programme supported farmers with different farming experiences, therefore, the programme was inclusive.

Most of the beneficiaries of the programme were dependant on farming for income generation. The minimum annual net income earned by the respondents in the previous year was R0.00 and the maximum was R900 000 per annum, with an average of R47 513.59 per annum or a monthly net income of R3 958.42. The variation was very high because the respondents farmed for different reasons, which included home consumption and sales. An overwhelming majority of the respondents were involved in crop production, followed by mixed farming and livestock production. Livestock production was lower because the municipal by-laws restricted farmers from keeping livestock near residential areas.

The Ilima-Letsema Programme contributed to food availability of the respondents in Midvaal Local Municipality, since majority of the respondents were never anxious about where their next meal would come from, and they consumed enough food because they were able to produce enough food from their farms/plots sustainably. Ilima-Letsema Programme contributed positively to food access of the respondents. More than half of the respondents and their family members had access to food.

They were never in a situation where they had to eat food that they did not choose to eat due to lack of production resources. A large proportion of Ilima-Letsema Programme beneficiaries had the necessary farming skills to sustain their agricultural production, which was a positive indicator of food stability of the respondents; although most of the respondents did not have concrete plans to cope with food instability.

Additionally, about half (51%) of the respondents were dependent on social grants, 41.8% on relatives and friends to buy food to cope with food instability. Other coping strategies were reduction of daily intake so that children can get enough, skipping certain meals of the day, skipping all meals for the whole day, borrowing money to buy food and buying on credit. This implied that although farming experience was a positive indicator of food stability, most of the respondents were at risk of not getting adequate food in the event they were unable to produce enough food.

Ilima-Letsema Programme contributed positively to job creation. On average there were 0.52 people employed by the respondents before programme support and 0.93 after programme support. Ilima-Letsema Programme increased farm annual net income of the beneficiaries significantly, from R24 238.27 per annum before programme support and R47 513.59 per annum after programme support. Ilima-Letsema Programme did not alleviate or lift beneficiaries from the trap of LBPL and FPL, although the programme played a significant role in improving the poverty status and livelihood of the respondents and their households by lifting them from the trap of UBPL. This implied that poverty status and living conditions of households falling below LBPL and FPL were not improved by Ilima-Letsema programme.

The average monthly net income of each household was R3 958.42, and in large households with about eight (8) members, each member would have R458.42 per month, or R1 138 using the 2017 UBPL. This implied that even though the programme improved poverty and livelihoods of beneficiaries, when a family of eight (8) is taken in consideration the condition would change. It was hypothesised that Ilima-Letsema Programme does not positively contribute to agricultural production of

the beneficiaries. This hypothesis was rejected because the study found that the programme had significant impact on agricultural production.

The second hypothesis was that Ilima-Letsema Programme does not positively contribute to poverty alleviation using Food Poverty Line (FPL), Lower-Bound Poverty Line (LBPL), and Upper-Bound Poverty Line (UBPL) measures. The hypotheses on FPL and LBPL was accepted since the programme did not alleviate and uplift beneficiaries from the trap of LBPL and FPL, however, the hypothesis on UBPL was rejected since the programme played a significant role in improving the poverty status and livelihoods of the respondents.

It was further hypothesised that Ilima-Letsema Programme does not positively contribute to job creation; this hypothesis was rejected since the findings revealed that the programme contributed positively to job creation. Lastly, it was hypothesised that Ilima-Letsema Programme does not positively contribute to income generation; the hypothesis was rejected since the study indicated that Ilima-Letsema Programme increased farm net income of the beneficiaries significantly.

### **5.3 Recommendations**

This section presents the recommendations based on the findings of the study. The recommendations were:

- To secure the future of farming in the country, youth should be encouraged to participate in farming because few young people benefitted from agricultural support programme.
- Since most farmers occupied farmland in peri-urban areas where municipal by-laws do not favour agricultural activities; it is recommended that DRDLR should work in collaboration with other departments to ensure that the beneficiaries of Ilima-Letsema Programme are allocated more farming land through land redistribution programmes.

- Farmers who received support from various agricultural support programmes did not necessarily obtain more production; as a result, it is recommended that government support programmes should be packaged in a manner that all farmers' needs are catered for in one programme.
- Even though the study was conducted at a local level, it was found that the programme improved food security status of the beneficiaries; it is therefore suggested that Ilima-Letsema should be expanded at a national level to improve food availability, access and stability of farmers in the country.
- Ilima-Letsema Programme significantly created employment opportunities; therefore, it is recommended that the budget should be increased to enable the programme to create more employment for unskilled labour in the agricultural sector.
- Net farm income of the beneficiaries of the programme increased significantly after receiving support from Ilima-Letsema; it is suggested that more farmers should be supported nationwide to improve their livelihoods.
- Although Ilima-Letsema Programme did not uplift the beneficiaries from LBPL and FPL, the number of farmers living under UBPL were reduced significantly. It is recommended that the evaluation of the programme should be conducted at a national level.



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## APPENDIX 1: SURVEY QUESTIONNAIRE

### EVALUATION OF THE CONTRIBUTION OF ILIMA-LETSEMA PROGRAMME TO FOOD SECURITY AND POVERTY ALLEVIATION IN MIDVAAL LOCAL MUNICIPALITY OF GAUTENG PROVINCE, SOUTH AFRICA

Questionnaire number	Area	Date

#### SECTION 1: SOCIO-DEMOGRAPHIC INFORMATION

No	Question	Code	Response
1	Gender	0=Female 1=Male	
2	Home Language	1=Sesotho 2=Setswana 3= IsiZulu 4=Xitsonga 5=Tshivenda 6=English 7=Afrikaans 8=IsiSwati 9=IsiNdebele 10=Sepedi 11=Other(specify)	
3	Age	1=18-30 years 2=31-40 years 3= 41-50 years 4=51-60 years 5=Above 60 years	
4	Level of Education	1= Never been to school 2=No formal education 3=Primary education 4=Secondary education 5=College education 6=University education 7=Other (Specify)	
5	Marital Status	1= Single 2= Divorced 3= Widowed 4= Married 5=Other (Specify)	

6	Land acquisition	1=inherited 2=Communal tenure 3=Rented 4=Purchased 5=Other (Specify)	
7	What is the size of your plot/farm?	Size in hectares	
8	How many members are you having in your household (Family size)?	Digits	
9	How many adult members are there at the home?	Digits	
10	How many members are below 18 years old in your household	Digits	
11	How many adults in your household are working?	Digits	
12	Main source of income	0=Non-farming activities 1=Farming	
13	How many years have you been involved in Agriculture	Digits	
14	How much do you receive from each sources of income per month?	Please state the amount in Rands (R)	
14a	Farming		
14b	Social grant		
14c	Full time employment		
14d	Part-time employment		
14e	Business		
14f	Other (Specify)		
15	How many times did you benefit from Ilima-Letsema programme?		
16	In which year(s) did you receive support from Ilima-Letsema Programme?	Digits	
17	Other support programmes received		
17a	CASP	1=No; 2=Yes	
17b	MAFISA	1=No; 2=Yes	
17c	Bank loan	0=No; 1=Yes	
17d	Fetsa Tlala initiative	0=No; 1=Yes	
17e	Siyasondla homestead food garden	0=No; 1=Yes	

17f	Land care programme	0=No; 1=Yes	
17g	Other (specify)	0=No; 1=Yes	
18	How many times did you benefit from other support programmes?		
18a	CASP		
18b	MAFISA		
18c	Bank loan		
18d	Fetsa Tlala initiative		
18e	Siyasondla homestead food garden		
18f	Land care programme		
18g	Other (specify)		

## SECTION B: AGRICULTURAL PRODUCTION

No	Question	Code	Response
19	What are you currently farming with?	0= Not farming 1= Crops 2= Livestock 3= Mixed farming	
20	Which one of the following did you receive through Ilima-Letsema Programme?		
20a	Pigs	0=No; 1=Yes	
20b	Broilers	0=No; 1=Yes	
20c	Layers	0=No; 1=Yes	
20d	Goats	0=No; 1=Yes	
20e	Sheep	0=No; 1=Yes	
20f	Seeds	0=No; 1=Yes	
20g	Fertilizers	0=No; 1=Yes	
20h	Pesticides	0=No; 1=Yes	
20i	Herbicides	0=No; 1=Yes	
20j	Vaccine	0=No; 1=Yes	
20k	Implements	0=No; 1=Yes	
20l	Fence	0=No; 1=Yes	
20m	Borehole	0=No; 1=Yes	
20n	Water tank	0=No; 1=Yes	
20o	Water pump	0=No; 1=Yes	
20p	Garden tools	0=No; 1=Yes	
20q	Irrigation system	0=No; 1=Yes	
20r	Other (specify)	0=No; 1=Yes	
21	Did your crop yield increase after receiving Ilima-Letsema support?	0=No; 1=Yes	
22	Did your livestock	0=No; 1=Yes	

	increase in numbers after you received Ilima-Letsema (production inputs) support?		
23	Are you still farming after receiving support through Ilima-Letsema Programme?	0=No; 1=Yes	
24	Has your farming area increased after receiving support from Ilima-Letsema Programme?	0=No; 1=Yes	
25	In your opinion, what is the impact of Ilima-Letsema on your agricultural production?	0=No impact 1=Low impact; 2=High impact; 3=Very high impact	

## SECTION C: CONTRIBUTION OF ILIMA-LETSEMA PROGRAMME TO FOOD SECURITY

### C1: FOOD AVAILABILITY

26. Since benefiting from Ilima-Letsema Programme are you able to provide enough produce at home?	0=No; 1=Yes	
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27. Please indicate your impressions of the items listed below by ticking (✓) in the block.

Since benefiting from Ilima-Letsema programme...	Never 1	Sometimes 2	Half the time 3	Often 4	Always 5
a) I do not know where the next meal will come from due to unreliable production.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) The produce I get from the farm/plot is not enough to feed my family.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) I eat more produce because of the high yields.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) I eat less produce because to low yields.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) My family is not getting enough produce to eat.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) I can afford to eat more produce every day.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

28	How often are you able to produce food for yourself in the following months of the year?	Never 1	Sometimes 2	Half the time 3	Often 4	Always 5
28a	January					
28b	February					
28c	March					
28d	April					
28e	May					
28f	June					
28g	July					
28h	August					
28i	September					
28j	October					
28k	November					
28l	December					

## C2: FOOD ACCESS

### 29. FOOD ACCESS SCALE: HOUSEHOLD FOOD INSECURITY ACCESS SCALE

No	Question	Code	Response
1a	Have you ever been concerned that some of your family members will not have adequate amount of produce in the last month?	0=No; 1=Yes	
1b	At what frequently did food insecurity concern show?	1=Frequently (many times in the last month); 2=Seldom (once or twice a month); Occasionally (1 to 10 times last month)	
2a	In the last month were some of the family members unable to have types of food (vegetables, fruits, meat and eggs) they desire because of no money?	0=No; 1=Yes	
2b	How frequent was that?	1=Frequently (many times in the last month);	

		2=Seldom (once or twice a month); Occasionally (1 to 10 times last month)	
3a	In the last month were some of your family members forced to consume inadequate selection of food (vegetables, fruits, meat and eggs) due to no income?	0=No; 1=Yes	
3b	How frequent was that?	1=Frequently (many times in the last month); 2=Seldom (once or twice a month); Occasionally (1 to 10 times last month)	
4a	In the last month did some of your family members have to consume the varieties of food (fruits, vegetables, dairy products, meat and eggs) that did not need to consume because of no income to buy other food varieties?	0=No; 1=Yes	
4b	How frequent was that in the last month?	1=Frequently (many times in the last month); 2=Seldom (once or twice a month); Occasionally (1 to 10 times last month)	
5a	Were some of the family members must eat the kinds of food that they did not want to eat because of lack resources to obtain other types of food in the last month?	0=No; 1=Yes	
5b	How frequent was that that in the last month?	1=Frequently (many times in the last month); 2=Seldom (once or twice a month); Occasionally (1 to 10 times last month)	

6a	In the last month did some of the family members have to consume less meal per day as there was no an adequate amount of food?	0=No; 1=Yes	
6b	How frequent was that in the last month?	1=Frequently (many times in the last month); 2=Seldom (once or twice a month); Occasionally (1 to 10 times last month)	
7a	Did any/some of the family members have to go a day (24 hours) without having meal as there was not enough in the last month?	0=No; 1=Yes	
7b	How frequent was that in the last month?	1=Frequently (many times in the last month); 2=Seldom (once or twice a month); Occasionally (1 to 10 times last month)	

### C3: FOOD STABILITY

No	Question	Code	Response
30	Who decides on which produce to purchase in the household?	1=Person who prepares produce; 2=Person who produces produce; 3=Person who buys produce; 4=Other (Specify)	
30a	Person who prepares the meal daily.	0=No; 1=Yes	
30b	The person who produces the food.	0=No; 1=Yes	
30c	The person who buy the produce.	0=No; 1=Yes	
30d	Other (specify)	0=No; 1=Yes	
31	How are your farming skills?	1= Very poor 2=Poor 3=Average 4=Good 5=Very good	
32	Are you satisfied with the quality of the produce you are getting from your farm/plot?	0=No; 1=Yes	
33	Are you satisfied with your current	0=No; 1=Yes	



	yield after receiving support from Ilima-Letsema Programme?		
34	Are you satisfied with the size of farm/plot you are farming on?	0=No; 1=Yes	
35	When you are unable to produce adequate produce from your farm/plot and you have no money to buy produce what do you do?		
35a	Reduce daily intake so the children can get enough	0=No; 1=Yes	
35b	Skip certain meals of the day	0=No; 1=Yes	
35c	Skip all meals for the whole day	0=No; 1=Yes	
35d	Depend on relatives, friends outside home to buy produce	0=No; 1=Yes	
35e	Borrow money and buy produce	0=No; 1=Yes	
35f	Buy on credit	0=No; 1=Yes	
35g	I do not have a plan	0=No; 1=Yes	
35h	Depend on government grants	0=No; 1=Yes	
35i	Other (specify)	0=No; 1=Yes	
36	Are you able to meet dietary requirements of your family after receiving support from Ilima-Letsema?	0=No; 1=Yes	
37	Do you all get enough food daily after receiving support from Ilima-Letsema Programme?	0=No; 1=Yes	

#### **SECTION D: CONTRIBUTION OF ILIMA-LETSEMA PROGRAMME TO POVERTY ALLEVIATION AND JOB CREATION**

<b>No</b>	<b>Question</b>	<b>Code</b>	<b>Response</b>
38	Before receiving support from Ilima-Letsema Programme, how many workers did you have?	Digits	
39	After receiving support from Ilima-Letsema Programme, how many workers do you have?	Digits	
40	Before receiving support from Ilima-Letsema programme what was your annual net income?	Please state the amount in rands (R)	
41	After receiving support from Ilima-Letsema, what was your annual net income in the previous year?	Please state the amount in rands (R)	
42	Has your annual net income increased after receiving support from Ilima-Letsema Programme?	0=No; 1=Yes	

**THANK YOU FOR YOUR PARTICIPATION**

## **APPENDIX 2: PARTICIPANT INFORMATION SHEET**

Ethics clearance reference number: **2017/CAES/150**

Research permission reference number: **Research (GDARD reference)**

19 October 2017

**Title: Evaluation of the contribution of Ilima-Letsema Programme to food security and poverty alleviation in Midvaal Local Municipality of Gauteng Province, South Africa**

### **Dear Prospective Participant**

My name is Tshidi Mokgadi Nkgudi and I am doing research with Dr. M.R. Masekoameng, a Senior Lecturer in the Department of Agriculture and Animal Health towards a master's degree in agriculture at the University of South Africa. We have funding from Women in Research on food security in Gauteng Province. We are inviting you to participate in a study entitled Evaluation of the contribution of Ilima-Letsema Programme to food security and poverty alleviation in Midvaal Local Municipality of Gauteng Province, South Africa.

### **WHAT IS THE PURPOSE OF THE STUDY?**

The purpose of the study is to evaluate contribution of the Ilima-Letsema programme towards household food security and poverty alleviation in Midvaal Local Municipality of Gauteng Province South Africa.

### **WHY AM I BEING INVITED TO PARTICIPATE?**

I chose you to participate in the study because you have benefitted from Ilima-Letsema Programme. Your personal information was received from Gauteng Department of Agriculture and Rural Development. The approximate number of participants targeted is 354 community members.

## **WHAT IS THE NATURE OF MY PARTICIPATION IN THIS STUDY?**

For you to participate in this study, you are required do the following:

- sign the consent form before participating in the study;
- participate in face-to-face interviews conducted by the researcher; and/or complete the research questionnaire; and
- not to provide your real name during the interviews or completion of the survey questionnaire.

The questionnaire will include socio-demographic information, agricultural production information, contribution of Ilima-Letsema to food security with reference to availability, access and stability and contribution of Ilima-Letsema Programme to poverty alleviation. The expected time needed to complete the questionnaire is about 30 minutes. It will take about 40 minutes to conduct the interview, if you prefer to be interviewed.

## **CAN I WITHDRAW FROM THIS STUDY EVEN AFTER HAVING AGREED TO PARTICIPATE?**

Participating in this study is voluntary and you are under no obligation to consent to participation. If you decide to take part, you will be given this information sheet to keep and be asked to sign a written consent form. You are free to withdraw at any time and without giving a reason. Participants will participate purely by choice and participants will be free to withdraw at any time without providing reasons for their decision. The confidentiality will be observed professionally, and participant's identity will not be revealed. The names of the participants will not be included in the research publications emanating from the study.

## **WHAT ARE THE POTENTIAL BENEFITS OF TAKING PART IN THIS STUDY?**

The potential benefits of taking part in this study are:

- you will understand the impact of Ilima-Letsema Programme to agricultural production of the beneficiaries;

- it will help to determine the contribution of Ilima-Letsema Programme to food security of the beneficiaries with reference to availability, access and stability; and
- it will also help determine the contribution of Ilima-Letsema Programme to poverty alleviation and job creation.
- the outcomes of the study will play a significant role in development of the new agricultural support programmes and policies that will assist in food security and poverty alleviation for Midvaal Local Municipality and the entire country.

**ARE THERE ANY NEGATIVE CONSEQUENCES FOR ME IF I PARTICIPATE IN THE RESEARCH PROJECT?**

There are no foreseeable physical risks associated with this study. The interviews conducted will not include emotional or sensitive questions.

**WILL THE INFORMATION THAT I CONVEY TO THE RESEARCHER AND MY IDENTITY BE KEPT CONFIDENTIAL?**

The confidentiality will be observed professionally, and participant's identity will not be revealed. The names of the participants will not be included in the in the research publication. A report of the study may be submitted for publication, but individual participants will not be identifiable in such a report.

**HOW WILL THE RESEARCHER(S) PROTECT THE SECURITY OF DATA?**

Hard copies of your answers will be stored by the researcher for a period of five years in a locked cupboard/filing cabinet in the Department of Agriculture and Animal Health at the University of South Africa, in Florida Science Campus for future research or academic purposes; electronic information will be stored on a password protected computer. Future use of the stored data will be subject to further Research Ethics Review and approval if applicable. Hard copies will be shredded, and/or electronic copies will be permanently deleted from the hard drive of the computer through the use of a relevant software programme after a period of five years.

## **WILL I RECEIVE PAYMENT OR ANY INCENTIVES FOR PARTICIPATING IN THIS STUDY?**

No payment or reward is offered for participating in this study.

## **HAS THE STUDY RECEIVED ETHICS APPROVAL?**

This study has received written approval from the Research Ethics Review Committee of the College of Agriculture and Environmental Sciences (CAES) Ethic Committee, Unisa and Gauteng Department of Agriculture and Rural Development (GDARD). A copy of the approval letter can be obtained from the researcher if you so wish.

## **HOW WILL I BE INFORMED OF THE FINDINGS/RESULTS OF THE RESEARCH?**

If you would like to be informed of the final research findings, please contact Tshidi Mokgadi Nkgudi on 061 482 5352 or [nkgudit@yahoo.com](mailto:nkgudit@yahoo.com). The findings are accessible for period of five years. Should you require any further information or want to contact the researcher about any aspect of this study, please contact Dr. M.R. Masekoameng on 011 471 3102, email at [masekmr@unisa.ac.za](mailto:masekmr@unisa.ac.za).

Should you have concerns about the way in which the research has been conducted, you may contact the research ethics chairperson of the CAES General Ethics Review Committee, Prof EL Kempen on 011-471-2241 or [kempeel@unisa.ac.za](mailto:kempeel@unisa.ac.za) if you have any ethical concerns.

Thank you for taking time to read this information sheet and for participating in this study.

Thank you.

Tshidi Mokgadi Nkgudi

### APPENDIX 3: CONSENT TO PARTICIPATE IN THIS STUDY

I, \_\_\_\_\_ (participant name), confirm that the person asking my consent to take part in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have read (or had explained to me) and understood the study as explained in the information sheet.

I have had sufficient opportunity to ask questions and am prepared to participate in the study.

I understand that my participation is voluntary and that I am free to withdraw at any time without penalty (if applicable).

I am aware that the findings of this study will be processed into a research report, journal publications and/or conference proceedings, but that my participation will be kept confidential unless otherwise specified.

I agree to the recording of the face-to-face interview responses in the research questionnaire.

I have received a signed copy of the informed consent agreement.

Participant Name & Surname..... (please print)

Participant Signature.....Date.....

Researcher's Name & Surname..... (please print)

Researcher's signature..... Date.....