

THE NATIONAL UNIVERSITY OF LESOTHO

FACULTY OF HUMANITIES

**THE ROLE OF BLOCK FARMING IN ASSURING FOOD SECURITY IN LESOTHO:
THE CASE OF BEREA, LERIBE AND MASERU DISTRICTS**

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**A DISSERTATION SUBMITTED TO THE DEPARTMENT OF DEVELOPMENT
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IN DEVELOPMENT STUDIES**

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DECLARATION

I hereby certify that this thesis is the result of my own work, except where otherwise indicated and due acknowledgement is given.

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ABSTRACT

Many developing countries are characterised by low levels of poverty caused mainly by food insecurity. There are different factors causing food insecurity in many developing countries, and changing climatic conditions especially severe drought is mentioned as the major one. However, high population increase is another cause of food insecurity in many developing countries, and Lesotho is not an exception. There are different measures used to solve the state of food insecurity in many countries, and increasing agricultural productivity is one of them. The Lesotho government has implemented different agricultural programmes to increase production in agriculture since colonialism. Although many colonial rural development strategies in Lesotho focused more on preventing and controlling soil erosion, there were some agricultural projects implemented in some parts of the country. The agricultural rural development programmes implemented in Lesotho since colonialism meant to reduce poverty and improve the living standards of people. And block farming is one of such agricultural development projects. Block farming is not a new agricultural rural development project in Lesotho. Block farming project was introduced in the Senqu River Valley Integrated Rural Development Project in the 1970s. The idea was to increase food production among Basotho farmers. This agricultural initiative was revived in the New Millennium. The government of Lesotho entered into sharecropping with subsistence farmers through block farming. The purpose of government was to reduce poverty by increasing agricultural food production in the country. And since the introduction of block farming, especially in the early stages of implementation, the lives of many farmers improved for the better. This is because they now cultivate their fields that have been left fallow for many years because of lack of agricultural inputs. However, of late, block farming is facing many challenges that affect agricultural production. As a result, it is not a profitable agricultural programme for many farmers.

LIST OF ABBREVIATIONS

AU	African Union
BF	Block Farming
BOS	Bureau of Statistics
CAADP	Comprehensive Africa Agricultural Development Programme
FAO	Food and Agricultural Organization
FTC	Farmer Training Centre
GMOs	Genetically Modified Organisms
GNP	Gross National Product
GOL	Government of Lesotho
IFAD	International Fund for Agricultural Development
ILO	International Labour Organisation
IMF	International Monetary Fund
IRDP	Integrated Rural Development Projects
LCN	Lesotho Council of Non-Governmental Organizations
LVAC	Lesotho Vulnerability Assessment Committee
MDGs	Millennium Development Goals
MOAFS	Ministry of Agriculture and Food Security
NGOs	Non-governmental Organisations
PRS	Poverty Reduction Strategies
PRSP	Poverty Reduction Strategy Paper
RAP	Regional Agricultural Policy
SADC	Southern African Development Community
SAPS	Structural Adjustment Policies
SDGs	Sustainable Development Goals
UN	United Nations
UNAIDS	United Nations AIDS
UNDP	United Nations Development Programme
USAID	United States Aid
WFP	World Food Programme

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CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Eradicating poverty in all its forms and dimensions is said to be both a global challenge and a requirement for sustainable development (United Nations, 2015:2). Besides poverty, hunger eradication is also widely acknowledged as an important milestone in advancing the living standards of the people so that they can be functional and lead healthy lives (Abdu-Raheem& Worth, 2011). Poverty and hunger eradication can be achieved through food security which has remained a major challenge in the world for over several decades (FAO: 2006).

Food insecurity is caused by the high population increase, among others that is experienced by many countries. As a result of this, millions of people are hunger stricken throughout the world (FAO: 2010). FAO (2010:6) estimates that one third of the world population is food insecure worldwide. For instance, around 925 million people are chronically hungry while 2 billion people are food insecure. Evidence is that food insecurity results in deaths of about six million children every year and about 17,000 of them die every day from hunger-related causes (UN, 2009:5). It is also indicated in the literature that food insecurity can be attributed to different factors such as the inability of countries to produce enough food, inequality of food distribution within the country or an imbalance of the distribution of food among the people or not being able to obtain a diet of sufficient quality (Robison, 1983:11).

Although the causes of food insecurity vary from place to place and from region to region, food insecurity in some African countries can be linked to colonial rural development strategies. It is argued in the literature that in some African countries colonial governments introduced cash-cropping and discriminatory pricing policies which resulted in a decline of peasant agriculture (Kalibwani, 2005:10). The colonial record provides ample proof of food crises originating not just from adverse climatic conditions but even from making direct or indirect policy decisions. These decisions were not very considerate of the viability of indigenous food systems in trying to find the quickest way of generating revenue by colonial governments (Kalibwani, 2005:10). Kalibwani further argues that the compulsory cultivation of cash crops became a standard policy through which the colonial government could earn some tax from the peasants' income.

Mbakwe (2000) stated that before 1900, African people depended mainly on subsistence agriculture for making a living. Shokpeka and Nwaokocha (2009:58) further asserted that agriculture formed the mainstay of Africans in the pre-colonial period. For instance, before the coming of the Europeans, Africans were practicing subsistence agriculture. However, the colonial governments forced African peasants to shift from subsistence food production to producing food for the market. This was observed in Nigeria where peasants were forced by colonial economic policies to shift from producing staple-food crops such as maize and cassava to cash crops such as cocoa and groundnuts (Shokpeka and Nwaokocha, 2009:58).

One of the strategies of the colonial governments to promote cash cropping in some African countries was the introduction of hut tax. Evidence reveals that peasants were forced to practise cash-crop farming so that they could pay the hut tax. Some farmers even had to sell their livestock to pay the hut tax (Clayton & Savage, 1979). This policy caused poverty in many African countries because agricultural production, both subsistence crop and livestock farming, declined (Usoro, 1977:21).

It is also noted from the literature that the colonial governments discriminated against peasant farming in Africa. This was done by introducing some policies that transferred the agricultural surplus from the rural areas to finance urban development (Rantso, 2015:2653). Peasant farming did not benefit from colonial state policies aimed at improving productivity. Some of the colonial state resources were channeled towards improving commercial agriculture that aimed at exporting raw materials to the colonizing countries, thus leaving the colonies with less food crops for the maintenance of the households (Mbakwe, 2000). Many post-colonial governments in Africa have inherited some of the colonial policies that are biased against staple food production. This is done by promoting cash crop farming that is allocated most of the governments' budget. It is evident that when focus is paid on promoting cash crop farming, staple food production is adversely affected (Kalibwani, 2005:10).

Among the European countries that colonized Africa, Portugal is said to have invested heavily in agriculture in the 1950s and 1960s. This investment was in high-profile large-scale settlement schemes such as agricultural and irrigation settlements at Cela and Cunene in Angola and

similarly on the Limpopo and Umbeluzi rivers in Mozambique (FAO, 2006). These massive investments by the Portugal government were distinct in that they were designed primarily for the white settlers' benefit rather than for promoting food security for African tenants (FAO, 2006). Many of Portugal's agricultural schemes were not very successful. A decline in food production led to hunger and starvation in the midst of these agricultural projects.

The colonial rural development strategies in Rwanda were similar to those of other African countries. The colonial government introduced different measures in the rural areas. Firstly, it introduced counter-measures such as hedge planting, excavation of drainage ditches and terrace making (Bart, 1993:20). Secondly, peasants were introduced to cash crop farming so that they could be able to pay tax. Thirdly, the wetlands were introduced because the newly introduced crops such as tea, sugar cane and others were best suited to the conditions of the swamps (Bart, 1993:20). There was also a policy aimed to foster the modern peasantry called "paysannat" (Bart, 1993:21). The rationale behind this policy was to establish the basis for future development in which peasants would settle in fixed blocks where they were trained about new agricultural techniques (Bart, 1993:21). Traditionally, Rwanda had its own forms of food self-assistance. Some of these forms such as Ubudehe, Umubyizi and Umuganda have survived until now (Gareth, 2013). These policies have affected food production negatively as there was a decrease in food production and an increase in conflicts over the land in Rwanda (Pritchard, 2012:1).

Although many colonial rural development strategies impacted negatively on food production in Africa, the advent of colonialism introduced new and exotic crops in some places such as Igboland and Mbaise in Nigeria. The local government introduced some exotic crops such as cassava, potatoes, plantain, pineapples and oranges (Mbakwe, 2015). This indicates that, as much as colonialism did not bring many benefits to most colonies, it however helped to improve farming in some communities. For example, the introduction of a special scheme for the training of agricultural assistants in Umuahia and Ibadan in the 1940s and 1950s was beneficial to the people. It eventually brought about the popularization of the teaching of agricultural science in schools (Mbakwe, 2015). The training focused mainly on the production of cash crops, especially palm produce which resulted in the expansion of palm plantations not only in Mbaise but also in other areas in South-Eastern Nigeria, thereby boosting the economy (Agwu, 1998:133). The colonial government also established the Produce Inspection Department to increase productivity

in agriculture and to promote trade (Mbakwe, 2015). This innovation significantly depressed production/farming among the local farmers and traders. For instance, palm produce farmers and traders gave up the production and trading on this crucial cash crop and eventually turned their attention to food crop production, especially yam and cocoyam production in Mbaise.

1.2 Statement of the problem

Lesotho has been experiencing a major food security crisis since 2012. FAO (2006) and WFP (2016) estimates put the figure of people vulnerable to food insecurity in the country at 549,000 constituting about 30 percent of the total population. This is exacerbated by poor farming practices and continuous drought. The country is vulnerable to climatic conditions that affect harvest yields and cause great loss to livestock (WFP, 2016:2). As a result of poor farming methods and climatic conditions, Lesotho is one of many developing countries that are dependent on food-aid and imports (Makenete, Ortmann and Daroch, 2008:1). In most cases, food aid often involves dumping of surplus food products into the poor countries by the rich ones (Madziakapita, 2008).

Food aid has many consequences in the host countries. First, it does not solve the issues related to poverty and food insecurity in the long run. This is because food donations do not provide a sustainable supply of food to the poor people; they provide a short term relieve used as a political weapon and a commercial enterprise (Mukeere and Dradri, 2006). Secondly, they create dependency on donor countries. This is a menace to food production in the recipient countries and it leads to food insecurity. Evidence shows that people who are dependent on food aid are not willing to produce food for themselves. They look for humanitarian aid from government or Non-Governmental Organizations (NGOs). Thirdly, food aid depresses prices in the local markets and this is destructive to the local economy. It further upsets the private commercial channels of food trade and marketing. When many people depend on food handouts, the local producers suffer because their goods lack a market. In some cases, food donations force prices on agricultural goods to go down and this affects local producers negatively.

According to the Lesotho Vulnerability Assessment Committee (LVAC), Lesotho, like the rest of Southern Africa, faces its most serious food security crisis since the severe drought of 1992. The country is classified as the least developed, with low income and a food deficit. With regard

to food availability, it is ranked 132 out of 173 countries assessed (National Nutrition and Cluster Survey, 2002). The May 2002 emergency food security assessment projected that 160,000 people, or 9 percent of the rural population, were in need of food assistance from September to November 2002. Population estimates for Lesotho vary from two million to 2.2 million (SADC-FANR 2003, LVAC 2002). By July of the same year, the number of people that needed food assistance increased to 600,000. Three months later, in November/December, the number of food insecure people increased from 108,797 to 760,000 (42%) (LVAC, 2002). The incidence of food insecurity is so serious and widespread that even the districts, which are normally classified as having a high agricultural productivity in the lowlands in the country are now among the vulnerable ones. Cereal unavailability and the declining purchasing power have, in turn, resulted in families surviving without food or having one meal per day while in some areas famine is beginning to claim lives and to worsen malnutrition (LVAC, 2002).

The state of emergency has been declared on famine and war against HIV/AIDS. Lesotho is one of the countries experiencing extreme incidences of poverty and deteriorating health status due to a decline in agricultural production. The country ranks 127th out of 174 countries on the UNDP's Human Development Index with the poverty line of M124.00 (about £8 per month). This situation means that about 68 percent of Basotho are poor (May et al, 2001).

Lesotho, like other countries of the world, is faced with the problem of high unemployment and underemployment which are major problems with devastating effects. In some cases, people move between different economic sectors in order to make ends meet. According to the Central Bank of Lesotho (2012), high unemployment means that resources that should be engaged in the production of goods and services are lying idle. As a result, there is a waste of scarce resources and dampening of the growth potential of an economy. According to IacovoIU (2012), unemployment decreases demand for goods and services because of the reduced purchasing power. This means that unemployed individuals are not able to spend much money on goods and services as well as to invest on agriculture.

The levels of unemployment in Lesotho are very high and keep declining. According to Shale (2013), since 1994, the levels of unemployment have been fluctuating. Shale indicates that in

1994 the level was at 20 percent, in 2002/2003 it was 23.2 percent, in 2008 it was 23 percent while in 2009 it was 25.3 percent. People between the ages of 18 to 35 are the ones that are mostly affected by inadequate job opportunities and this poses a real challenge to the economy of Lesotho (Shale, 2013). The level of poverty in Lesotho is very high.

Several studies indicate that household economic, social and cultural situations are important factors on household food security status. Therefore, this study aims to assess the contribution of Block farming to food security in Berea, Leribe and Maseru districts of Lesotho.

1.3 Aim of the study

- The aim of the study is to determine the contribution of block farming in reducing food insecurity in the Lesotho.

1.3.1 General objective

- The main objective of this study is to investigate whether block farming in Leribe, Berea and Maseru districts of Lesotho addresses the ongoing problem of food insecurity or not.

1.3.2 Specific objectives

- To assess the contribution of block farming towards food security.
- To assess the impact of block farming on food security.

1.4 Research questions

- Is block farming a good strategy in assuring food security?
- What are the factors that lead to food insecurity in your area?
- What are the impacts of food insecurity to your welfare?

1.5 Hypotheses

- Block farming does not contribute to high food production.
- Block farming is not a good agricultural development strategy for poverty reduction.

1.6 The significance of the study

The study is important because it is going to investigate the role of Block farming in assuring food security in Lesotho, taking the case of Berea, Leribe and Maseru districts. One needs to find out if Block farming is assisting in solving food insecurity problem which appears to be a menace in Lesotho. It is essential for the Lesotho government to promote food security for its citizens. This would be a solution to food insecurity in the country. Secondly, the study is important because it will help the policy makers to improve policy strategies on food security.

1.7 Scope of the study

The study focuses at both maize and wheat block farming in Lesotho. The study on maize block farming was conducted at Ha Tšekelo in Berea district and at Ha Molipa in Leribe district while that on wheat was conducted at Ha Toloane and Mokema both in Maseru district. The block farmers as well non-block farmers in the study areas are included in the study. The officer from the Ministry of Agriculture and Food Security is also included in the study.

1.8 Theoretical framework

The theoretical foundation of this study is the post-development theory, which was developed in the 1980s as a critique of the development theory and practices. The post-development theorists viewed the development theory as the extension of the western “First World” hegemonic ideology (Karplus, 2014). According to the post-development theory, the construct of development first arose in the Post-WW II to meet the hopes of the new independence leaders, the colonial masters and the recently liberated masses (Rahnema, 1997). The post-development theorists argue that development should not be depoliticized because it is a political issue. They argue that food security is a political issue and this is why strategies for assuring food security are politicized. In this theory, development is “understood as an intervention of structures and practices that would lead to raising the standard of living manifested in an increase in income, which would in turn render better health and nutrition” (Ahorro, 2013). In other words, post-development theorists call for a desire to change for those hit hard by poverty than dwelling on earlier ways of life. This therefore means that interventions such as block farming could be more beneficial than dwelling on traditional ways of farming.

The term development comprises a wide range of ideas such as services and goals (Kurplus, 2014). Food security is one of the goals that are encompassed in development. Kurplus (2014) states that post-development analysis of food security interventions can identify problems with the development agendas as well as offer alternatives to development as potential solutions to food security. Therefore, the post-development perspective will be used to answer the question of whether development practices such as block farming adequately address the issues of food security or not.

1.8.1 Entitlements and access to food

According to Sen (1981), hunger originated in what is referred to as 'entitlement failures'. Entitlement is defined as set of alternative commodity bundles that a person can command in a society using the totality or rights and opportunities that one faces (Sen, 1984). This implies that a person has the rights and opportunities to use in order to have access to food which is deemed essential for human survival and well-being. Therefore a person needs to have access to food at all times. The concept entitlement was commonly used by Sen in the early 1980s to emphasize the importance of access and entitlement to food. Sen's entitlement framework provides a systematic approach which indicates that an individual's entitlement is rooted in one's endowment through the initial resource bundle which is transformed via production and trade into food or commodities which can be exchanged for food (Sen, 1984). It is further argued by Dreze and Sen (1989) that, entitlements are derived from endowments that include assets, labour power, own production of food, and income from other self-employment.

According to Sen (1981) there are four types of entitlement relations in the market economy. Firstly, trade based entitlement indicates that one is entitled to trade what has been obtained through buying and selling. Secondly, production based entitlement refers to production arranged through using one's own resources or resources hired from willing party (Sen, 1981). Thirdly, own-labour entitlement is based on one's own labour power that one trades for production. Lastly, inheritance and transfer entitlements are explained as owning something by birthright because it has been given to a person by a legitimate owner leaving it as a legacy for those left behind.

Furthermore, Sen (1981) argues that trading plays a major role for one's survival and as a result, through trading, producing or a combination of both, people can interact. Evidence shows that this interaction takes place in a market by exchanging a commodity they have for another collection which is known as exchange entitlement (Sen, 1981). Exposure to chronic hunger and starvation can be experienced if a person does not have sufficient exchange entitlement to earn one enough food for consumption. Sen (1981) asserts that there are several factors contributing to a person's exchange entitlement. Such factors are, available employment and opportunities for earning what can be obtained through selling what one owns as well as what can be acquired through labour power.

It can be noted from the above discussion that for people to command access over food, there must be different types of entitlements taking place. For a person to be entitled to food, either through trade or exchange entitlements, there must be production in agriculture. Therefore, the next section is looking at the different agricultural programmes used to increase productivity.

1.8.2 The contribution of population growth to agricultural production: views of Thomas Malthus and Ester Boserup

According to Thomas Malthus, if the population growth is not checked, it will outgrow the resources (Todaro, 2000). Malthus drew his theory on the concept of diminishing returns and indicated a universal tendency for the population of a country to grow at a geometric rate if not checked as against the food supplies. Malthus continues to indicate that food production increases at an arithmetic rate and eventually population will exceed the capacity of agriculture to support the new population numbers (Todaro, 2000). The scenario of arithmetic food production and simultaneous geometric human population growth predicted a future when humans would have no resources to survive on. In order to curb this problem, Malthus urged controls on population growth. Malthus suggests operation of various checks on population growth to keep the population growth level low through preventive checks and positive checks. According to Malthus, preventive checks are based on "moral restraint" by males to delay attachment with females by postponing marriage. This would lower fertility rate and increased cost of food as people were to resist the urge to marry and reproduce until they are capable of supporting a family. This is suggested because getting married later would have a natural bearing on population growth which would limit the number of their progeny (Todaro, 2000). According to

Todaro (2000), Malthus might be regarded indirectly and inadvertently as the father of the modern birth control movement. The positive checks include famine, war as well as poor living and working conditions which would give rise to low resistance to disease increase the death rate thus would have a positive bearing on food supplies as there would not be many people to feed (Todaro, 2000). Malthus saw positive checks to population growth as being any causes that contributed to the shortening of human lifespan.

Unlike Malthus, Ester Boserup (1965), stipulates that population growth is an independent factor that affects agricultural productivity rather than being affected by it. Boserup (1965) maintains that higher population is needed for more efficient division of labour and improved agricultural practices thereby discrediting Malthus assumption of diminishing returns to labour. Boserup (1965) further continues to show that a better agricultural technology will prove that soil fertility is not fixed and given by nature as it can be substituted therefore likely to result in an increase in population. Boserup (1965) indicates that economic development is likely to occur for communities with higher population growth rates provided they undertake necessary agricultural investment. Boserup also believes that population as an independent variable can influence agricultural technology in the process shaping the productive capacity of resources. Boserup states that agricultural intensification is an important mechanism for increasing production through frequent use of the land which is induced by population growth. As opposed to Malthus, Boserup proposes “invention-push” agricultural change while Malthus talks about “invention-pull” population growth. In other words, Boserup believes that population pressure can result in high technological innovation. Therefore, this suggests that as population keeps growing, it gradually goes through some transitions in farming. In Boserup negation to Malthusian assumption that a growing agricultural population will lead to a fall in agricultural output, Boserup argues that sustained population growth would lower output. Boserup continues to argue that if the population growth is not sustained, it would simulate more efficient production by allowing division of labour.

1.9 Conceptual framework

According to Miles and Huberman (1994), conceptual framework is defined as a visual product that can be explained using graphs or in a narrative form. A conceptual framework binds facts together and provides guidance towards the collection of appropriate data or information (Katani,

1999). At this juncture, the main things to be studied here are the key words or concepts that have framed the research topics which are block farming and food security.

Food insecurity

Food insecurity is a global issue that arises as a result of socio-economic inequities as well as environmental constraints. Food insecurity is a state of, or risk of being unable to provide food for oneself, a family and a nation (FAO, 2001). This situation of insecurity exists when members of a household have inadequate diet for the better part of the year or face a possibility of inadequacy in the future. According to Phillips and Taylor (1990), lack of food causes hunger which is the uneasy and painful sensation. Therefore, this implies that, households as well as the state have to join hands and ensure food security within the countries.

Food security

There are differing definitions of the concept 'food security' in literature, and many of them talk about accessibility to food. For instance, on the one hand Iram & Butt (2004) point out that food security includes issues related to the nature, quality, food access and security of the food supply. On the other hand, the Food and Agricultural (FAO) Food Insecurity Report (2010) associates food security to a situation "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, 2010:8). Other definitions by the World Bank (1986:6) relate food security to access by all people at all times to enough food for an active and healthy life. During the 1980s, (FAO, 1983) started to acknowledge that there was a need to balance the supply and demand side of food. This food crisis brought to the attention of the nations the fact that the availability of sufficient food at national level did not imply food security at household level (Frenkenberger, 2001). It is further argued that food availability is about the supply of food to a given community or geographic region and hinges on the success of the producer subsystem, while food access focuses on consumer subsystem (Frenkenberger, 2001).

The definition of food security by World Bank is well reflected in the food security definition given at the World Food Conference of 1974 as: "Availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices" (UN 1974). More precisely, a much quoted definition states that food security exists when all people at all times have physical and economic access to

sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life (FAO,1996). Food security involves three components: food availability, food access and food utilization. Food availability implies sufficient production or imports to meet the food needs of the population. Food access refers to the ability of people to obtain food, either through their own production or by purchasing it with money earned from other sources. Food utilization means that the nutrient intake associated with food consumption is not impeded by inadequate nutritional information, poor sanitation or problems in intra household distribution (Haddad, 1997).

The above discussion reveals that it is important to ensure access to food at all times. For example, research by the World Bank (1986:6) found that ensuring food security is an investment in human capital that will not only lead to a more healthy and productive society but one that is active and alert and contributes more effectively to economic development. However, failing to ensure food security not only leads to food insecurity and hunger, but it leads to a society which is physically and mentally weakened by inadequate and poor health (World Bank, 1996).

Block farming is an initiative (done by government of Lesotho through the Ministry of Agriculture and Food Security), using individual farmer's fields to eradicate extreme poverty. It is a joint project that is supported by the three key players being the government, the Standard Lesotho Bank and the farmers themselves. The Standard Lesotho Bank provides credit guarantees for the farmers to access credit (Makakane, 2015). This is a system in which farmers cultivate their fields as a group to reduce overall costs and to offer support across the crop-farming spectrum (Gwimbi et al., 2014:8).

Under the block farming system of farming, the government provides all farming inputs and adopts a mechanised approach that necessitates the consolidation of blocks of the farmers' fields into areas large enough for operation by combine harvesters and other heavy equipment (Turner, 2009). Some of this equipment was provided by the government LEMA agricultural machinery service and some was contracted from South Africa as part of a programme of technical assistance, in some seasons. The farmers were supposed to provide some manual labour, but

often did not. Yields were divided half and half between the government and the farmers (Turner, 2009:16).

Block farming is not practised in Lesotho only but it has an international dimension being practiced in countries such as Ghana where the late president John Atta Mills introduced it into the Ghana agricultural extension as a presidential initiative to combat food insecurity (Amanor, 2012:1). In Ghana, block farming is said to have four elements. 1) It is applied to a group of adjacent farmers who have agreed to farm their land uniformly, applying the directives of the extension division or to farmers who are allocated land by the Ministry of Agriculture. 2) Inputs such as seeds and hired labourers are released to farmers as a package to be paid in kind at the end of the harvest period in seeds which are acquired by the Ministry of Food and Agriculture. 3) Seed growers are also contracted by the Ministry and provided with similar packages repayable in seed that is released to the participating farmers. 4) Labourers are recruited from among the rural youth to ameliorate youth labour (Amanor, 2012:1).

1.10 Research methodology

The main aim of this section is to provide details about the methods that were used to collect data as well as the ones followed in analysing the collected data. The section entails the study population, the sample size, the sampling techniques, the data collection methods and data analysis techniques.

1.10.1 Methods of data collection

The study gathered secondary data using the available literature. A literature review on food security was conducted from various sources such as journals, articles, books, Five year Development Plans, the internet, and from previous research studies that were relevant to this study. These sources were mainly used to provide a theoretical perspective to the issue under study in both developing countries as well as in Lesotho. In order to gather data on food security in Lesotho, documents such as the Five Year Development Plans, *The Silo* magazine and books were used.

Primary data was gathered through the use of structured interviews which allow a face-to face interaction between the researcher and the respondents, thereby giving the researcher a chance to observe the respondents' gestures. The questions were prepared in English but they were translated to Sesotho (the language of the farmers) for the actual interview. The interview instrument was divided into four sections. The first section questions were directed to the maize

block farmers. Those in the second section were directed to the wheat block farmers, the ones in the third section to the non-block farmers and those in the fourth section were directed to the Ministry of Agriculture and Food Security.

Apart from the interviews, an observation was also done when the researcher was in the fields to interview the block farmers at harvest time.

1.10.2 Study population

The population of this study included the communities from the three districts. In the Leribe district, data was collected from Ha Molipa; in the Berea district it was collected from Ha Tšekelo and in the Maseru district it was collected from Ha Toloane and Mokema.

1.10.3 Sampling and sampling techniques

In undertaking the study, two sampling techniques were used, namely, purposive sampling and snowball sampling.

1.10.4 Snowball sampling

The Snowball sampling technique was used to select wheat and maize block farmers as well as the selected non-block farmers. It was found to be the best technique to use because the researcher did not know any block farmers in the study areas and because it was not everybody who was involved in block farming in the areas of study. Each farmer that was interviewed in each of the four areas directed the researcher to the next farmer involved in block farming until the sample of 61 respondents was covered. The sample was made up of one officer from the Ministry of Agriculture and Food Security, 10 maize block farmers and 5 non-block farmers from Ha Molipa, 10 maize block farmers and five non-block farmers from Ha Tšekelo. The sample comprised also of 10 wheat block farmers and five non-block farmers from Mokema as well as 10 wheat block farmers and five non-block farmers from Ha Toloane.

1.10.5 Purposive sampling

Purposive sampling was used when choosing the areas of study from many other areas where block farming is operational. These districts were chosen because they were among those that block farming is fully operational in and were within easy reach of the researcher. Purposive sampling was also used to select the officer from the Ministry of Agriculture and Food Security;

it was found necessary to interview the officer who was in charge of block farming and therefore had an inside information on block farming.

CHAPTER TWO

THE CONTRIBUTION OF AGRICULTURE TO FOOD SECURITY IN DEVELOPING COUNTRIES

2.1 Introduction

This chapter studies the available literature on different causes of food insecurity and the programmes and strategies that are used by different countries to assure food security. Food insecurity is a major challenge that needs attention in many parts of Africa and other developing countries. In this respect, programmes and policies that assure availability of food among the population are implemented across the globe. These policies and programmes are meant to solve the outcome of the factors that cause food insecurity. And these factors include among others, the 2007/2008 financial crisis that contributed to escalating food prices in the world. In addition to this worldwide cause of food insecurity, other causes of food insecurity such as climate change, environmental degradation, poor farming practices to mention but a few, are looked at in this chapter. After looking at the causes of food insecurity, the chapter then studies the programmes that are used to improve food production. This chapter begins by studying differing arguments around the concept ‘food security/ insecurity’.

2.2 The global food security challenges

According to available literature, Food and Agriculture Organisation (FAO) was formed in 1945 to ensure food security, eliminate hunger and malnutrition (McDonald, 2010). Another role of FAO that is related to food production is to manage and utilize resources for food production (McDonald, 2010). In this regard, FAO often convene several conferences on food production, and one of the World Food Summit was held at FAO headquarters in Rome in 1996. The objective of the summit was to reaffirm the overriding need to ensure food security for all people in the world (FAO, 1996). Despite all the efforts by the FAO to ensure access food by all people in the world, food insecurity remains a major global problem and a challenge.

Providing food to all people in the world is still a cause for concern. This is because people’s livelihoods, especially in developing countries have been negatively impacted by lack of enough and safe nutritious food (McDonald, 2010). Among the African regions, the sub-Saharan Africa has the highest incidents of malnutrition and food insecurity in comparison with other regions

(FAO, 2006). To portray the seriousness of food insecurity in Africa, Thompson (2012) estimated that about 200 million African children are undernourished, and about 126 million are chronically undernourished while 5 million die every year because of hunger. Some other statistics showing shortage of food in Africa estimate that, about 30 million people receive food aid every year and a large number of them are living within the regions of East and Southern Africa (Clover, 2003). Shortage of food in developing countries, and particularly in Africa indicates that many people are lacking entitlement to food. Therefore, the next section studies entitlements and command access over food by different people.

2.3 Programmes and policies used to ensure food security in developing countries

Agriculture forms the backbone of economies of many developing countries, thus this sector has an important role to play in meeting the needs of the poor. Through agricultural production, food security is expected to be attained. Food security dominates the international development agenda, but strategies to curb chronic hunger in developing countries have had limited success so far (Shattuck, 2010). In order for people to be food secure, several agricultural practices have to be adopted so as to bring the anticipated changes.

In order to bring the agricultural changes, history shows that many revolutions have occurred in trying to change human lives. Therefore there was a need for a dramatic change in the field of agriculture to increase productivity. There are different programmes and approaches used to increase agricultural production in developing countries, and the discussion in this research report will be limited to Community Development Approach, the Green Revolution and Gene revolution/Biotechnology.

2.3.1 Community Development Approach

According to the literature, the origins of Community Development can be traced way back to the 1930's in United States of America (De Beer and Swanepoel, 2001). In this regard, Frenk, (1966) views Community Development Approach as self-help approach to rural development which was first introduced in Nepal in 1951 under the name of Village Development. Community development is a process whereby those who are marginalized are in a position to participate in developments that are aimed at improving their lives by tackling problems that face their community (Combat Poverty, 2000).

It is further stated by Budapest Declaration (2004) that community development strengthens civil society by prioritizing the actions of communities and their perspectives in social, economic and environmental policies. Improvement of policies will result in eradication of poverty and promotion of sustainable development and empowerment of communities in different countries (Cornway and Toennissen, 2003). Poverty and other social problems can be solved through community participation projects or activities that are meant to improve their lives (Frenk, 1966). Community participation in development initiatives, especially development projects is considered imperative because the local people are in a position to make decisions and implement programmes that are meant to improve their lives (Coombs and Ahmed, 1974). It is also noted by Frenk, (1966) that involvement of the local people in development projects secures participation and brings up the feeling of being involved in one's destiny. In addition, the local people are knowledgeable about their problems (Frenk, 1966). In other words, Community Development is a joint effort between the communities and the state in which the state has a duty to create an enabling environment for development to take place (Groenewald, 1989).

Community Development Approach was not without problems. The main challenge with this approach is that, it failed to meet either the economic or the political development objectives (Ruttan, 1984). As much as involvement of people is of great importance, local people rarely have the sophistication to understand problems in totality. Therefore, if the progress is slow, the local people may lose interest leading to very few problems being solved. According to the literature, the failure of Community Development Approach led to the rise of the Green Revolution (Jones and Wiggle, 1987). This is because the Green Revolution signaled a shift of attention to programmes that focused more on the enhancement of agricultural production (Jones and Wiggle, 1987). Therefore, the next discussion will be on the contribution of the Green Revolution to food production in developing countries.

2.3.2 The Green Revolution

The Green Revolution was initiated in the 1960's to address the issue of malnutrition in developing world (Sebby, 2010). Chapman and Graham (2002) state that Green Revolution refers to a series of research, development and technology transfer initiatives that occurred between 1943 and late 1970s in an attempt to improve agriculture. The technology of Green Revolution

involved bio-engineered seeds that worked in conjunction with chemical fertilizers and irrigation to increase crop yields (Todaro, 2000). It is further stated by Todaro (2000:746) that, Green Revolution is concerned with boosting grain production with the use of modern agricultural inputs such as new hybrid seed varieties of wheat, rice and corn that are expected to result in high farm yields. And this is a result of the use of modern technologies in agriculture. In addition to increasing agricultural production, the use of the Green Revolution technologies has been commented for several advantages. First, the use of the Green Revolution technologies such as new chemical fertilizers and synthetic herbicides supplied crops with extra nutrients. This was done by enhancing the quality of the soil as well as deterring pests and insects (Sebby, 2010). Second, the newly developed synthetic herbicides and pesticides controlled weed, killed insects and prevented diseases. In this regard, these new agricultural technologies are commented for providing double as well as triple yields. And where irrigation facilities are being used, the new technologies even provide three harvests a year (Bernstein, Crow and Johnson, 1995).

Third, during the Green Revolution multiple cropping was introduced which resulted in high productivity (Sebby, 2010). Fourth, the new High Yielding Varieties took a shorter period to mature compared to the traditional ones, and this allowed increased multiple cropping (Hazzel, 1985).

There is no development that is without challenges, and this was the case with the Green Revolution technologies. Therefore, this part studies the major challenges of the Green Revolution

2.3.3 Challenges of the Green Revolution

Although the Green Revolution technologies improved agricultural productivity in many parts of the world, the use of these new inventions were not without some setbacks. For instance, it is opined by Todaro (2000) that the Green Revolution often merely served the needs and vested interests of wealthy landowners. This is because the hybrid seeds require access to certain complementary inputs such as fertilisers, insecticides, irrigation, credit and agricultural extension services which can only be afforded by small minority of large landowners. And this impacted negatively on many small poor peasants. Evidence further indicates that large landowners eventually drove out smallholder farmers of the market. This is because large scale farmers are

able to obtain access to low-interest government credit while smallholder farmers are not supported by government and commercial lending institutions (Todaro, 2000:393).

Another challenge of the Green Revolution was an increasing inequality between poor and rich people. It is stated by Sebby (2010) that many farmers could not afford the new agricultural inputs because of lack of income. In addition to the social and economic challenges of the Green Revolution, the new agricultural technologies have a negative impact on the environment (Andersen and Hazzel 1985). As stipulated by Andersen and Hazzel (1985), the chemical fertilisers, herbicides and pesticides affect the environment by increasing pollution and erosion. These negative outcomes of the Green Revolution affected humans, environment as well as productivity. It is further noted in literature that the Green Revolution technologies resulted to extinction of the thousands of traditional varieties that were used prior the new discovery. For instance, only few species of high-yield varieties of rice or wheat were grown, and other seed varieties that existed prior to the Green Revolution are no longer being used (Dethier and Effenberger, 2012).

It can be noted from the above discussion that the Green Revolution was faced with social, economic and environmental challenges. And some of these challenges affected agricultural productivity negatively. The failure of the Green Revolution to ensure food security in different parts of the world resulted into the invention of new agricultural technologies, Gene Revolution or biotechnology. Therefore, the next discussion will be on the contribution of the Gene Revolution/biotechnology to food production.

2.3.4 The Gene Revolution/Biotechnology and food production

Biotechnology is any technological application that uses biological systems, living organisms or derivatives theory to make or modify products or processes for specific use (Convention on Biological Diversity, 1992). According to Krishna and Reddy (2005), in agriculture, biotechnology has been viewed as the most powerful tool and one of the rapidly growing technologies that would guarantee food security in the world. Therefore, biotechnology is said to have a potential of alleviating most of the human sufferings (Krishna and Reddy, 2005). Evidence reveals that biotechnology was first used in 1917 and used the living organisms to make products in industries and agriculture (Van, 2009). The current impact of biological technologies

in food production is evidenced in different countries, especially in food insecure African states. According to Fresco (2001) the major producers of the genetically modified foodstuff in developing countries are South Africa, Argentina, Mexico, Uruguay and China. Fresco (2001) further argues that of these five countries that have adopted and used this new agricultural technology, Argentina is at the top in relation to the cultivation of Genetically Modified Organisms crops. In the year 2001 the total land under production of Genetically Modified Organism (GMO) crops was estimated at 23 per cent covering an area of about 4.3 ha, in general between 1999 and 2000 the area under transgenic crops increased by 7 per cent in developing countries (Davies, 2003). Like the Green Revolution technology, the advent of the Gene Revolution into the poor countries is highly supported and promoted by national governments, bilateral and multilateral institutions, the World Bank and IMF. The use of biotechnology in some developing countries is commented for offering better quality meat and other products. This is because GMOs have made it possible for plants to be tolerant to drought and salt stresses, toxic heavy metals, pests and diseases (Carpenter, 2010).

The advent of the Gene Revolution was welcome with hopes of increasing food production in the world. However, this new agricultural invention posed many people to health risks (Hawes et.al, 2003). For instance, as stated by Fransen, Dayrit, Gatlabayan, Santosa and Adiwibowo (2005) reveal that, the concentration of beneficial or harmful ingredients can be modified by breeding because it changes the internal chemistry of organisms. The authors further argue that, new plants and animals may generate husbandry practices that damage the environment. Therefore, biotechnology cannot solve the problems related to food insecurity and poverty in many countries (Persley and Doyle, 1999). Instead, there must be development of policies that would guide increased public investment in research and development and protect the public from risks arising from genetically modified organisms (Persley and Doyle 1999).

2.3.5 Approaches to food production

In 2000, The World Bank formulated multidimensional approaches to ensure food security. It called such approaches 'pathways'. De Janvry and Sadoulet (2001: 9-10) identify four such pathways which households may use to address their food insecurity and poverty. The first path is an "agricultural path" which refers to using agricultural production by the poor who have access to land and other farming resources. The second path is a "multiple-activity path" which

refers to rural households using off-farm income sources as their main means of livelihood, and agricultural production as secondary and households in this path often use off-farm income to finance their farming activities in which they are caught between these two limited income sources (De Janvry and Sadoulet, 2001: 9-10).

Again, there is another path known as an “assistance path” which refers to extremely poor households that depend on transfers such as remittances from a family member working away from home as their primary source of income (De Janvry and Sadoulet, 2001: 94). This also includes households without other resources for which remittances are their permanent source of income. Lastly, there is an “exit path” which refers to the situation in which rural poor own and manage businesses for a livelihood, which are sometimes related to agriculture (De Janvry and Sadoulet, 2001). These businesses often include merchandise and food shops, processing services and storage facilities (Haggblade, Hazell, & Reardon, 2002: 22). Food security is a global concern that challenges the existence of all nations. Therefore, the next section is going to discuss the global food security challenges.

2.6 Factors that caused food insecurity in developing countries

According to the available literature, in the end of 1970s, many Sub-Saharan African countries were in serious economic difficulties that were evidenced by high inflation, unmanageable balance of payments and fiscal deficits to mention but a few (FAO, 1999). According to FAO (1999), these difficulties were to a large extent attributed to excessive government intervention and control of national economy. Therefore, the World Bank and International Monetary Fund came into picture to address those financial problems through massive reforms. Therefore, these multilateral financial institutions introduced the Structural Adjustment Programmes (SAPs) in many African countries. SAPs are listed as one of those policies that were meant to restore macroeconomic balances and facilitate growth (World Bank Report, 1998). Structural adjustment is the package of reform measures that is adapted by partnering countries in order to reduce economic imbalances and improve economic incentives (World Bank Report, 1998). According to the World Bank and the IMF, the SAPs are meant to ensure sustainable economic growth and poverty alleviation. This would be achieved implementing some of the conditionalities such as privatisation, liberalisation, devaluing the currency, reduction of agricultural subsidies and downsizing in the public sector. However, these austerity measures impacted negatively on poor

people, and mainly smallholder farmers. For instance, Abugre (2000) posits that reducing government subsidies resulted in low agricultural productivity because without subsidies many small farmers resorted to the use of simple/primitive technologies. And this affected productivity negatively.

In this respect, Steward (1994) points out that in many African countries, small-scale agriculture suffered lack of access to technology and poor access to inputs because of reduction of agricultural subsidies. Furthermore, lack of reduction of public expenditure has brought about limited supply and access to critical production facilities such as irrigation facilities (Steward, 1994).

2.6.1 Climate change and food production

Climate change as one of the causes of food insecurity is outstandingly impacting the conditions in which agricultural activities are conducted (FAO, 2016). Globally, plants, animals, and ecosystems are adapted to the prevailing climatic conditions as a result, when these conditions change, all present will be impacted on. For example, some will be less productive. Some changes can be predicted while some are rather complex. For instance, under controlled conditions many plants react well to an increase of the carbon dioxide in the atmosphere and also weeds can do the same (FAO, 2016). This can result in an increase or decrease in yield of the cultivated plant depending on weeds competing for nutrients and water and on remedial agricultural practices. According to (FAO, 2016), the risks on agricultural production translate directly into risks for the food security and nutrition of the people who directly depend on agriculture for their food and livelihood. There can also be impacts on the food security and nutrition of distant populations through price volatility and disrupted trade.

Agriculture is an economic activity that depends to a large extent on weather and climate in order to produce food necessary for human survival (Altieri, 1995). Agricultural sector is very vulnerable to climatic conditions and therefore is prone to suffer a lot from the effects of climate change (Altieri, 1995). According to Schlenker and Lobell (2010), the consequences of climate change on agricultural production and food security in Africa are of serious concern.

According to Harper (2001), global warming seems to be a menace to food security as many crop yields are highly dependent on a mix of temperatures, soil conditions and rainfall patterns. Harper (2001) continues to show that heat stress could severely reduce the productivity which in turn together with growing population and higher food prices could seriously jeopardize the world's food security. The amount of warming is expected to increase but will be more severe in the southern latitudes resulting in a huge harm to the crops specifically on the Less Developed Countries (Harper, 2001). Many low-income countries are considered to be most vulnerable to climate change mainly due to their rain-fed agricultural reliance (USAID Report, 2009). In addition to climate change, food insecurity in Africa is caused by environmental degradation (IFRC, 2008). It is further argued by Al-Amin and Leal Filho (2014) that climate change causes decline in food production and worsens food sustainability over time.

2.6.2 Impact of HIV/AIDS on food production

According to FAO (1996), HIV/AIDS affects mainly the active labour force, people aged between 15 and 50 years. FAO (1996) estimates that seven million agricultural workers in Africa have died because of HIV/AIDS related diseases since 1985. It is reported that the disease can affect about 16 million people or more within the next 20 years (FAO, 1996). HIV/AIDS has a significant indirect impact at the household, community and institutional as well as societal levels. The impact of HIV/AIDS goes a way beyond the physical and psychological impact on the infected individuals. Direct impact of HIV includes loss of labour resulting in a decline of quantity and quality of food available to a household. This is so because as productive family members become sick or die, medical and funeral expenses severely affect agricultural activities together with depletion of any of the household reserves. FAO (1996) further indicates that, the illness increases dependency ratio like orphans becoming incorporated into extended family, threatening food security through increased costs, stretched limited income and food reserves. HIV impacts negatively on food security because labour shortages and reduced productivity are experienced as sick people are less productive and their caregivers are diverted from productive activities (FAO, 2006). A decrease in land use for cultivation due to labour shortages affects the agricultural mainstay of many communities.

FEWS (2008) found that the spread of HIV and other diseases is undermining food security in African countries. For instance, in Kenya, Uganda and Tanzania, more than 5 percent of the

working-age population is infected. FEWS (2008) further stipulates that in regions with high HIV/AIDS prevalence like southern Africa, where subsistence agriculture is mostly practiced, HIV/AIDS-related illness and deaths reduce the agricultural labour force. This results in less land being cultivated, reduced yields and less intensive crops being grown.

There are many child-headed households and those headed by elderly people because the children's parents have lost their lives to this illness. Apart from this, family members spend a lot of time which could otherwise be invested in agriculture to care for the sick and to attend funerals as well as mourning the dead. As a result, food availability, nutrition and well-being diminish. Again, many girls especially from communities that are hit-hard, drop-out of school to help lighten the family load (FAO, 2002). Also, women account for 70% of the agricultural labour supply yet they have a higher infection rates which register negatively on the quantity and quality of labour and farm output (Baier, 1997). As a result, cultivated land may receive less timely attention either for tillage, planting or weeding leading to poor production (UNAIDS, 2000). Furthermore, there is a decline in diversity of crops grown, changes in cropping patterns are occurring and cash crops are being abandoned for less labour-intensive subsistence crops as a result of AIDS pandemic (Guerny, 2000).

According to Hunter (2008), a study conducted in Kenya on the link of HIV/ADS and agricultural production found that in the first place, the death of an adult female household member resulted in fewer grain crops grown, while the death of an adult male resulted in decreased production of cash crops like sugar and coffee. Secondly, if the infected individual was a wage earner, household income may fall and expenses may increase because of new health care costs. Hunter (2008) asserts that as much as HIV/AIDS impacts negatively on food production, food crisis is also likely to exacerbate the impact of this menace as infected individuals with high nutritional needs may find it more difficult to purchase food.

2.7. Food production in the New Millennium

Lack of access to food still remains a challenge even in the new millennium. And this has forced the United Nations to incorporate some goals that deal with hunger and food production. First, Goal 1 and 2 of the Millennium Development Goals put more emphasis on reduction of poverty and hunger. The Millennium Development Goals (MDGs) represent the international

community's collective commitment to create a better tomorrow for billions of people by prioritizing efforts to reduce poverty and hunger (UNDP, 2010). The first Millennium Development Goal aimed at halving the proportion of people whose income is less than 1 dollar per day between 1990 and 2015 and would be achieved by increasing agricultural productivity (UNDP, 2010). However, extreme poverty, hunger and malnutrition still remain a challenge in many countries despite some achievements in the MDGs. For example, in Lesotho out of the population of around 2.109 million, 57.1% live below the poverty line while 709,394 people are food insecure and in need of food assistance (World Food Programme, 2016:1)

Second, the Sustainable Development Goals (SDGs) were also established by the United Nations and adopted by many countries to continue from where the MDGs have stopped. Building on the unfinished business of the MDGs, the 2030 Agenda for Sustainable Development is adamant to promote good nutritional status for realizing inclusive development. Forming part of the wider 2030 Agenda for Sustainable Development, the 17 Sustainable Development Goals (SDGs) build on the MDGs were adopted and their focus was on international development (Thomson, 2015). Their intention is to go beyond the MDGs and to provide a comprehensive vision and framework for the evolution of all countries in the years ahead (Osborn, Cutter & Ullah, 2015:3). Specifically, the SDGs aim to ensure "universally shared common global vision of progress towards a safe, just and sustainable space for all human beings to thrive on the planet" (Osborn et al., 2015:2).

In fact, the UN's first SDG aims to eradicate extreme poverty for all people everywhere while the second SDG aims to end all forms of hunger, achieve food security and improved nutrition and promote sustainable agriculture (Osborn et al., 2015:6). The target of the SDGs is to achieve these by 2030 through ensuring that all people have access to sufficient and nutritious food all year round through the implementation of three strategies. And these are; promotion of sustainable agricultural practices, supporting small scale farmers to ensure equitable access to land, technology and markets, and ensuring international cooperation in investment, infrastructure and technology to improve agricultural productivity (UNDP, 2016).

2.8 The impact of food insecurity on developing countries

Food insecurity is recognised as a serious social and public health problem in many countries (Na Li, Dachner and Tarasuk, 2016). Food insecurity in the world has been increasing each year in different countries as much as the world is trying to produce enough food to feed everyone. According to (FAO, 2002), world agriculture produces 17 percent more calories per person today than it did 30 years ago, despite a 70 percent population increase. This is enough to provide everyone in the world with at least 2,720 kilocalories (kcal) per person per day (FAO, IFAD, WFP, 2002).

In most developing countries, food insecurity results in such nations getting food aid. Food aid could be described as aid supplied as food commodities on grant or concessional terms (European Commission, 2000). The food donations can be offered by government, inter-governmental organisations especially World Food Programme (WFP), and private voluntary or non-governmental organisations (European Commission, 2000). Food aid is provided to countries that are food insecure because of inadequate food production and insufficient foreign exchange to import the food they need. Food aid is a very controversial form of assistance as it poses severe effects on the recipient's development. According to Shaw and Clay (1993), food aid can cause a disruption of trade and creation of dependence on the parts of both government and beneficiary groups causing food insecurity in a long run. The European Commission (2000), states that the diverse effects of providing food aid may cause economic inefficiency, disruption of local markets, eating habits affected, reduction in beneficiaries' sense of responsibilities as well as creating laziness on small scale farmers.

For a long time there have been some controversies surrounding food aid based on whether it assists in curbing the problem of food security or not. In the first place, Shaw (2001), asserts that WFP as the main distributor of aid believes that due to an increase in hunger around the world, food aid and other forms of assistance are needed. This is because evidence shows that during some emergencies, drought and other natural disasters, WFP distributed food aid to affected countries such as Lesotho, Zimbabwe, Malawi to name but a few.

2.9 Food security situation in Africa (case study Nigeria and Tanzania)

In developing countries especially in Su-Saharan Africa, agriculture plays a major role in the economic sector therefore, land as a natural resource forms the economic base from which the

largest section of the national population depend on for their livelihood. In many African countries, there have been lots of efforts made to develop effective policy approaches to ensure that agriculture's potential is developed to its maximum but none have appeared profitable so far.

Food security as a concept gained momentum during the 1980s and during the implementation of the structural adjustments programmes especially in most Sub-Saharan Africa (Diao, 2010). Therefore, achieving food security, improving people's livelihood, maintaining and improving conditions for the natural resources are of great importance in Sub-Saharan Africa. This requires creating sustainable development projects that fulfils objectives of governments in low-income countries so as to solve the problem of food security.

According to Otaha (2013), Nigeria is among the African countries that are now importing food because of the food crisis experienced in that country. The cases of malnutrition and under nutrition are growing on daily bases in Nigeria. As a result, food intake requirements of majority of Nigerians have fallen below international standard (Otaha, 2013). However, there are several attempts made to solve the problem and correct the situation for instance, Otaha (2013) points out that several efforts were made to improve food supply through agricultural production but did not yield good results. The first attempt was to set up companies that would participate in direct food production (Otaha, 2013).

Secondly, there were eleven River Basin Development authorities that were established to set up river basins for better agricultural production to make Nigeria self-sufficient in food production. Then thirdly, the national campaigns that were launched to give agricultural production an image were Operation Feed the Nation and Green Revolution (Otaha, 2013). These short-lived campaigns were meant to encourage land owners to take farming as a way of life not just occupational. The programmes that were implemented to boost agricultural production were not successful but instead helped to alienate the peasant farmers who are the major food producers in Nigeria. These programmes were capital intensive therefore; the large scale commercial farmers were the ones that benefitted a lot at the expense of poor peasant farmers.

The frequent changes of policy and poor performance of the agencies assigned to implement food and agriculture policies in Nigeria have serious setback on food production and distribution (Otaha, 2013). For instance, there was a declining value in total credit to agriculture and declining domestic and foreign investment in agriculture as companies that had ventured into agriculture withdrew their investments (Olomola, 1998). Garba (1998) indicates that policy implementation was a problem because of policy inconsistency, transparency and poor coordination. Therefore, according to Otaha (2013), this comes as a result of changes in governments because every time a new government comes to power, the previous agricultural policies and programmes are abandoned and new ones are made. As a result, this creates no room for stability and progress in food production (Otaha, 2013).

Agriculture plays an important part in the economy of Tanzania like in other African countries. For instance, agriculture contributes 50 percent to the GDP and another 50 percent to the country's exports (Sokoni, 2007). Although agriculture contributes positively to the economy of Tanzania, this sector is not mechanised. This sector is still dominated by smallholder producers who farm on small landholdings with the use of simple technologies (Sokoni, 2007). Evidence shows that Tanzanian farmers are producing for the market, and the commercialisation of agriculture has gained momentum over the past years leading to a success of smallholder farmers who depend on farming.

Sokoni (2007) research on Tanzania reveals that the increase in commercial production by smallholder farmers has experienced a lot of weaknesses and these include inter alia low agricultural productivity and erosion of natural resource base. Sokoni (2007) indicates that this is due to the threat to sustainable use and management of agricultural resources triggered by the process of commercialisation of smallholders. Sokoni (2007) further points out that, in Tanzania, spatial arrangement of farmers has played a major role in the decline of agricultural production. This was caused by the post-colonial government's attempt to modernise and improve productivity in agriculture. For instance, the government's programme to modernise farming was through the Ujamaa. This agricultural programme came with the idea of establishing villages where people would leave and practise farming. However, villagesation meant movement of peasants or households from scattered dwellings. And this affected the living styles of many people. In addition, working together was not easy for many people.

Sokoni (2007) further argues that a change in spatial organisation was not very beneficial as it disrupted peasants' productive environment. As much as commercialising farming has created opportunities to earn some income by the producers, not all benefitted as it has exacerbated inequality in entitlement of rural households as they vary in their command of environmental good (Sokoni, 2008). It is further reported that, there was shortage of labour as farmers were forced to recruit hired farm labour (Sokoni, 2008). In addition to the impact that Ujamaa brought to the economy of Tanzania, it is reported that Structural Adjustment Programmes worsened the situation. After the adoption of the SAPs, the Tanzanian government reduced agricultural subsidies to smallholder farmers. And this resulted to an increase in farm inputs and fertilizers prices (Sokoni, 2007). The above problems are mentioned as the ones that have hindered progress in agricultural production and resulted in food insecurity.

CHAPTER THREE

AGRICULTURAL POLICIES AND PROGRAMMES IN LESOTHO

3.1 Introduction

Lesotho's agricultural production started a way back as the early 1800s. Agricultural production especially grain production was considered to be good enough to enable the country to export to other countries particularly to South Africa. During that time, Lesotho enjoyed being called the basket of Southern Africa. Lesotho's production started to decline after South Africa opted for other alternatives sources of cheap maize grain from other countries. Through the international donors, the Government of Lesotho (GoL) after independence was able to assist agricultural production financially as a result, there was an increase again. At around this period, the agricultural policies were developed in order to support smallholder farming in an attempt to stay food secure.

Food security is looked at in terms of production practices and patterns of small holder farmers because as (LVAC 2002) puts it, 70% of the communities make a living from agricultural production. Climate change is an important phenomenon that calls for extreme measures to be adopted by the government and non-state-actors especially because Lesotho is an agrarian society. The first part that is going to be discussed is that of geographical location in Lesotho. The second one will be to cast an eye on the agricultural initiatives undertaken by the Government of Lesotho in trying to curb food insecurity in the country.

3.2 Agricultural background of Lesotho

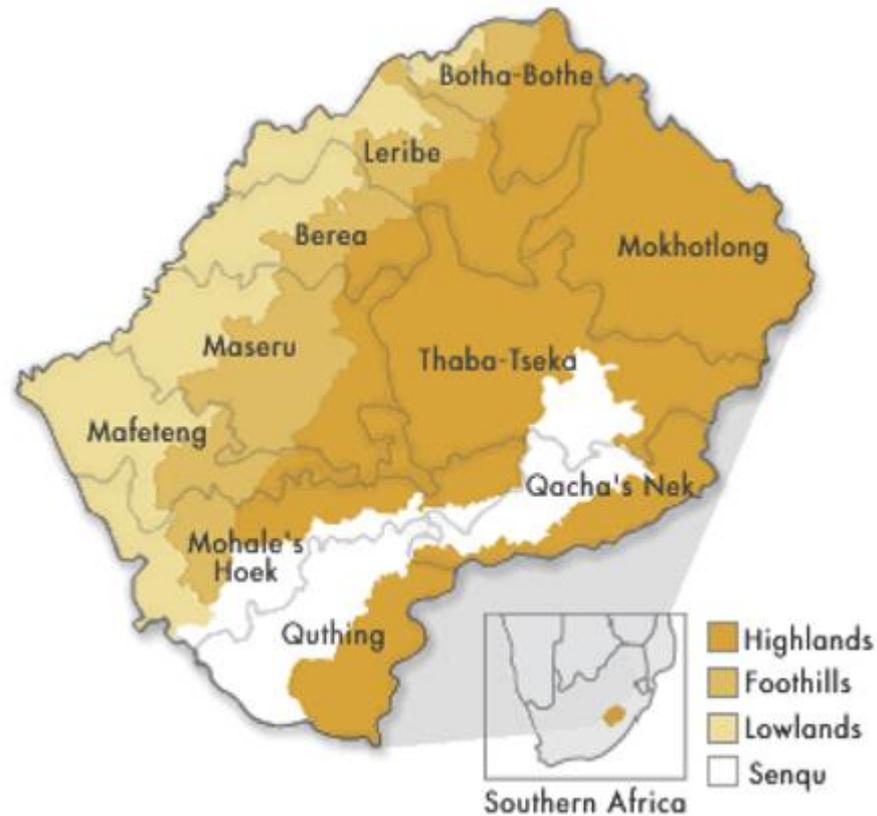
Lesotho's geographical situation is explained as being very unique as it is completely landlocked by a single country (Lundahl et al, 2003). It was also observed that, the country's economy in all measures is very small be it GDP, GNP, Population as well as the land surface (Lundahl et al, 2003). Lesotho is a country with constraint economic development, natural resource base, small arable land, and an agricultural sector that is severely affected by desertification, excessive soil erosion together with land degradation (FAO, 2009). As much as rural communities depend on agriculture to satisfy their daily food supplies and generate income to meet other needs, Lesotho continues to be faced with an ongoing crisis of alarming food insecurity failing livelihoods (FAO, 2009). Severe climatic conditions such as drought have led to a decline in the production of

cereals and other staple crops. Evidence indicates that the decline in production often pushes the government to declare a food shortage state of emergency and seek food aid from foreign countries. The increase in staple food prices and deterioration of food security in the country come as a result of falling agricultural output (GoL, 2007). It is estimated that, with climate change, the situation worsen and have a negative bearing on food security.

3.3 Lesotho's ecological zones

Lesotho is made up of four ecological regions or zones (Gwimbi et al, 2014). These ecological zones are lowlands, consisting of Butha-Buthe, Leribe, Berea, Maseru, Mohale's Hoek and Quthing and these are mainly agricultural plains. The lowlands are the most productive arable land in the country that has generally good annual rainfall, ranging from 700mm to 800mm and complimented with sandy textured, red to brown soils in the north and clay in the south (Mokhothu: 2002) The foothills still take the above mentioned districts with an exception of Mohale's Hoek and Quthing which are dominant in grassland pastures and agricultural plains. Livelihoods in the foothills are more agriculturally oriented and driven by crops such as maize, wheat, peas, fodder crops, potatoes etc. The mountain valleys and high basins consist of the districts of Mohale's Hoek, Quthing, Qacha's Nek, Thaba-Tseka and Mokhotlong and the region is known for its mountain shrubs. Livelihoods in the mountain regions are overly dependent on food crops and livestock (Mphale: 2002). However, the soils are fragile, thin horizon of rich black loam except in valley bottoms (MOAFS: 1996). The final region is Senqu Valley which covers the valleys of Qacha's Nek, Quthing and Mohale's Hoek districts (Secondary School Atlas, 1990). This area has low soil fertility, calcareous clay red soils with poor penetration by rainfall, and therefore generally experiences low agricultural output which is inadequate to meet local demand (GoL:2000).

The Lesotho ecological zones map



3.4 Food insecurity in Lesotho

Although Lesotho is working hard to provide for better quality of life for all its citizens, it however faces some major challenges that have dire effects on food security. The government of Lesotho is among the few in Africa that are heavily engaged in fighting food insecurity and agriculture. The problem of food insecurity is so serious and widespread that even the districts which are normally classified as having high agricultural productivity such as the lowlands are now amongst the vulnerable ones (GoL: 2001). Unavailability of cereal and a declining purchasing power have resulted in many families surviving without food or at times having one meal per day while in some areas, famine is beginning to claim lives and worsen malnutrition (LVAC, 2002)

3.5 The causes of food insecurity in Lesotho

The economy of Lesotho is to a large extent dependent on climate with water as a key economic sector both as an energy source and as an export to South Africa (Lesotho Climate Action Report, 2015). The water sector has been impacted by climate change resulting in springs running dry and experiencing a decline in subsistence farming due to recurring droughts (MNR, 2007). Although agriculture forms a small portion of Lesotho's GDP, it provides subsistence for the majority of households. Climate change in Lesotho has a dire effect on food production as it exacerbates existing environmental stresses such as drought, land degradation and loss of biodiversity which undermines sustainable development efforts (MNR, 2007). Furthermore, among the four distinct geographical regions that Lesotho is divided into, Senqu River Valley is the most vulnerable to climate change with a population of mostly peasant subsistence farmers, livestock farmers and destitute households with no means (MNR, 2007).

According to MEMWA (2013), though average annual temperature is highly variable year to year, there has been an observable increasing trend. Evidence shows that over the period 1970 to 2000, the total temperature increase is 0.7C (National Adaptation Programme of Action, 2007). Subsistence farming, which is a major source of living in rural areas is steadily declining as a result of droughts experienced. Therefore, this has led to a steep decline in production of crops as well as livestock farming that has also been impacted with chronic drought limiting the carrying capacity of pastoral lands (MNR, 2007).

Furthermore, The First Five Year Development Plan stated that, the reasons for low level of crop production are many for instance adverse climatic conditions. These climatic conditions comprise periodic droughts, frost and hail, variable rainfall during the critical period of cultivation. Evidence also indicates that sandy soil with low fertility, lack of irrigation, shortage of labour suitable for heavy agricultural work, primitive farming practices and lack of sufficient agricultural tool and implements, inadequate credit facilities and limited developments funds, fragmentation which has assumed great proportions owing to the population pressure and to the land tenure. It is further explained that, the situation in the agricultural sector is also aggravated by the very high rate of soil erosion which is to a large extent caused by high pressure of human and animal populations seems to be the main cause of accelerated soil erosion.

However, to counter the causes of food insecurity, The Third Five Year Development Plan was formed to design programmes to ensure that social and economic benefits reach the poor and that government action assists the poor to help themselves. The Third Development Plan calls for recognition of development in rural areas that must integrate activities for full impact because the lives of rural people and the determinants of their behavior are not divided along sectoral lines. To raise the nutritional status of children under five, and integrate programmes that encourage village gardens, emphasizes the value of breast feeding, teaches nutritional values, constructs a clean water supply, introduced pit latrines.

3.6 Effects of HIV/AIDS on food production in Lesotho

The causes and effects of HIV pandemic are closely associated with various development issues such as poverty, food and livelihood insecurity together with gender inequality (FAO, 2009). Unavailability of basic social services like health and education exacerbate the spread of this epidemic (FAO, 2009). Ultimately, the effects of HIV/AIDS on the labour force have a direct impact on the individual households. For example, households may not have the ability to either produce sufficient food or to go to work in order to receive a wage and have the ability to purchase food.

According to UNAIDS (2001), HIV/AIDS epidemic is a major risk to Lesotho's medium and long-term prosperity. Due to this epidemic, a lot of human development indices have declined leaving for example life expectancy that was 52 years in 1995 to 36 years in 2001 (UNAIDS, 2001). There has also been a significant economic impact brought by HIV/AIDS. The high prevalence rate is among people aged 15-49 which is the main labour force cohort resulting in absenteeism, mortality and reduction of productivity and efficiency (FAO, 2001). Furthermore, the rural areas have been hit hard by this pandemic as poor health related to HIV/AIDS has reduced agricultural productivity thereby aggravating food crisis (FAO, 2001). In addition, the impact of HIV and AIDS on this sector has also been detrimental with loss of adult manpower that leaves orphans and widows that do not have the resources to sustain production (International Monetary Fund Country Report, 2012).

Again, with increased percentage of retrenched Basotho men from the mines in South Africa, it was expected that they will contribute to agricultural production. On the contrary, that has not

been the case because of poverty that has spread widely (Sechaba consultants, 2000). Evidence shows that the HIV/AIDS scourge spreads easily where poverty is rife as the opportunistic diseases take advantage of the situation. According to the Basotho beliefs, agricultural activities have to stop to observe the sorrow during funeral and to prevent hailstorms. This has negative impacts on food production given the high rate at which people are buried. This also has an impact on the environment since graveyards become full within a short time. A lot of people are selling their fields for the graveyards in some villages.

3.7 Post independence government policies and programmes

During the colonial rule, rural development took place to try and improve agricultural productivity. After gaining independence, the post-colonial government adopted rural development policies and programmes in its quest to solve a problem of food insecurity. These policies and programmes were included in the Five Year Development Plans. The intention was to increase productivity in agriculture through using better methods of production. Most agricultural projects were introduced during the first decade of the post-independence era with an aim of ensuring that at least most of the arable land was under production (GoL, 2000). Like many developing countries, Lesotho strives hard to ensure food security for everybody in the country. So this section is going to discuss the policies and programmes that were adopted by the Lesotho government at post-independence in Lesotho.

3.7.1 The Green Revolution and food production

Agriculture in developing countries Lesotho included, was characterised by low productivity due to primitive practices and tools hence why there was a call for modernising it. Increasing productivity in agriculture was the intention of the government thus the adoption of Green Revolution technologies in crop farming as well as in livestock. The first Five Year Development Plan indicates that the objective for crop production was to transform it from subsistence to commercial farming for import substitution and export. It is stated in the First Five year Development Plan that improvement in crop production could be brought in two ways. It was through an increase in the crop yields as well as through a shift in the production towards high value crops such as wheat, peas and beans. The improvement was made by applying fertilisers to the soil, using mechanised tools to avoid fallow lands and improving irrigation schemes due unpredictable rainfalls.

The Government of Lesotho introduced agricultural programmes during the Second Five Year Development Plan. This was done with the first aim being increasing productivity in agriculture as well as increasing food security in the country by identifying the capital investment programme. The second aim was to identify the technical assistance and capital assistance anticipated for the implementation of the programme. The Government of Lesotho formed the Ministry of Rural Development as a way of improving the standard of living of the rural poor. The objectives of the Lesotho Government during the Second Five Year Development Plan was inter alia, to improve general yield and production increase but above all to become self-sufficient in basic grains that could be commercialised. As a result, area development projects were established such as Thaba-Bosiu Integrated Rural Development, Khomokhoana, Phuthiatsana Irrigation, Matelile and Thaba-Tseka Mountain Area Development Projects (Kingdom of Lesotho, 1976).

3.7.2 Food aid programmes

During the first decade following independence, there have been some government programmes and policies that have favoured the poor. The government of Lesotho launched large public works schemes in the 1970s many of which were supported by World Food Programme. Food-aid to primary schools as well as to clinics throughout the country was introduced at around this time (Young and Abbot, 2005). According to Hawkins (2000), aid is defined as money, food or anything given to a needy country to help it. These programmes extended through the 1980s and 1990s.

As much as different food-aid programmes provided essential short-term relief to the needy households, at some point they were discontinued because they were seen to be creating dependency and acting as the wrong type of incentive. For example, it was not very clear whether a mother was taking a child to the clinic to be immunised for the sake of the child or because they were induced to do so with food-aid. Also a lot of households that were not poor benefitted from the programme thereby rendering it not well-targeted. The school feeding programmes in better-off lands were discontinued in the name of self-sufficiency projects involving vegetable production and poultry but with limited success (Shaw, 2001). Again, the universal supply of

food to mothers attending post-natal clinics ended although there was a provision that was made later for feeding those who were seriously malnourished.

There have been some reviews and revision of many policies and programmes in terms of agricultural production in order to address food insecurity issues at both national and household levels. The fact that many people in Lesotho are food insecure called for the changes in food security policies. It is only a few people that are able to grow all their food while many must buy some or all food or keep hoping that other people will give them some or the government. Ministry of Agriculture and Food Security (2008), indicates that on average, poor people in Lesotho grow less than 20% of the food they need showing that there is a gap to be made up from other sources. This implies that food insecurity exists all over the country and appears to be more severe in the mountains but also is becoming an increasing concern in the towns too.

3.7.3 Poverty Reduction Strategy

For food insecurity to be combated, Lesotho's Poverty Reduction Strategy is expected to make an outstanding contribution. According to (Ministry of Agriculture and Food Security, 2008), this national policy has it that promotion of agricultural and food production needs to be enhanced or sustained so that food insecurity can be curbed. As much as agricultural sector is important for both employment opportunities and food production, the levels of performance have been low for several years. The food security policy recommends a reversal of this trend through the implementation of Lesotho's Agricultural Sector Strategy (Ministry of Agriculture and Food Security, 2008). One of the things that can be done to ensure that the performance improves could be to give farmers all the necessary information about new farming methods.

For example, Lesotho has recently gone through an intensive period of policy development, whose results included the Poverty Reduction Strategy (PRS) and The National Food Security Policy (GoL, 2007). The intention is to provide technical assistance to the Government of Lesotho (GoL) in implementing these policies. In response, GoL approved the policy on subsidies in which it continues to maintain its commitment to the use of systematic subsidies. The subsidies are used as a policy tool to help achieve poverty reduction and food security objective. These two policies highlight GoL's efforts to combat food insecurity in Lesotho.

3.7.4 Extension services

History shows that since independence, there have been some extension services providing agricultural producers with information about new ways of farming hence an improvement in agriculture (Tshabalala, 2003). During the 1980s and early 1990s, agricultural production improved and had a large share in Gross National Product (GNP) because in almost all districts in Lesotho, there were extension officers who gave information to farmers about better ways of farming. Extension officers acted as a link between farmers and Ministry of Agriculture hence the improvement which was even better enhanced by the funding from the World Bank in Unified Extension Services. The importance of agricultural extension services was not only recognised in Lesotho but throughout the universe thus called for International Extension and Communication Conference in 1993 (Botha, 1994). Therefore, the change in extension policies in Lesotho has been made so that the policies are relevant to the information supply to the local farmers through research and participation.

Again, the government of Lesotho established the Agricultural Resource Centres in each of the ten districts to offer direct farmers' training and where the farmers and the officials meet and get some information on new agricultural practices. In order to try and modernise farming, there are some Farmer Training Centres (FTCs) in all districts where the farmers are trained on new technology in farming systems and the general agricultural technology. This brings about a good dissemination of information as the representatives reports to other farmers back home the information they gathered in such trainings.

Due to the crippling effects of hunger, international, regional and national efforts have been made to combat hunger in Lesotho (FAO, 2005). For example, in 2003, Lesotho as a signatory to the African Union (AU) adopted the Comprehensive Africa Agriculture Development Programme (CAADP) at the Maputo Summit to accelerate agricultural development and food security (SADC, 2013). Similarly, in 2013, Lesotho ratified the SADC Regional Agricultural Policy (RAP) born out of Member States' recognition that agriculture remains central to poverty reduction, growth, food and nutrition security in the Region (SADC, 2013). Therefore, Lesotho in its quest to promote food security, adopted six farming systems or technologies which are practiced in Lesotho namely: block farming, mono-cropping, conservation farming, keyhole

garden, double digging and Machobane farming systems (Mekbib et al, 2011). Despite all these laudable efforts, a huge percent of Basotho remain hungry.

Since Lesotho has different ecological zones, the farmers are trained with zonal differences in mind in regard to weather conditions hence these places are suitable for different crops. With respect to these ecological zones, the post-independence era saw the importance of agricultural development projects in order to enhance food security at household level and the creation of employment and income for the farmers. Therefore, among the six farming systems that were adopted by Lesotho, the study is going to focus on Block Farming.

3.8 Block Farming

In an attempt to counter the severe results of agricultural production of small holder's farmers, the new concept of Block farming was introduced marking the agricultural season of 2004/2005. Block farming means the small tracts of land combined to form one large productive land of which such small tracts of land are sub-leased to the particular farmer for a certain period.

Block farming aims at establishing commercially oriented farming and viable farming units in order to make productive use of available agricultural land. With a minimum of 20 hectares (ha) block farmers could access credit from Standard Lesotho bank (Lesotho Audit Report on Crop production, 2009: 13-14). In this farming system, farmers cultivate their fields as a group to reduce overall costs and to offer support across the crop-farming spectrum (Gwimbi et al., 2014:8). Block farming is said to be a form of intensified and mechanized farming system aimed at increasing food production both at household and national level (Gwimbi et al., 2014).

Under block farming system, the government provided all farming inputs and adopted a mechanised approach that necessitated the consolidation of blocks of farmers' fields into areas large enough for operation by combine harvesters and other heavy equipment (Turner, 2009:22). Some of this equipment was provided by the government LEMA agricultural machinery service and some was contracted from South Africa as part of a programme of technical assistance, in some seasons. The farmer was supposed to provide some manual labour, but often did not. Yields were divided half and half between government and farmer (Turner, 2009).

Furthermore, block farming is not only practiced in Lesotho but has an international dimension like in Ghana where the late president John Atta Mills introduced it into Ghana agricultural extension as a presidential initiative to combat food insecurity (Amanor, 2012). In Ghana, block farming is said to have four elements which are: 1) It is applied to a group of adjacent farmers who have agreed to farm their land uniformly applying the directives of the extension division or to farmers who are allocated land by the Ministry of Agriculture. 2) Inputs, seeds and hired labourers are released to farmers as a package to be paid in kind at the end of harvest in seed which are acquired by the Ministry of Food and Agriculture. 3) Seed growers are also contracted by the Ministry and provided with similar packages repayable in seed that is released to the participating farmers. 4) Labourers are recruited from among the rural youth to ameliorate youth labour (Amanor, 2012:1).

CHAPTER FOUR

THE ROLE OF BLOCK FARMING IN FOOD PRODUCTION IN LESOTHO

4.1 Introduction

This chapter evaluates the contribution of block farming in assuring food security in Lesotho. The focus is on some different villages, Ha Molipa in the Leribe district, Ha Tšekelo in the Berea district, Mokema and Ha Toloane in the Maseru district. The research findings provide an overview of agricultural development projects in assuring food availability at household level. In the light of the above, this chapter is divided into four main sections. Section A provides an overview and profile of maize block farming at Ha Molipa and Ha Tšekelo villages. Section B presents the characteristics of maize block farmers at Ha Molipa and Ha Tšekelo, while Section C focuses on wheat block farmers at Mokema and Ha Toloane. Section D explores the views of non-block farmers on block farming in the country.

4.2 Section A: An overview of Intensive Crop Production: Block Farming in Lesotho

According to the officer in the ministry of Agriculture and Food Security, block farming was introduced in the financial year 2005/2006 by the government of Lesotho working hand in hand with Standard Lesotho Bank with the aim of reducing food insecurity among the citizens. The other aims of introducing block farming were to subsidize farmers as well as creating job opportunities for the owners of the tractors that are used for cultivation. This system is said to have been introduced throughout the country in the ten districts. The crops that are grown include maize, wheat, sorghum and beans depending on the climatic conditions in each district. Block farming is said to be mainly sponsored by the Lesotho government and the local farmers that provide their land for growing the crops. The officer indicated that the government spends around M123 000 000.00 per year depending on the areas of land to cover.

According to government official from the Ministry of Agriculture and Food Security, block farming was introduced in the study areas in the financial year 2016/2017. The main purpose of the government was to assure food security among farmers who cannot afford to cultivate their fields due to financial problems. In this regard, the Lesotho government assists farmers by providing agricultural inputs such as fertilizers, seeds, insecticides and tractors. Therefore, block farming is highly subsidized by the Lesotho government. The main crops under block farming include maize which is grown at Ha Molipa and Ha Tšekelo, and wheat that is grown at Mokema

and Ha Toloane. Introduction of these cereal crops responded to an increasing food insecurity that was among other reasons associated with many fields remaining fallow for many years.

One female farmer who acts as block farmers' coordinator between block farmers and the government indicated that joining block farming is free but only covers the fields on the area chosen for block farming by the government. And government and farmers sign a 3 year contract. There is also a division of labour between government and farmers. In this respect, the Lesotho government shoulders most of the responsibilities including provision of agricultural inputs such as tractors, seeds and fertilizers, while farmers make their labour available mainly during the weeding and harvesting time. The findings show that block farming is a sharecropping between the Lesotho government and the farmers. Initially, the government was going to get 60 percent of the produce while the farmers were to get 40 percent of the produce. However, it was not the case at other areas where it was decided that the government would get 50 percent and the farmers get the other 50 percent especially in the areas where they grow wheat.

The officer from the Ministry of Agriculture And Food Security further revealed that the government's share from block farming is sold to Lesotho Flour Mills based on the quality. This means that Lesotho Flour Mills buys the produces only when they are of good quality. When the produces are not of good quality, they are sold to the ordinary people. When asked about whether the government is benefitting from block farming, the officer indicated that the government is benefitting from block farming. The benefits that the government gets include among others the produces that it sells to accumulate some wealth. The officer further pointed out that block farming is contributing to food security in the country because other farmers are unable to cultivate their fields due to shortage of money to buy the inputs and machinery.

However, there are some challenges in relation to block farming. Among the challenges, the officer pointed out that the government is running a loss according to the economic perspective especially when looking at the fact that in some areas the crops were not harvested. An example of such a case is at Mokema where the wheat was not harvested and went to a waste.

4.3 Section B: characteristics of maize block farmers

This section studies the characteristics of maize block farmers in Lesotho. Evidence shows that maize is Lesotho's staple food, and it is often accessed through two main sources, production and importing from other countries (FAO, 2016). However, production of maize is affected mainly by environmental, social and economic factors. As a result, the country is too dependent on food imports to assure food security. And this called for the Lesotho government to introduce an agricultural development programme that strives for assuring availability of food to some food insecure households. Therefore, it is imperative to study the characteristics of people participating in block farming in Lesotho.

4.3.1 Age of block farmers

Many African societies depend on agriculture for making a living where both men and women participate. However, many studies have revealed that farming in many African societies is left in the hands of women, the elderly and young people. For instance, it is stated by the ILO (1977) that many young men left farming in Senqu River Valley Agricultural Development Project and migrated to South African mines for employment opportunities. This is a common trend in some African countries where young men migrate into towns for paid employment. Against this background, the following Table 4.1 presents the age of block farmers in Lesotho

Table 4.1: Age distribution of maize block farmers at Ha Molipa and Ha Tšekelo 2017

Age	Frequency	Percentage
15-20	0	0.0
21-25	0	0.0
26-30	0	0.0
31-35	2	10
36-40	0	0.0
41-50	3	15
51 and above	15	75
Total	20	100

Source: Field data

It can be observed from Table 4.1 above that a large percentage (75) of people participating in block farming age 51 and above. There are three main conclusions that can be made from these results. First, agriculture in Lesotho is in the hands of the elderly people. Second, many people aged above 50, especially those found in the 60 and 70 age brackets are mostly pensioners (for those who were working). Some pensioners do not have money to invest in agriculture, and this

can affect agricultural production negatively. Third, the elderly people are not eager to venture into new innovations. In support of this statement, Dercon and Krishman (1996) stipulate that age has also been found to affect the rate of household adoption of innovations which in turn affects household productivity and livelihood strategies. And this can be reflected by their participation in government supported agricultural development projects.

There is also an interesting observation that can be made from the above Table 4.1. The young people are found in small numbers in block farming. For instance, the results indicate that about 10 percent of farmers are aged 31–35. And this is small percentage when taking the level of youth unemployment into consideration in the country. This is because youth unemployment has been on an increase in recent years due to lack of employment opportunities in the formal sector. For example, employment in the public sector declined by 1.0 percent in 2012 following a marginal decrease of 0.1 percent in the previous year (Central Bank Annual Report:2012) However, it can be noted that many young people do not consider farming as a way of employment or making a living. Therefore, it is very important to change the mind set of young people as far as farming is concerned.

4.3.2 Gender of maize block farmers

The historical analysis of agrarian societies referred to agriculture as a male dominated activity. However, these traditional and societal perceptions changed overtime with the discovery of paid employment in towns. The advent of modern industries has resulted to migration of men into towns to seek paid employment. As a result, women stay home looking after family members and taking care of agricultural activities. Therefore, agricultural activities in most African countries and elsewhere are performed by the females while their husbands are employed in towns as migrant workers. The following Table 4.2 looks at the gender of maize block farmers in the study areas.

Table 4.2: Gender of the maize block farmers at Ha Molipa and Ha Tšekelo, 2017

Gender	Frequency	Percentage
Male	6	30
Female	14	70
Total	20	100

Source: field data

It is evident from the above Table 4.2 that there are changing roles of male and female people in society. Although farming is considered a male dominated activity, the current situation shows a contradictory view. For instance, there are many (70 percent) female farmers in block farming compared to their male (30 percent) counterparts. The unequal distribution of gender in block farming can be linked with an exodus of men to seek employment in towns and outside the country. The cultural practices show that men are breadwinners in the families. Therefore, when agriculture provides little returns they often migrate. In this case, evidence shows that agriculture in Lesotho has been in decline for the past decades due to physical and economic factors. The physical factors include among others, increasing soil erosion and changing weather conditions, while the economic factors are listed as lack of employment opportunities in the country. In this regard, many people migrated into South African mines, plantations and industries in search of employment opportunities, while women stay behind taking care of the families.

Block farming has contributed positively to the livelihood of the farmers as they are now able to cultivate their fields that had been lying fallow for several years. This is better explained by one female widow who indicated that; *“Block farming is good because I had not cultivated my fields for years because I have no money to spend on farming as my husband passed on”*. In block farming, men and women participate in the cultivation of maize and wheat but the majority of farmers are women. This means that, women are the ones who fully engage in farming activities as they do a lot of work. Even though other people believe that block farming contributes to food security, others especially those whose fields are not on the chosen areas do not believe that it can bring food security.

However, the recent studies show that with the retrenchment of many Basotho men from the South African Goldmines, there is an increasing movement of Basotho women working as domestic workers in South Africa. And this suggests a new form of gender relations in farming in rural Lesotho, where men are now back in farming and women migrating into South Africa.

4.3.3 Marital status of block farmers

Agriculture plays an important role as a source of food to both single and married people. However, many people who participate in food production are mostly married. This is because they tend to have some dependents to support. Therefore, it is imperative to study marital status

of the respondents in block farming. And the following Table 4.3 looks at marital status of the respondents.

Table 4.3: Marital status of maize block farmers at Ha Molipa and Ha Tšekelo, 2017

Marital status	Frequency	Percentage
Single	1	5
Married	7	35
Divorced	0	0.0
Separated	0	0.0
Widowed	12	60
Total	20	100

Source: Field data

The contribution of agriculture to food security at household level cannot be underestimated in many developing countries. In this regard, agriculture provides the means of sustenance among single, married and divorced people alike. However, it can be observed from Table 4.3 above that, about 60 percent of block farmers are widowed. These research findings suggest that agriculture is the main source of livelihood for the widowed people. It can be assumed from these research findings that many widowed people do not have partners or a helping hand for maintenance of the households. Therefore, many of them consider farming as the main source of making a living. In addition to the widowed people, a large number of block farmers is made up of married people. For instance, about 35 percent of block farmers are married. These research findings indicate that, married people also depend on agriculture for making a living and supporting of household members. For instance, one respondent pointed out that she participates in farming to cater for her household's needs such as feeding four orphans and other five of her own children.

4.3.4 Educational level of maize block farmers

Education is very important for development of many countries. For instance, when taking Human Development Index into consideration, the literacy level of people/citizens is taken as a crucial measurement of development. In addition to have been used as an indicator of development, the level of education is also believed to influence the adoption and use of improved farming technologies. In this regard, Table 4.4 shows the education level of block farmers in the study areas.

Table 4.4: Educational level of maize block farmers at Ha Molipa and Ha Tšekelo, 2017

Level	Frequency	Percentage
None	1	5
Primary	14	70
Secondary	3	15
COSC	1	5
Tertiary	1	5
Total	20	100

Source: Field data

It is indicated above that education plays an important role in the development of countries, especially in production. However, the current situation in Lesotho provides an opposite view. For instance, it can be noted from Table 4.4 above that 70 percent of farmers have primary education. These results suggest that many people participating in block farming have a low level of education. Therefore, it is correct to argue that there is no link between level of education and participating in farming in most peasant societies. This is because agriculture is considered the main source of livelihood in many agrarian societies.

When taking the statistics of people participating in block farming into consideration, it can be observed that people with tertiary education constitute only about 5 percent. These results suggest that farming is done mainly by people with low level of education. This is because they do not have many chances of getting employment in the formal sector. At this juncture, it is right to argue that, low agricultural productivity in Lesotho can be associated with lack of farming skills because of low educational background. This is because when agriculture is practiced mostly by people with low level of education, productivity is affected. For instance, they are not in a position to research on modern farming practices and techniques. In addition, many agricultural workshops are conducted in English, as a result the illiterate farmers are often left out. Evidence from the literature further shows that, smallholders are not willing to adopt new agricultural technologies, but the advent of block farming has empowered farmers as far as innovation of new technologies are concerned.

There are several conclusions that one can make from the above research findings. One, level of education helps farmers to use production information efficiently because a better educated person can acquire more information and becomes a better producer (Amaza et al: 2006). Two, people with tertiary education are less interested in farming, and this affects agricultural productivity.

Therefore, it can be suggested that educated people should participate actively in block farming by providing their skills and capacity to innovate new farming techniques. And this can increase agricultural production in the county.

4. 3.5 Employment status of maize block farmers

Many developing countries are faced with high unemployment rate. As a result, some people participate in agriculture to make a living, while others are employed in non-agricultural activities. However, the majority of people in the poor countries make a living from subsistence farming. Therefore, farming is considered the major source of income. However, research on Lesotho reveals that working on the family farms is not considered work by some men in Lesotho, but working in South African goldmines. In support of this, Mensah and Naidoo (2013) assert that Basotho mine workers regarded their work in South African mines as a career and would hold on to it until retirement. In the light of this, the following Table 4.5 studies the employment status of block farmers.

Table 4.5: Employment status of household head at Ha Molipa and Ha Tšekelo, 2017

Status	Frequency	Percentage
Employed	0	0.0
Self-employed	3	15
Unemployed	17	85
Total	20	100

Source: Field data

The economy of Lesotho is dependent on that of South Africa for employment. For instance, a large number of Basotho is employed in South African mines, plantations, industries while others (especially women) are employed as domestic workers. The increasing unemployment rate in the country can be traced as far back as the 1860s with exodus of Basotho men working in South African Kimberly mines (Modo, 2001). However, an escalating unemployment rate can be witnessed in the 1990s during the introduction of Structural Adjustment Programmes (SAPs) in 1991 by the Lesotho government. The adoption of SAPs by the government also coincided with the massive shading of jobs by the South African gold mines starting the 1990s. As a result, unemployment rate was estimated at 45 percent in the 1990s by the Sechaba Consultants (Gay and Hall, 1994). However, unemployment rate decreased starting the new millennium due to the introduction of African Growth and Opportunity Act (AGOA) in 2000. Many people were employed in the textile industries, thus contributing to a decline in unemployment rate. For

instance, unemployment rate was estimated at 25 percent in 2008 by the Bureau of Statistics (BOS, 2009).

It can be noted that, although high unemployment rate plummeted in the past decades, about 85 percent of block farmers consider themselves unemployed. This perception can be linked with historical situation where many people were employed in the South African mines. It is indicated earlier that many Basotho men do not consider farming as work but getting paid employment in towns or South African mines. It can be deduced from these research results that, although farming is considered to employ a large number (about 80 percent) of people in developing countries, many Basotho do not consider it as a form of employment. In this case, farming is a supplementary source of income, while employment in non-agricultural activities is the main source of a living to curb poverty, unemployment and food insecurity. In addition, some block farmers make a living out of the social safety nets, old age pensions.

4.3.6 Household size of maize block farmers

It is indicated in the literature that household is a unit of production and consumption. Many smallholder farmers in Africa and elsewhere depend on unpaid household labour for working on the farms. Therefore, large households ensure availability of labour. It is also stated that the produce from farming is consumed within the household. However, large households can be detrimental to available food stocks. Household with many members are more vulnerable to food insecurity compared to those with fewer members (Chanetsa *et al.*, 2003). Against this background, the following Table 4.6 presents the results of the household size in the study areas.

Table 4.6: Household size of maize block farmers at Ha Molipa and Ha Tšekelo, 2017

Number	Frequency	Percentage
1 - 4	8	40
5 - 9	12	60
10 - 14	0	0.0
Total	20	100

Source: Field data

It can be observed from Table 4.6 that about 60 percent of the respondents have household size ranging between 5 – 9 members. These results suggest that a large number of block farmers have availability of labour to perform some agricultural activities such as weeding, ploughing, harvesting and many others. Therefore, large households are important for availability of labour.

It is therefore argued by Crehan (1992) that household is a unit of production, while Ellis (1988) opines that peasant farming depends mainly on family labour. On the contrary to being a unit of production, a household can be a unit of consumption (Crehan, 1992). From the previous discussions in Chapter two, it can be noted that a household can consume what has been produced on the farms.

There are some social factors that can be lined to large household sizes in the rural areas. And one of them is the high prevalence of HIV/AIDS which has left many children without parents. Many orphans live with their relatives, and thus increasing the size of household members. Although it is stated earlier that the large households ensure availability of labour on family farms, children are only increasing the number of dependents (mouths to feed). As a result, most of them are not economically active.

4.3.7 Criteria for joining

Many Integrated Rural Development Projects (IRDP) were implemented in Lesotho in the 1970s. Many of these projects followed a top-down approach where government was involved in initiation of the projects, and the local people were expected to implement them. Therefore, many IRDPs were not participatory, people in the area of development were expected to join. As a result, many of them (IRDPs) failed due to lack of community involvement in the decision making. However, many of the agricultural development projects implemented by the Non-Governmental Organizations (NGOs) in the 1980s followed a participatory development approach, and many of them were sustainable. In the light of these, the following Table 4.7 looks at the criteria used for recruiting block farmers in the study areas.

Table 4.7: whether farmers were free to join maize block farming at Ha Molipa and Ha Tšekelo, 2017

Free to join	Frequency	Percentage
Yes	20	100
No	0	0.0
Total	20	100

Source: Field data

The results of the study reveal that people are free to join block farming in Lesotho. In this case, statistics from Table 4.7 show that about 100 percent of the respondents were free to join block farming. It can be assumed from these results that, the state led top-down approach is no longer applicable in the contemporary era. However, this conclusion is contradicted by the views of some

block farmers. For instance, farmers are free to join block farming as long as their fields are in the area demarcated for such type of a project. And this is illustrated by one block farmer who explained that everybody in the demarcated area is free to join. However, the farmer further explained that, one person who was not around during the touting of block farmers by government officials was also included under the block farming scheme. There are two main observations that one can make from the above statement. First, block farming is not participatory as farmers are arguing. This is so because, even during the IRDPs in the 1980s and 1990s fields that were in the area of development were included in the scheme. Second, in reality farmers are not given an opportunity of deciding to join block farming or not. This is illustrated by the fact that even a farmer who was not present during the initiation of the scheme was also considered to be part of the project. In this case, one can conclude that, block farming in Lesotho still follows statist development approach of the past years where farmers were not consulted on what they want.

4.3.8 Acquisition of land

There are different types of land ownership in Lesotho, and the mostly prominent one is traditional land tenure system. In this case communal land tenure system has been practised over a long period of time (Lesotho Report; 2011). However, starting from the 2010, the country introduced a leasehold tenure to promote commoditization of land. It is therefore imperative to know how block farmers acquired their land. And the results are presented in Table 4.8 below.

Table 4.8: Acquisition of agricultural land by block famers at Ha Molipa and Ha Tšekelo, 2017

Ways of acquisition	Frequency	Percentage
Inherited from parents	18	90
Rent the fields	2	10
Total	20	100

Source: Field data

The most common method of land ownership in many African countries is the customary one. Communal ownership of land (where the land ownership is passed on to the descendants) has been practised in Lesotho and elsewhere for a long period of time. It can be noted from the results in the above Table 4.8 that land ownership in the study area followed the same trend. In this case, about 90 per cent of block farmers have inherited the land from their ancestors. Criticisms against customary land tenure system are well documented and beyond discussion in

this research reports. However, one can argue that, lack of security of tenure restricts farmers to secure loans from commercial financial lending institutions to increase agricultural productivity. Therefore, it can be correct to argue that, declining agricultural productivity in Lesotho can be linked to freehold tenure. Although the Lesotho government has introduced the leasehold tenure from 2010, the outcomes of the new land tenure system have not yet been realized.

4.3.9 Agricultural inputs

According to Ellis (1988) peasant farming depends on the use of simple technologies that hinder productivity. And this called for government intervention to provide smallholder farmers with agricultural subsidies to increase production. In addition, the introduction of agricultural development projects since the colonial period introduced farmers to improved farming technologies. However, with the advent of agricultural development projects, it is possible for poor farmers to have access to some improved agricultural inputs. It is therefore essential to look at the main providers of agricultural inputs in block farming. And the results are presented in the following Table 4.9.

Table 4.9: Providers of agricultural inputs in block farming at Ha Molipa and Ha Tšekelo, 2017

Provider	Frequency	Percentage
Government	20	100
Farmers	0	0.0
Total	20	100

Source: Field data

The Lesotho government introduced different agricultural development policies and programmes to support smallholder farmers since independence. Some of the policies supported farmers with agricultural inputs such as fertilizers, tractors, insecticides and many others. This was meant to promote and increase agricultural productivity in the country. Therefore, some agricultural development projects that supported farmers with agricultural inputs were introduced in the country. And these include among others, Thaba-Bosiu Integrated Rural Development Project, Food Self-sufficiency Programme and Co-op Lesotho. It can be noted from this research findings that the Lesotho government has for a long time been committed to increasing agricultural production in the country. The role of the Lesotho government in providing agricultural inputs to smallholder farmers can still be observed in block farming. This is because 100 percent of block farmers pointed out that, agricultural inputs are provided by the government. Although the

involvement of the Lesotho government in supporting small scale peasant farming is currently noticed, government support deteriorated in the late 1990s due to implementation of the Structural Adjustment Programmes (SAPs) in 1991 (Makenete, Ortmann and Darroch,1997). The SAPs urged some developing countries to cut subsidies on small scale farmers, and this affected agricultural production. As a result, food insecurity and poverty increased.

4.3.10 Arrival of agricultural inputs

Improved farming inputs are of great value because they assist in revitalizing the farming sector. Therefore, the timely arrival of inputs is imperative because that could help raise crop yields that are of good quality. Many programmes fail to succeed due to time constraints that are a major challenge. Crop farming is seasonal therefore any delay that may be there can cause a hindrance to better quality products. According to the Lesotho Poverty Reduction Strategy Paper (PRSP) (2012), developed by the International Monetary Fund (IMF), agriculture is the main source of employment and income in rural areas therefore it should be done properly for better products. However, the poor management of the sector continues to exacerbate poverty and food insecurity. This critical state of affairs has led the government to adopt better farming methods, improved seeds as well as improved technology. Table 4.10 is going to show whether inputs arrive on time or not.

Table 4.10: Do agricultural inputs arrive on time at Ha Molipa and Ha Tšekelo, 2017

Arrive on time	Frequency	Percentage
Yes	6	30
No	14	70
Total	20	100

Source: Field data

The government’s policy of subsidizing inputs is a good idea especially for the poor people who are unable to buy the inputs whose prices have escalated. However, the untimely supply and inadequate supply were noted as major complaints by the majority of households. It can be observed from Table 4.10 that the agricultural inputs do not get to farmers on time in the study area. From Table 4.10, the majority of respondents (70 percent) indicate that, the inputs do not arrive on time while only 30 percent show that they arrive on time. The findings suggest that, the crops will not reach maturity as when winter comes they will be negatively affected leading to a loss.

The Lesotho Council of Non-governmental Organisations (LCN) in its Non-state Actors Project, revealed that block farming programme has been characterized problems. Some of those problems include delays in input distribution and payment of contracted private vendors resulting in many challenges for the programme. One male farmer indicated that:

“I think the inputs arrived late because there was drought and probably the government decided to hold onto the inputs until rain comes for fear that farmers might consume them as it has been the case in some villages.”

One respondent indicated that late arrival has resulted in immaturity of maize in some areas. However, in some places where agricultural inputs arrived on time, productivity has been enhanced thus resulting to good yields.

4.3.11 Share cropping between government and farmers

According to Lesotho Council of Non-governmental Organisations, currently Lesotho’s households cannot feed themselves for more than six months. Therefore, in an attempt to address that situation, the Government of Lesotho has engaged in Universal Agricultural Input Subsidy in which it shares the crops with field owners. Therefore, table 4.11 below is going to reveal whether it is a sharecropping or not.

Table 4.11 Farmers views whether block farming is a share cropping or not at Ha Molipa and Ha Tšekelo, 2017

Share cropping	Frequency	Percentage
Yes	20	100
No	0	0.0
Total	20	100

Source: Field data

In its quest to fight the problem of food insecurity, the government introduced block farming in which crops are shared between farmers and the government. This becomes beneficial to the farmers because the majority of them are unable to cultivate their land and getting a share is much better than not getting anything. Since the government is the one that provides the inputs, it also decides on how products are going to be shared. According to Table 4.11, the farmers consider block farming as a sharecropping. Because the government provides the inputs and the farmers provide the fields for cultivation. And 100 percent of farmers revealed that block farming is some kind of sharecropping in which the government gets 60 percent of the produces while the farmers get 40 percent of the produce. Despite all the efforts made by the government, food insecurity remains a major challenge in Lesotho even in the twenty-first century (Turner: 2009).

Lesotho is therefore highly dependent on food imports to meet its food needs. Furthermore, the Lesotho Vulnerability Assessment Committee (2016) asserts that Lesotho depends on 70 percent food imports mainly if not all from South Africa. As a result of the prevailing food insecurity situation, in January 2016, the Lesotho Prime Minister declared a state of emergency and requested development partners to intervene and support government efforts in dealing with the situation (International Federation of Red Cross and Red Crescent Societies Report:2017). Among the efforts made by the Lesotho Red Cross Society as a development partner, it supports agricultural production through the provision of inputs and agricultural training to curb the problem.

4.3.12 Considerations for the share received

It has been the efforts of the Lesotho government and other development partners to assist the farmers in crop production through hybrid seeds, fertilizers as well as farming equipment. Since the government incurs some expenses in this endeavour, it is only fair that it recoups its expenses through sharing the produces with the farmers that were assisted. For the fact that block farming is a sharecropping calls for questions like whether farmers are happy with the way they share or not. Therefore, table 4.12 below is going to show whether farmers are happy or not with the share they get after the harvest.

Table 4.12: Satisfaction of farmers with the share at Ha Molipa and Ha Tšekelo, 2017

Satisfied	Frequency	Percentage
Yes	15	75
No	5	25
Total	20	100

Source: Field data

Table 4.12 above revealed that the majority (75 percent) are satisfied with the share they get from block farming, while 25 percent of respondents are not satisfied with the share they get. As much as a higher percentage is satisfied with the share they get, the share does not sustain many of them because of their large household sizes. The implication of the satisfaction of the majority of farmers may be attributed to the fact that some block farmers have many fields under block farming as a result they get more produces unlike a few farmers with only one field. Another reason why other respondents are satisfied with the share is because of the high prices of inputs that make it difficult for the majority of farmers to cultivate the land themselves and they become

happy with the least they get from block farming. Many respondents who are satisfied indicated that they actually were no longer able to cultivate their fields as farming has become very expensive and they cannot afford to finance it since they are not working. For instance, one male farmer explained that:

“I think share cropping is a good engagement, it’s a win-win situation for me, if the proceeds are few, I do not get hurt or disappointed because I did not put anything in. What I expect is my share no matter how little it may be”.

4.3.13 Utilization of the share

Farming in most African societies is regarded to be the most important means of survival because people are able to feed their families and at times get the income that they can use to meet other basic needs. Likewise, in Lesotho agriculture plays an important socio-economic role because it is the major contributor to the livelihood of many Basotho people. According to Ministry of Agriculture and Food Security: 2007), 90 percent of farmers are engaged in subsistence agriculture and only 10 percent are engaged in commercial agriculture. As little as the percentage of commercial farmers may seem, at least they are still able to meet some of their needs besides food from agriculture. Therefore, Table 4.13 below summarizes how the farmers utilize their share.

Table 4.13 what farmers do with their share at Ha Molipa and Ha Tšekelo, 2017

Utilization	Frequency	Percentage
Consume	17	85
Sell	0	0.0
Both	3	15
Total	20	100

Source: Field data

According to Table 4.13, utilization of maize harvested differed among the respondents because the majority of farmers accounting for 85 percent are mainly producing for home consumption while only 15 percent of the respondents are both consuming and selling the products. The analysis on the level of food production in the households and its utilization of harvested maize by respondents indicated that, it is only a few that can afford to consume and sell the products. The majority of respondents indicated that, as much as they use the products mainly for consumption, they do not sustain them until the next harvesting season. This could be associated with the fact

that many families are huge due to the effects of HIV/AIDS as the household head has to take care of the orphans of this scourge. One respondent explained that for her to assure food availability in the family, she gets some money from her children who are working in towns in the industries. Others pointed out that they are on social grant from the government (70 years and above) while others have retired and earn some pension.

4.3.14 Benefits of block farming

Economic and social benefits that block farming offers are important to this study because the main aim is to curb poverty and food insecurity that threatens the country. Table 4.14 show whether farmers benefit from block farming or not.

Table 4.14: Whether farmers benefit from block farming or not at Ha Molipa and Ha Tšekelo, 2017

Benefits	Frequency	Percentage
Yes	19	95
No	1	5
Total	20	100

Source: Field data

Table 4.14 shows that the majority of respondents (95 percent) benefit from block farming while only 5 percent claimed not to benefit from block farming. The response of the majority can to a large extent be attributed to the fact that farmers were unable to cultivate their fields before this system was introduced. Therefore, they are happy that at least they are getting some food from their fields of which if it was not for block farming, they would not have been able to cultivate them. In fact, the majority of them even recommend that block farming should cover everybody in the study areas and other parts of the country so that they also reap the fruits. They also indicated that block farming has improved agricultural production in their area. Agricultural production has improved because there are some fertilizers that are applied to the soil that has long lost fertility due to poor farming methods. However, a small percentage of respondents explained that they do not get benefits from block farming. One lady explained that:

“Block farming is not beneficial to us farmers because the government is not considerate as they make us share the produce with them even during bad harvests. We were expecting that the government would not share with us when harvests are not good”.

4.3.15 Challenges of block farming

Challenges are often met in farming especially in countries that are poverty stricken like Lesotho as well as unpredictable climatic conditions that come as a result of global warming. Some challenges impact negatively on the outputs. Table 4.15 summarizes different opinions about the challenges facing the maize block farmers.

Table 4.15 challenges faced by block farmers at Ha Molipa and Ha Tšekelo, 2017

Challenges	Frequency	Percentage
Drought	7	35
Inputs	1	5
Theft	9	45
Vandalism	3	15
Total	20	100

Source: Field data

From Table 4.15, the highest percentage of respondents who account for 45 percent show that the main challenge they face is theft especially from non-block farmers. This is because the non-block farmers are not content with not being part of the system. This can only imply that the system was not fully communicated with the community members that is why they did not feel a sense of ownership and ended up causing destruction in the fields. The second highest (35 percent) indicated that drought poses a major challenge because some fields were not ploughed on time due to drought because the land was so hard and after planting, the rain did not fall until it was late. The other 15 percent claimed that the fields were vandalized while 5 percent pointed out that the inputs delayed to arrive. One farmer clarified that, as much as there was theft and vandalism, it was mostly done by the herd boys. The relationship between block farmers and non-block farmers was good to an extent that in some cases, the non-block farmers helped block farmers to harvest their fields.

4.4 Section C: Wheat block farmers at Mokema and Ha Toloane

Wheat Block Farming was introduced by the Lesotho government through the Ministry of Agriculture and Food Security in the annual year 2016/2017 in Mokema and Ha Toloane villages. And the main purpose of the programme was to increase agricultural production and create employment opportunities in the country. It was realized that majority of people are unable to cultivate their fields because of expensive agricultural inputs and that even those who still cultivate

them are not productive because the soil has lost fertility and they are unable to buy fertilizers. Poor soil is to a large extent attributed to poor farming methods of the farmers. Therefore, this called for the government adopting the strategy of block farming to reduce food insecurity.

The agreement between the government and the farmers was a verbal contract. And it stated that, the government would help farmers in some selected areas to grow wheat on their fields for three consecutive years. It was further agreed that the government was to perform all the duties until the harvesting period and thereafter the products would be shared equally. Unlike in maize block farming where the sharing is in the ratio of 60 percent (for the government) to 40 percent (for farmers), in wheat production sharing is following 50 percent to farmers and 50 percent government. In other words, in wheat block farming, the proceeds were shared equally. Although many farmers are happy with the share they get, they complained that the share does not sustain them to the next harvesting season therefore are forced to seek piece jobs performing family chores or helping other farmers in their fields. Many farmers said they benefit from block farming and would even recommend that this type of farming is applied country wide. However, those who were unable to get the products said they did not benefit and would not recommend it country wide unless some improvements are done. The farmers indicated that since it was their first time to be engaged in block farming, they did not know if the government would still take a share if production was not good.

The agricultural produce that is shared between farmers and government is the result of the women's work. Women farmers are dominating both maize and wheat farming in the study areas. The results of the study reveal that 75 percent of wheat block farmers are women while males account for only 25 percent. The large number of female farmers in block farming can also be associated mainly with the reasons outlined in Section B under maize block farming.

4.5 Section D: Non-block farmers

It was very important for this research to study the non-block farmers who are not the participants under this strategy because their opinions matter a lot. This is because block farming has a great impact on many people as food insecurity affects us all. Some people were unable to be block farmers because their fields were not in the area ear-marked for block farming when the strategy

was introduced. On the bases of this, the following table shows whether the non-block farmers want to join block farming or want to work as independent farmers.

Table 4.16 Whether they want to join at Molipa, Tšekelo, Mokema and Ha Toloane, 2017

Farmer's status	Frequency	Percentage
Join block farming	17	85
Independent farmer	3	15
Total	20	100

Source: Field data

Food insecurity affects everybody especially in developing countries so much that everyone would like to be involved in any strategy that might change the situation. It is on this basis that the majority of non-block farmers would like join block farming for better returns from their fields. Table 4.16 illustrates the views of non-block farmers about whether they want to join block farming or not. The findings reveal that, 85 percent of non-block farmers would like to join block farming because it is beneficial to people in terms of poverty reduction while others responded that they are unable to cultivate their fields because farming has become very expensive and they do not work. However, 15 percent of non-block farmers indicated that they want to work as independent farmers because work is not done on time. For instance, they pointed out that there is a delay of distribution of inputs resulting in immaturity of crops. Another reason is that wheat was not harvested at Mokema so they feel that it is a waste of time as one farmer stipulated that: *“Block farming is a waste of time and money that the government uses to buy votes and nothing else”*

Although some non-block farmers are eager to be included in block farming, they are still engaged in subsistence farming where some of them own fields in the range of 1 to 4 fields. The fields are used to grow crops such as maize sorghum and beans. Non-block farmers indicated that during the harvesting period they get about 17 bags (50kg) of produce from their fields. This is despite the changing climatic conditions in the country, especially severe drought and theft from their fields. Most of the non-block farmers use the produce from their fields to maintain their households. In this case, subsistence agriculture sustains about 75 percent of non-block for a period of a year, while 25 percent of them (non-block farmers) are not sustained by the produce over a long period of time. Although there are some non-block farmers who cannot produce

enough foodstuffs, those who produce in excess market the surplus produce. It is stated that many smallholder farmers in developing countries participated in incomplete market.

4.5.1 Conclusion

Despite the political and economic efforts made by the government, Lesotho continues to experience the major challenges of poverty, unemployment and ever increasing prices for food and fuel. These harsh conditions have placed an ordinary Mosotho who is already struggling to meet the basic household needs in an increasing vulnerable position. Poverty and food insecurity manifest themselves differently in both rural and urban areas. Therefore, it is the duty of the government to put in place strategies that will improve the socio-economic situation in the country. Block farming is a strategy meant to curb food insecurity and unemployment in Lesotho. It appears to work differently in different study areas because those engaged in maize production were sharing 60 percent government and 40 percent farmers while those in wheat were sharing 50 percent government and 50 percent farmers. Other block farmers do not think that block farming contributes to food security especially those that delayed to get the inputs and those that did not harvest their fields. They mainly think block farming is a political move for politicians to buy votes under the pretence of fighting food insecurity. However, many believe that with proper supervision, block farming can assure food insecurity especially because the seeds used together with fertilizers do improve agricultural production.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The issue of food security is taken seriously by the world food leaders and national governments. However food security policies fall short of effective strategies for the most deep rooted situations of undernourishment and starvation. The need to conduct this study was motivated by the fact that food insecurity is a real problem in the world because a large number of households cannot access adequate food especially female-headed households. The study is also geared towards highlighting the dynamics of household food security in Lesotho. This chapter is going to provide a summary of the study and reach some conclusions and provide recommendations from the findings of the study.

5.2 Summary

The aim of the study was to determine whether block farming is assuring food security in Lesotho. The study was carried out at Berea, Leribe and Maseru. In Berea and Leribe, the study focused on maize block farmers and in Maseru it was wheat block farmers. Agricultural production is deemed to be the backbone of many developing countries as many people depend on it for their livelihood. Therefore, the Lesotho government adopted the strategy of block farming among others to try and solve the problem of food insecurity. Food insecurity is not a new issue as it has been persistent for decades in many developing countries including Lesotho. Food security is one of the essential things for human survival that is why the adoption of better farming strategies is of great value in many parts of the world especially in Africa. Block farming is geared towards solving the problem of food insecurity that has troubled the world especially the developing countries for a long time. It is an expectation that the local farmers will benefit through poverty reduction and generally improving the living standards of the local farmers. The findings from this study indicate that block farming is beneficial to the farmers because the government provides them with the inputs which they would otherwise be unable to access if it was not for the assistance from the government. This has improved the living standards of many farmers because they are able to feed their families and others even sell the produces to meet other needs.

Data obtained from the case study villages indicates that, educational level of farmers is of great importance to agricultural production. It is important because agriculture has been modernised in many parts of the world. Therefore, modern technology adopted calls for a certain level of education on the part of farmers to be able to apply modernised farming methods. The findings indicate that the majority of farmers have only gone through primary school level which is not very helpful to improve agriculture in the country.

The study on land acquisition revealed that farming land is not equitably shared among the households. Some households appear to have several fields and others a few which they have not even inherited but bought them. The issue of land distribution is very important and requires urgent attention to be reviewed by the land authorities in the study areas so as to provide the means of survival to the people through farming to address the problem of food insecurity.

The findings of the study on the criteria for joining block farming indicate that there are certain chosen areas earmarked for block farming by the government. Therefore this means that anybody whose fields are found on the areas chosen automatically joins. However, this has led to the destruction of traditional social harmony and solidarity among the households. This was reflected when the study revealed that some fields are vandalised and theft is rampant among non-block farmers and their herd-boys. Another example is in the case of maize block farmers who had to pay for services rendered by non-block farmers who assisted them during harvesting. Traditionally, farmers used to provide people who assisted them in the fields with food only not some payment. So this indicates that the traditional way of doing things among the Basotho is no longer there.

Findings on household sizes indicate that households are generally large with four or more members. This household size has a policy implication for education and family planning programs that will teach people about bringing their households to a manageable size and viable opportunities for income generating activities to replace losses if any from farming.

However, there are still some challenges that need to be addressed especially in a case where wheat was not harvested to an extent that it got destroyed by the rain. In a nutshell, block farming

is generally a good strategy that can assure food security only if all the challenges are addressed properly and the policy that guides block farming is clearly stipulated.

5.3 Concluding remarks

All age groups made up of old people and young people take part in farming. The findings indicate that household size, age, employment status, gender, educational qualifications and marital status play a vital role in determining food security among the farmers. For example, it has been discovered that old people participate in large numbers in block farming because some of them are so old that they cannot be employed anywhere while others are illiterate and therefore cannot easily penetrate the formal sector. Larger household sizes are associated with negative impacts because when a household is large, there are many mouths to feed therefore the produces from the fields are not going to sustain such a family.

Employment status also affects food security because even if a farmer received a big share from the harvest, if such a head of household is not employed, he or she will be forced to sell the produces so as to meet other needs. The gender of the household is also influential to food security.

However, block farming is not regarded to be assuring food security because the majority of farmers believe that the government is taking a bigger share yet the fields belong to the farmers. For example, one woman involved in wheat block farming indicated that it is a waste of time and money for the government to be sponsoring block farming yet they do not seem to care about the produces since they did not harvest the fields. This woman's utterance come as a result of wheat that was destroyed by rain at Mokema because it was not harvested in many fields. Again, some farmers involved in maize block farming were not very impressed with block farming because they received the inputs late and that had a negative impact on the yields as some maize was not ripe during the harvest time.

There are some challenges faced by block farmers especially from non-block farmers who take their animals to go and graze in the fields and that affects the yields. Many farmers cannot afford to buy farm inputs so would have loved to be involved in block farming because the farm inputs are provided by the government.

5.4 Recommendations

The following are recommendations for future improvement of block farming in the study areas:

The government through the Ministry of Agriculture and Food Security has to cooperate and improve the situation of block farming in the study areas. This can be achieved by deploying extension officers at each village to supervise farming. This will help to ensure that farmers at the lower levels have access to knowledge regarding crop farming management, skills and technical advice and sustainability in general.

The district agricultural officers together with extension officers and other stakeholders in the districts dealing with food security should also recognise and provide support to the block farmers by providing training and advice for the betterment of the strategy. Regular workshops should be organised country wide so that farmers from different districts can interact and share their experiences of block farming. These efforts should be taken by both local extension officers and also district officers to educate the farmers on proper use of agricultural methods including application of modern agricultural inputs.

Participation of farmers in this system appears to be very minimal thus that should be changed. It is therefore recommended that the farmers become involved as primary stakeholders who have the obligation to meet their immediate food security needs and improve their income.

There should be a clear agreement made between the government and block farmers so that block farmers will be knowledgeable and feel obliged to fully participate in the project.

A clear policy should be formulated and developed which will foster relationships among stakeholders to ensure accessible use of the farming inputs together with land use. A policy should advance self-confidence of farmers and provide them with the needed skills to overcome educational barriers that hinder their path to economic liberation.

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APPENDIX

SECTION A: DEMOGRAPHIC PROFILE OF FARMERS

1. **Gender:**

Male { }

Female { }

2. **Age:**

15-20 { }

21-25 { }

26-30 { }

31-35 { }

36-40 { }

41-50 { }

51 and above { }

3. **Marital status:**

Single { }

Married { }

Divorced { }

Separated { }

Widowed { }

4. **Level of education:**

No education { }

Primary { }

Secondary { }

COSC { }

Tertiary { }

5. **Employment status:**

Employed { }

Self-employed { }

Unemployed { }

6. Number of household members :

1 – 4 { }

5 – 9 { }

10 – 14 { }

SECTION B: Block farmers

7. When was block farming introduced in your area?

.....

8. Who introduced this type of farming?

.....

9. Why was block farming introduced?

.....

10. Were all farmers free to join?

Yes { }

No { }

11. If no, how did people become part of block farming?

.....

12. Who is the sponsor of block farming?

.....

13. Is there a contract signed between the government and the farmers?

.....

Acquisition of land

14. What size of fields do you cultivate?

.....

15. How did you acquire the agricultural land?

Inherited from my parents { }

Rent the fields { }

16. If you rent the fields, how much do you pay?

.....

17. If you own more than one field, are they all under use?

Yes { }

No { }

18. If no, what do you do with the unused land?

.....

19. What kind of crops do you grow on your land?

Maize { }

Sorghum { }

Beans { }

Peas { }

Fodder { }

Agricultural inputs

20. Are agricultural inputs provided on time and cultivation done on time?

Yes { }

No { }

21. If not, why?

.....
.....

22. What did you do to solve the problem?

.....
.....

23. Did the inputs help?

.....

24. Were the inputs enough to cover the size of the fields?

.....

25. If not, what was being done?

.....

26. Was the harvest satisfactorily both for subsistence and or for selling?

.....

27. Do farmers use their own facilities for cultivation or the government provides them?

.....
.....

Agricultural subsidies and loans

28. Is block farming subsidized?

.....

29. What were the terms of the subsidy given to you by the government?

.....
.....

30. Is block farming a loan?

Yes { }

No { }

31. If it is a loan, are farmers expected to pay the costs of cultivation?

.....

32. If yes, for how long are you expected to pay the loan back?

.....

33. If no, who pays for the total costs?

.....

34. Does the government provide everything or equipment only?

.....

35. What type of help did you receive? E.g machinery, money etc. Give details.

.....

.....

36. If the government does not provide everything, how do you as farmers meet those needs that are not provided for?

.....

.....

37. Did you encounter any problems during the whole process of subsidized farming?

.....

.....

38. Did the subsidized farming affect your usual producing capabilities?

.....

Agricultural outputs

39. Is block farming a kind of sharecropping between the government and the farmers?

Yes { }

No { }

40. If yes, how do you share?

.....

41. What percentage do two parties get?

.....

42. Do you think the share is satisfactory?

Yes { }

No { }

43. If yes, explain.

.....

.....

44. If no, explain.

.....

.....

45. What do you do with your share? i.e. do you consume or sell?

.....

.....

46. Does it sustain you for a year or what?

.....

47. If no, what do you do to make sure there is food in the family?

.....

.....
48. If you buy, where do you get the money from?
.....
.....

49. Do you think this kind of farming is good, would you recommend it?
.....
.....

50. What can be done to make people benefit from this kind of farming?
.....
.....

51. How well do you interact with the government?
.....
.....

Challenges of block farming

52. What challenges do you face in block farming?

- A) Drought { }
- B) Inputs { }
- C) Theft { }
- D) Vandalism { }
- E) Others { }

53. What can be done to overcome those challenges?
.....
.....

54. Do the challenges have a negative bearing on the outputs you get from your fields?
.....
.....

Division of labour

55. What roles are played by the government and the farmers?

.....
.....

56. Does the government provide labour for cultivation as well as removing weeds?

.....

57. What happens in a case whereby production is not good?

.....
.....

58. Do you still share even during bad harvests?

.....

59. If no, what does the government do to recoup the costs incurred?

.....
.....

60. What kind of relationship do block farmers and non-block farmers have?

.....
.....

61. Did block farming improve production?

.....

62. In your opinion, was the distribution of inputs fair or politically dominated under block farming?

.....
.....

SECTION C: Non-block farmers

63. Why are you not a member of block farming?

.....

.....

64. Do you want to join block farming or work as an independent farmer?

Join block farming { }

Work as an independent farmer { }

65. If yes or no from the above, please state the reasons.

.....
.....

66. How many fields do you own?

.....

67. What kind of crops do you grow on your land?

Maize { }

Sorghum { }

Beans { }

Peas { }

Fodder { }

68. How many hectares do use to grow maize?

.....

69. How many bags of maize do you get from this agricultural land?

.....

70. What challenges do you encounter?

.....
.....

71. Does the produce from your fields sustain your family for a year?

Yes { }

No { }

72. If yes, how do you use the agricultural produce?

Consume in the household { }

Sell to the villagers { }

73. If you sell the excess produce, how do you use the incomes obtained from selling?

Maintenance of the household { }

SECTION D: Ministry of agriculture and food security

74. When was block farming introduced?

.....

75. Which areas are under block farming?

.....
.....

76. How many farmers are you working with?

.....

77. Why did you come with this idea?

.....

78. What kind of crops do you offer under block farming?

.....
.....

79. Where do you get the money to sponsor block farming?

.....

80. How much is spend on block farming annually?

.....

81. Is block farming sharecropping or not?

.....

82. What is the percentage used for sharing?

.....

83. What do you do with your share?

.....

.....

84. Are there any other sponsors besides the government?

.....

85. How does the government benefit from this farming system?

.....

.....

86. Does the government run a loss in block farming?

.....

.....

87. Is block farming contributing towards assuring food security?

.....

.....

88. Are there any challenges experienced in block farming practice?

.....

.....

89. How do you deal with those challenges?

.....

.....

90. What can be done to improve this farming system?

.....

.....

91. Are there any development partners that you work with in ensuring food security in the country?

.....

92. What could be the factors that lead to food insecurity in Lesotho?

.....

93. How does food insecurity impact on the development of the country?

.....

.....

Your cooperation is highly appreciated.