An examination of the perspectives and experiences of crop production by the beneficiaries of the Arable Lands Development Programme (ALDEP)

by

Lindsey Jones

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School of Agriculture and Agribusiness,

University of KwaZulu-Natal

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Abstract

Botswana is considered an economic success story since the discovery of diamonds in the late 1960's. While this mineral wealth allowed the government to invest in infrastructure which reduced poverty nationally, it still remained high in the rural areas.

Subsistence agriculture is the main source of livelihood in these rural areas. However agriculture had declined from 42.7% of the Gross Domestic Product (GDP) at independence in 1966 to a mere 1.8% of GDP in 2006. As a result, in the late 1970's the Government of Botswana conceptualised an agricultural development programme to address the high poverty levels in rural areas, targeting "resource-poor farmers". This programme was aptly named the Arable Lands Development Programme (ALDEP).

The objective of ALDEP was essentially to address the problem of food insecurity and assist in overcoming poverty. In turn, the government aimed to reduce its growing grain deficit, urban migration and high unemployment. However, after almost three decades of implementation ALDEP had little impact on the beneficiaries' income or crop production levels. This was despite the fact that there were significant economic resources available to implement ALDEP.

The main aim of this study was therefore to examine the perspectives and experiences of crop production of the beneficiaries of ALDEP. In order to achieve this, a basic qualitative research approach was applied aiming to examine how the participants interpreted and gave meaning to their involvement in ALDEP. In order to collect the qualitative data, semi-structured interviews and focus group discussions were conducted with nineteen beneficiaries of ALDEP, three District Agricultural Staff members and one supplier.

The findings revealed that as a result of a lack of participation due to a top-down decision making process throughout ALDEP, beneficiaries felt their real needs had not been met. Although many of the beneficiaries had developed coping mechanisms to overcome the risks of farming through alternative sources of income, they remained dependent on government due to variety of factors beyond their control. These factors included the interrelated nature of the characteristics of the beneficiaries, the environment in which they lived, the resources available and their perceived psycho-social status. Minimal crops were planted because of the beneficiaries' age, limited family labour due to urbanisation and

working farm land that had little rain and poor soil The result was less or no income from crop production, thus defeating the objectives of ALDEP. Another finding was that due to the hardships the beneficiaries experienced as a result of these interrelated factors, the youth were not interested in arable farming. This could be a potential problem for the future of the arable agriculture economy in Botswana if it is not addressed.

Thus, if the government of Botswana are to meet similar objectives to ALDEP in future arable agricultural programmes targeting the resource-poor, they would need to address their decision making approach, encourage greater participation, and develop farming techniques suitable for an aging farming population or develop means of attracting the youth to the arable farming sector.

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Abbreviations

ADB	African Development Bank
ARAP	Accelerated Rain-fed Arable Programme
ARDP	Accelerated Rural Development Program
ALDEP	Arable Lands Development Programme
BAMB	Botswana Agricultural Marketing Board
BIDPA	Botswana Institute for Development Policy Analysis
CAR	Centre for Applied Research
CEDA	Citizen Entrepreneurial Development Agency (CEDA)
CSO	Central Statistics Organisation
EFSAIP	Evaluation of Farming Systems and Agricultural Implements Project
FAO	Food and Agricultural Organisation
FAP	Financial Assistance Programme
GDP	Gross Domestic Product
IFAD	International Fund for Agricultural Development
IFPP	Integrated Farming Pilot Project
ISPAAD	Integrated Support Programme for Arable Agriculture Development (ISPAAD)
NAMPAADD	National Master Plan for Arable Agricultural and Dairy Development
NDP	National Development Plan
RDP	Rural Development Policy
NFS	National Food Strategy
OECD	Organisation for Economic Co-operation and Development

RRA	Rapid Rural Appraisal
PRA	Participatory Rural Appraisal
TAHAL	TAHAL Consulting Engineers
TGLP	Tribal Grazing Lands Programme
UNDP	United Nations Development Programme
UN HDR	United Nations Human Development Report

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Chapter 1

INTRODUCTION AND OVERVIEW

1.1 Introduction

"Despite progress in boosting democracy, ending wars, and economic growth, Africa is the only region in the world becoming less and less able to feed itself" (McLaughlin & Purefoy, 2005 as cited in Davidson, 2009:122).

This statement reflects that people are still going hungry in Africa despite the ability of the continent to develop itself. One of the reasons suggested by Pickford (2008) is that other first world countries are exploiting agriculturally wealthy countries for their own needs. This resulted in land being used to produce crops needed to support western technological advances, such as biofuel, and also increases global food market prices, leading to increased food insecurity (Wilson, 2011, FAO, 2011). Even though emphasis is placed on policies and programmes to develop the rural agricultural sector, high levels of food insecurity in Sub-Saharan Africa still remain (Arntzen, Dube and Muchero, 2004). In rural Sub-Saharan Africa, agriculture accounts for 70-80% of the labour force, 40% of exports and 30% of Gross Domestic Product (GDP) (Brüntrup and Zimmerman, 2009). Therefore, agriculture is seen as a major driving force to change the social and economic circumstances of rural communities in Africa and as a result, support for small scale farming is encouraged (Denning, 2007; Southgate and Graham, 2006; Wilson, 2011).

Other factors that are inhibiting these resource-poor farmers in rural communities include over-taxation, poor government policy and support, poor quality of land, natural disasters, warfare, the inability to compete with commercial farmers, and the lack of infrastructure (Brüntrup and Zimmerman, 2009; Food and Agricultural Organisation [FAO], 2011). Despite these factors hindering agricultural development, it is still seen as the primary means of alleviating poverty as experienced by 70% of the world's rural poor (Denning, 2007). One such agricultural development programme in Botswana that aimed to address food insecurity and poverty was the Arable Lands Development Programme (ALDEP) (Purcell, 1982; Seleka, 2004).

Botswana is roughly the size of France, approximately 582,000 km², with an estimated population of 1.8 million people (Ministry of Finance and Development Planning, 2009). It is a landlocked country and is considered semi-arid with a low annual rainfall (Arntzen and

Pearce, 2005). At the time of independence in 1966, agriculture contributed 43% to the GDP but by 2006 this had dropped to approximately 1.8% (Seleka, 2005; Central Statistics Organisation [CSO], 2006). In 2003 it was reported that only 0.65% of the 5% of land suitable for arable agriculture was actually being used and only 0.01% of that land had permanent crops (Seleka, 2004). As a result more than 70% of grains/cereals are still being imported into Botswana, making the country vulnerable to rising food prices (FAO, 2011; Seleka, 2004).

In contrast, Botswana is considered one of the wealthiest countries in Africa due to the discovery of diamonds in the late 1960's (Clover, 2003; TAHAL Consulting Engineers [TAHAL], 2000). Despite Botswana's successful economic growth and its ability to create a democratic independent government, there is a growing need to feed its people as arable agriculture declines. It is thus paramount that the government of Botswana has support systems in place to develop arable agriculture for the poor in rural areas.

1.2 The need for the research

ALDEP was established in the late 1970's in Botswana to address the high poverty levels in rural areas targeting "resource poor farmers" (Seleka, 2004:7).

ALDEP's objectives were to:

1. "increase arable production with a view to reducing the annual 20-40% food grain deficit and achieving self-sufficiency (later changed to food security) in the long term;
2. enhance rural development and welfare by raising arable incomes through improved agricultural productivity;
3. optimise income distribution by concentrating on smaller holder development; and
4. create productive and remunerative employment in the lands areas to absorb the rural-under-employment and to reduce rural-urban drift" (Purcell, 1982).

The objectives of ALDEP were commendable, essentially addressing the need for food security and assisting in overcoming poverty in many ways. However, after almost three decades of implementation, ALDEP was said to have had very little impact at a national level on the beneficiaries' income or increased crop production levels, but may have had an impact at an individual level on some beneficiaries in terms of increasing crop production (Centre for Applied Research [CAR], 2002, as cited in Seleka, 2005). Although a framework was in place to monitor planned ALDEP outcomes each year, these outcomes were not

aligned with the objectives. Thus, there were no measures in place to establish the achievement of the objectives of ALDEP.

Since the pilot project report in 1982, reports advised what would be required to assist ALDEP to succeed. However, based on an examination of the literature (Moremi and Entaile, 2001; Chilume, 1992; Ministry of Agriculture, 1990; Mmofswa, 2001; Mmofswa, Kwape, Nehemiah, and Makhura, (undated); Mmofswa, Pheto, Nehemiah, and Makhura, 1999), little changed in proceeding years in terms of the recommendations made. A number of studies (Whiteside, 1997; Purcell, 1982; IFAD, 1992; TAHAL, 2000; Chilume, 1992; ADB, 1996; Jefferis and Kelly, 1999; Moremi et al., 2001) reveal potential reasons for ALDEP not achieving its objectives, such as: a paternalistic culture of decision making, a focus on mineral and cattle economies and a lack of real understanding of the root causes of poverty.

Based on the literature available on ALDEP (Moremi et al., 2001; Chilume, 1992; Ministry of Agriculture, 1990; Mmofswa, 2001; Mmofswa et al., (undated); Mmofswa et al., 1999; Whiteside, 1997), there is a distinct lack of evidence to ascertain the perspectives and experiences of those at a grassroots level, namely the beneficiaries of ALDEP, with regards to why they felt ALDEP was unsuccessful in increasing crop production. It is for this reason that this study was needed to establish the perspectives and experiences of the ALDEP beneficiaries.

1.3 Problem statement

Agriculture yields four times more benefit in reducing poverty than any other economic sector. The World Development Report (2008) therefore recommends that government policy should continue to tackle poverty issues through agriculture. However, the attempts by the government of Botswana to reduce poverty through agriculture over the past four decades have unfortunately been unsuccessful (Jefferis and Kelly, 1999). Rural poverty is still high, urban drift has increased and there is still a high level of importation of grains/cereals (Clover, 2003; Seleka, 2004; Aina, 2007), so it is clear that the objectives of ALDEP were not achieved.

As stated in the need for the study, various reasons have been sighted for ALDEP's demise, including the government's paternalistic management style which creates greater dependency of beneficiaries on government or donors and thus perpetuates poverty (Theron, 2008; Desai and Potter, 2008; Mongula, 2006; Swanepoel and de Beer, 2006). In a press release the Ministry of Agriculture cited other reasons, including farmers abusing the

packages (Regonamanye*, Sunday Standard*, 10 August 2008). Whiteside (1997:46) on the other hand felt that the Ministry of Agriculture saw the farmer as the "problem rather than the solution".

Botswana does not have a large population like many other African countries, which usually impacts significantly on the resources available for development. With significant economic resources available to implement ALDEP and yet a failure to succeed at achieving its objectives, it is the aim of this research to examine potential reasons for this from the beneficiaries' perspectives and experiences.

1.4 The main objective

In order to address the research problem in an organised and systematic manner, the following main objective was formulated:

An examination of the perspectives and experiences of crop production by the beneficiaries of the Arable Lands Development Programme (ALDEP)

1.4.1 Sub-objectives

In order to address the main objective, and driven by the literature, the sub-objectives will examine:

1. factors that influence beneficiaries' ability to produce crops during ALDEP;
2. the level of participation of beneficiaries of ALDEP; and
3. the effect of the government's decision-making approach to the beneficiaries of ALDEP.

1.5 Clarification of concepts

It is important to understand the different key concepts related to this research in the context in which they have been applied. These include the following:

1.5.1 Subsistence farmers

Subsistence farming is characterised by small farms (0.5 ha – 4ha) where agriculture is for household consumption and, when there is excess, for local selling (Aina, 2007). These types of farmers generally cannot generate surplus (Pinder and Wood, 2003). Since poverty and subsistence farming are synonymous (Zoomers cited in Desai and Potter, 2008), they

rely on rain to provide water for their crops and have very few resources to pay for fertilisers or other farming inputs.

1.5.2 Resource-poor farmers

It was the aim of ALDEP to assist the resource-poor farmers in creating surplus crops through the subsidies offered, in order to reduce levels of poverty. Therefore, in the context of this research, resource-poor farmers are also referred to as subsistence farmers.

1.5.3 ALDEP

ALDEP was a programme that was piloted in the early 1980's and ran until mid-2008. Its aim was to decrease poverty and unemployment, thus reducing urban migration and increasing crop production. ALDEP as a programme was divided into three projects, namely ALDEP I, ALDEP II and ALDEP III.

In the context of the research the Ministry of Agriculture reports on ALDEP were only available up to and including ALDEP II. The final ALDEP III report was unavailable at the time of conducting research and thus alternative reports from other sources were used to conduct the literature review thereon.

1.5.4 Beneficiaries of ALDEP

In this research the term 'beneficiaries' refers to the people who qualified to receive ALDEP packages. The reason that the word 'people' has been used instead of 'resource-poor' when referring to the beneficiaries, is that not all those who became ALDEP beneficiaries were necessarily resource-poor and thus not necessarily those being targeted by the programme (Seleka, 2004).

1.6 Research methodology

This section outlines the methodology that will inform the research framework. Such a framework will allow for the research to be focused on examining the perspectives and experiences of the beneficiaries of ALDEP.

1.6.1 Research design and methodology

A basic qualitative research approach was used to examine how the participants interpreted and gave meaning and perspective to their involvement in ALDEP (Woods, 2006). In order to gain this qualitative data, the methods of data collection used were semi-structured interviews and focus group discussions.

1.6.2 Sampling

Purposeful sampling was used to select the participants. Coyne (1997) advises that this sampling method allows for the intentional selection of participants based on the objective of the study. In this case the objective was to study the beneficiaries of ALDEP. However, those that may add value to the study and who were specifically involved in ALDEP were also included, namely the district agricultural staff and an ALDEP package supplier.

1.6.3 Data analysis

A vast amount of data was captured during the interviews and focus group discussions. Identifiable categories emerged from the data which were then grouped into themes. It was these themes that formed the framework for data analysis and triangulating the findings with the literature.

1.6.4 Delimitation

There are nine districts within Botswana. The focus of this study was the Kgatleng District which is made up of 16 villages in South Eastern Botswana. With the exception of the primary village of Mochudi, all other villages within the District are considered rural. Since ALDEP focused on rural farmers, two villages were selected for the study, namely Bokaa and Dinogeng. Both villages had farmers who were willing to participate in the study and had been beneficiaries of ALDEP.

1.7 Sequence of chapters

The thesis consists of five chapters.

Chapter one gives a broad outline of the research objective and sub-objectives, through the need for study to the problem statement as well as the research methodology and data collection methods in brief.

Chapter two reviews the literature available on topics relevant to informing the research objectives and sub-objectives. It therefore gives an understanding of who the resource-poor farmers are and how poverty and agriculture are essential to their survival, whilst also understanding what would influence their participation in government agricultural development programmes. It goes on to review agriculture within Botswana, giving a context for ALDEP. The literature focuses more on ALDEP and the project management thereof. Overall, the chapter allows for an examination of both management and subsistence farmers in order to inform the data collection.

Chapter three discusses the basic qualitative research approach and how the data was gathered through semi-structured interviews and focus group discussions; who the participants were; and how data was analysed.

Chapter four describes the analyses and interpretation of the data by linking the emerging themes with the literature review in relation to the sub-objectives.

Chapter five draws conclusions and provides recommendations for practice and future research based on the findings of chapter four.

1.8 Summary

This chapter outlines the various challenges that are being faced in agricultural development programmes attempting to address poverty through crop production. Botswana faces its own unique set of challenges however this study focused on the perspectives and experiences of the beneficiaries of ALDEP in the Kgatleng District in order to give an alternative perspective. This was achieved through basic qualitative research in order to address the main objective. This chapter addressed the above through an outline of the need for research; a statement of the problem; citing the main and sub-objectives of the programme; clarifying concepts that will be used during the study and finally the research methodology that was used. The following chapter reviews the literature in order to give a theoretical background of rural agricultural development in the context of ALDEP.

Chapter 2
LITERATURE REVIEW

2.1 Introduction

Chapter one introduced the problem and need for the study based on the understanding that ALDEP never achieved its intended objectives. This chapter begins with an understanding of who subsistence farmers are by examining rural agriculture. The chapter then focuses on the agricultural climate and programmes leading up to, and within the context of, the lifecycle of ALDEP in Botswana. Thereafter the chapter examines the types of participation and factors that influenced subsistence farmer participation. Finally, the chapter reviews literature on different government decision-making approaches and the consequential effects they have on subsistence farmers. The aim of the chapter therefore is to gain perspective on who the beneficiaries of ALDEP are and the circumstances under which they attempt to alleviate their own poverty through arable agriculture.

2.2 Rural agriculture

> *"It is impossible for a person to live in the village without being a farmer... In my case, farming was not necessary in the past because I was doing business. But when it failed, I realised that farming is the only way out. Similarly, my kiosk business was very necessary to me in the past, enabling me to survive. But it failed and now I don't think of it because I couldn't raise sufficient capital to start it up again" (Madulu, 1998:29 as cited in Bryceson, 2002:14).*

The story above is not an uncommon one for rural subsistence farmers and as we gain a better understanding of their characteristics, we see that agriculture is a safety net for many of them. Agricultural activities are a means of at least providing enough for household consumption. However, many have little or no access to finance as a result of this subsistence agriculture and thus turn to non-agricultural sources of income as a means to assist with their household shortfall. This section substantiates these statements.

Poverty is usually synonymous with subsistence farmers and subsistence farming in Africa has predominantly been unsuccessful at providing a sole source of income (Zoomers cited in Desai and Potter, 2008). Bryceson (2002:14) advises that in spite of non-agricultural incomes being sought in rural communities, there is a major emphasis still placed on agriculture as a safety net and "essential for survival". However, this safety net may be

further strengthened through the acquisition of livestock and non-agricultural sources of income in order to cope with the risks of arable farming (Bryceson, 2002; Hasselberg as cited by Morapedi, 2006; Siegle, 1990; Zoomers in Desai and Potter, 2008).

Without these coping mechanisms or safety nets, high risk situations (such as drought) heighten subsistence farmers' sense of vulnerability as they feel an even greater lack of control over their own livelihoods (Hill, 2004; Wheeler and Haddad, 2005). It is also at this time that a subsistence farmers' status within a community may fluctuate from being considered 'rich' when crops were good, to being 'poor' as they have no crops (Zoomers in Desai and Potter, 2008; Morapedi, 2006; Lee, 2004). Nonetheless poverty cannot only be determined from a financial perspective, it also includes people's basic human rights, their dignity, their recognition for their traditional knowledge and their empowerment throughout the decision-making process (May in Pressend and Ruiters, 2008; Pinder and Wood, 2003; Khan in Pressend and Ruiters, 2008).

As reflected in the farmer's statement above, dignity and the ability to provide for their families plays a large role in encouraging subsistence farmers to continue farming at least as a means to feed their families. More importantly it shows how resilient and resourceful some rural community members are at coping with risks, such as losing their alternative source of income. However, not all rural communities or groups therein can be considered to have the same goals and objectives when embarking on farming projects. Chirwa, Zgovu and Mvula (2002) stated that when initiating development programmes, the goals and objectives of the participants needs to be aligned with the objectives of a programme or policy. Thus targeting particular groups or communities for agricultural development programmes needs careful consideration. Pinder and Wood (2003) for instance, advise that subsistence farmers (particularly women, the elderly and children) are not viable farmers and so cannot be considered a good target group for commercial farming development programmes combating poverty. However this explanation would depend on the type of farmer being referred to by Pinder and Wood (2003).

Verschoor, van Rooyen and D'Haese (2005) found that four types of farmers exist, each with their own set of unique goals, objectives and circumstances. These types are referred to as commercialising, entrepreneurial, opportunistic and inactive. They are briefly defined as follows (Verschoor et al., 2005):

- a commercial subsistence farmer yields the most substantial amount of all the types of subsistence farmers and therefore is generally more successful due to the amount of investment they have in agriculture;
- an entrepreneurial subsistence farmer farms a greater portion of land, has access to mechanisation and produces good yields as a result. Their objective would therefore be to invest in agriculture;
- an opportunistic subsistence farmer would only farm as opportunities or resources are made available to them. Their investment in farming mechanisation is minimal, and they tend to hire equipment as required; and
- an inactive landowner is a person who has land but does not make use of it, or uses it minimally.

By understanding that there are different types of farmers, it is clear that targeting the incorrect type of farmer, such as an inactive farmer when the objective of the programme may be to develop them into commercial farmers, could result in an unsustainable programme. Those who are unable to cope with risks, such as opportunistic subsistence farmers, tend to focus their goals on day-to-day survival and view life from a short-term perspective. Therefore, involving themselves in yet another programme could potentially result in them becoming more dependent on the government or donors (Swanepoel and de Beer, 2006; Morapedi, 2006).

Since the focus of this study is on the Kgatleng District of Botswana, the following section will examine the agricultural circumstances of subsistence farmers in that district.

2.3 Agriculture in Botswana

Arable agriculture production is seen as high-risk in Botswana because of erratic climate conditions, poor soil fertility and soil erosion (Department of Surveys and Mapping, 2001; Jefferis and Kelly, 1999). Drought compounds poverty/destitution, as does the high HIV/AIDS infection rate which affects the rural labour force's ability to be productive (Jefferis and Kelly, 1999; Clover, 1993). Despite this, Jefferis and Kelly (1999) believe Botswana's rain-fed agriculture still has the capability to provide adequate income for the poor during non-drought years. As with many other countries, Botswana has embarked on agricultural development programmes over the years to assist in combating poverty, whilst also attempting to grow the arable agricultural economy.

Botswana is considered a success story in Africa, having grown from one of the poorest countries at independence in 1966, to an economy that grew at a rate of 7% per annum due to the discovery of diamonds in 1967, making it a middle income country (Clover, 2003; TAHAL, 2000). The mining sector does not have a very large impact on unemployment as it only supports 20 000 people, yet it contributes to 36.1% of the country's GDP, 45% of government revenue and 90% of exports (Organisation for Economic Co-operation and Development [OECD], 2005). Since most of Botswana's land is more suitable for cattle, government policies focused on the cattle industry as well as minerals and mining, making it one of the most stable economies in Sub-Saharan Africa over the last thirty years (Jefferis and Kelly, 1999). This success however was to the detriment of arable agriculture.

Botswana is a semi-arid country with a low annual rainfall ranging from 650mm to 250mm (Seleka, 2004). Most agriculture takes place on the eastern border of the country however, as large parts of these areas are set aside for wildlife, growth is hindered (Seleka, 2004). Less than 5% of the land in Botswana is suitable for arable agriculture, with only 10km² of arable agriculture under irrigation in 2003 and only 0.01% with permanent crops (Seleka, 2004).

Considering that at independence agriculture contributed to 42.7% of the GDP and in 2006 a mere 1.8%, agriculture has been on a rapid decline over the last four decades (Department of Surveys and Mapping, 2001; CSO, 2006).

The paradox of Botswana's economic success is that there are still high levels of poverty (approximately 30% of the population still lives on less than $1 per day), unemployment (24%) and inequality (OECD, 2005; Ministry of Finance and Development Planning, 2009; Robinson, 2009). However, the decrease in poverty levels over the last 20 years cannot be attributed to agricultural development but rather more public spending on health care, schools, as well as improved life expectancy (Clover, 2003; OECD, 2005; Robinson, 2009). However the poverty situation in rural areas has not had the same level of decline. Approximately 50% of the population lives in rural areas and approximately half of the rural population rely on arable agriculture as a source of income (TAHAL, 2000). It was also reported in September 2008, that formal employment in all agricultural sectors only represented 2.9% of total formal employment in Botswana, of which 28.4% are non-Batswana (CSO, 2008). This emphasises that there are not many jobs within the formal agricultural sector for those living in the rural areas either.

Factors such as low rainfall and small areas cultivated areas, along with a focus on mineral and cattle development may all account for Botswana's arable agricultural economy declining rapidly since independence in 1966 (Jefferis and Kelly, 1999; Auty, 2008). A USAID study (Arntzen, Buzwani, Setlhogile, Kgathi and Motsholapheko, 2007) revealed that 65% of the population relies on arable agriculture as a means of sustaining their livelihoods, thus making them a highly vulnerable group. Based on the above statistics, it can be ascertained that for the rural poor to escape the trap of poverty, they would require formal employment, non-agricultural income or cattle. However with low literacy levels, limited opportunities for formal employment and the substantial investment required to purchase cattle, their battle with poverty will continue (Clover, 2003; Jefferis and Kelly, 1999; BIDPA, 2002 as cited in Arntzen and Pearce, 2005). Considering that 40% of cattle in 1974/1975 were owned by a mere 5% of the population and the policies favouring the cattle owners, the possibility of acquiring cattle may continue to be an unobtainable goal for the poor (Jefferis and Kelly, 1999; Purcell, 1982). All these factors contribute to the statistic that those living below the poverty line in rural areas being as high as 55% (Clover, 2003).

The above statistics confirm the reasons why there has been poor agricultural growth which would directly have an impact on poverty in Botswana. Other reasons have also been cited by Jefferis and Kelly (1999), namely:

- reliance of farmers on government, especially during drought years;
- urban migration leading to the youth not having suitable knowledge of farming;
- female headed households making up 50% of rural households;
- rapid population growth, and
- greater employment opportunities in the formal sector.

It is for these reasons that agricultural development programmes initiated in Botswana be examined further in order to understand the decline in the growth of the arable agricultural sector in spite of the extensive investment therein.

2.3.1 Agricultural Development Programmes in Botswana

TAHAL Consulting Engineers (TAHAL) was hired by the Ministry of Agriculture to develop the National Master Plan for Arable Agricultural and Dairy Development (NAMPAADD) in

2000. In their report they found that, in spite of a number of agricultural programmes being initiated by the Ministry of Agriculture, their ability to meet their objectives was “minimal”, and that this was due to strategies that could not be monitored and plans that could not be implemented (TAHAL, 2000:1-1). Jefferis and Kelly (1999) also concluded that, despite much investment in agricultural production through development programmes, overall they had been “largely unsuccessful” (1999:213). It is for this reason that a brief examination of agricultural development programmes was conducted in order to understand the findings of TAHAL (2000) and Jefferis and Kelly (1999), as well as to give background to the ALDEP.

A variety of agricultural development programmes were initiated in Botswana prior to independence in 1966, as well as up to and including ALDEP. The subsequent section describes various agricultural development programmes. The main focus is on ALDEP but also other programmes which either informed or ran concurrently to ALDEP. This has been included to examine possible trends in the agricultural programmes initiated by the government to support arable agricultural development in Botswana.

2.3.1.1 African Agricultural Scheme D680

The Colonial Development and Welfare Fund (of three million Pounds) was established between 1946-1956 by the British Government for the development of Botswana. Twenty seven thousand Pounds of this amount was allocated to the development of African Agriculture Scheme D680. This scheme, initiated in 1947 in the Bakgatla Reserve (now known as the Kgatleng District), was aimed at ‘progressive farmers’. These farmers were selected as eligible of being ‘progressive’ based on whether they were: rich peasant farmers who owned significant cattle; selected by the chiefs; men; formally educated; and employed in European farms or the mines. The ‘progressive farmers’ would be educated at demonstration farms overseen by Europeans and initially would be given drought resistant seed (e.g. sorghum), fertiliser and implements. This investment in the farmers led to an increase of 200% in their crop yields. In 1954 this scheme was extended to other parts of Botswana but in addition to implements and seed the farmers received three to four years of training. The implements had to be returned after the four years since it was expected of the farmers to purchase their own based on the profits made. Morapedi (2006) reported that those who did not participate in the scheme produced seven times less in their crop yields than those who did participate. This was attributed to those not participating having an average of seven acres of land under cultivation, whilst those on the scheme had over seventeen acres (Morapedi, 2006).

The criteria for these farmers being selected was that they were more privileged farmers, rather than resource-poor farmers (as was the case with ALDEP), in that they were educated, had cattle (an indicator of wealth) and they owned substantially large farms. Furthermore, extensive training was conducted and appropriate technology was sourced based on the environmental realities of Botswana, such as drought (drought resistant seed) and poor soil fertility (fertiliser). Farmers were also held accountable to produce crops. Overall this scheme was successful in producing substantially more crops and is perhaps why at independence there is such a high percentage of arable agriculture contributing to the GDP.

2.3.1.2 Evaluation of Farming Systems and Agricultural Implements Project (EFSAIP) and the Integrated Farming Pilot Project (IFPP)

In 1975 the Government of Botswana initiated the Evaluation of Farming Systems and Agricultural Implements Project (EFSAIP) to research appropriate farming technology in order to reduce the reliance on draft and labour power in farming (Purcell, 1982). To test their suitability, a pilot project, the Integrated Farming Pilot Project (IFPP), was initiated at centralised demonstration farms (Purcell, 1982). After various recommendations and further testing, these technologies then became the basis of technological knowledge for ALDEP (Purcell, 1982). It must be noted however, that the technology was sourced in Zimbabwe and South Africa and not in Botswana.

2.3.1.3 Accelerated Rural Development Program (ARDP)

This programme was initiated in 1973 with a substantial increase in funding going towards health, education, water and roads in rural areas (Danevad, 1993). However, it is suggested that this programme was initiated to show results for the ruling party in rural areas with the upcoming 1974 election. This motivation for the programme becomes clear when considering the lack of a long term strategy for rural development thereafter (Danevad, 1993).

2.3.1.4 Rural Development Policy and the National Food Strategy

The Rural Development Policy (RDP) was initiated in 1972, out of which the National Food Strategy (NFS) was introduced in 1985 in response to growing food insecurity (Siegle, 1990). The NFS included ALDEP, Accelerated Rain-fed Arable Programme (ARAP), Tribal Grazing Lands Programme (TGLP) and the Financial Assistance Programme (FAP). The objectives of these programmes were driven by the National Development Plans (NDP).

However, other than a change in objective in 1991 (NDP6) from food self-sufficiency to food security, most of the objectives remained unchanged between NDP1 and NDP9. These NFS revisions therefore included "technological development, provision of infrastructure, and institutional and human capital development" (Seleka, 2004:6).

2.3.1.5 Accelerated Rain-fed Arable Production (ARAP) and the Drought Relief Programme (DRP)

The five year drought that began in 1982, just as ALDEP was starting, led to the initiation of the ARAP and DRP. This programme ran concurrently to ALDEP.

ARAP gave farmers short-term assistance after the drought to assist in getting their farms productive again through land clearing, fencing and water projects to sustain arable farming (Siegle, 1990). ARAP's funding was said to continue for two years after the drought ended. Danadev (1993) suggested two reasons for this: to assist farmers after the drought ended and possibly to gain support for the ruling party in the upcoming 1989 elections.

The DRP was made up of four elements. Firstly, to secure the nutritional status of those most vulnerable. This comprised 70% of the rural households in Botswana, (Holm and Cohen, 1988). Secondly, to provide labour-intensive employment where needed in the villages through the Labour Based Relief Programme (LBRP) (Holm and Cohen, 1988).Thirdly, to assist the agricultural industry with subsidies and relief assistance, such as purchasing of older cattle, or providing water or seed (Holm and Cohen, 1988). Finally, the DRP provided clean drinking water for the villages (Holm and Cohen, 1988).

Jefferis and Kelly (1999) felt that farmers fended better during drought years because of DRP than they did in non-drought years due to the subsidies. However this impacted on ALDEP, as IFAD felt that running the programmes concurrently made monitoring ALDEP difficult and "jeopardized project (ALDEP) activities" with extension officers working on all three programmes at once (IFAD, 1992).

2.3.1.6 Financial Assistance Programme (FAP) and the Citizen Entrepreneurial Development Agency (CEDA)

The Financial Assistance Programme (FAP) was started in 1982 to help increase employment in the rural areas and thus decrease unemployment (Siegle, 1990). This was through promotion of growth in sectors other than cattle, mining or government employment using private sector grants (Seleka, 2005). This programme ended in 2000 and was

succeeded by CEDA in 2002 (Seleka, 2005). CEDA aims to provide subsidised loans whilst attempting to ensure viability and sustainability for entrepreneurs and their businesses (Seleka, 2005).

The NFS programmes essentially assisted rural farmers who were resource-poor or were badly affected by drought, but failed to have an impact on achieving growth in the arable agriculture sector.

2.3.1.7 Integrated Support Programme for Arable Agriculture Development (ISPAAD)

ISPAAD was launched in 2008 after the closure of ALDEP. The primary objectives and components of ISPAAD are similar to that of ALDEP in that it also aims to increase grain production in order to improve food security at a farmer level. It differs in that it opens up access to credit, seed and fertilizer and has a greater emphasis on water provision.

2.3.1.8 Arable Lands Development Programme (ALDEP)

In the late 1970's Government policy began to focus more on agriculture as a means of addressing Botswana's high reliance on South Africa for basic foodstuffs, high unemployment and poverty (Purcell, 1982). This was initiated through the National Development Plan (NDP) from 1979 to1985, since agriculture was seen as the "most commonly carried out rural economic activity" (Purcell, 1982:3). ALDEP was one of the programmes that was initiated under this NDP and was initially funded by the International Fund for Agricultural Development (IFAD) and the African Development Bank (ADB).

Planning of ALDEP began in 1978 (Purcell, 1982), with the pilot study being initiated in 1981. The focus was mainly on poverty alleviation for resource-poor farmers, which was to be achieved by increasing crop production thus reducing the grain deficit, urban migration and unemployment in the rural areas (Seleka, 2004; Purcell, 1982). Since draught power was mainly being used for traditional farming, one of the programme's eligibility criteria was that beneficiaries owned less than 40 cattle (Seleka, 2004). Government sourced suppliers and technology and subsidised the costs of packages for farmers, with male farmers paying a 15% portion of the package(s) they selected, whilst female farmers only paid 10%. Packages included: donkeys and cattle, farming implements, fencing materials, water tanks, two and four wheeled scotch carts, and fertiliser was added in ALDEP III (Chilume, 1992).

ALDEP was reported as having a top-down approach from the very beginning, especially at a local level, with the powerful making decisions on behalf of the poor, thus the needs of the poor were not being reflected (Purcell, 1982; Jefferis and Kelly, 1999; Whiteside, 1997). The CAR (2002, as cited in Seleka, 2005) found that ALDEP, after running for approximately three decades, had very little impact on the subsistence farmer's incomes or increased crop production at a national level but may have had an impact on some at an individual level.

It was reported that some beneficiaries did not use the implement packages provided, for example planters. Seleka (2004) suggests that this could be due to the expectations of government not being communicated to beneficiaries and beneficiaries not being held accountable for increased crop production.

It is for this reason that the focus of this research is on the perspectives and experiences of the ALDEP beneficiaries on the programmes ability to assist with increasing their crop production.

2.3.1.9 Summary of Botswana's agricultural development programmes

The above gives a list of programmes that the Government of Botswana has initiated over the last five decades in order to develop the arable sector or assist those within the sector. Trends that have emerged are that the government has policies that support the development of arable agriculture, however the criteria for these programmes is set by government centrally. Thus far the most successful programme in terms of producing higher yields was that of the African Agriculture Scheme D680. However the difference with this scheme and the others is that the beneficiaries selected were not resource-poor, they were well-educated and their farms were of a substantially larger size. Furthermore they had been given a substantial amount of training and the inputs they were provided with were given to them with an expectation that they, the beneficiaries, would be accountable for producing higher crop yields. The other schemes were aimed at addressing government objectives as set out by policies and related programmes, and as a result were deemed unsuccessful in increasing arable yields. What the different programmes have highlighted is that the governments' decision making approach to development has an impact on their achievement of their objectives and that the farmers' needs must be aligned with these objectives (as described in section 2.2).

Therefore it is important to understand the level of participation beneficiaries had in agricultural development programmes and the effect that this could have on the success of the programmes.

2.4 Participation in development programmes

Progress in development programmes is said to be minimal without the contribution of the beneficiaries (Kotze and Kellerman, 1997). It is for this reason that participation is an important part of the decision making process in order for programmes to be sustainable. Various levels of participation exist and each level can be used at different periods of time within a programme.

Participatory management can be said to be a means of "unlocking... the human capital" (Wheeler and Haddad, 2005:9) of all stakeholders, thus allowing each to be a part of the decision making process, adding value to programme through varying levels of expertise (Verschoor et al., 2005; Siegle, 1990).

Verschoor et al., (2005) and Fraser, Dougill, Mabee, Reed, McAlpine, (2006) believe that participation allows for gaining benefit from grass roots knowledge, greater support from the beneficiaries, improved monitoring and sustainability.

It is clear that the authors see a distinct advantage in the participatory approach as it includes all the stakeholders throughout development programmes. That is, the objectives are being met when aligned with the needs of all the stakeholders and particularly the beneficiaries. Therefore the style of management of a programme or project can influence the objectives being met based on the level of participation. It is therefore important to understand the types of participation available.

2.4.1 Types of participation

Types of participation denote to what degree the stakeholders, in this case the beneficiaries, are involved in decision making. Many variations on the types are offered and will now be examined.

Pretty and Smith (2003) refer to six types of participation;

1. *Passive participation* – this occurs when participation is as a result of being told what is going to be, or has been, done;

2. *Consultative participation* – this is merely a process of the participant giving information to those making the decisions;

3. *Bought participation* – participation is a reciprocal process in this case i.e. participation is only achieved through beneficiaries getting something in return;

4. *Functional participation* – here groups are formed to achieve a particular goal and set objectives;

5. *Interactive participation* – this is a joint initiative between various stakeholders in both decision making, monitoring, evaluation and planning in order to form, strengthen or develop groups or locally initiatives; and

6. *Self-mobilisation* – in this case farmers take ownership and initiative to begin programmes independently of others.

The above explains how participation is a matter of analysing how decisions are being made. Just because people participate in a particular programme, does not negate it from still being a top-down approach. An example of this would be the passive or consultative participation whereby decisions are made for the participant or they are merely a source of data collection for the real decision makers. When participatory approaches are encouraged and referred to in the research, reference is being made to types 4-6.

Another description given of participation is by Sanginga, Tumwine and Lalja (2006) namely Type A-E, and are correlated below to Pretty and Smith (2003) levels of participation where possible.

1. *Type A (contractual)* includes material incentive participation. Participants do not have any organised communication regarding the programme but rather participants are used for their land (material incentive) and labour, whilst the programme facilitator makes all the decisions (similar to passive participation).
2. *Type B (consultative)* participation, also referred to by Pretty and Smith (2003), is similar to Type A, except that there is organised communication which only allows for the gathering of data. This, like Type A, is a low level of participation on the part of the participants and although communication is possible between facilitator and participants, it is more for the purposes of information gathering rather than addressing the needs of the participants.

3. *Type C (collaborative)* is inclusive of all stakeholders. Participants are seen as key decision makers in all the stages and their input is key to the data being gathered. This is a far higher level of participation that empowers, dignifies and may lead to the identification of the root cause of problems within that particular group of participants. This type of participation is also referred to by Pretty in 1994 (as cited in Saliu, Alao and Oluwagbemi, 2010; Pretty and Smith, 2003) as interactive participation.
4. *Type D (collegial)* is a type of participation which is usually initiated by the participants themselves by creating collective groups. For instance, experimentation is done by the participants who use the development facilitators merely to assist when required. This level of participation is highly empowering and allows the farmers to own the experimentation, whilst increasing their capacity as and when required through the facilitators' presence, rather than having it imposed on them.
5. *Type E (farmer participation)* is similar to Type D (collegial) in that the participants are their own development initiators. However, the participants do not have organised communication with the facilitators but rather the facilitators review the methods being used by farmers in order to develop appropriate tools or techniques that may assist the participants. This type of participation, especially in action research, allows the facilitator to observe techniques, methods and difficulties participants may be experiencing. This allows them to ascertain for instance, the appropriate technologies that may compliment or assist the participants, rather than giving the farmers "appropriate" technology without experiencing participants' day to day lives and their appropriate needs.

Both type D and type E are not referred to by Pretty and Smith (2003) however they would appear to be a type of self-mobilisation on the part of the participants, with varying degrees of requested interaction with facilitators as and when needed.

It is acknowledged by Sanginga et al., (2006) that these types of participation can alter from one type to another throughout an agricultural development programme, with the degree of participation being different throughout the programme stages. Also it is noted that the type of participation is also determined by policy which will then inform the participatory process, technique and instruments that will be used in each unique situation (Bayley and French, 2008). It is therefore a careful balance to achieve government's goals and objectives whilst also trying to ensure appropriate participation that will address the needs of the beneficiary.

2.4.2 Costs vs. benefits of participation

"People will sustain what meets their objectives and reject what does not" (Chambers, Pacey and Thrupp, 1989:102)

The above statement leads one to believe that beneficiaries participate in order to have their needs met and if they are not met they will not participate. Understanding what influences resource-poor farmers' participation is seen as a means of "speed(ing) up development" (Mishev and Kostov, 2003:72, cited in Abele and Frohberg, 2003). It is therefore implied that for beneficiaries to get involved in agricultural development programmes, the benefits of participation ('what meets their objectives') must outweigh the costs of participating (what they would need to give up). For example, if the beneficiary must participate in training (benefit) on a demonstration farm, this may be perceived as being at a great cost, compared to using the time to work on their own land. Therefore, they may not participate due to the risk of not being able to grow crops that would feed their family.

One can see from this example that costs and benefits are not always financial in their nature (Prokopy, 2009). Costs could be "opportunity costs, direct participation costs, personal constraints, and countervailing social norms and organisational barriers" (Prokopy, 2009:472); whilst the benefits could be communal or purely for personal gain (Prokopy, 2009). Resource-poor farmers also cannot be grouped as the same due to their unique perspectives of costs and benefits. This was supported by the findings of Verschoor et al., (2005).

Opportunity cost refers to sacrificing something in order to participate (Prokopy, 2009). Direct participatory costs are financial, psychological or physical losses in order for the participant to be involved (Prokopy, 2009). Personal constraints refer to the amount of time the participant has to give, as opposed to everyday obligations (Prokopy, 2009). Countervailing social norms refers to the level or right a person has to participate based on social norms within a community e.g. a woman being forbidden to participate due to her religion (Prokopy, 2009).The final cost that would influence participation is that of organisational barriers. Organisational barriers exclude certain people from participating due to how the participation is organised, for instance, where a meeting is held. That is, people may not be permitted into a meeting by virtue of the fact that the venue denies access to them.

Alternatively the participants may consider the costs in relation to the benefits that are either individual or collective in nature (Prokopy, 2009). For instance, if members of the community want to benefit themselves as opposed to a programme that has the objective of benefitting the entire community, this may deter some from participating.

However, the type of participatory decision making approach is not the only factor that would influence participation. Other factors that could influence participation will now be examined.

2.4.3 Factors that influence beneficiary participation

Various factors may influence community members' participation, such as environmental issues; the beneficiaries' health or other people's health; inappropriate technology; their access markets; their historical experiences; their social organisation, beliefs and practices and finally the access to resources. Each will be described briefly in this sub-section.

Environmental issues can influence the beneficiaries' level of participation in that an agricultural development programme may benefit them in overcoming environmental risks. These risks include drastic weather conditions, lack of availability to water, soil erosion, soil type, lack of nutrients in the soil, all of which have spiralled subsistence farmers into further poverty (Southgate and Graham, 2006; Lee, 2004; Jefferis and Kelly, 1999; Department of Surveys and Mapping, 2001; Shafiullah, 2003). Also, as suggested by Southgate and Graham (2006) and Bunch (1999), when environmental issues are addressed more cost effectively and have quicker outputs of crop yield, this may influence farmers to participate as the beneficiary costs and benefits align with being able to grow more crops and thus being able to benefit from the proceeds.

Health issues such as high HIV/AIDS infection rates affect the rural labour forces ability to be productive (Clover, 2003; Lee, 2004; Khan in Pressend and Ruiters, 2008). Micro-nutrient and vitamin deficiencies result in various diseases which also reduced labour force productivity (Graham, Welch, Saunders, Ortiz-Monasterio, Bouis, Bonierbale, de Haan, Burgos, Thiele, Liria, Meisner, Beene, Potts, Kadian, Hobbs, Gupta, Twamlow, 2007; Shafiullah, 2003). Illness for whatever reason can result in resource-poor farmers losing what little they have by being less active or having to work for others or gain non-agricultural employment, thus abandoning their own subsistence crop production (Southgate and Graham, 2006). Pests and diseases, such as malaria, also play a role in health factors influencing participation, which again impacts on labour productivity (Tibandebage in Pressend and Ruiters, 2008). Therefore, the cost of health issues clearly has an influence on

active participation in agricultural development programmes. Thus, having to involve this labour in a project that may take them away from caring for the ill or working their own lands may be perceived to be at a higher cost, from a short term perspective, than of long term benefit. This is illustrated in the figure 2.1 (World Health Organisation, 2001 as cited in Levasseur, Desrosiers and St Cyr Tribble, 2008)

Figure 2.1 brings together the links between health and the environment and how the two can affect the degree to which participation is possible. Health factors will affect the level of activity as beneficiaries will not be able to engage as much in crop production as they did before they were sick. Therefore, their cost outweighs the benefit of participating in various programmes as they need to spend more time caring for the ill and have less time to participate in activities that would take them away from the household due to diminished resources or time. The long term effect of this is that the less time and capacity available to farm, for instance, would impact levels of nutrition, which would then impact further on health. Also environmental factors, such as drought and a lack of access to drinkable water, may not only exacerbate health issues but may initiate other health issues, thus impacting on participation. Both age and health issues will impact on the suitability on the environment, as fewer resources (e.g. additional labour or funds) result in less time spent on improving the environment. This can in fact result in greater degradation of the land as those that are not as active look to cost-effective means of surviving. For example they may chop down trees closer to home for firewood, as opposed to getting firewood elsewhere or using other energy sources to cook food and heat the home.

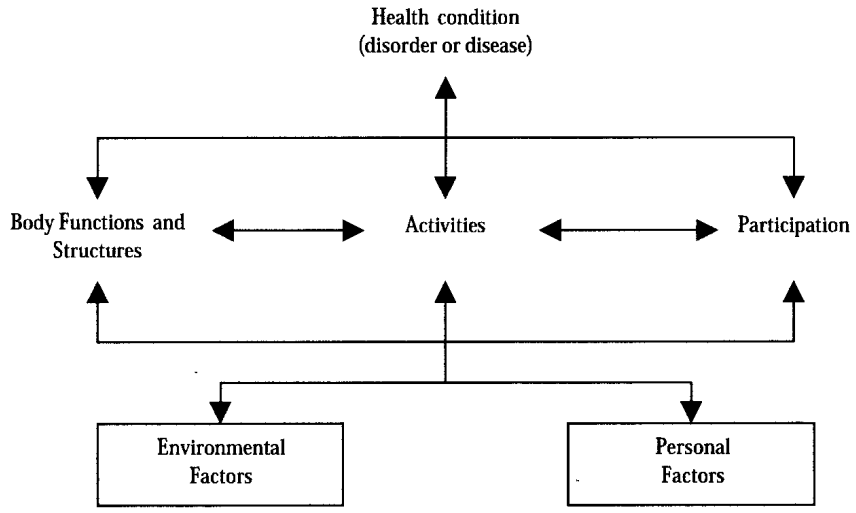

Figure 2.1: International Classification of Functioning, Disability and Health (ICF) model (Levasseur, Desrosiers and St Cyr Tribble, 2008)

Inappropriate technology for the conditions and social situation the agricultural programme is operating in, influences whether beneficiaries will participate and to what level. Various authors (Southgate and Graham, 2006; Chambers et al., 1989; Shafiullah, 2003) cite examples such as: speed at which crops grow based on biotechnology, soil type vs. crops grown, fertilisers being available, mechanisation vs. non-mechanisation, all of which will uniquely need to be analysed to ascertain their suitability within the context of the programme. Furthermore, the benefit of using this technology would also need to be in accordance with the needs of the beneficiaries. That is, will it allow them to gain greater rewards as a result of using them or is it really what they need?

Access to markets influences beneficiaries' willingness to participate in agricultural programmes because in order to combat poverty through the programme, they need to be able to sell their crops. This is influenced by programmes not taking into account distances to markets to sell products, lack of transportation, prices for products, lack of storage facilities, access to market information, having to compete with big commercial farmers by accepting lower prices for crops, and wanting to be linked to a co-operative (Pinder and Wood, 2003; Shafiullah, 2003; Kilman and Thurow, 2002; Verschoor et al., 2005).

Historical experiences have an impact on the psychological attitudes of beneficiaries, which may provide a key as to how agricultural programmes directed at them may fail or succeed. A study on pro-poor agricultural programmes (Pinder and Wood, 2003) found that such programmes, when attempting to uplift the rural poor, in fact did not decrease poverty but increased it. Therefore, the risk of involving themselves in agricultural programmes initiated by international donors or governments is something resource-poor farmers are fearful of. The main reason for this is failure in the past, a lack of self-esteem, attitudes, feeling ignored, stressors affecting their sense of reality and lack of control over their own situations, all of which lead to dependency on government or aid agencies (Swanepoel and de Beer, 2006; Siegle, 1990). As a result when yet another agricultural programme is initiated there may be fear of further loss which can influence their willingness to participate.

Social organisation, beliefs and practices, also referred to as countervailing social norms (Prokopy, 2009), also contribute to poverty and thus can act as an inhibitor to participation in agricultural programmes (Jefferis and Kelly, 1999). It is therefore noted that when

agricultural programmes aim to target for instance female-headed households, such cultural influences may inhibit the success of the programme and participation.

Resources, such as financial and human resources, play a role in the costs outweighing the benefits of participating in agricultural programmes. Risk has already been discussed above in relation to its impact on farmers' well-being and a lack of access to finance or assets will likewise impact their ability to handle risks more effectively (Pressend and Ruiters, 2008; Holm and Cohen, 1988) or purchase what they may need to improve their livelihoods. Resources also imply access to information and assistance. Thus, where administrative resources, such as extension officers, are scarce this has a substantial impact on programmes (Chambers, 2005), resulting in farmers being unable to get the advice they need. Therefore, participation may not be high due to a lack of funds, programme resources or the beneficiaries' own labour resources.

Although the above list is not exhaustive, it does indicate factors that could influence participation on the part of beneficiaries. Agricultural programmes tend to be more successful when development facilitators acknowledge that both they and the beneficiaries have certain objectives that they want achieved. The potential beneficiaries may be unwilling to participate unless the factors that influence them are addressed prior to the programme's initiation. Therefore the costs and benefits to all stakeholders need to be taken into account and analysed for each programme.

Having examined possible factors that could inhibit subsistence farmers from participating in agricultural development projects and how these, amongst others, are weighed up against the benefits of being involved, the influence that government's decision making approach may have on the participation of beneficiaries of such programmes will now be examined.

2.5 Decision making approaches available to governments embarking on development programmes

With the best intentions governments engage in development programmes to assist the poor within their countries. Theron (2008) and Desai and Potter (2008) found that these programmes are often paternalistic and top-down in their approach, which results in communities feeling disempowered and dependent, thus perpetuating their poverty.

This section will review some of the approaches available when managing development programmes, starting with a brief history of community development approaches and how these approaches have evolved.

2.5.1 The history of government approaches to community development

In the 1940's the British colonial office adopted the *Rural Development* Policy (originating from the Gandian Rural Reconstruction Experiment in the 1930's) which emphasised self-sufficiency and change in attitudes towards" community development" in India and in Africa (de Beer and Swanepoel, 1998). Unfortunately the policy focused more on the elite community members speaking for the community as a whole. There was a similar strategy in pre-independence Botswana during the African Agricultural Scheme D680 which targeted the more privileged rural farmers. The failings of this approach led to the development of a new approach called the integrated rural development approach.

Integrated Rural Development (IRD) focused more on service delivery and inputs but failed to change its management approach of using 'change agents and self- help projects' and acknowledge that using the elite within the community only benefited the elite (de Beer and Swanepoel, 1998: 4). This approach therefore led to very little change for the resource-poor in terms of job or income generation.

The Basic Needs Approach (BNA) was developed in the 1970's in response to the failings of the IRD and focused on poverty eradication (de Beer and Swanepoel, 1998). Its premise was that poverty could be eradicated if basic human needs could be met, such as access to food, education, shelter, health, sanitation and drinking water. However, this approach failed since there was not a strategy for how they were going to actually meet these basic needs.

The above programmes represent a top-down approach to development. The next sub-section will review the effects this type of approach has on development, which has been evident in the failings of the approaches above.

2.5.2 Top-down approach

The top-down approach, also known as the blueprint approach (de Beer and Swanepoel, 1998) is associated with a centralised management approach that is authoritarian in nature, thus creating a sense of dependency of communities on government (Wallis, 1976 as cited in Wassermann, 2001; Kotze and Kellerman, 1997). It begins with the premise that communities do not have the resources to develop themselves and therefore only

government can assist with finance, human resources and capacity (Kotze and Kellerman, 1997). Decision making is driven by those who deem themselves experts and determine what will be done, when it will be done and how it will be done, without taking into account the benefits of local knowledge (Fraser et al., 2006). Lower level staff are merely communicated the policy plan and are required to implement it with very little consultation of what would work in the context of their environment (Gboku and Lekoko, 2007).

Several authors (Verschoor et al., 2005; Theron, 2008; and Desai and Potter, 2008; Siegle, 1990) advise that the consequences of top-down management on development programmes are that they result in poor outcomes and fail to look at farmers independently of government objectives. Beneficiaries' needs are then not met resulting in a sense of helplessness in ensuring real development, whilst governments' political, economic and/or technological policy drives the objectives (Verschoor et al., 2005; Theron, 2008; and Desai et al., 2008; Siegle, 1990). An example of this is in Zimbabwe and Kenya where development was an attempt at rural upliftment in order to gain political support (Wallis, 1976 and Madondo, 1985 as cited in Wassermann, 2001).

Lauglo (1990) (as cited in Gboku and Lekoko, 2007) however, expresses that there are benefits to the top-down approach as it is more cost effective, centralised control allows for historically successful methodologies to be adopted, and there is better resource management.

Although there are advantages to the use of a top-down approach in certain programmes, for the most part the literature advises how a top-down management culture can result in dependency on the part of the beneficiaries (Mongula, 2006; de Beer and Swanepoel, 1998). This is why it has been rejected in favour of a more decentralised approach, which leaves communities at the centre of decision making at all stages of development. As they are aware of the changes in the dynamic environment in which they live, they are able to make more pertinent decisions (Mongula, 2006; Verschoor et al., 2005).

The above reflects that there is not advocacy for a top-down management style in development programmes. Ethically it leaves the beneficiaries vulnerable to political ambitions or goals, rather than what is really needed to improve their lives.

2.5.3 Bottom-up approaches

Wisner (as cited in de Beer and Swanepoel, 1998) defined two BNA approaches: a weak approach, where basic needs are dictated to the community, and a radical approach, where

the community defines their own needs. Therefore, more participatory approaches emerged from BNA as it focused more on grass roots empowerment. This sub-section will now examine bottom-up approaches.

Bottom-up approaches developed as a more inclusive or participatory method of community development in response to the failed top-down approaches as discussed above. In order to achieve outcomes or objectives, this approach focused on capacity-building and ownership in the communities (Kotze and Kellerman, 1997; Gboku and Lekoko, 2007). This is achieved through empowering local authorities in order for them to take the needs of their local communities into account and involve them in the decision making process (Gboku and Lekoko, 2007).

Due to the failings of the top-down approaches, the following bottom-up approaches emerged during the mid-1980's: the learning-process approach, adaptive administration, the people-centred approach or empowerment strategy, and the human scale development (de Beer and Swanepoel, 1998).

The learning-process approach, also known as the social learning process approach (de Beer and Swanepoel, 1998), develops a culture which includes all the stakeholders in learning (Kotze and Kellerman, 1997; de Beer and Swanepoel, 1998).That is, it allows for adaptability, decision making and learning throughout the programme, whilst still addressing the objectives of the project or programme (Kotze and Kellerman, 1997).

Adaptive administration is a style of management aimed at encouraging partnerships, making communities less dependent and building capacity (de Beer and Swanepoel, 1998). It places greater emphasis on people working together and being able to communicate and learn from each other in spite of position or rank. It encourages and rewards innovation and efficiency whilst also acknowledging the benefits of local knowledge (Kotze and Kellerman, 1997). However adaptive administration still has some elements of the top-down approach as the community are consulted and involved in the implementation decision making, but the allocation of resources and development strategies is at a government level (de Beer and Swanepoel, 1998). As a result the people centred approach emerged.

People-centred development, also referred to as the empowerment strategy, looks at peoples' ability to participate in programmes considering those in the rural areas are not afforded the opportunities to develop the capacities as equally as those in urban areas (Kotze and Kellerman, 1997). Therefore it is a process that empowers communities to initiate

their own development. Unlike adaptive administration, the governments' role in people-centred development is more to support the process of capacity building and ownership, which in turn, would hopefully ensure the delivery of the needs of the community (Kotze and Kellerman, 1997).

Human Scale Development differentiates between community 'needs and satisfiers' (de Beer and Swanepoel, 1998). Needs are defined as being material but also related to individually specific requirements whilst still being communal in nature (de Beer and Swanepoel, 1998). Satisfiers however are related to the unique circumstances of each community. Both needs and satisfiers need to be understood in order to address community needs (de Beer and Swanepoel, 1998).

The above methodologies are available to those embarking on community development programmes or projects. However, they do not describe the processes and practices that allow communities to evaluate their capacity and outcomes (Swanepoel and de Beer, 2008). These include approaches such as the Rapid Rural Appraisal (RRA) and Participatory Rural Appraisal (PRA) which can be used during any of the bottom-up community development methodologies. It was not the aim of this research to determine if these assessment methods were used but rather how the Government of Botswana's decision making approach, that is, the methodology they used during ALDEP, may have affected the beneficiaries.

2.6 Summary

The literature review examined that poverty alleviation through agricultural development programmes is possible, provided more inclusive participatory approaches are adopted. By taking this approach, beneficiaries tend to feel more valued and motivated to participate. However, a top-down approach tended to encourage dependency and thus perpetuate poverty. It has been established through the literature that the Government of Botswana adopts a top-down approach in its management of projects. During ALDEP it failed to achieve its objectives of increased crop production or reducing poverty in the rural areas. A variety of reasons have been cited for this failure. The chapter revealed that a variety of factors impact on participation of subsistence farmers, which in turn impacts on the ability to achieve the objectives of the programme. Since it is the objective of this study to examine possible reasons for the low crop production, and thus its lack of impact on the poverty of the ALDEP beneficiaries, the factors impacting their participation will be revealed in the context

of their perspectives and experiences. Chapter three will review the methodology adopted to achieve answers to the main objective.

Chapter 3

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

In Chapter two the literature review gave a context to ALDEP, describing rural agriculture in general and relating specifically to Botswana. The literature review then examined types, costs vs. benefits and factors influencing participation. Finally, the chapter examined literature on the managerial approaches governments have available to them and the effects these approaches have on beneficiaries. This chapter describes the methodology used; the methods of data collection; who the participants are; and the delimitation of the study. It is thus outlined in this chapter how the research was conducted in order to address the main objective: *An examination of the perspectives and experiences of crop production by the beneficiaries of the Arable Lands Development Programme (ALDEP).*

3.1 The research setting

There are nine districts throughout Botswana, namely: Chobe, Central, Kgalagadi, Kgatleng, Kweneng, North-West, North-East, Southern and South-East. The Kgatleng District is the homeland of the Bakgatla people. It is 7600 km^2, with a total population of 73,032 people (Ministry of Local Government, 2002) and based in the South Eastern part of Botswana. The Kgatleng District is made up of sixteen villages of which two have been selected for the study, namely Bokaa and Dinogeng, both of which are on the outskirts of the main village of Mochudi.

Figure 3.1 reflects where Mochudi village is situated in the Kgatleng District in Botswana.

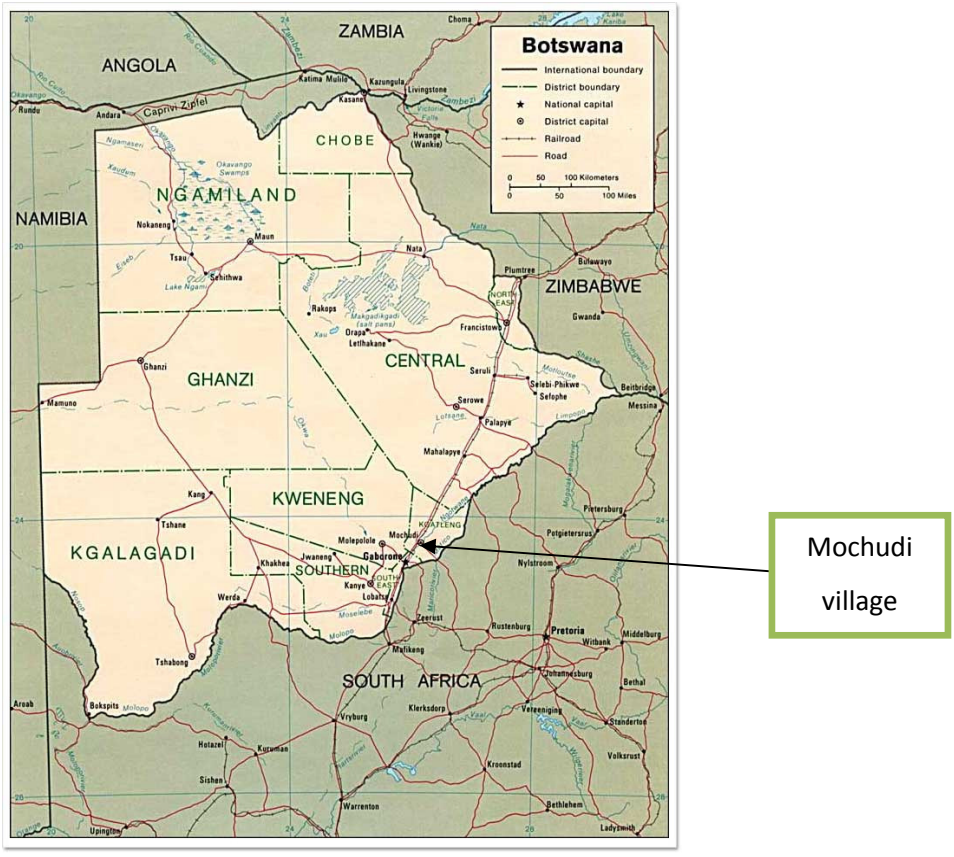

Figure 3.1: Map of Botswana and its nine districts (Source: University of Texas Library, *s.a)*

The village of Mochudi, being the primary centre of the Kgatleng district, has the largest population, approximately 39 349 (Ministry of Local Government, 2002). Of those economically active, 22 032 are employed, equating to a 20% unemployment rate (Ministry of Local Government, 2002). In 2002 it was estimated that over 10 000 people tested positive for HIV/AIDS between 1987-2002 with the highest infection rates being between the age group of 20-39 years (Ministry of Local Government, 2002). The greatest infection rates were therefore in the economically active age groups. This could have an impact on the future of food security due to the effects health issues will have on labour capacity and availability to farm (Saliu, et al., 2010).

Within the Kgatleng District arable farming makes up only 6.91% (Ministry of Local Government, 2002). This is attributed to urban employment, as well as poor soil fertility and degradation (Ministry of Local Government, 2002). Rainfall is between 450 – 550mm per annum with summer weather averaging a maximum of 28ºC and a minimum of 13ºC, whilst winters are mild with the temperature rarely dropping below freezing (Ministry of Local

Government, 2002). It needs to be noted that the village of Mochudi is relatively close, approximately 30km, to the capital of Botswana, Gaborone. This too may have impacted on arable farming as alternative sources of income, formal or informal, are accessible in the city.

This data shows that environmental conditions, health issues and urban migration have all had an impact on the ability to grow the arable sector in this district.

3.2 Research sampling

Hill, Knox, Thompson, Williams and Hess (2005) recommend that a sample of between seven and nineteen participants for individual studies and eight to fifteen participants in focus group studies are used. This study was conducted with twenty three participants. Purposeful sampling is guided by the principle that in qualitative research the topic of the research needs to be appropriately matched to the sample group (Coyne, 1997; Hill et al., 2005). Purposeful sampling was therefore used as specific participants who had been involved in ALDEP needed to be selected.

Based on this purposeful sampling, what follows is a description of each of the participant groups, namely the beneficiaries, the district agricultural staff and finally the supplier.

3.2.1 Beneficiaries

Nine women and eleven men were selected for the sample selection. The criteria for choosing the participants were that they had to have been beneficiaries of ALDEP and they were willing to take part in the research. Based on the criteria, the extension officers that worked in Bokaa and Dinogeng compiled a list of ALDEP beneficiaries and contacted them regarding their possible participation. Those beneficiaries who expressed their willingness to participate were then finalised and a list was submitted for the study.

Male beneficiaries were coded “M” and female beneficiaries were coded “F” for data collection purposes and maintaining confidentiality. Furthermore, coding beneficiaries were differentiated to see if there were distinctions between male and female perspectives and experiences.

3.2.2 Ministry of Agriculture employees at a district level

Even though the main focus of the study was on the ALDEP beneficiaries, three government employees participated in the research. Each worked for the Ministry of Agriculture and was based at the Kgatleng District Agricultural Office in Mochudi. They were selected because

they were directly involved in ALDEP for many years. This meant they had a wealth of knowledge in terms of their perspectives and experiences of ALDEP. Their input was important to ascertain if there was any correlation between the beneficiaries' perspectives and experiences and their own as implementers.

The semi structured interviews took place at the District Agricultural Office, on the 16th July 2010. Two male and one female staff members participated in the semi-structured interviews. Table 3.1 reveals their work experience.

These participants were coded "A" in order to maintain confidentiality.

Table 3.1: District Agricultural Staff

Code	Male / Female	No. of years working on ALDEP
A1	Male	10
A2	Female	11
A3	Male	18

Table 3.1 reveals that the purpose of using District Agricultural Staff in the sample is that, due to their many years of working on ALDEP alongside the beneficiaries and within the Kgatleng District, they were able to provide a perspective that would either support or contradict the perspectives and experiences of the beneficiaries.

3.2.3 Suppliers

The suppliers referred to in the research were those businesses contracted to supply beneficiaries with the various packages (such as fencing and poles) once they had paid their subsidised fee. Much criticism was placed on poor delivery of packages (Moremi et al., 2001), however, the reasons cited often related to the suppliers (Moremi et al., 2001). Interviewing the suppliers was intended to give background on the source and nature of the packages which may have impacted on the beneficiaries' perspectives of ALDEP.

Suppliers were identified by the Kgatleng District Agricultural Office, based on the fact that they were direct suppliers to ALDEP. Three suppliers were selected for the study based on a

supplier list provided by the District Agricultural Office. Unfortunately only one supplier was available for interviewing, whilst the others could not be contacted.

3.3 Research Methodology

The research methods that were used to gather the data for this study were semi-structured interviews and focus group discussions as part of a basic qualitative research design. Both of these methods allowed for the research to get individual perspectives and experiences, whilst the focus group discussions meant the group could share experiences and the researcher could further probe the data that emerged from the interviews.

Table 3.2 gives a breakdown of what method was used with which group of participants in order to gather the data that would inform each sub-objective, as advised by Ehrich (2005). Based on the structure of the table the nature of the interviews and focus group discussions will be discussed in terms of how data was collected.

3.3.1 Research paradigm

An interpretive paradigm will be used as it is more suitable for a qualitative study than a positivist paradigm, which is more suited for quantitative research (O'Brien, 1998). Data is subjective and based on the reality of the participants, whilst the researcher interprets the data objectively (O'Brien, 1998).

3.3.2 Research design and methods

This research uses a basic qualitative research design. This examines how participants perceive a specific phenomenon in terms of its effect on their lives, whilst the researcher is attempting to interpret their experience and describe it in a cohesive way (Welman, Kruger, and Mitchell, 2005; Smith & Osborn, 2008, cited in Shaw, 2010; Moustakas, 1994). The approach does not judge participants perspectives, experiences or feelings but tries to understand the reasons for them (Davidson, 2009). The researcher achieved this through asking the participants "how did this make you feel?" when they described an experience. Participants were therefore encouraged to speak openly and freely about the phenomenon. This was achieved through semi-structured interviews and focus group discussions.

3.3.3 Data collection methods

The methods that were used to gather the data for this study were semi-structured interviews and focus group discussions, with a basic demographic survey to give background on the characteristics of the beneficiaries. These methods allowed the

researcher to get individual experiences, whilst the focus group discussions allowed for shared experiences.

Moustakas (1994) explains that through these approaches the researcher gets raw data, which is then structured and interpreted (interpretivist) in order to gain an understanding of how the participant experienced the phenomenon. Combining all of these perspectives and experiences, the researcher was then able to group categories that emerged and group them into themes.

Table 3.2 gives a breakdown of what method was used with which group of participants in order to gather the data required that would inform each sub-objective.

Table 3.2: Methods used during data collection in relation to sub-objectives

Sub- objectives	Methods	Sampling area and group	Sampling size
Examine factors that influenced ALDEP beneficiaries' perspectives and experiences of crop production	Semi–structured interviews	Dinogeng and Bokaa farmers	19 beneficiaries (10 male and 9 female)
	Focus group discussions	Dinogeng and Bokaa farmers	2 groups (one of 8 male and one of 7 female beneficiaries)

Sub- objectives	Methods	Sampling area and group	Sampling size
Examine the level of participation of the ALDEP beneficiaries	Semi – structured interviews	Dinogeng and Bokaa farmers	19 beneficiaries
	Focus group discussions	Dinogeng and Bokaa farmers	2 groups (one of 8 male and one of 7 female beneficiaries)
Examine the effect of the government's decision making approach on the beneficiaries' of ALDEP	Semi–structured interview	ALDEP staff based at the Kgatleng District Agricultural Office (DAO)	3 staff members (one senior staff member, two agricultural extension officers)
	Semi–structured interviews	Suppliers	1 supplier

Based on the structure of the table, the nature of the interviews and focus group discussions will be discussed in terms of how data was collected.

Welman et al., (2005) cautions that the researcher may not only have cultural and sexual barriers to overcome in multicultural research, but also language barrier and thus recommends using an interpreter in such situations. Since most of the beneficiaries spoke minimal English and their primary language is Setswana, the researcher was accompanied by a volunteered interpreter from the primary chief's Kgotla in Mochudi. Furthermore, many of the beneficiaries were illiterate and therefore the consent given to participate was verbal and through their physical presence. Since this was a voluntary research process of the initial 21 beneficiaries that were approach only 19 arrived for the semi-structured interviews, and 15 for the focus group discussions.

3.3.3.1 Semi-structured interviews

In order to prepare for conducting semi-structured interviews, the literature review was critical in informing the background on the nature of the participants and the phenomenon being examined (Welman et al., 2005). This informed the research problem and what information would be required during the interviews, allowing for semi-structured questions to be developed (Welman et al., 2005). Hill et al., (2005) advise that semi-structured (open-ended) interviews are a good method for collecting qualitative data and should include a limited number (eight to ten) of pre-prepared questions to allow for probing. Answers can therefore vary from one participant to another, even when there are the same semi-structured questions for each of the participants (Welman et al., 2005).

Semi-structured interviews were conducted with a sample group of nineteen ALDEP beneficiaries from two villages in Kgatleng district, one supplier of fencing materials to ALDEP and three District Agricultural staff who had been involved with ALDEP. In order to answer the sub-objectives, the literature review guided the nature of the questions. This was primarily focused on who subsistence farmers were and what could influence their perspectives and experiences, and through these experiences their level of participation. The semi-structured questions examined the nature of their daily lives and how they viewed themselves; what factors had influenced their livelihoods; how they viewed ALDEP; how they viewed the Ministry of Agriculture in terms of their involvement in ALDEP and their involvement in the project management of ALDEP. Furthermore, their perspectives of how agricultural development programmes should be managed, or what should be incorporated by the Ministry of Agriculture in future was examined. The following guidelines were used in the semi-structured interviews:

ALDEP beneficiaries:

1. basic demographic on each of the beneficiaries.
2. An understanding of beneficiaries day to day lives.
3. An examination of factors that influenced their reasons for joining ALDEP.
4. Whether livelihoods have improved since receiving the ALDEP package(s).
5. An examination of expectations and experiences once ALDEP packages were received.
6. An examination of past experiences with agricultural development programmes and the influence this had on their perspectives of new agricultural development programmes.

7. What the beneficiaries' needs and priorities were in terms of arable agriculture development in comparison with what ALDEP provided them.
8. If the beneficiaries participated in future agricultural development programmes, what would they like the Ministry of Agriculture to do in future.

District Agricultural Office Staff:

1. An understanding of their daily duties with respect to ALDEP.
2. Their perception of what the needs of beneficiaries are.
3. Their past experiences with programmes similar to ALDEP.
4. Whether there was an understanding of the objectives of ALDEP by the district staff.
5. What their experiences and expectations of ALDEP were.
6. Their experience of the style of management adopted and what impact this had on ALDEP's success.
7. In terms of future programmes, what would they advise the Ministry of Agriculture to do, based on what they have learnt from ALDEP.

Suppliers:

1. The process through which they became a supplier of ALDEP packages.
2. Their expectations and experiences of being a supplier of ALDEP packages.
3. If they got involved with a similar programme in future what advice would they give the Ministry of Agriculture to assist the beneficiaries.

As per the above semi-structured questions, the aim was to elicit responses that would allow for further probing and thus gain answers to the sub-objectives. Since each participant is considered unique, the answers varied in degree of content or perceived importance depending on the participants' perspectives and experiences of ALDEP. A Setswana interpreter was used for all the interviews to ensure the participants understood what was being asked of them and that the researcher understood the responses correctly to prompt any further questions.

Once the semi-structured interviews were completed, focus group discussions were held only with the beneficiaries of ALDEP since it was their perspectives and experiences that were the focus of the study.

3.3.3.2 Focus group discussions

A focus group discussion is a means of bringing a relevant sample group together to get their opinions on the phenomena at hand through open questions (Welman et al., 2005). It produces qualitative data which the researcher is then able to examine as a collective experience. Only the beneficiaries of ALDEP took part in the focus group discussions.

Focus group discussion helps to "elicit responses" and encourage open dialogue with the other participants (Welman et al., 2005:202). The purpose of the focus group discussion in this study was therefore to:

- allow participants to openly discuss their personal experiences, which may stimulate memories of experiences by other participants;
- examine different or similar expectations of those involved in ALDEP as a collective; and
- examine in greater detail themes found during the semi-structured interviews that may not have fully been understood in terms of the objectives and sub-objectives.

The male and female beneficiaries took part in separate focus group discussions over two to three hour sessions. This allowed for participants to speak freely without inhibitions (Wiseman, 2005:204). The method of separating male and female beneficiaries during the focus group was chosen due to cultural norms of gender inequality which often results in women not being able to express their opinions in male dominated settings (Iruonagbe's, 2011). This approach was supported by Chambers (2008: 54) who stated that 'women's concerns are normally neglected…'

The focus group discussions took place at the Bokaa village Kgotla, which was close to Mochudi. Figure 3.2 visually reflects one such focus group discussion.

Figure 3.2: Focus group discussion with male beneficiaries

Through the methods of semi-structured interviews and focus groups, a vast amount of data emerged. How this was informed will now be addressed in the data analysis.

3.3.4 Data analysis

Hill et al., (2005) recommend three steps to qualitative data analysis:

1. Grouping information into clusters (domain coding)
2. Emerging categories
3. Cross analysis and level of frequency

In order to analyse the data collected, the vast amount of information needed to be compartmentalised into more manageable domains. From theses domains categories emerged by grouping the domains. These categories then developed into smaller themes which allowed for greater interpretation.

However, due to the importance of the frequency at which answers occurred and in order to allow for comparison with future research, it became important to quantify the number of similar answers given, for example n=5. Hill et al., (2005: 12) inform this through defining the level of the results, as “general results apply to all cases, typical results apply to at least half the cases and variant results apply to at least two or three, but fewer than half, of the cases”. Quantifying the number of answers being given would clarify this.

3.3.5 Procedure of the study

The following sequence was followed in order to collect the empirical data for the purposes of the study:

1. Prior to initiating the research, permission was granted by the Ministry of Agriculture to conduct research on ALDEP in Botswana.
2. A literature review was conducted to assist in informing the sub-objectives and in developing the instruments, permission was granted to conduct the research by the relevant authorities in Mochudi and suitable dates for the study was approved.
3. Ethical approval was submitted to University of KwaZulu Natal
4. Lentswe Sekai of the Mochudi Kgotla then approved the research being done in Kgatleng and volunteered the services of an interpreter.
5. The Principal Agricultural Scientific Officer arranged for his staff and the sample group of beneficiaries to be identified for the study.
6. Data collection took place between 16 and 23 July 2010 with the beneficiaries and district agricultural office staff, whilst the supplier was interviewed on 31 July 2010.
7. Data interpretation revealed categories of data which were then grouped to form themes that would inform the sub-objectives.
8. Conclusions of the findings were established after correlation with the literature.
9. Based on these findings, recommendations for future research were presented.

3.4 Summary

Chapter three outlined the basic qualitative approach of the research. That is, the research setting, design, data collection as well as the data analysis. The following chapter will show how this design evolved into the data collected and created clusters of information, categories and finally themes that could be examined against the literature review. For greater depth to the findings the frequency at which the same answers occurred or differed was also given. Based on this analysis of the data these findings then informed the sub-objectives.

Chapter 4
ANALYSIS OF RESULTS

4.1 Introduction

The previous chapter described the methodology applied in this research to guide the empirical data collected. The nature of the study was qualitative and made use of semi-structured interviews and focus group discussions. Twenty three participants took part in this research, including beneficiaries, district agriculture staff and a supplier of ALDEP packages. The main objective was to *examine the perspectives and experiences of crop production by the beneficiaries of the Arable Lands Development Programme (ALDEP).*

The data collection was aligned with the sub-objectives, which were to examine:

- factors that influenced beneficiaries' ability to produce crops during ALDEP;
- the level of participation of beneficiaries of ALDEP; and
- the effect of the government's decision making approach on the beneficiaries' of ALDEP.

This chapter will firstly discuss how the categories and themes were formulated and how they correlated with the literature. Secondly, the chapter focuses on the analyses and interpretation of the findings by dividing it into two parts. The first part (Sub-section 4.3) focuses on the characteristics of the beneficiaries. The second part (Sub-section 4.4-4.8) relates to the analysis of the findings, informed by the themes.

4.2 Development of categories and themes based on the findings

Data from both the semi-structured interviews and the focus group discussions held with the participants (Sub-section 3.4.3) allowed for the analysis of the perspectives and experiences of the beneficiaries of ALDEP on crop production in the Bokaa and Dinogeng villages of Kgatleng District.

Clusters of information emerged as categories, which then allowed for the development of themes based on the frequency of the answers not only during the interviews but also the confirmation or lack of support thereof during the focus group discussions.

Table 4.1 outlines the twenty categories and how they emerged as six themes. It also relates the themes to the sub-objectives and the relevant sub-sections in the literature.

Table 4.1: Summary of analysis of findings divided into categories and themes

Categories	Themes	Sub-objectives	Literature
• The level of education of the beneficiaries • The age of the beneficiaries • Involvement in ALDEP	Characteristics of beneficiaries	Factors that influenced beneficiaries' ability to produce crops during ALDEP.	Sub-sections 2.3 and 2.4.3
• The existence of gender differences • Perception of what it means to be poor • The effect of status on beneficiaries	Psycho-social factors influencing the beneficiaries	Factors that influenced beneficiaries' ability to produce crops during ALDEP.	Sub-section 2.2
• The impact of the physical environment on crop production • The impact of the natural environment on crop production	The environmental factors influencing beneficiaries ability to produce crops	Factors that influenced beneficiaries' ability to produce crops during ALDEP The level of participation of the beneficiaries of ALDEP. The effect of the government's decision making approach on the beneficiaries' of ALDEP	Sub-sections 2.3 and 2.4.3

Categories	Themes	Sub-objectives	Literature
• Beneficiaries' financial resources • Human resources available to the beneficiaries • Human resources available to the beneficiaries of ALDEP at a District level	Availability of resources	Factors that influenced beneficiaries' ability to produce crops during ALDEP	Sub-sections 2.5.1 and 2.4.3
• The beneficiaries experiences of the process of the supply of ALDEP packages • The quantity of packages applied for • The appropriateness of technology provided to the beneficiaries • The sustainability of packages offered to the beneficiaries • The beneficiaries experience of package abuse	The impact of ALDEP packages	Factors that influenced beneficiaries' ability to produce crops during ALDEP The level of participation of the beneficiaries of ALDEP The effect of the government's decision making approach on the beneficiaries' of ALDEP	2.4.3

Categories	Themes	Sub-objectives	Literature
• Types of participation applied by government to agricultural development programmes • The level of accountability beneficiaries had to government during ALDEP • The perspectives of beneficiaries of political undermining in ALDEP • The level of beneficiary dependency on government	Government of Botswana's approach to the management of ALDEP	Factors that influenced beneficiaries' ability to produce crops during ALDEP. The level of participation of the beneficiaries of ALDEP. The effect of the government's decision making approach on the beneficiaries' of ALDEP	Sub-sections 2.5.1; 2.5.6, 2.4.3 and 2.4.2

4.3 Characteristics of the beneficiaries

This section examines characteristics of the beneficiaries in terms of their age, level of education and their level of involvement in ALDEP (see Sub-section 2.3 and 2.4.3).

Nineteen beneficiaries, nine female and ten male, participated in the semi-structured interviews and only fifteen, seven female and eight male, participated in two focus group discussions.

Table 4.2 tabulates the findings that will be discussed in the following sub-sections. This includes the age and level of education of the ALDEP beneficiaries. The contents of the table will be individually discussed in sub-sections 4.3.1 and 4.3.2.

Table 4.2: Age groups and level of education

Age Group	Female	Male
40-49	Grade 10 (1) Grade 9 (1)	Not applicable
50-59	Grade 8 (1) Grade 7 (1) Grade 5 (1) Grade 9 (1)	No education (4)
60-69	Grade 6 (1) No education (1)	No education (1)
70-79	Grade 5 (1)	Grade 7 (1) Grade 5 (1) No education (1)
80-89	Not applicable	No education (2)

4.3.1 Age

The government of Botswana's Central Statistics Office (2006:3) found the average age of a farmer in Botswana was 58 and agricultural involvement "increases with age". The research explored the age demographics of the beneficiaries. Table 4.3 reflects that the beneficiaries' ages agree with the national average.

Furthermore, the issue of aging and increasing health issues also impact on the beneficiaries' ability to farm efficiently and was expressed by 12 of the beneficiaries as a hindrance to their farming ability.

Table 4.3: Age demographic of beneficiaries

Age Group	Female	Male
40-49	2	0
50-59	4	4
60-69	2	1
70-79	1	3
80-89	0	2

Therefore, age, the impact of their health on their ability to farm as actively and less family assistance overall has resulted in even lower crop production and less income to hire labour. This correlation between activity, age and health is supported by the literature findings in Sub-section 2.4.3 and demonstrated in Figure 2.1. The source of labour will be explored further in Sub-section 4.6.2 as will the lack of involvement by the youth in arable farming.

4.3.2 Level of education

As indicated in Table 4.2 and Figure 4.1, this study shows that eight of the nine female beneficiaries had some form of schooling, but none went further than Grade 10. On the other hand 80% (n=8) of the male beneficiaries had no formal education.

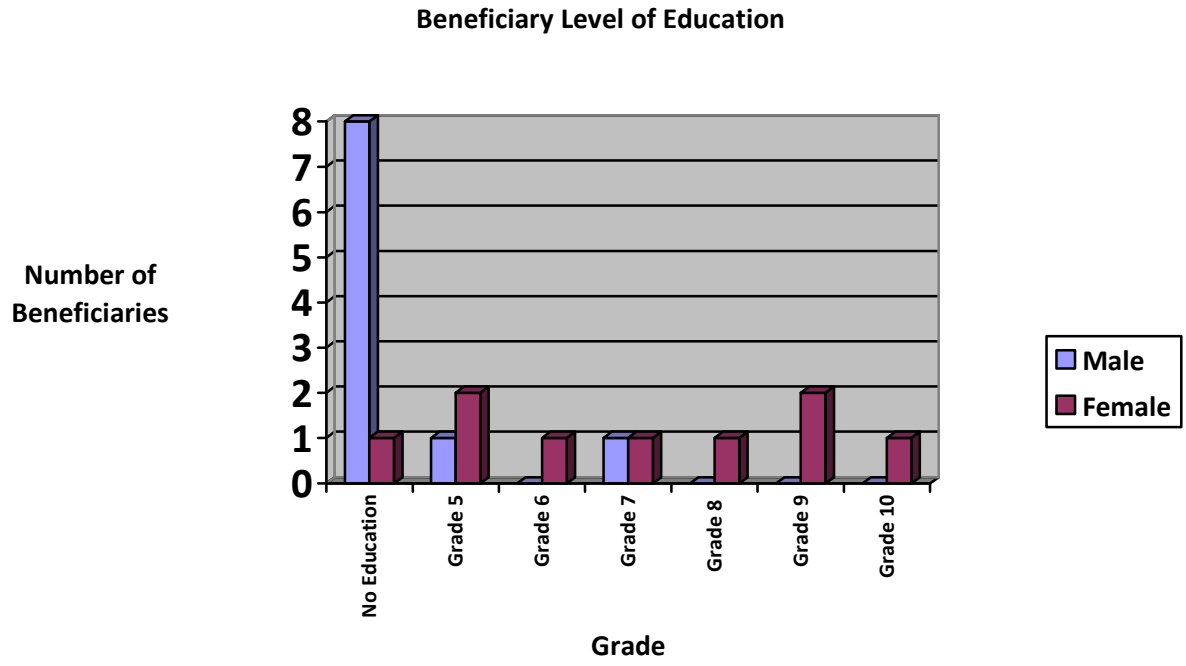

Figure 4.1: Number of beneficiaries and highest level of education

Botswana is said to have a higher literacy rate in females than males which supports the findings of this study (OECD, 2005). The reason given in the findings of this study for men not going to school is that they are often responsible for herding cattle. Botswana at the time of independence also had very few schools and this may have also influenced the level of importance education held in comparison to cattle herding (Sub-section 2.3). It is also evident that parents did not see the importance of education as reflected in the following statement:

*"I had to look after cattle, my parents advised not to go to school" (**Respondent M1).***

Other reasons given for this low level of education included parents being unable to afford to send their children to school, failing grades and being too old to go to school.

This is in contrast to the findings in other third world countries, like India, where a greater emphasis is placed on males going to school than females (Desai and Potter, 2008).

In both focus group discussions it was evident that these ALDEP beneficiaries chose agriculture since there was no other option due to their lack of education. This is reflected in the following statement made by one male beneficiary during the focus group discussion:

"farming is not a sector for educated people, rather uneducated" ***(Male focus group)***

Riemer (2008) supported this finding in a study on literacy in Botswana, whereby literacy represented a non-reliance on farming and a better way of life.

The findings of the focus group discussions showed that the beneficiaries believe that having a better education would have resulted in them migrating to urban areas, as reflected in the following statement:

"I would have left for white collar jobs and greener pastures" ***(Male focus group)***

However there were beneficiaries who indicated that they farm out of choice and not due to a lack of education.

In the focus group discussion it became evident that female beneficiaries believed that if they have finished school it could have helped them improve their farming abilities. This does not only refer to their reading and writing skills but also their ability to farm, as farming was taught at a secondary school level.

4.3.3 Involvement in the ALDEP

ALDEP was made up of three projects, namely ALDEP I, ALDEP II and ALDEP III. ALDEP I, ran from 1982-1993 (11 years), ALDEP II ran from 1993-2006 (13 years) and ALDEP III ran from 2006-mid 2008 (2 years) (Chilume, 1992). The findings in Table 4.4 inform the Sub-section in terms of how many of the ALDEP project's beneficiaries were involved in and how, if in any way, this related to their age.

Table 4.4 shows that seven (70%) of the male beneficiaries and five (56%) of the female beneficiaries participated in more than one ALDEP project. Only four of the male beneficiaries participated in all three of ALDEP's projects.

There is, to some degree, a correlation between the age of the participants and the number of projects they were involved in. For many of the younger beneficiaries (43-58) we see most (n=5) only participated in ALDEP III which was coming to an end at the time..

Table 4.4: Level of participation in ALDEP projects vs. age

Code	Age	ALDEP		
Females		**I**	**II**	**III**
F1	43			X
F3	60	X		X
F4	45			X
F5	53			X
F6	52		X	
F7	58		X	X
F8	52	X	X	
F9	73	X	X	
F10	66	X	X	
Males		**I**	**II**	**III**
M1	58			X
M2	58			X
M3	87	X	X	X
M4	84	X	X	X
M5	78	X	X	X
M7	58	X		
M8	57		X	X
M9	67	X	X	X
M10	73	X	X	
M11	73	X	X	

>refers to 'sometimes', or during certain planting, harvesting or weeding times of the year

The findings reveal that there was on-going support by the beneficiaries throughout ALDEP's lifecycle, in that many applied for packages in more than one phase of ALDEP. This could imply a need for subsidised packages due to a lack of sufficient income to purchase packages outright. Alternatively, due to ALDEP I being plagued by many years of drought (Chilume et al., 1992), ALDEP II created a renewed interest in more extensive farming due to better rains and hence the need to purchase more farming equipment. Furthermore, as will be seen in Sub-section 4.7.4, the reason could have been the need to replace packages that were no longer used due to their being un-repairable.

4.3.4 Summary of characteristics of beneficiaries

It is clear from the findings that beneficiaries' age, literacy levels and level of involvement in ALDEP possibly have impacted on their ability to be effective in their crop production. The above is supported by Green, Lukano, Worth, and Greenfield (2006) who believe that looking more at the individual characteristics of those involved in agricultural development would assist in determining the factors that would influence market participation (see Sub-section 4.6.1.3).

4.4 Psycho-social factors influencing the beneficiaries

When conducting the interviews with the beneficiaries, the researcher examined issues related to gender differentiation and the beneficiaries' perception of poverty. However, some of the beneficiaries expressed a pride in their status as a result of getting their ALDEP package, which then led to an additional examination in the focus group discussions of the effects of status in influencing the beneficiaries' crop production. The influence of these psycho-social factors will now be examined in this sub-section.

4.4.1 Gender differences

ALDEP aimed to address the vulnerability of women-headed households by reducing the amount women had to pay for packages compared to men. Women paid 10% of the subsidised price for packages, whilst men paid 15%. Female-headed households' level of vulnerability was not established in this study. However, it was examined whether male and female beneficiaries' needs differed in terms of needs that enabled them to improve their crop farming.

The findings revealed that thirteen (68%) of the beneficiaries felt that the needs of both males and females did not differ in terms of what they require to succeed in arable farming. When the researcher asked this again during the focus group discussions one of the responses was:

> *"There is no difference, why do you keep asking?"* ***(Male focus group)***

During the interviews one of the beneficiaries made reference to the lack of physical strength in women in comparison to four of the men. However, it was evident that any perceived physical limitations were resolved through reciprocal relationships. This can be better explained through an example given by one beneficiary. She stated that because she was

not strong enough to use her plough, she assisted her neighbours with their farming and in return their male household members assisted her with ploughing.

How this finding is interpreted is that, although being assisted with subsidised packages allowed resource-poor female beneficiaries to participate in ALDEP, this did not necessarily make their needs any different to those of the male beneficiaries, nor assist in overcoming a perceived vulnerability that government had of the female beneficiaries. In fact, Perretts' (1996) findings show that, although there are a higher number of female-headed households in Botswana, it does not make them poorer or more vulnerable than male-headed households. That is, whether you are a male or female beneficiary, you require water to grow crops therefore it was the need for water that was more important in overcoming their vulnerability than an issue of gender.

The findings show that, although beneficiaries' needs don't differ, if there were any limitations, reciprocal relationships assist in overcoming them. Therefore, the focus should be more on the needs of the poor rather than gender-defined vulnerabilities.

4.4.2 Perspectives related to poverty

This Sub-section reflects the beneficiaries' perspective on poverty. In order to examine the beneficiaries' perspective, the researcher presented the following question during the focus group discussions:

> *"ALDEP was said to be a programme for the resource-poor. Do you believe you are poor?"* ***(Researcher)***
>
> *"No, that is a western term"* ***(Male focus group)***
>
> *"People who are poor cannot help themselves at all"* ***(Male focus group)***

The findings reveal that being poor is a term that some of the beneficiaries do not want to be stigmatised as.

Contrary to the comments made in the male focus group one female beneficiary stated:

> *"We classify ourselves as poor".*

However, the majority of the participants in the focus group discussion felt they were not poor but stated that others who classify themselves as poor were considered *"lazy"* and as a result were poor. Findings show that, although some beneficiaries felt they were not poor, because they made use of their *"thinking ability"*, they felt that those who considered themselves as poor had *"failed to use thinking ability"* to alleviate their poverty. To illustrate, one beneficiary (female-headed household) told the story of how she bought a small cow that no one else had wanted because of the size. She says that that cow has since had *"many calves"*, so through her ability to recognise an opportunity she benefited in the long run and does not consider herself poor anymore.

As seen in Sub-section (1.3) we see opposing perspectives between government officials and ALDEP beneficiaries regarding the reasons for ALDEP's failure. Likewise, the findings reflected that District Agricultural staff saw the ALDEP beneficiaries as *"majority poor"* **(Respondent A2).** However, they may be referring to 'poor' in the context of the beneficiaries' lack of financial resources.

Only three beneficiaries referred to themselves as being 'poor' during the interviews, however six referred to their status as being financially insecure. However, when conceptualising the use of the term 'poor', participants can refer to the word not only in a financial sense but also in terms of a lack of access to "consumption, health, education, social life, environmental quality, spiritual and political freedom" (Desai and Potter, 2008:25). The distinctions in the definitions of the term 'poor' were not made in this research, which perhaps explains the contrasting perspectives of whether the beneficiaries were poor or not.

The findings show that the majority of beneficiaries do not consider themselves to be poor as they have developed coping mechanisms (e.g. thinking ability) to alleviate poverty. Therefore in relation to Desai et al., (2008), their ability to provide for their families consumption needs has left them with the perspective that they are not poor.

This conflict in the findings supports the literature on poverty identity by Preece (2005) and Brown (2005) whereby the poor establish their identity through attitudes, expectations and values formed within their dynamic environment. Furthermore, their formation of a poverty identity can be determined by changes in circumstances. In the case of ALDEP beneficiaries they may identify themselves as rich due to good rains producing excess crops, whilst the following season they would again identify themselves as poor due to drought (Zoomers in Desai and Potter, 2008; Morapedi, 2006; Lee, 2004).This is concluded as being the result of

financial resources being defined by the beneficiaries during times when they had crops or other items to sell, rather than a consistent monthly income (see Sub-section 4.6.1.2).

4.4.3 Perspectives related to how status affects beneficiaries

Status here is defined as how beneficiaries felt other community members judged them. The findings showed that some of the ALDEP packages, like the fencing package, resulted in a greater 'status' in the community, predominantly expressed by the female beneficiaries.

One female beneficiary said that although her income had not increased with ALDEP, she could now feed her family (mother and children) and that she *"now had status"*. Through the fencing package she was perceived as being a good farmer and this increased her status amongst others in the community which made her *"feel important"*. One of the beneficiaries said that her farm was a *"benchmark farm"* and that the extension officer used to bring people to her farm to see a good example of an ALDEP farmer. This made her feel motivated to be a good farmer, however, since her donkeys were stolen she has been unable to maintain her level of farming and *"now they are no longer benchmarking my farm"*. As a result of her losing her donkey package, her status within the community diminished as she could not be as active a farmer without her donkeys to help her plough her field.

On the contrary, one of the male beneficiaries said that although beneficiaries were seen as better farmers in the community because there was a fence around their crops, it was not necessarily the truth or how he *"feels about himself"*. Therefore we can see that, although status is a motivator to continue being a good farmer as members of the community are noticing your farm improve, it does not necessarily affect the way all beneficiaries perceive themselves as they may have other factors affecting their perceptions. The conflicting statements by the male and female beneficiary reflect the opposing views on self-perception and require further research in order to determine if community perceptions of beneficiaries has any motivating influence on crop production.

The findings show that community perceptions about the beneficiaries' ability to produce crops do impact on them, however that this is not the only motivating factor that influences the beneficiaries.

4.4.4 Summary of psycho-social factors influencing the beneficiaries

The findings revealed that psycho-social factors such as gender differentiation, poverty and status all have different influences on beneficiaries.

Gender needs and differentiation were referred to by the beneficiaries in terms of physical strength and inputs required for farming. Neither male nor female beneficiaries felt that their needs differed and physical capabilities were overcome by reciprocal labour bartering.

Being referred to as 'poor' was not accepted by the beneficiaries however some did refer to being poor. This apparent contradiction was due to the type of poverty being undefined during the research and thus the beneficiaries having different perceptions of what it meant to be poor.

Perceived status as a result of factors, such as being able to fence a farm in particular, played a role in motivating some farmers but the finding was not conclusive for all beneficiaries.

4.5 Environmental factors influencing beneficiaries' ability to produce crops

Botswana is a semi-arid country with varying degrees of rainfall, soil conditions and infrastructure. Drought is cyclical and has had a significant impact on the farmers in the country (Jefferis and Kelly, 1999; Seleka, 2004).

The concept of the environment here is referred to in terms of the physical and natural situation in which the beneficiaries live. It was evident in the findings of this research that the physical environment and the natural environment posed a hindrance to farming successfully.

4.5.1 The physical environment

The beneficiaries referred to the physical environment in terms of dirt roads and access to water. The findings showed that the physical environment was problematic and affected the beneficiaries' ability to live at their farms and to grow and sell their crops.

Unsuitable dirt roads resulted in an increased danger of getting to farms as expressed by one beneficiary:

> *[There are] "accidents going to lands because roads are poor" [so government needs to] "maintain [the roads], make the roads wider and clear to see collisions between cars and donkey carts"* ***(Respondent F9).***

Beneficiaries' lack of resources left them with little choice but to use carts to transport goods to and from their farms. Being unable to see any dangers ahead on the road may result in not only the loss of their only means of transport and draught power, but also their lives. In

spite of plans to fix the roads in the Kgatleng District Development Plan 6 (Ministry of Local Government, 2002) problems with equipment breakdowns and a lack of funds were cited as reasons for their continued state of disrepair. However, whether this related to farm roads was not specified.

In terms of access to water, beneficiaries revealed that a lack of boreholes was an infrastructural problem faced when farming. Despite a solution being offered to beneficiaries, in the form of water tanks to store water on their farms, this package was taken by only one of the beneficiaries interviewed. The Kgatleng District Development Plan 6 (Ministry of Local Government, 2002) reported that a lack of policy on irrigation and the high costs of water were hindrances to crop farming in the district. This high cost of purchasing water to fill the tanks may have been a deterrent to beneficiaries who may have been looking for a more cost-effective solution to their water accessibility problems. No mention was made in the Kgatleng District Development Plan 6 (Ministry of Local Government, 2002) of any future plan to install more boreholes and so no solution is foreseen for the beneficiaries' immediate problems of water accessibility.

The need for improved roads and accessibility to water was seen as key to the beneficiaries not only transporting their crops from the farms but also being able to water their crops when rain water was insufficient. Solutions to these infrastructural problems would require further investigation in future research.

4.5.2 The natural environment

During the semi-structured interviews and focus group discussions with beneficiaries, the natural environment was shown to have had an impact on their ability to grow crops. These challenges included: poor rain; unsuitable, eroded, or poor soils; and various pests eating crops and fencing poles.

In terms of rain, fifteen of the beneficiaries mentioned the lack of water or rain as a challenge in increasing their crop yields. Although beneficiaries expressed that in years when there were good rains they had excess crops and could sell them, in other years when there was drought or low rain-fall and no access to alternative sources of water they merely farmed enough for their household. That is, seeds were only being planted if the rains were good thus not giving these resource-poor farmers a consistent production of crops to enable them to escape the trap of poverty, as was the objective of ALDEP.

Nine of the beneficiaries revealed that unsuitable, eroded, or poor soil had impacted on their ability to increase crop production which was also the findings of Arntzen et al., (2005). . For example: soil that drained water too quickly (sandy soil); rain water not draining into the soil; soil that was unsuitable for the crops being grown; and extensive soil erosion on farms. Fertilisers were one solution to the poor soil problem but were only introduced as a package during ALDEP III. Through the extension officers' visits, some beneficiaries explained how they had learnt to manage soil problems, however since there were insufficient extension officers for the number of farmers requiring assistance, many may have not been assisted with their soil management. Furthermore, these problems with their soil may have been another reason for some beneficiaries not cultivating their entire field as parts may have been eroded or had poor drainage, thus not making it a viable area for crop production without expensive inputs and soil management.

As expressed by eleven of the beneficiaries, pests such as jackals, cattle, birds, rabbits and goats were able to eat the their crops if unprotected. Prior to ALDEP they were unable to afford to fence their fields hence one of the motivations to join ALDEP was to obtain the subsidised fencing package. Eighteen (95%) of the beneficiaries applied for this package when first joining ALDEP (Sub-section 4.7.2). Arntzen et al., (2005) found that over one quarter of the packages received during 1980 to 2000 was fencing due to it preventing livestock from destroying crops. The findings also revealed however that the fencing package was not suitable in deterring all types of pests. The Aquila Birds and Diamond Back Moth could not be deterred by fencing and thus pesticides would be required to eliminate them, which were an input beneficiaries could not afford (Ministry of Finance and Development Planning, 2009). Another example given was that rabbits and jackals could get under fencing that had prevented goats and cattle from entering their fields. Hence beneficiaries suggested that different types of fencing be made available according to the pest problem being experienced.

Due to pests, four of the beneficiaries applied for the fencing package twice, due to termites eating their poles and damage to existing fencing. A possible reason for the application for additional fencing was due to the lack of an alternative package that could combat the problem of termite pests, for example pesticides. Solutions to this problem require investigation for future application in agricultural development programmes.

Various authors (Southgate and Graham, 2006; Lee, 2004; Jefferis and Kelly, 1999; Department of Surveys and Mapping, 2001; Shafiullah, 2003) confirm that environmental

factors can inhibit beneficiaries' willingness to participate in agricultural development programmes. All of the natural environmental constraints were also acknowledged by the Ministry of Finance and Development Planning (2009:186) as inhibitors to the performance of arable rain-fed farmers. Therefore, environmental factors affecting the beneficiaries' ability to produce crops require addressing in future programmes targeting resource-poor farmers.

4.5.3 Summary of the influence of the environment

The study revealed that one of the main reasons for poor crop production prior to ALDEP was pests and hence a motivator to join ALDEP was to get the subsidised fencing package. However infrastructural development, such as accessibility to water, which would allow the beneficiaries to grow excess crops and roads to transport crops, were perceived as not being developed.

4.6 Availability of resources

In this research, three main categories emerged related to the resources theme: human resources at the District Agriculture Offices, beneficiaries' financial resources and the ALDEP packages as a resource. Having sufficient resources is important not only in order to manage projects, but also to be an active participant therein as a beneficiary (Sub-section 2.2).

4.6.1 Beneficiaries' financial resources

In order to assess the beneficiaries' financial resources, this research examined sources of income prior to joining ALDEP and income levels after receiving the ALDEP packages. The research also examined if there was any correlation between the number of packages taken and an increased level of income. Finally, since poverty is not only seen from a financial perspective, the researcher examined if the quality of beneficiaries' lives had improved since joining ALDEP.

4.6.1.1 Source of income prior to joining ALDEP

The primary source of income prior to joining ALDEP was probed in order to examine whether this could have been a factor that influenced participation, as government considered the beneficiaries to be resource-poor prior to ALDEP.

Table 4.5 describes how the beneficiaries supported themselves prior to ALDEP.

Table 4.5: Source of income prior to joining ALDEP

Source of Income	Female	Male
Own business	2	-
Selling livestock	1	-
Selling crops	1	1
Selling livestock and crops	1	2
Piece jobs	2	1
Working in SA mines	-	3
Working in SA mines and farming in Botswana (cattle/crops)	-	3
Spouse	2	

Table 4.5 reveals that fifteen of the beneficiaries had alternative sources of income (other than arable agriculture) prior to joining ALDEP, of which two had spouses who supported them in their farming activities. Beneficiaries said that this source of income was erratic and dependant on factors such as excess crops due to good rain; the ownership and quantity of livestock, potential employment, or the demand for their business's products.

Six of the male beneficiaries had been working in the South African mines prior to joining ALDEP earning Rands (R3 and R7). Three of them were also involved in crop and/or cattle farming whilst doing so. They therefore had a regular income divided into a living allowance and a savings allowance which they could send home, allowing them to invest concurrently in farming. The investments male beneficiaries had made in cattle and expanding the infrastructure of their farms during their employment in the South African mines left them at a distinct advantage over the other beneficiaries as they had a stable monthly source of income. This stable income was not an assurance for others who supported themselves with piece jobs or selling crops. However, when the miner beneficiaries returned to Botswana they no longer had a regular alternative source of income that allowed them to support their families. This made the application for ALDEP packages at subsidised rates attractive.

The findings show that alternative sources of income allowed beneficiaries to join ALDEP. They used this income to pay the subsidy required for their ALDEP packages. Income was

made through selling things (such as goats, cattle and firewood), saving money from piece jobs or through their own small businesses. This finding correlates with the literature (Bryceson, 2002; and Morapedi, 2006) that states that, due to the high risks involved in arable agriculture (such as cyclical drought), farmers look to alternative sources of income as a safety net or to assist in subsidising shortfalls in household consumption (Sub-section 2.2).

4.6.1.2 Level of income after ALDEP

It was one of the objectives of ALDEP to reduce poverty through increased crop production, and by selling excess crops resource-poor farmers would increase their levels of income. For this reason it was important to explore if there had been any increase in their income.

Table 4.6 reflects the size of the beneficiaries' farm in comparison to how much of the farm was cultivated and the income they estimated they earned per month. The following table will be interpreted in this Sub-section.

Table 4.6: Beneficiary farm sizes vs. actual cultivated area vs. income

Female beneficiaries				**Male beneficiaries**			
Code	**Farm**		**Approx. income p.m.**	**Code**	**Farm**		**Approx. income p.m.**
	Size	**Used**			**Size**	**Used**	
F1	10Ha	2Ha	P1000	M1	"443m x 170m"	¼	South African miners allowance (R3) and savings (R7)
Female beneficiaries				**Male beneficiaries**			
Code	**Farm**		**Approx. income p.m.**	**Code**	**Farm**		**Approx. income p.m.**
	Size	**Used**			**Size**	**Used**	
F3	4Ha/ 2Ha	2Ha/ 2Ha	>P450	M2	12Ha	6Ha	South African miners

							allowance (R3) and savings (R7) and >P1000 from Botswana household income
F4	7Ha	3Ha	>P200	M3	10Ha	10Ha	P2000
F5	16.5Ha	1.5Ha	0	M4	15Ha	10Ha	P150
F6	15Ha	9Ha	0	M5	13Ha	5Ha	>P500
F7	15Ha	6Ha	>P60	M7	Don't know	Don't know	South African miners allowance (R3) and savings (R7)
F8	5Ha/ 8Ha	5Ha	>P200	M8	8Ha	8Ha	South African miners allowance (R3) and savings (R7) and >P300 Botswana household income

Female beneficiaries				Male beneficiaries			
Code	**Farm**		**Approx. income p.m.**	**Code**	**Farm**		**Approx. income p.m.**
	Size	**Used**			**Size**	**Used**	
F9	"400 m x 400m "	6Ha	>P60	M9	11Ha	4Ha	South African miners allowance (R3) and savings (R7)
F10	8Ha	5Ha	>P400	M10	19Ha	15Ha	>P300
				M11	16Ha	2Ha	South African miners allowance (R3) and savings (R7) and >P60 Botswana household income

>refers to 'sometimes', or during certain planting, harvesting or weeding times of the year

Table 4.6 reveals that the income levels of the beneficiaries per month or per annum after they joined ALDEP could not conclusively be established as beneficiaries referred to their income in relation to *"when"* they had something to sell. Also they did not differentiate in all cases whether the income came purely from arable agriculture or from alternative sources. Beneficiaries' income both prior to and after joining ALDEP therefore continued to be erratic. This is supported by IFAD (1992) (ALDEP I donor) who stated that when they assessed the cereals produced at the ALDEP farmer level, in terms of increasing food self-sufficiency it was "precarious" (1992:4) and therefore other sources of income were being sought after by these farmers.

One past agricultural development programme, African Agricultural Scheme D680, (Sub-section 2.3.1.1) revealed that the size of the farm had a greater impact on the ability to increase crop production. However this programme (D680) had far more inputs than ALDEP, such as on-going training and fertilisers. As reflected in Table 4.6, many (n=15) of the

beneficiaries did not cultivate their entire farm and no conclusive correlation could be found between the size of the area under cultivation and monthly income.

Cyclical drought and low rainfall are realities for many farmers in Botswana (Sub-section 2.3). Therefore, planting significant portions of their farms was not feasible unless rains were good that season. This resulted in minimal crop production for most years, and thus defeated the objectives of ALDEP to increase crop production.

The findings reveal other reasons why the beneficiaries did not maximise their entire farm areas, such as:

- a shortage of labour (Sub-section 4.6.2);
- bush clearing being required – with little labour assistance or mechanisation, clearing bush to make farming land available was difficult (Sub-section 4.3.2 and 4.7.4); and
- having enough to feed their families on the land they had cultivated – this related to beneficiaries who were farming merely to sustain their family and so there was no reason to grow excess crops.

These findings are supported by the Ministry of Finance and Development Planning (2009) which stated that the small sizes of farms and areas under cultivation, as well as a lack of water, were reasons for poor crop production during ALDEP. Furthermore, Whiteside (1997) found that only 7% of ALDEP beneficiaries were able to exclusively support themselves on arable agriculture, whilst those with 20 – 40 cattle fared better. This is because cattle sales provided an alternative source of income, enabling the purchase of household shortfall that arable farming couldn't provide.

Harvey and Lewis (1990 cited in Danevad, 1993) report that after fourteen years of economic growth in Botswana, little had changed in terms of rural poverty or income growth in poor households. Since ALDEP was established during the period referred to by Harvey and Lewis (1990), one can deduce that little change occurred in the beneficiaries' income as a result of ALDEP. This concurs with the later study by CAR (2002, cited in Seleka, 2005). CSO (2006) suggests that resource-poor farmers in Botswana could not achieve food security from their crops and this might suggest why these beneficiaries reflected that in spite of ALDEP, they continued to pursue alternative sources of income to help support themselves.

Therefore, the findings conclude that the ploughing of total field area was not seen as a viable option for survival by resource-poor farmers due to a variety of factors, primarily a lack of water/rain. As a result very few had a sustainable income from excess crops as a result of joining ALDEP.

4.6.1.3 Marketing access

The term 'access to markets' is used in this research to describe the farmers' ability to utilise existing market structures to sell their arable goods. It also relates to access to communication on farming trends and pricing and being able to contribute to the process.

The findings of this research thus far reveal that poor roads, lack of financial resources, lack of availability of (free) labour, and the extension officers being overloaded, all posed problems to beneficiaries ability to access markets, such as the Botswana Agricultural Marketing Board (BAMB).This is significant as one of the objectives of ALDEP was to reduce the food grain deficit through decreasing imports and increasing local crop production. Seleka (2004) reported that Botswana continued to import over 70% of its requirements, thus reflecting that ALDEP did not achieve its objective. It was intended that when beneficiaries of ALDEP had excess crops they would sell them to BAMB.

BAMB's prices were set by the South African market prices and thus subsistence farmers were competing with commercial farmers when they sold their goods. As a result, considering economies of scale, the prices they received for their crops in comparison to the inputs, resulted in the beneficiaries selling in their local communities rather than to BAMB.

The findings show that various reasons were given by the beneficiaries for not supporting BAMB when they had excess crops. These included: the prices they were offered for their crops not justifying the cost of the inputs; how costly it was to get the crops to BAMB; and poor road infrastructure to transport the crops.

The literature supports the data in that sorghum, an ideal crop for rain-fed farmers, was getting very low prices through BAMB (Whiteside, 1997). Government acknowledged that BAMB's "performance has not been satisfactory" (Ministry of Finance and Development Planning, 2006) and infrastructural and pricing problems mentioned by the beneficiaries had an influence on BAMB's lack of success. The findings therefore revealed that if beneficiaries had excess crops they would rather sell them locally in their village, as they could then get a good price for their crops and it cost them less to get their crops there than to BAMB.

In relation to financial resources, the beneficiaries ascertained that the cost benefit ratio of supplying BAMB compared to local villages, was outweighed by the distance to BAMB, the high costs involved and a lower income, which has already establish as being erratic. The risk was therefore lower in selling to local villages.

4.6.1.4 Perspectives on ability to provide for their families

Since a monthly income could not be conclusively established during the research, a more subjective approach was taken to the concept of ALDEP improving the beneficiaries' ability to provide for their families, as opposed to taking an income-centric approach to the benefits of ALDEP on the resource-poor. This was due to the beneficiaries expressing that they were not poor because they did not need government for everything (see in Sub-section 4.4.2).

In order to determine if ALDEP achieved its objective of reducing poverty by allowing beneficiaries to improve their livelihoods through increase crop production, the question was posed as follows:

> *"Since getting the package(s) have you been able to better provide for yourself and your family?"* ***(Researcher)***

Eighteen of the beneficiaries replied *'yes'* and answers explaining why ranged from the ability to keep pests away, to not having to borrow money anymore, to higher levels of food security as stated below:

> *"Yes, I don't produce more, but I can rely on what I do grow to feed ourselves"* ***(Respondent F7)***

The above finding reveals that, although there was no evidence of increased income, beneficiaries felt that they were better able to provide for their families as a result of taking ALDEP packages. Based on the above findings, the reason for this response could have been due to being able to protect crops better (fencing) or even to plant quicker (planter or draught power). However, this may not be as a result of planting more crops than normal, but rather that more crops were available as they had not been destroyed by pests. This can be concluded to be a result of the popularity of the fencing package, the continued erratic rain making planting of large areas of land unfeasible, as well as the fact that most beneficiaries never cultivated their entire farm.

4.6.2 Human resources available to the beneficiaries

The source of labour, as a human resource, is significant in that it could have had an impact on the amount of land farmed.

Table 4.7 reveals that the main source of labour was the ALDEP beneficiaries themselves and will be analysed further in this Sub-section.

Table 4.7: Sources of Labour

Code	Age	Source of Labour			
		Beneficiary	Spouse/partner	Children/family	Hired
F1	43	1		1	
F3	60	1		4	
F4	45	1	1		>3
F5	53	1	>1		
F6	52	1	>1	>4	
F7	58	1		2	>3
F8	52	1	1	>2	>2
F9	73	1	1	2	>2
F10	65	1	1		
M1	58	1	1	>2	>2
M2	58	1	1	>2	>2
M3	87	1			
M4	84	1	1	>3	
M5	78	1	1		
M7	58	1	1		
M8	57	1	1		
M9	67	1			>4
M10	73	1	>1	1	>2
M11	73	1	1	4	

>refers to sometimes, during school holidays or weekends, or during certain planting, harvesting or weeding times of the year.

Table 4.7 revealed that eleven of those beneficiaries made use of their spouse on a permanent basis in farming. Six farmers had children assisting permanently with farming, whilst hiring of labour was generally on a seasonal basis. There was no correlation found

between age and the hiring of labour, which was examined as possibly being significant due to the high number of elderly beneficiaries reporting health problems (Sub-section 4.3.2). The table therefore reflects again that the use of household labour is important in the beneficiaries' ability to grow crops. However, with more children being educated and moving to the urban areas, the findings do not reflect a high level of labour being hired. This may be one reason for low crop production.

With only six of the beneficiaries' children assisting then with farm labour due to the fact that they had left for the cities and *'white collar'* jobs, there was very little assistance or free labour available to the beneficiaries. This is significant in terms of looking at the future of arable farming. Also due to their age, they did not see hope for the youth as farmers with comments like:

"We are at the end of the journey of crop production" **(Male focus group)**,

"When I die the one that is left may become interested in farming" **(Male focus group)**,

"[The] new generation [is] not interested in crop farming" ***(Male focus group)***.

This supports one of the reasons for poor agricultural growth in Botswana cited by Jefferis and Kelly (1999) and Whiteside (1997): the youth are not interested in arable farming.

Therefore, with less household labour available and an aging population with diminished capacity to grow more crops, there is less income available to hire labour. The data reveals that it is an aging population that is left in the rural areas farming to support themselves. They have very little faith in the youth as farmers because they prefer urban employment, as opposed to the hard physical and high risk labour they have seen their parents enduring.

This evidence suggests that as a result of the youth's lack of interest in arable farming, their age and their erratic income, they are unable to farm as actively as they did before when they had household assistance. This reveals that availability of human resources at a household level would have impacted on the ability to produce crops.

4.6.3 Human resources at the District Agricultural Office level

Human resources in this study also pertain to the availability of District Agricultural Staff, such as extension officers. The reason for this being examined was due to the District

Agricultural Staff expressing during the semi-structured interviews that they were responsible for too many farmers (as reflected in Table 4.8) and that they could therefore not be as effective in helping them. Possible reasons for how this could have impacted on the beneficiaries' ability to produce crops was therefore explored.

Table 4.8: Number of farmers District Agricultural Staff were responsible for

Code	No. of farmers responsible for	No. of farmers you believe you need to be responsible for in order to be effective?
A1	All	N/A to himself but believed 200 farmers per person
A2	500	200
A3	800	200

Beneficiaries experienced support from extension officers in varying degrees. Some said the extension officers had only visited them once, whilst others saw them up to four times a week. The findings revealed a possible reason for this being that extension officers in both villages were not only supporting the beneficiaries of ALDEP but also other farmers in the area too. These included the beneficiaries of ARAP and DRP (Sub-section 2.3.1.5). These programmes ran concurrently to ALDEP at the expense of training and supporting ALDEP beneficiaries (ADB, 1996). The insufficient number of extension officers to farmers may be the reason for a low level of technology transfer, which Seleka (2005) expresses as a reason for low crop production in Botswana.

The beneficiaries commented that the extension officers' lack of feedback and assistance to them was "painful", made them "unhappy" and "lose hope", and one said "I console myself that maybe it's not within their power and they will refer me to the right person". Another beneficiary was of the opinion that the lack of attention was due to the extension officers being choosy about whom they would assist. He said that he felt the extension officers preferred to visit the "rich" farmers rather than the "poor" farmers.

A report by the Botswana Auditor General's Office (Moremi and Entaile, 2001) revealed the consequence of this lack of sufficient District Agricultural Staff during ALDEP II was that administrative systems were insufficient, leading to the majority of the objectives not being met. These included a lack of sufficient transfer of technical knowledge to beneficiaries, poor

record-keeping and assessment of those receiving packages, and poor programme management (Moremi et al., 2001).

What is revealed however, in Sub-sections 4.8.1 and 4.8.3, was that decisions were made centrally and most of the answers to beneficiaries' problems had to come from the Ministry of Agriculture rather than be given by the extension officers, so there was little they could do to assist the beneficiaries if they never got a response from the Ministry. It is therefore understandable how the perception that the beneficiaries were not being assisted arose, when in fact there was a lack of sufficient extension officers to cope with the demands of all farmers, and the extension officers were not in a position to make decisions.

The findings of this study as well as the findings of the Auditor General report both confirm the literature on what the consequences are when there is an inadequate number of staff to manage development programmes. Theron (2008:49) advises that scarce human resources in programme management result in a "local incapacity to administer, "infrastructural and logistical problems", and insufficient resources to support the policy. The failure during planning to take into account the need for more human resources may be as a result of either poor project management or political agendas that undermined the achievement of the objectives (Verschoor et al., 2005; Theron, 2008; Desai and Potter, 2008; Siegle, 1990; Wallis, 1976 and Madondo, 1985 as cited in Wassermann, 2001). Chambers (2005: 30) stated that policies are often in favour of less intensive administration than those that would result in more staff being employed and required on an on-going basis. This he felt, could "inhibit, rather than promote development".

The findings reveal that not only was understaffing a problem in assisting all ALDEP beneficiaries adequately, but also that due to decision making being centralised, initiative by local level staff could not be taken to solve problems experienced by the beneficiaries. This may have played a role in ALDEP beneficiaries' inability to increase their crop production.

4.6.4 Summary of the effects of the availability of resources

This section revealed that no conclusive answer can be given as to whether there was an increase in income as a result of ALDEP. However, beneficiaries felt that overall they are better providers to their families since getting the package. The lack of assistance available at a household level, the cost of hiring labour, the aging of farmers and the poor rains, all substantiate a greater need for mechanisation in the rural communities. In order to improve

the transfer of knowledge and support to beneficiaries, the findings showed that sufficient local level staff needed to be planned for and provided.

Since the core focus of this study is on the beneficiaries' perspectives and experiences of ALDEP, it is important that the research focused on the packages and how this may have influenced their ability to produce crops. The following section will reveal the findings thereof.

4.7 The impact of ALDEP packages on the beneficiaries' ability to produce crops

It was the objective of the Ministry of Agriculture that through utilisation of packages, beneficiaries would be able to grow more crops. As a result the Ministry of Agriculture invested in various programmes and a pilot study to ascertain what would be the most suitable packages for resource-poor farmers (Sub-section 2.3.1). Therefore, it is important to understand whether the ALDEP packages had an impact on the beneficiaries' ability to grow more crops. The following Sub-sections break down the process of package acquisition including application, number of packages applied for, the quality of packages, the appropriateness of technology provided, and the perceived abuse of packages.

4.7.1 The beneficiaries' experience of the process of supplying ALDEP packages

Guidelines were available on the requirements that needed to be met in order to be eligible to receive ALDEP packages (Ministry of Agriculture, 2006). However, once farmers had been approved, no guidelines can be found in the literature on how all the packages should be supplied to the beneficiaries (Ministry of Agriculture, 2006).

Findings of this study showed that the process of becoming a supplier of ALDEP was through a tender process. A supplier revealed they were required to supply a sample of the product they intended to supply along with a tender application. Suppliers were then informed if they had been awarded the tender. It could therefore be assumed that being awarded the tender meant that you were an approved supplier of ALDEP and that the product being supplied was of an acceptable quality. Through the analysis of the data however this was not the case and supported by the following summary of the findings.

The research revealed during the semi-structured interviews that a number of methods existing for obtaining packages. Either beneficiaries could "choose their own supplier", or "were told which supplier to use", or the "extension officer arranged for the packages". This lack of control could have resulted in the dissatisfaction with the quality (Sub-section 4.7.3)

of some of the packages, or the abuse of packages (Sub-section 4.7.5). This shows that process of getting the packages was not standardised and controlled.

The ALDEP supplier interviewed advised that his business agreed in the tender document to deliver to the beneficiaries for free within a 100km radius of his business. However, the findings showed that this was not a standardised practice. Some packages were delivered to beneficiaries whilst others had to be collected. By targeting 'resource-poor' farmers, it was an important participatory factor to have packages delivered. Therefore, beneficiaries who had to find additional funding to get their package delivered may have had to delay their participation or this may have deterred other potential beneficiaries from getting certain packages because of the cost involved in transporting them.

Furthermore, the period of time beneficiaries had to wait to receive their packages was also an important factor that could have influenced their participation. Some beneficiaries advised that the waiting period was short whilst others waited up to nine months. The impact of delays on some beneficiaries could have resulted in them missing the ploughing season. As a result they would not be able to grow crops that season and would have to wait another year to use their packages. Since rain-fed farmers are highly reliant on ploughing in time for the rainy season, the result of a delay in receiving their package could mean a more labour intensive method for ploughing that year. This could result in the loss of the potential additional income resulting from being able to grow excess crops, especially if there were good rains that season.

The findings revealed that the application process for ALDEP beneficiaries varied in terms of how long it took to get approval. Reasons were not established for this but it was also noted in the Moremi and Entaile (2001) report and may be linked to insufficient staff being available to administer the applications (Sub-section 4.6.3). The findings also show that the suppliers of packages went through a tender process which would have ensured that beneficiaries would have received quality-controlled packages delivered to their farms. However, the findings revealed that there was no standardised policy on the use of those suppliers. This resulted in a lack of control over the quality of the packages received and that in some cases beneficiaries had to pay to transport their packages to their farms. Since it has been established during these findings that financial resources were scarce and that packages were being abandoned (Sub-section 4.7.5), the failure to control package suppliers may be a contributing factor to the poor crop production by beneficiaries.

4.7.2 Impact of the quantity of packages received

Since Chilume (1992) noted that those that took more than one ALDEP package tended to yield more crops, the aim of this section of the research was to determine if this was also the case with the beneficiaries.

Various guidelines were given on the packages taken by ALDEP beneficiaries (Ministry of Agriculture, 2006). These packages included (Chilume, 1992):

1. Donkeys or cattle
2. Single and double row furrow ploughs
3. Cultivators
4. Single and two row planters
5. Fencing materials
6. Water tanks
7. Two and four wheeled scotch carts

As established in Table 4.9, despite unreliable or erratic sources of income (Sub-sections 4.6.1.1 and 4.6.1.2), fourteen (74%) of the beneficiaries took more than one package. It has also been established that beneficiaries made use of alternative sources of income to enable them to purchase ALDEP packages.

Table 4.9: Number and nature of packages applied for

Code	Age	Type of package applied for		
		ALDEP I	**ALDEP II**	**ALDEP III**
F1	43	Cattle	Fencing	
F3	60	Fencing (ALDEP I)		Fencing (ALDEP III)
F4	45	Fencing		
F5	53	Fencing		
F6	52	Fencing	Scotch cart	
F7	58		Cultivator and fencing (ALDEP II)	Donkeys, scotch cart, and two row furrow (ALDEP III)
F8	52	Fencing (ALDEP I)	Harrows, planters, and fencing (ALDEP II)	

Code	Age	Type of package applied for		
F9	73	Fencing (ALDEP I)	Harrows, planters, cultivators, scotch cart (ALDEP II)	
F10	65	Fencing	Plough	
M1	58	Fencing		
M2	58	Fencing		
M3	87	Fencing (ALDEP I)	Water tank(ALDEP II)	Fertiliser (ALDEP III) Scotch cart (lack of availability led to reimbursement)
M4	84	Harrows, planters, cultivators, fencing, scotch cart (ALDEP I-III)		
M5	78	Harrows and planters (ALDEP I)	Fencing (ALDEP II)	Cultivator (ALDEP III)
M7	58	2 row farrow		
M8	57		Fencing (ALDEP II)	Scotch cart (ALDEP III)
Code	**Age**	**Type of package applied for**		
M9	67	Fencing, and 2 row farrow (ALDEP I)	Harrows and planters (ALDEP II)	Cultivators and scotch cart (ALDEP III)
M10	73	Fencing and plough (ALDEP I)	Planters, cultivators, fencing and plough (ALDEP II)	
M11	73	Fencing (ALDEP I)	Fencing (ALDEP II)	

The research revealed that fencing was taken by eighteen beneficiaries and thus can clearly be seen as a priority for beneficiaries of ALDEP. This was due to the impact that pests had on their crop production (Sub-section 4.5.2). This corresponds with the quarterly reports (1999) for the Kgatleng region that fencing was taken by a higher number of farmers than any other package. Most of the fencing packages were also taken during ALDEP I when there was an extensive drought and poor crop production, therefore it was important for farmers to guard what crops they could grow.

Seven beneficiaries applied for scotch carts, however due to a lack of availability one was reimbursed (M3). The research reflected that beneficiaries made use of the scotch carts to earn additional income *"to buy food"* (F9). Seven of the beneficiaries applied for implements that would assist them in ploughing, planting and cultivating their crops. It was established that most of these packages were taken during ALDEP II. The reason for this could be that the drought that had plagued ALDEP I had come to an end and with better rains and there was a renewed ability to farm, thus beneficiaries were able to make use of the technology offered. Verschoor et al., (2005) would therefore describe the beneficiaries as opportunist subsistence farmers, as they made use of an opportunity to gain the subsidised packages in order to improve their level of farming.

However, since access to water or rain determined yearly crop production, pest problems persisted, and beneficiaries did not keep records, it could not be conclusively established if more crops were grown by the beneficiaries that took more than one package. Perhaps further investigation is required to establish which packages were found to increase crop production in (Chilume, 1992).

4.7.3 Appropriateness of technology provided

Appropriateness of technologies refers to the adoption or development of agricultural technologies pertinent to each country's unique environmental and agricultural systems and health issues (Graham et al., 2007, IFAD (1992), one of the donor agencies responsible for funding ALDEP I, advised that there was a need for technology to address the multitude of "location-specific-variations" of needs of the rural farmers.

In Sub-section 4.7.2 an analysis of the data revealed various problems with the ALDEP packages namely:

- implements not being sourced locally, therefore no parts available to repair;
- no maintenance personnel available to repair packages locally, as planned for in the pilot project;
- some packages were not sustainable due to environmental hazards such as pests eating fencing poles, resulting in repeated applications for the same package;
- implements not being suitable to female headed households; and
- technology being more labour intensive.

The aim of the Ministry of Agriculture experimenting with technology prior to the inception of ALDEP was to speed up ploughing and reduce the need for draught power and labour power (Purcell, 1982) during EFSAIP and IFPP (Sub-section 2.3.1.2). However, in Sub-section 4.6.2, 4.3.2 and 4.7.3 we see that age, physical strength, a lack of additional farm labour and technology not sourced locally made the use of the technology provided by ALDEP inappropriate for the beneficiaries' unique circumstances.

In an example of rural farmers in India given by Chambers et al., (1989), the farmers reverted back to traditional farming methods after the completion of the agricultural development project, with reasons being either that there was a weakness in the technology or that farmers merely went along with a project because of the subsidised inputs. In the case of ALDEP, row planting was introduced as a means of improving crop production. However, like in the example of India, Whiteside (1997) found that this method impacted on the beneficiaries' labour requirements and hence many continued the 'broadcasting of seed' method (a traditional farming method). This could be another reason for low crop production, which is supported by IFAD (1992:4) when describing ALDEP beneficiaries and the difficulties faced by extension officers as: "not dealing with progressive farmers keen to adopt new technologies and risk changes in their farming practices".

However, the findings thus far do not support that the ALDEP beneficiaries are not "progressive" but rather that they have had various problems hindering them (Sub-section 4.6.2, 4.3.2 and 4.7.4) other than technology, which may have resulted in them reverting back to using traditional methods.

Despite external factors, such as drought, being a main reason for the lack of success of ALDEP 1, the Ministry of Agriculture based its justification for continuing onto ALDEP 11 on the fact that "technology exists that could increase yield by 300-400%" (Chilume, 1992). However, no evidence can be found of technology that produced results thus far in the research. It is therefore important to look at alternative technological solutions brought up during the research. This includes mechanisation and biotechnology.

In a country with a small population, a short ploughing season, low rainfall and cyclical drought, speed at which one can prepare or clear a field is an important factor in beneficiary participation, as found during the research. Therefore beneficiaries said that the ALDEP methods of draught power was out-dated and too slow and they wanted "tractors because they are better and quicker". Various authors (Southgate and Graham, 2006; Chambers et

al., 1989; Shafiullah, 2003) found that the level of participation in a programme will depend on the appropriateness of the technology provided. This included biotechnology (which allows for crops to be grown quicker), mechanisation, fertilisers, and so forth. Therefore, if based on their experiences of programmes, drought, effects of aging and the lack of labour to farm have deemed that mechanisation would improve their farming, then this needs to be taken into consideration before participation in future programmes is deemed viable by the beneficiaries.

One of the District Agricultural Staff supported mechanisation for farmers in Kgatleng District. However, he felt that it needed to be the District Agricultural Staff that make recommendations on the type of technology. This was because they are aware of what would be best suited for their dynamic farming communities and the capabilities of the farmers. To demonstrate, one of the District Agricultural Staff used the recently started ISPAAD as an example of how technology was acquired. ISPAAD was the programme that replaced ALDEP and had a larger degree of mechanisation in its offering to beneficiaries. However, the research revealed that the government continues to make decisions about what is best for the beneficiaries without consultation. One of the District Agricultural Staff reflected that with the launch of ISPAAD, the Ministry of Agriculture had “tractors [ordered] that are not suitable and planters [which are] too wide to get to [the] farms”. As a result they currently sit unused, at the District Agricultural Offices. What this reveals is that government still has not acknowledged the value of grass roots consultation and this may lead to the needs of farmers not being met yet again as much needed machinery is not being used due to a lack of suitability for their environment.

Due to the success of using drought-resistant seed during the African Agricultural Scheme D680 (Sub-section 2.3.1.1) as an appropriate technology, one District Agricultural Staff member (A3) was asked if the seed given to the beneficiaries (as part of another agricultural programme) was drought-resistant seed (biotechnology). One of the District Agricultural Staff answered that it was not. The reason for this enquiry was also due to the cyclical drought in Botswana and to see if drought resistant seed was being issued to beneficiaries as a means to overcome this obstacle and increase crop production.

The technology offered as an ALDEP package was adopted by the beneficiaries, however when they could not maintain them, they abandoned them and reverted back to traditional means. If the aim of developing the technology was to increase ploughing and reduce labour-intensive means, it would seem from these findings that they did not achieve their

intended goal. The demand for mechanisation by ALDEP beneficiaries contradicts much of the literature related to developing nations, which suggests more labour-intensive methods of farming. However, it is clear that the unique characteristics of Botswana's climate create demands for technology that offers quicker solutions to their problems e.g. tractors. Future research should therefore look more intensely at technology that is uniquely suited to farmers in Botswana.

4.7.4 Sustainability of the packages offered

The sustainability of the packages in the context of this research is understood as the ability of the package to do what it was intended for and that the package is able to be used for a reasonable length of time without having to be replaced or abandoned or repaired.

Since it has already been established that there was little control over who supplied packages to ALDEP beneficiaries, an examination of the standards of the package and therefore their sustainability as packages needed further investigation.

The research revealed that most beneficiaries were happy with the ALDEP packages offered. However, some of the packages had to be abandoned after some time as they were found to be faulty. For example the planters were releasing too much seed, thus using them was wasting seed. The researcher questioned why:

> *"If the planter was faulty why didn't you get it repaired? Was it because you couldn't afford to?" (**Researcher)***
>
> *"(money) wasn't an issue, I had money but parts were from Zimbabwe and South Africa" **(Male focus group)***

It is also understandable that as some of the packages, such as the ploughs and planters (made predominantly made of metal), got old they rusted and could no longer be used and thus were abandoned. One beneficiary also revealed that he had problems with the quality of his scotch cart purchase - "the bearings were damaged because they weren't properly welded" and as a result he could not use this package at all. This is another possible reason for the reported abandonment of packages, despite beneficiaries purchasing the packages in order to make use of them.

Example of packages that were abandoned due to being faulty or old is visually demonstrated in Figure 4.2.

Figure 4.2: Examples of abandoned ALDEP packages

The implements were selected on the basis that they would increase the speed of ploughing and improve the method of planting by ALDEP beneficiaries. They had been tested during the Evaluation of Farming Systems and Agricultural Implements Project (EFSAIP) and the Integrated Farming Pilot Project (IFPP). With this in mind, it must be noted that during the pilot study, Purcell (1982) recommended the training of mechanics to repair and service the packages. It is clear from the study that these mechanics were not provided during ALDEP, whether any were trained as suggested was not established. Therefore, with the lack of parts available and broken or faulty packages, and the policy of not allowing beneficiaries to take the same package more than once, the result was the abandoning of the package.

In contrast with the experiences of the beneficiaries, interviews with the District Agricultural Staff revealed that in their experience failure to use the packages was due to the beneficiaries being *"lazy"*. This concurs with the Ministry of Agriculture's criticisms of the beneficiaries of ALDEP (Regonamanye*, Sunday Standard*, 10 August 2008), who they saw as abusing packages (see Sub-section 1.3).

These findings reveal that many reasons can be attributed to the packages not being used other than beneficiary neglect or abuse.

4.7.5 Package abuse

Sub-section 1.5.1 described beneficiaries of ALDEP as people who qualified to receive ALDEP packages because, although the intended recipients of ALDEP were resource-poor farmers, the research revealed that this was not the case when packages were being administered.

The first evidence of potential package abuse was during the focus group discussions, when one of the beneficiaries referred to other beneficiaries of ALDEP as inactive farmers, that is, people who had farms but did not farm the land actively (Sub-section 2.2). These inactive farmers took ALDEP packages but did not use them. The following comment reveals how beneficiaries perceived the inactive beneficiaries' reasons for taking ALDEP packages:

> *"This is for the government – why bother using it"* ***(Female focus group)***

This comment reveals that when the government had packages or programmes that allowed for people to get items at a subsidised cost, people take the opportunity to get the items even if they are not going to use them for their intended purpose, merely because it comes from government. One needs to remember that qualification for ALDEP did not require proof of being an active farmer but rather proof that you owned farming land, earned less than a stipulated amount (the amount was reviewed and changed over the years) and owned less than 20 cattle (Ministry of Agriculture, 2006). Therefore, if you qualified for ALDEP packages, there was no accountability (Sub-section 4.8.2.2) to use the packages or produce crops. Furthermore, with the workload of the extension officers and the substantial number of packages applied for, it can be assumed that it was difficult to monitor (Sub-section 4.8.2.1) all the beneficiaries.

This perception of farmer abuse of packages was also supported in the interviews with the District Agricultural Staff. One statement reflects the length to which non-qualifying beneficiaries would go to in order to qualify:

> *"Farmers abused the programme, in one case a farmer forged my signature to get approval, in another the farmer negotiated with the supplier so that instead of getting a scotch cart he got something else, and [they also abused the programme] by not using the packages"* ***(Respondent A1).***

Findings from the interviews with district staff revealed that, due to the high value placed on cattle in society, the cattle packages were a major motivating factor for people to participate in ALDEP. However, the findings revealed that the motivations for applying for cattle packages were not for ploughing. Cattle packages were taken in order to profit by selling them at a higher price to the Botswana Meat Commission (BMC). This package was particularly open to abuse due to a failure to brand the cattle until 1999 (Atlhopheng, 1999:16). This meant that for more than fifteen years, abuse could not be proven when beneficiaries reapplied for cattle packages due to their animals being 'lost' or "stolen'.

Furthermore, even after three decades in existence, the Kgatleng District Development Plan (2003-2009) stated: "The influx of applications was a result of a lax definition of a farmer, where every applicant claimed to be a farmer led to depletion of the fonds (sic)" (2002: 18). Guidelines can be found as produced by the Ministry of Agriculture (2006), but the problem as revealed by the research was related to staff not being empowered to enforce them (see Sub-section 4.8.5).

The prevention of abuse was also suggested during the data collection. Solutions suggested by the district staff included:

- targeting the correct type of farmers,
- improving methods to analyse farmer eligibility, and
- empowering staff to reject farmer applications.

The literature supports that targeting the correct type of farmer for the agricultural development programme is also key to successfully achieving the objectives. For instance, rain-fed subsistence farmers were not viable targets for becoming commercial farmers (Pinder and Wood, 2003), as their farms were too small (on average 5Ha) and they failed to adopt the technology that would assist them (Mosupi, Manchwe, Mazebedi, Tsheboeng, Nthoyiwa, Moremedi and Kwape, M., 2005). What the data reveals is that the District Agricultural Staff and the beneficiaries alike have knowledge of what their unique needs and priorities are. As a result, beneficiaries do not have control over their own development and the expertise of the district staff was being undermined.

Since subsistence farmers live life from a short term perspective (Swanepoel and de Beer, 2006) as a result of the risks they have encountered before, they tend to rely more heavily on assistance out of fear (Hill, 2004; Wheeler and Haddad, 2005) and this may lead to dependency on government or donors. This could be the reason that some inactive farmers

applied for packages even if they did not use them, in order to be able to make use of them when they perhaps no longer had other safety nets to fall back on as an alternative source of income.

4.7.6 Summary of ALDEP packages

Overall the findings showed that the beneficiaries were happy with the packages, however, they would have liked to have been offered more locally-sourced packages and more controls to prevent abuse. No conclusive evidence could be found to show that the number of packages, size of field cultivated or the number of ALDEP projects resulted in increased income or crop production.

4.8 Government's decision making approach to ALDEP

Specific categories (Table 4.1) emerged from the study that emphasised the need to examine governments' decision making approach specifically.

Each of the following categories: types of participation as applied by the government; accountability of the beneficiaries to the government; perceptions of political undermining in ALDEP; and beneficiary dependency on government, was examined in terms of the possible impact they had on the beneficiaries' perspectives and experiences of ALDEP's management.

4.8.1 Types of participation as applied by the government

The style of management adopted during a programme often determines the type of participation by beneficiaries. Firstly, a brief review will cover the types of participation available to programme initiators. Secondly, the findings thereon will be presented and the type of participation observed during the research will be determined. Finally, the effects this type of participation had on the beneficiaries will be examined to determine if this had an effect on them.

In order to determine the type of participation involved, the beneficiaries were asked during the interviews if there had been any community consultation before ALDEP started, to which they all replied *"yes, we were told"* about the programme and the packages and what was required to get them. As a result of these answers, during the focus group discussions the beneficiaries were asked if they believed being 'told' and being 'consulted' were perceived as the same thing. All the beneficiaries replied 'no'. One female beneficiary gave an example of how the two concepts differed:

"Being 'told' is when you must take what's in the pot; but 'consulted' is come let's see what we must put in the pot to make the food".

Therefore it can be concluded from this finding that the level of participation expressed by the beneficiaries of ALDEP can be categorised as passive participation (Sub-section 2.4.2). This is because the beneficiaries were merely participating after being told about ALDEP but had no input in the design, implementation or decision making thereof.

Based on the above findings, the effects of this type of participation on the beneficiaries of ALDEP need to be examined to see if this influenced their level of participation.

Passive participation resulted in both the male and female focus groups expressing that they felt dependent on the government. This contrasted with the findings that they did not consider themselves poor because they *"didn't need the government for everything"* (see Sub-section 4.4.2).The reasons beneficiaries gave for being dependent was because they "have nowhere else to go", and therefore they felt *"hopeless",* that they have *"no rights",* and that they are *"unhappy",* that this dependence made them *"feel like children"* and that governments' approach of telling them is what *"we are used to"*. One beneficiary stated their level of dependency as:

"Government says we give you all this cool drink and we all say yes, because we are subsistence farmers we cannot say no".

Dependency was also expressed as a result of the subsidies being offered to the beneficiaries. District Agricultural Staff perceived the beneficiaries and other farmers as getting too many subsidised packages, thus not allowing the farmers to develop themselves. One of the District Agricultural Staff expressed that:

*"It's changed from my parents' generation [1960's] to today…there are too many subsidies…whereas my parents had to produce, whereas now the destitute get food, and the unemployed get employed [*by government]".

Beneficiaries however, felt that they were unable to manage their own development due to the governments' paternalistic approach. Beneficiaries' further comments supported this in the following statements:

"[*Government is] a jack of all trades and a master of none";*

"Government believes they are master of thought but we have thinking capacity".

These comments expressed a desire on the part of the beneficiaries to have their 'needs' addressed but because they are not met due to a historical experience of government not consulting them, they need to just accept what government offers them. This is supported by the literature which states that when beneficiaries input or participation in the decision making is not taken into account it leaves them feeling dependent on government (Fraser et al., 2006; Mongula, 2006; Swanepoel and de Beer, 2006).

Specific findings related to Botswana by Lekoko and van der Merwe (2006:193) on the well-known Setswana phrase of *'atlhama-o-je'* (direct translation meaning '*open your mouth and eat*') reiterates that the approach by the Government of Botswana has created dependency. Lekoko and van der Merwe's (2006) findings showed that community workers doing everything for communities rather than empowering them, had left the poor feeling 'helpless' and 'dependent' (Lekoko and van der Merwe, 2006:194). Their study also found that the community workers would prefer to empower the rural poor through a learning process and address the communities' needs rather than telling them what to do (Lekoko and van der Merwe, 2006). The findings thus far reveal that the District Agricultural Staff felt the same way as they too wanted the beneficiaries to be less reliant on government.

In order to bring together the findings in 4.6.3 in terms of the District Agricultural Staff not being able to service the needs of the beneficiaries, the following reveals other reasons besides a lack of sufficient staff for their inability to address beneficiaries' needs.

District Agricultural Staff felt *"their opinions not listened to"* and therefore they were used as mere 'implementers' to what government thought was best for the beneficiaries. This had an impact on the District Agricultural Staffs' ability to service the beneficiaries properly as they never got feedback from the Ministry of Agriculture about the problems the beneficiaries were addressing with them. As a result the district staff felt they lost *"credibility"* with the beneficiaries, as they had to implement whether the Ministry of Agriculture's decision was *"right or wrong"*.

The findings reveal that the ALDEP was well supported by the beneficiaries as some of the packages were needed and they could afford to purchase them at governments' subsidised rate. However many had little choice but to participate even though ALDEP did not address their core needs, such as access to water and infrastructure.

Based on the findings that the government created beneficiary dependency as a result of a passive participatory approach to the management of ALDEP, other factors influenced by

government's management approach will be examined. This includes issues around accountability and political objectives.

4.8.2 Beneficiaries' accountability to the government

Accountability here is referred to in terms of an expectation of the beneficiaries giving something back in return for getting something from government and being held responsible for the outcome. That is, subsidised packages were given to the beneficiaries in order to increase crop production, and thus decreased the national food grain deficit, an ALDEP objective. In return, in order to achieve this objective the beneficiaries would need to ensure they produce and sell sufficient crops to the Ministry of Agriculture.

When asking beneficiaries if the government had expressed any expectations of them or explained the objectives of ALDEP to them, answers given were related to: looking after packages; producing more crops for themselves; and selling their crops to the community and/or BAMB. However, no answers from beneficiaries included that they had to produce crops as a requirement for getting the subsidised packages. The importance of government creating that expectation was in order to achieve its objective of reducing the amount of grains imported (Sub-section 2.3.1.8). Therefore, without an expectation, and thus accountability, being placed on beneficiaries this objective could not be achieved.

Accountability to produce excess crops was placed on the beneficiaries of the African Agricultural Scheme D680 (Sub-section 2.3.1.1) in return for training and subsidies and the beneficiaries did achieve high crop yields. This is not to say that ALDEP beneficiaries can be compared to the type of farmers of D680, but it would seem from the success of the D680 that one of the factors that led to its success was a degree of accountability and the reduction of subsidies after a set period of governments' investment. That is, D680 beneficiaries were motivated to increase their crop production, as they were required to give back the subsidised packages after a set period of time. Therefore, if they did not produce crops and make a profit, they would not be able to replace the packages they had to return.

One District Agricultural Staff member expressed that ALDEP beneficiaries needed to be incentivised because *"Batswana in general are not hard working".* Again we can see evidence of beneficiaries being seen as the "problem" rather than the "solution" (Whiteside, 1997:46), without taking into account the whole picture of why some beneficiaries did not produce as already examined in Sub-sections 4.3 - 4.7.

These findings were supported by CAR (2005:24, as cited in Seleka, 2005) which stated that the reason for low crop production was that "there is virtually no linkage between subsidies and outputs; this discourages productivity increases, as farmers do not depend on their outputs". It can be concluded that there was no expectation placed on beneficiaries to produce in order to assist government to achieve their objectives.

Beneficiaries were not aware of the objectives of ALDEP and were not held accountable for producing excess crops. Perhaps this was due to the fact that the government was aware of the limitations of infrastructure and the natural environment and thus the outputs were aligned with the number of packages in the hope that in the long run the beneficiaries would be successful and government would achieve their objectives. Accountability of government to the beneficiaries was not addressed as part of this study.

4.8.3 Perspectives of political undermining in ALDEP

Political undermining here describes the perception of any political party or politician in the ALDEP programme. That is, this undermining was not in the interest of ALDEP achieving its intended objectives nor did it aid in the adherence to the ALDEP guidelines for subsidy approval. Since political undermining was experienced by the District Agricultural Staff when implementing ALDEP, this section will briefly examine if it had any impact on the beneficiaries.

During the research, District Agricultural Staff experienced political undermining particularly with the ALDEP cattle packages. Based on the guidelines given to them by the Ministry of Agriculture, they would deny applicants additional cattle packages when beneficiaries declared their animals had been 'lost' or 'stolen, as beneficiaries were only permitted one of these livestock packages over a set period of time. This was because the District Agricultural Staff suspected some beneficiaries of profiteering off the cattle packages by selling them rather than using them for draught power. The District Agricultural Staff then stated that beneficiaries dissatisfied with their rejected application would then go to the Ministry of Agriculture and complain. District Agricultural Staff explained that they then would receive a call from the Ministry telling them to give the packages to the respective beneficiaries. Since decision making powers lay with the Ministry of Agriculture and not at a district level, they "*had no power to say otherwise".*

The researcher then probed further:

"Do you feel the Ministry of Agriculture was aware of this abuse of power when it came to ALDEP packages? ***(Researcher)***

"*They [government] knew all along but didn't want to upset their constituents".* ***(Respondent A1)***

The above statement reflects that there was a perception that government was aware of political undermining but did not take any action to prevent it. Whether this was the case would require further research focusing more on government, which is not the aim of this research.

Although there was a perception that some beneficiaries abused political power to undermine the guidelines of ALDEP, so too was there a perception that political parties attempted to interfere with the ruling parties' initiation of ALDEP. They explained that the opposition parties had spread fear amongst the farmers prior to ALDEP, telling them that the ruling party would *"repossess our packages"* or *"repossess our land"* if they took ALDEP packages. This was supported by another beneficiary who felt that the opposition party had also tried to scare them by saying that ALDEP was *"corruption"*, and that ALDEP *"wasn't good"* but in spite of this the beneficiaries still went ahead and joined ALDEP.

What this finding reflects is that, in spite of the political undermining experience by the beneficiaries, this did not deter them from joining ALDEP. Prokopy, (2009) would describe the beneficiaries as looking to join ALDEP from an opportunity cost perspective. That is, the benefit of paying a subsidised rate for packages that would help them improve their ability to provide for their families far outweighed any comments being made by political parties.

Governments' objectives are not always altruistic, as described in the literature on rural upliftment programmes in Zimbabwe and Kenya where the programme was used merely to gain political support by the ruling party during elections (Wallis, 1976:197 and Madondo, 1985:297 as cited in Wassermann, 2001:175). However, in the experiences mentioned above one cannot state that this was government's objective but perhaps a perceived political undermining by certain individuals within the Ministry of Agriculture or within the opposition party.

The above statements give insight into a perception that beneficiaries were given approval in order to ensure votes and on-going support for a particular political party or party member. It also reiterates the lack of power at a local level to adhere to the guidelines as the decision

making power came from the Ministry of Agriculture. This may be another reason why package abuse was perceived by both government and beneficiaries (see Sub-section 4.7.5).

4.8.4 Beneficiary dependency on government

Beneficiaries expressed that they were dependent on government because their needs were not being met (see Sub-section 4.8.1). Therefore this Sub-section will examine the extent to which beneficiaries perceived they were dependent on government and how government's approach may have contributed to this dependency.

The research question was posed in the following way:

> *"Do you think you would be able to farm if the government didn't help you?"* ***(Researcher)***

Five (56%) female beneficiaries and seven (70%) male beneficiaries said they would be able to survive as farmers without government intervention. The reasons they stated were their dedication to farming; that the government *"found us as farmers";* and that their parents had been able to sustain themselves without any assistance from government. This supports the other findings that beneficiaries believe that using their *"thinking ability"* (Sub-section 4.4.2) enables them to survive, that they learnt to cope with the risks of farming by having alternative sources of income (Sub-section 4.6.1.1) and that they did not want to be dependent because it made them feel "like children" (Sub-section 4.8.1). Other beneficiaries felt that they would not be able to cope if government did not provide water and infrastructure. For these beneficiaries it would seem that their dependency on government is essential to their survival, as reflected in the following statement:

> *"We would die a sudden death, we wouldn't be able to survive"* ***(Respondent M7).***

Again the finding reveals conflicting perceptions and experiences that the beneficiaries have of their ability to cope with the risks of being resource-poor. As we have seen in Sub-section 4.6.1 however, many have alternative sources of income and this may be why a large proportion of them felt they could cope without government's assistance. Another reason for farmers' dependency on government is due to poor marketing systems (Seleka, 2005: 12) and a lack of assistance in the natural environmental challenges faced by beneficiaries (see Sub-section 4.5.2), most importantly their access to water. This leads to the other finding that the government's paternalistic approach to the development of resource-poor farmers

has led to a voiceless group who have no means of empowering themselves through their own determination of their needs. The above finding therefore advocates a more participatory approach towards beneficiary development in order to potentially reduce the level of dependency they have on government in future.

4.8.5 Conclusions on government's approach to the management of ALDEP

The above section reviewed perceptions and experiences of government's approach to the management of ALDEP by examining the types of participation, the level of accountability placed on the beneficiaries, the influence of political undermining and the level of dependency beneficiaries had on government. The overall conclusion was that beneficiaries were passive participants in ALDEP and therefore had no role to play in the decision making, which left them feeling helpless. They were not expected or held accountable to produce crops in order to get the subsidies, which would have potentially resulted in government at least achieving one of its objectives. Political undermining in ALDEP gave one potential reason for why package abuse was experienced. However, since the benefits of the subsidies outweighed the cost of not participating, any negative comments made about ALDEP did not deter the beneficiaries. Finally, we see that most of the beneficiaries felt that they could cope without government, however for some this was not without at least basic infrastructural development. A few of the beneficiaries however felt they were completely dependent on government, despite having alternative sources of income.

Findings of this Sub-section revealed that the following governmental decision making approaches were experienced by the beneficiaries:

- participation was passive, in that beneficiaries were told about programmes rather than being active participants in their own development;
- decision making was centralised and paternalistic;
- the objectives of government were not known to the beneficiaries, as a result the beneficiaries were not held accountable to achieve the objectives in return for the subsidies; and
- the ability to overrule District Agricultural Staff was as a result of the local administrators being mere implementers of ALDEP.

Based on these findings it can therefore be deduced that government had a top-down decision making approach to ALDEP. This was supported by authors Whiteside (1997) and Lekoko and van der Merwe (2006) who stated that this decision making approach imposes development and breeds dependency, a lack of trust and lack of control, all of which was perceived by the beneficiaries during the research.

Another approach available to governments is the bottom-up approach which brings local authorities into the decision making process but not necessarily the community (Gboku and Lekoko, 2007). There is also a learning-process approach which encourages a capacity-building environment in which local authorities as well as the community are learning from the process, without compromising the needs and objectives of the programme (Kotze and Kellerman, 1997). However, with the number of extension officers in relation to the number of farmers they were working with, this would not have been possible without additional personnel being employed. Adaptive administration encourages the cooperation of all stakeholders, whilst rewarding innovative ways of managing the programme (Kotze and Kellerman, 1997). Since the findings have revealed that the District Agricultural Staff had problems with being overruled in their decisions, this approach may have resulted in less package abuse. People-centred development focuses on communities driving their own development with government playing a more supportive role, such as in the development of the capacity of the community (Kotze and Kellerman, 1997) (see Sub-sections 2.5.2 and 2.5.3). Based on the findings this approach would have been encouraged by the beneficiaries as they would have felt more included in the decision making and would have had the opportunity to have their needs met.

4.9 Beneficiaries suggestions for successful arable farming in Botswana

Based on the finding that beneficiaries experienced a lack of participation in decision making throughout ALDEP, the researcher asked each of the beneficiaries to express their suggestions for future arable agricultural programmes. The following key suggestions were expressed as areas government should acknowledge:

- the development of rural infrastructure;
- greater mechanisation;
- addressing pest problems;
- greater beneficiary participation in their own development;

- increasing the number of District Agricultural Staff available to assist beneficiaries; and
- improving the BAMB prices offered to beneficiaries for crops.

They believed that the development of rural infrastructure for the future of farming, most critically the addressing of access to water on farms, would enable them to grow more crops. Since it is assumed that an increase in crops would assist in increasing income this would allow for greater independence of farmers to buy the other necessary inputs for their farms, thus potentially reducing their dependency on government. It needs to be noted that although the government did acknowledge that rural infrastructure required address in an NDP 8 mid-term review (Ministry of Finance and Development Planning, 2000), the experience of the beneficiaries was that this had still not been addressed. Infrastructure is clearly linked to economic growth and therefore the lack thereof would have an impact on agricultural development (Seleka, 2005).

Due to poor resources, age, health issues and/or short ploughing seasons, mechanisation would allow for farmers to reduce the amount of time ploughing whilst giving them more time to sow their crops. Mechanisation may also result in greater areas being ploughed and thus assist in increasing crop production. Mechanised draught power was also acknowledged (Ministry of Finance and Development Planning, 2000) as a means of decreasing the time it took to plough, but was only seen as being introduced during ISPAAD in 2008.

Another environmental hazard that played a large role in low crop production was pests such as smaller animals (such as rabbits) insects and birds needing to be controlled. Therefore, beneficiaries of ALDEP believe that pesticides and different types of fencing would assist in eradicating these problems and again would enable them to grow more crops. Since the fencing package was so successful during ALDEP, perhaps a means of addressing this would be through different types of fencing depending on the type of pest, as well as through the availability of pesticides or teaching beneficiaries about pest control techniques. It is clear that beneficiaries believed that fencing was the most important means of deterring most pests, hence it being the most sought after ALDEP package. However, the Government of Botswana (Ministry of Finance and Development Planning, 2000:79) felt that pest problems were due to “low adoption of integrated pest management techniques and practices due to issues of traditional beliefs and attitudes of farmers”.

One of the perceived approaches by government to the management of ALDEP was the failure to supply sufficient human resources for the number of farmers in the district. Furthermore, these same resources were required to implement multiple programmes concurrently and thus were not able to service the farmers effectively. As a result one of the recommendations made by the beneficiaries was that sufficient extension officers were made available in order to better serve resource-poor farmers in improving their crop production. One solution suggested in the NDP 8 mid-term review was to reduce administrative duties of such technical staff so that they could focus more on developing farmers' technical knowledge (Ministry of Finance and Development Planning, 2000). Technological transfer of knowledge is key to agricultural development and increased crop production (Seleka, 2005) and therefore a lack of sufficient agricultural staff to impart this technological knowledge would have had an impact on the beneficiaries' and future farmers' ability to produce crops. Therefore, compared to the cost of not adopting new farming techniques, educating farmers on these techniques and the benefits thereof may result in greater technology transfer.

Finally, it has already been established that BAMB performed poorly. One of the reasons for this cited by the beneficiaries was due to the prices they offered to farmers for their crops. Since subsistence farmers cannot compete with commercial farmers in economies of scale, the cost of producing the crops and the cost of transporting them to BAMB for the amount they were being paid, resulted in the ALDEP beneficiaries preferring to sell their crops locally in their villages. This would have also have had an impact on government achieving its objectives of decreasing the grain deficit. Therefore, a potential solution would require a review of not only the pricing policy but also making the process more cost-effective for farmers to sell their crops to BAMB should government wish to achieve this objective in future. Again this was acknowledged as requiring address in the NDP 8 mid-term review (Ministry of Finance and Development Planning, 2000).

All the suggestions made by the beneficiaries were acknowledged by government, yet based on the experiences of the beneficiaries none of their suggestions have been addressed in the farm areas, hence ten years later they still require the government to address them. However, the reason for this perceived failure to address what was already suggested by government in their reports was not the focus of this study.

4.10 Chapter summary

This chapter aimed at expanding on core themes that emerged from the research in order to answer the sub-objectives of this study.

The characteristics of the beneficiaries are significant in terms of the impact that they would have had on increasing crop production due to their age. It is also clear that this would pose a problem for future arable agricultural programmes.

Psycho-social factors influencing the beneficiaries were that there was not any gender differentiation amongst the beneficiaries, however conflicting poverty identities existed and status was a motivating factor amongst some beneficiaries as a result of receiving ALDEP packages. However, how members of the community viewed the beneficiaries did not impact necessarily on how they viewed themselves, which insinuates that other psycho-social factors are at play in motivating the beneficiaries.

Environmental factors influencing the beneficiaries were that as rain-fed farmers, a lack of infrastructure (especially water) had an impact on their ability to produce excess crops. Pests also impacted on crop production and resulted in the fencing package being popular amongst the beneficiaries. Therefore, their ability to improve their crop production without a solution to this problem would be limited.

The lack of human resources had an impact at a local government level, as extension officers could not be effective due to the high number of farmers in turn would impact on the beneficiaries' ability to improve their crop production. However, the lack of resources at a household level resulted in fewer crops being planted due to a lack of labour, which resulted in less income and perhaps a greater emphasis on alternative sources of income, or a reverting back to the level of vulnerability the beneficiaries had before joining ALDEP.

The above correlates with some of the key factors influencing farmer participation by Sanginga et al., (2006) namely, how much contact the farmers had with the extension officers and whether family labour was available. Furthermore, their findings that age, sex of the head of the household and level of education did not impact on farmers' willingness to participate, concurred with the findings of this research, which were that despite age, gender or level of education, the benefit of participation outweighed the cost of not participating.

The impact of the ALDEP packages on crop production in relation to the number of packages received was not conclusive. This may have been as a result of packages being

abandoned due to them being faulty and the inability to repair them. Abuse of packages was also experienced.

Government's approach to the management of ALDEP was found to be top-down and thus paternalistic. The research established that this was due to a passive-participatory approach being taken as well as a welfare-development approach, which left beneficiaries feeling dependent on government. Findings were not conclusive as to the impact of a lack of accountability however it may have impacted on ALDEP not achieving its reduction in grain deficit. Political undermining did not impact on beneficiaries' willingness to participate in ALDEP but may have contributed to package abuse. Therefore, greater participatory approaches to development were expressed. This could either be in the form of functional participation where participation is in order to achieve a goal; interactive participation which involves all participants on every level of the decision making process; and finally self-mobilisation which involves participants initiating and managing the whole process as suggested by Pretty and Smith (2003). Which of these approaches is most appropriate would need to be determined based on the type of programme, type of beneficiary and the nature of the objective.

The suggestion for arable farming by the beneficiaries was not a theme but rather allowed the beneficiaries to express their needs, which from their perspective and experience they had not previously been given an opportunity to do.

Chapter five will draw on these themes in order to answer the sub-objectives and main objective of this study.

Chapter 5

CONCULSIONS AND RECOMMENDATIONS

5.1 Introduction

The main objective of this research was to examine the perspectives and experiences of crop production by the beneficiaries of the Arable Lands Development Programme (ALDEP): a case of Kgatleng District, Botswana. Chapter Four described the findings of the basic qualitative research. In order to answer the main objective of the study, the sub-objectives were to examine:

1. factors that influences beneficiaries' ability to produce crops during ALDEP;
2. the level of participation of beneficiaries of ALDEP; and
3. the effect of the government's decision making approach on the beneficiaries' of ALDEP.

The following chapter will bring together the findings of this research firstly, by synthesising the sub-objectives as a means of answering the main objective and secondly, recommendations for future practice and research will be expressed based on the findings. Finally, the chapter will conclude the overall findings.

5.2 Synthesis of findings of this research

This section provides the synthesis of the findings of this research. The following sub-sections (5.2.1 to 5.2.3) are based on the three sub-objectives of the research.

5.2.1 Factors that influenced beneficiaries' ability to produce crops during ALDEP

Various factors were identified which influence the beneficiaries ability to produce crops. Four key areas were seen as influential factors namely, the characteristics of the beneficiaries, environmental factors, the resources available to the beneficiaries and psycho-social factors. These factors are portrayed in Figure 5.1.

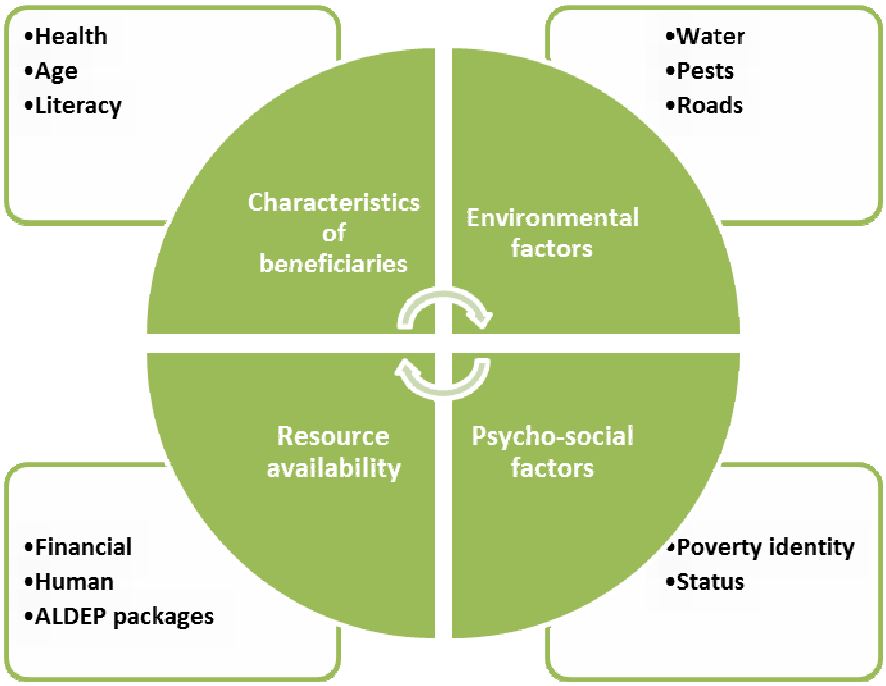

Figure 5.1: Factors influencing beneficiaries of ALDEP

Figure 5.1 brings together the findings which reveal four key factors that impact on beneficiaries' ability to produce crops, as well as the characteristics that define those factors. The figure only reveals findings from the analysis of the data collection. Characteristics of beneficiaries and psycho-social factors relate to social factors influencing beneficiaries' ability to produce crops. The characteristics of Botswana's aging rural arable farmers are factors that require address when designing arable agricultural programmes. Targeting this population will create its own unique circumstances that will require further investigation. The paradox of Botswana's improved educational policies has resulted in more schools and higher levels of literacy than ever before (see Sub-section 2.3). This resulted in the greater urban drift by the educated youth, leaving arable farming to the aging and illiterate. The implication of this is that if youth do not see the benefits of arable agriculture and thus find it an attractive occupation, the number of arable farmers will drop in years to come. This will potentially create an even greater problem in future in terms of developing this sector of the economy.

The finding that the beneficiaries had poor access to extension officers due to low staff numbers is a hindrance to the development of the sector, as reflected in the findings of Aina (2007) in this research. Extension officers are the key source of information on farming

practices due to beneficiaries' high illiteracy levels, thus showing how a lack of human resources interlinks with the characteristics of the beneficiaries (see figure 5.1) .

The beneficiaries' lack of participation and their desire to be more included when programmes are being decided on was a finding of the research. How the Botswana Government made their decisions regarding ALDEP therefore left the beneficiaries without the ability to manage their own development. Participation in the decision making process would give beneficiaries access to information, which is said to be key to participation by beneficiaries of programmes (United Nations Development Programme [UNDP], 2011). How governments define and address the issues of poverty through policy has grown from an income-centric perspective in the 1980's to one that includes more social consequences of being poor, such as a lack of education, health, nutrition, and the maintenance of such development through improved sustainability and good governance, (Khan in Pressend and Ruiters, 2008; UNDP, 2011). However, it is the way policy responds to these needs that is more important than purely the measurement thereof. It is for this reason that we find beneficiaries with conflicts in their poverty identity, why they still feel they would need government to at least provide for their basic needs (such as infrastructure) and also why they are still vulnerable. It is for this reason that participation is required to assist beneficiaries in reducing their level of dependency and vulnerability and making projects more sustainable.

Finally environmental factors influenced beneficiaries' ability to produce crops as they felt many of the packages did not adequately address their needs. Failure to address environmental concerns directly can be linked to a lack of participation and accountability on the part of the beneficiaries and government (UNDP, 2011). Since government cannot control natural disasters, it is important for environmental policies to be developed to assist in future arable farming programmes. The failure of local, national and global policies to address environmental factors will result in decreased crop production, increased natural disasters and a decreased access to drinkable water, thus increasing the risk to the poor overall (UNDP, 2011). Therefore environmental policy needs to address these issues as they will continue to increase the risk to arable farmers as global warming increases and more importantly to those that are most vulnerable, the resource-poor farmers. Furthermore, a failure to address water issues may hinder growth in this sector and make arable farming less attractive to new farmers, such as the youth.

Fifty percent of Botswana's population live in the rural areas, compounded by high levels of poverty and half the rural population relying on arable agriculture to sustain them, it is important for government to continue addressing arable farming needs in these communities (TAHAL, 2000). Based on the above summary of findings we see key areas for policy, that is, social, economic and environmental policy. Government would therefore need to address these issues in order to assist in overcoming these barriers to development which the beneficiaries perceived as factors influencing their ability to produce crops.

5.2.2 The level of participation of the ALDEP beneficiaries

Participation results in the greater progress and success of programmes (Kotze and Kellerman, 1997). It was established that government approached the ALDEP beneficiaries through a passive-participatory approach. A lack of participation has resulted in conflicting levels of dependency of the beneficiaries on the government. However should future programmes wish to be sustainable, a greater level of consultation and empowerment of farmers in their own development would be required. This is largely based on the "attitudes, mind sets and behaviours" of those involved (Chambers, 2008). That is, this research gave a basic qualitative examination of the beneficiaries' perceptions and experiences, which are all related to their attitudes, mind sets and behaviours. However, they are powerless to escape their trap of dependency if government does not see value in their perceptions and the historical lack of success of programmes (see Sub-section 2.3.1) and look to more participatory methods of developing sustainable programmes that empower beneficiaries to determine their own future. Pretty and Smith (2003) present three alternative participatory approaches that could be examined for future programmes these include:

- functional participation whereby stakeholders may have a particular goal they wish to achieve and therefore participate together to achieve that particular goal;
- interactive participation which results in all stakeholders being involved in all aspects of the decision making process throughout the phases of the programme; and finally
- self-mobilisation may be applicable when farmers wish to initiate programmes independent of others and therefore take complete control of all aspects of their development without outside involvement.

The type of participation would therefore depend on the type of programme, the type of farmer, as well as the goals and objectives of those wishing to embark on a programme.

5.2.3 The effects of governments' decision making approach on the beneficiaries' perspectives and experiences of ALDEP

A top-down management approach was established as the Government of Botswana's approach to ALDEP. The effect of using this management approach is well-documented as increasing the beneficiaries' dependency on the government (Verschoor et al., 2005; Theron, 2008; and Desai and Potter, 2008:46; Siegle, 1990).

Figure 5.2 explains the nature of dependency as a result of using a top-down approach to development programmes as found in this study.

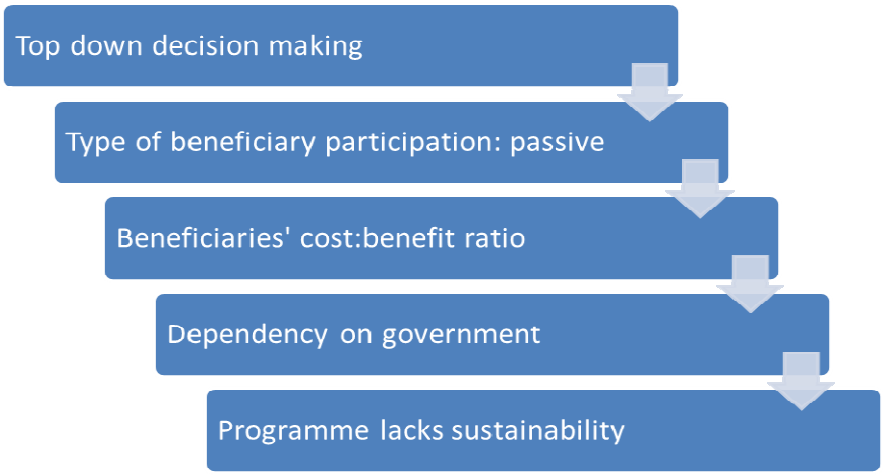

Figure 5.2: The effect of a top-down approach on ALDEP beneficiaries

The findings revealed that the approach resulted in government believing that the objectives of ALDEP were the solution to solving the problems experienced in Botswana, and thus became prescriptive in their decision making. The result of this was that resource-poor farmers were not able to express their needs in their unique context, but rather that they were passive participants in yet another government programme. As a result, in order to avoid the risks of being resource-poor, the benefit of participating in the programme outweighed the cost of not participating, in spite of their needs not being addressed. The beneficiaries thereby continue to be dependent on the government due to a variety of factors (see Figure 5.1) inhibiting their ability to produce excess crops, resulting in a lack of sustainability of the programme. Thus, in trying to gain more control over the lack of sustainability, the government continues to maintain its top-down decision making approach. This can be supported by the literature on past agricultural programmes in Botswana which have failed to achieve sustainability (see Sub-section 2.3.1), yet the government continues with a top-down decision making approach to such programmes.

Greater decentralised decision making was also perceived to be a solution in minimising political undermining and improving the adherence to the guidelines. By empowering those who are implementing the programmes it is perceived that there will be less package abuse.

The government's top-down decision making approach has consequences for future programmes targeting resource-poor arable farmers. The UN HDR (UNDP, 2011) reveals that citizens have greater vested interest when accountability for outcomes is visible to them and they are included in the process of decision making.

The top-down approach has benefits in certain contexts, as discussed by Lauglo (1990) (as cited in Gboku and Lekoko, 2007). However the findings show that the beneficiaries do not benefit from this approach. Therefore, it is important that alternative approaches are reviewed by government in order to achieve their objectives and ensure sustainability, whilst also reducing dependency.

5.2.4 Conclusions

The sub-objectives and the discussions that followed in the research provided background information for the formulation of the conclusions. This section proposes the following conclusions to the research:

The perspectives and experiences of crop production by the beneficiaries of ALDEP was considered beneficial in terms of addressing some of the key issues preventing the beneficiaries' ability to grow more crops. An example of this was that pest problems were addressed through the fencing packages. However, the programme was perceived to be managed in a manner that perpetuated their dependency on the government as opposed to a more participatory approach that would have led to greater sustainability. The decision making approach to the programmes would therefore require a review of the environmental, social and economic needs of the beneficiaries they are targeting, through an appropriate consultative participatory process, thus taking into account the core factors that would allow for both government and arable farmers to achieve their objectives.

5.3 Recommendations

5.3.1 Recommendations for practice

Based on the findings of the research as well as the recommendations by the beneficiaries, the following recommendations for practice have been identified:

1. creating a support mechanism to assist in the adoption and sustainability of programmes such as:
    a. sufficient extension officers;
    b. providing technical support for the maintenance of packages; and
    c. providing packages of the right specification in order to meet local needs.
2. consultation with the beneficiaries throughout the programmes and projects phases, and specifically at the inception phase;
3. ensuring pricing systems for crops align with the input costs of crop production of resource-poor farmers;
4. ensuring clear guidelines of governments expected outputs for beneficiaries are developed and expressed; and
5. holding regular reviews with the resource-poor farmers in order to understand, respond to and address crop production issues.

5.3.2 Recommendations for further research

Due to the limited nature of this research, various recommendations for further research emerged, they are as follows:

1. a more in-depth study to determine whether these findings represent the perceptions and experiences of other beneficiaries;
2. an examination of motivations for the youth to become permanent arable farmers as a means of increasing production;
3. an analysis of farmers' needs (based on farmer type) in order to align future arable programmes' target groups with the respective governments' objectives;
4. an examination of appropriate participatory methods and levels of participation for resource poor farmers being targeted in agricultural development programmes; and
5. an examination of alternative water source solutions for rain-fed farmers.

5.4 Summary

This research was conducted to get the ALDEP beneficiaries' perspectives and experiences of crop production and is not a complete study of the programme itself.

This study revealed that both the government and the beneficiaries are dependent on external parties to meet their objectives. The government is dependent on imports to feed the nation, whilst beneficiaries of ALDEP have become dependent on the government to provide them with subsidies that, to a degree, can assist them in crop production. Although government's dependency was not a focus of this study, the relationship between government and the beneficiaries is symbiotic. That is, government relies on the beneficiaries of programmes to assist them in achieving their objectives, whilst beneficiaries rely on government to provide for their various needs. Both government and beneficiaries face various other challenges that impact on solving their reliance on others. Thus suitable methods of working together to meet both stakeholders' objectives requires further examination, as the current top-down approach is perceived by the beneficiaries as lacking consultation or participation when it comes to decision making.

In the case of ALDEP, government believed that assisting resource-poor farmers would solve several of their objectives including reducing poverty, unemployment, urban drift, grain deficits and thus reducing their dependency on imports.

Environmental, resource and psycho-social factors as well as the characteristics of the beneficiaries left them with a multitude of challenges that resulted in them not relying on arable farming for their income but on alternative sources of income generation. As a result they could not focus primarily on arable farming and thus arable farming became merely a means of sustaining their households. Therefore without a means of addressing these challenges, the beneficiaries could not move away from being mere opportunistic farmers to commercial farmers. This would have assisted in meeting the government's objectives of reducing poverty through increased crop production. Furthermore, the challenges also impacted on their children who, now educated, realised the difficulty arable farming posed and therefore looked to the urban areas for formal employment. The objective of reduced urban migration was therefore not achieved. This also further impacted on the availability of resources for an aging farming population and poses a problem for government's potential growth of this sector in the future.

However, it was the perception and experience of the beneficiaries that was the root cause of their increased sense of risk and thus dependency was as a result of government's paternalistic management approach. As they were never consulted on what their needs were, beneficiaries did not have the capacity to become less dependent on government. This approach not only led to poor planning, political undermining and package abuse, but also left the beneficiaries with over extended extension officers, resulting in a poor transfer of knowledge.

These perceptions and experiences are representative of a small sample of beneficiaries of ALDEP. Therefore, a more in-depth study would be required to determine whether these findings represent the perceptions and experiences of other beneficiaries before government can attempt to address the problems experienced by arable farmers in Botswana in future.

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