

**UNIVERSITY OF KWAZULU-NATAL**

**THE IMPACT OF INFRASTRUCTURE ON AGRICULTURAL ECONOMIC  
DEVELOPMENT IN BIZANA, EASTERN CAPE**

**By**

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## **Declaration**

I ...Badikazi Lonwabo Ngcobo .....declare that:

The research reported in this dissertation/thesis, except where otherwise indicated, is my original research;

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My Lord I couldn't have done this without you.

“Behold I am doing a new thing”, Isaiah 43:19.

## **Abstract**

The study sought to examine the impact of infrastructure on agricultural economic development in Bizana (Mbizana), Eastern Cape.

The Eastern Cape Province is one of the poorest provinces in the country. The province consists of predominantly rural areas and rural towns. One of the challenges facing the Eastern Cape Province is inadequate access to infrastructure such as roads. Poor road links keep rural communities “distant” from the mainstream economy. The province requires approximately 12 000km of access roads. Although government has programmes in place aimed at improving access to adequate infrastructure, South Africa has rapidly deteriorating infrastructure and this is due to under-investment. The infrastructure in rural communities is poor, as infrastructure development strategies historically favoured urban areas over rural areas.

Although the province is faced by these infrastructure challenges the Eastern Cape Province has great potential agricultural land, and this is evident in the case of Bizana (Mbizana). The farmers are faced with a number of infrastructure challenges and these include access to water and roads. Quality roads enable easy transportation of the agricultural produce from the farms to local and international markets. Bizana (Mbizana) has a high unemployment rate, and the study aims to contribute towards the upliftment of the communities in Bizana (Mbizana) through agriculture.

One-on-one interviews and site visits were conducted. The study unveiled some of the challenges that the farmers encounter and these included inadequate access to water, challenges with transportation system, market competition, fencing, drought, etc. Some farmers practise commercial farming individually.

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# CHAPTER ONE

## 1.1 Introduction

Infrastructure has a huge impact on economic growth. It is one of the fundamental entities that facilitate economic growth and sustainable development. Bhattacharyay, (2010:201) classifies infrastructure into two categories, namely hard and soft infrastructure. The difference between the hard and soft infrastructure is that hard infrastructure is tangible and relates to structures or facilities that support society and economy; for example: transport, energy, telecommunications and basic services whereas soft infrastructure is non-tangible. Soft infrastructure provides support to the hard infrastructure that is in its development and operation for example, policy, institutional framework, governance mechanisms and social networks.

The classification by Bhattacharyay, (2010:201) will be adapted for this research. Bhattacharyay, (2010:201) goes further and takes into consideration the policies and institutional framework, as they guide planning and enable development of infrastructure. The two categories of infrastructure will be investigated and discussed in this research and this will make it possible to conduct an evaluation of the impact of infrastructure on agriculture to promote economic growth. According to the United Nations Human Settlement Programme (2011:2) the absence of adequate infrastructure hinders economy development and efforts aimed at reducing poverty in Africa. Identifying infrastructure gaps, and the appropriate responses to these gaps, is critical in overcoming development challenges (UN-NEPAD-OECD Africa policy briefs, 2010:1).

According to the World Bank (2009:1), for growth to be sustainable in the long run, it should be broad-based across sectors and include a large part of the country's labour force. Although the inclusive growth approach adopts the longer-term perspective and focuses on productive employment, at times government is forced to adopt the short-run approach which includes income redistribution as a means of increasing income for the excluded groups. For developing countries, transfer schemes are not regarded to be a solution in the long run as they bring their own challenges, such as straining an already stretched budget (World Bank, 2009:2).

Because of declining agricultural productivity, unemployment and lack of access to basic services, people in rural areas opt to migrate to urban areas in search for a better life (United Nations Environment Programme, 2002:248). For those relocating to cities, this move does not guarantee employment and a better life, but tends to present its own challenges such as unemployment, residence in informal developments and lack of access to basic services such as water (Cornwell and Inder, 2004:2). When people encounter such challenges they explore and adopt various survival strategies. According to Thornton (2008:258), the unemployed and urban poor have limited sources of income, and the most common form of employment includes, “casual labour and street hawkers”. Agricultural activities are not at the top of the list as an option to minimise the impact and effect of poverty and unemployment on those living in these conditions. Previous studies indicate that urban peri-rural agriculture is an “insignificant activity amongst South Africa’s poorest of the poor” and the youth does not consider agriculture an alternative to social grant dependency and unemployment (Thornton, 2008:247).

Goldsmith, Gunjal, Ndarishikanye (2003:35) argue that “the foundation of rural–urban migration is due to the excess of the urban wages over the rural wages”. It is further argued that an increase in wages due to agricultural growth will reduce the wage gap between urban and rural dwellers and this could reduce rural-urban migration.

## **1.2 Background**

“Globally, extreme poverty continues to be a rural phenomenon despite increasing urbanisation. The promotion of the rural economy in a sustainable way has the potential of increasing employment opportunities in rural areas, reducing regional income disparities, stemming premature rural-urban migration and ultimately reducing poverty at its very source” (Anríquez and Stamoulis 2007:1).

The growth rate of Africa’s infrastructure is slower than other developing regions. One of the contributing factors is that some countries are not able to keep up with demographic growth and urbanisation. The development of infrastructure is low to non-existing in rural areas compared to urban areas; this is partly due to neglect of rural areas. Lynch (2005:13) highlights that the model of rural-urban economic exchange is based on the notion that economic policy favours the urban

over the rural sector. According to Bogetić and Fedderke (2005:13) South Africa's rural areas fall behind its counterpart in providing access to water and sanitation. Geographic location plays a major role in economic growth, and the rate at which the economy grows in rural areas and urban-rural towns is lower than that in urban areas. According to Asfaha and Jooste (2006:89) rural-urban migration is driven by economic inequalities between rural and urban areas and this is worsened by urban-biased policies.

In a study undertaken by the Council for Scientific and Industrial Research (CSIR) (2007:14) investigating the state of municipal infrastructure in South Africa, the findings revealed that South Africa has occurrences of adequate municipal infrastructure, but municipalities are challenged by increasing infrastructure deterioration. The study further revealed that South African municipalities compared poorly with other countries, such as New Zealand, in matters regarding strategic and financial planning to improve infrastructure.

The Eastern Cape Province is one of poorest regions in the country, as only a few areas are well developed (<http://www.hsrb.ac.za/HSRC-Seminar-405.phtml>). The province consists of predominantly rural areas and rural towns. The report by Statistics South Africa, Eastern Cape provincial profile (2004:2), reflects that 21% of the province's population left the province for other provinces, and that only 6% of people migrated to the Eastern province. The people migrating went to Amatole and Nelson Mandela Metropolitan areas (Statistics South Africa, 2004), which are perceived to be hubs of opportunity.

According to the O.R. Tambo District Municipality's Integrated Development Plan (2010/11:15) this district is mainly rural and it is estimated that approximately 93% of the population in this district reside in rural areas. Some of the challenges that the district has encountered include declining economy, high levels of poverty, underdevelopment and infrastructure backlog (O.R. Tambo District Municipality Integrated Development Plan, 2010/11:32).

In a study conducted by the Council for Scientific and Industrial Research (2007:13), the findings revealed that the more rural municipalities are not coping with maintenance of infrastructure. In the O.R. Tambo District Municipality, one of the challenges facing the water

services in this region is lack of or poor maintenance and poor design of the infrastructure (O.R. Tambo District Municipality Integrated Development Plan, 2010/11:42). According to the United Nations Human Settlement Programme (2011:50), poor maintenance of infrastructure results in “reduced life-span” of infrastructure.

According to Dulauf and Blume (2010:47), there are four primary determinants of growth, and these are: geography, institutions, policy and culture. Although using the same technology, countries with transportation challenges will produce at a lower level than countries not faced with the same challenge.

Traditionally, agricultural activities concentrated on subsistence farming and over the decades this evolved and agricultural activities diversified. Todaro (1997:312) highlights that with subsistence farming, despite the fact that there were vast amounts of suitable land for agricultural activities; small portions of land were cultivated with traditional technology such as the hoe. According to the O.R. Tambo District Municipal Integrated Development Plan (2010/11:33) “the agricultural potential in the district remains largely untapped”. Agriculture activities have diversified over decades from subsistence farming to “mixed family agriculture” cultivation of “cash crops” to specialised commercial farming (Todaro, 1997:317). The transformation to “modern commercial farming” was unavoidable and this was due to population growth and other factors. Unfortunately Africa has suffered due to lagging behind in agricultural development (Todaro, 1997:313). Agricultural transformation, amongst other factors, has played a major role in economic transformation, and some countries have introduced and implemented various legislations to promote economic growth. Post-1994 South Africa adopted and implemented the land reform programme, which aimed to address the previous imbalances of agricultural land ownership (Kirsten, Van Zyl and Vink, 1998:94).

Binns, Hill and Nel (1997:1) argue that the top down rural development strategies in Africa have not succeeded in improving the living standards of rural communities. It is suggested that these strategies failed to understand the socio-economic and cultural issues of rural communities. It is further argued that some of the reasons why the strategies failed include failure to realise the skills, knowledge and the ambitions of those whom the programmes were designed to assist.

### **1.3 Description of Problem**

“Agro-climatic conditions, endowments of natural resources and geographic location such as distance to a seaport or centres of commerce determine the potential for the economic development of a region”, (United Nations Economic and Social Council, 2001:1).

According to the United Nations Human Settlement programme (2011:13), access to adequate roads and transport infrastructure can contribute positively towards agricultural growth. It is estimated that approximately 95% of the population in Bizana (Mbizana) reside in surrounding locations, and as a result subsistence farming is predominantly practised and communities rely mostly on natural resources. Securing formal employment is also a challenge in this town, which is administered by the Mbizana Municipality (<http://www.mbizana.gov.za/about-mbizana>).

In 1992 a global partnership was established, through which a comprehensive plan, the Agenda 21, was discussed. The document highlights that having enabling strategies in place at various levels ranging from community level to local, provincial, national and even to international level is important when pursuing sustainable development. Agenda 21 suggests that strategies should integrate sustainable livelihood with environmental protection. Programmes to be implemented should focus on empowering local and community groups by delegating authority and accountability to the appropriate levels (United Nations, Sustainable Development, 1992:14).

The purpose of this study is to establish the role and impact of infrastructure on agriculture and how they influence development. Agriculture has always been at the forefront in addressing and reducing poverty. According to the World Bank (2008:2) agriculture can work together with other sectors to promote growth, reduce poverty and at the same time preserve the environment. Agriculture contributes to development in many ways (for example, through economic activity and source of income, and as a provider for environmental services), thus making the sector a “unique instrument for development”. As an economic driver, most developing countries rely mostly on agriculture for economic growth and development. Countries compete and export agricultural products.

According to Warburton (1998:20), when the top down approach to development was seen to have failed in solving poverty issues, the focus shifted from developing technical solutions to community-based development. The development of communities has been based on acknowledging and appreciating the skills of the people, resulting in them being involved in participatory programmes. These programmes developed techniques which aimed to enable communities to participate in finding their own solutions and taking control of processes that affect their lives. Although this approach had its own challenges, rewards began to be achieved.

### *Problem Statement*

Many households at Bizana (Mbizana) and in its surrounding locations (peri-urban areas) participate in subsistence farming and some individuals are small-scale farmers-entrepreneurs. Transportation infrastructure is crucial for these small-scale farmers to succeed in commercial farming. Roads are used by the farmers on a daily basis to access their farms and to transport products to consumers and the market place. The roads to and in the surrounding locations are barely maintained and in rainy seasons the conditions of these roads deteriorates.

*The problem statement is thus:*

How are the farmers affected by infrastructure gaps and how do they overcome these challenges?

## **1.4 Research Objectives**

- To establish the infrastructural challenges hindering agricultural development in Bizana (Mbizana) peri-urban areas;
- To investigate the conditions under which small scale farmers in Bizana (Mbizana) practise in their locations;
- To establish whether the agricultural activities by the small scale farmers in Bizana (Mbizana) contribute towards development;
- To evaluate the impact and influence of the roads infrastructure on agricultural development of the area;
- To determine the role of local government in creating an environment conducive to commercial farming.



*Key Research Questions:*

- What are the infrastructural challenges hindering agricultural development in Bizana (Mbizana) peri-urban areas?
- What are the conditions under which the small scale farmers practise and can they be improved?
- Can the agricultural activities by small scale farmers in Bizana (Mbizana) contribute towards development?
- What is the impact and influence of the road infrastructure on the agricultural development of this region?
- What is the role of the Bizana (Mbizana) local municipality (O.R. Tambo District Municipality) in creating an environment conducive to commercial farming?

### **1.5 Motivation for the Study**

Regardless of where one resides in urban or rural areas, sustainable development affects us all. It is therefore important that we join forces and establish strategic alliances with government, private sector, communities and international alliances. With this in place countries will be able to reduce levels of poverty and inequality, develop human resources and grow the economy. This can be achieved by ensuring that there are basic necessities in place, such as access to appropriate infrastructure, sound policies, promotion of entrepreneurship and skills development. This will enable us to respond appropriately to our socio-economic circumstances. It is key to ensure that communities in urban or rural areas have access to adequate infrastructure, as this will enable participation by all and will result in economic growth and development. Participation is essential in promoting sustainable development, which we can achieve if every person, sector and country commits and participates in promoting sustainable development (Coetzee, Graaff, Hendricks and Wood, 2001:469).

According to Coetzee, Graaff, Hendricks and Wood (2001:469) participation by citizens at local level in the decision-making processes is sometimes difficult to achieve and maintain, as at times there is hostility towards participation by certain individuals. When Nakuru in Kenya experienced water shortage, the local municipality consulted the community for possible

solutions. The community proposed a water kiosks project and the international community was approached for funding. The project was managed by the Naroka Greeners Self Help Group, together with other stakeholders. Community participation played a major role in addressing the water supply problem (United Nations Environment Programme, 2007:106).

When defining sustainable development, Warburton (1998:1) states that “humanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs (WCED 1987:8)”.

## **1.6 Significance of the Study**

The study will identify infrastructural challenges from the perspective of the crop farmer-entrepreneur and the community. The beneficiaries of the study will include the small-scale crop farmers, rural-urban communities, the private sector and the three spheres of government; national, provincial and local government.

The envisaged benefits of the study are that it will:

- contribute to the uplifting of the communities of Bizana (Mbizana) by ensuring that infrastructural issues are planned and lobbied for, so that ultimately the community will benefit. This process will enhance possibilities and opportunities of entrepreneurship, employment and job creation in the Bizana (Mbizana) agricultural sector by highlighting deficiencies and proposing solutions;
- present recommendations and possible solutions to challenges associated with access to infrastructure and promote economic growth and development;
- contribute towards the improvement of conditions and the environment in which the entrepreneurs and communities function and live;
- produce findings that could be used by government to align its strategies in providing access to infrastructure.

The recommendations and proposed solutions can be used by the different spheres of government to reposition their strategies and identify priority areas. It is hoped that opportunities

for public and private partnership and community participation can be identified to promote and facilitate the development of this area.

## **1.7 Literature Review**

This study will involve reviewing legislation, strategies, programmes and previous studies on agriculture, infrastructure and development. Legislation (such as the Constitution of the Republic of South Africa, the Local Government Municipal Structures Act, the Development Facilitation Act and the Municipal Systems Act) has played a major role in moulding and guiding government strategies and will be borne in mind for this research.

### *Constitution of the Republic of South Africa*

Amongst other issues addressed in the Constitution (Section 24; Chapter 2:24), the Bill of Rights states that, for the benefit of present and future generations, everyone has the right to have the environment protected. This can be achieved through reasonable legislative and other measures that promote conservation and secure ecologically sustainable development and use of natural resources, while promoting justifiable economic and social development. Section 152 (Chapter 7:78) of the Constitution also sets guidelines for local government, and the objectives of local government include the following: to ensure that communities have access to services, promote social and economic growth and encourage community participation.

### *Local Government: Municipal Structures Act 1998*

According to the Local Government (Municipal Structures Act 1998. Section 19, Chapter 3: 14), municipalities must annually review the needs of the community, its priorities to meet these needs and its processes for involving the communities.

### *Development Facilitation Act 67 of 1995*

The Development Facilitation Act 67 of 1995, (Part A, Section 3:83) requires that the land development objectives of a municipality create an integrated development planning framework (IDPF) that will guide development strategies. The IDPF of a municipality will also be guided by development strategies of the other spheres of government. The Act also encourages community participation.

The above legislation has played a major role in the formulation of spatial development framework (SDF) in municipalities and local economic development (LED) programmes. The municipal SDFs differ from municipality to municipality and they act as a guide and as a roadmap for development for a municipality. The legislation above has also had an impact on other legislation and government strategies, hence the need for synchronisation between the different spheres of government.

The proposed N2 Wild Coast Toll Project, which falls under local economic development (LED), aims to promote tourism and provide investment and economic opportunities. This project will not only respond to development issues and job creation, but it will have an impact in the environment of the region, hence the need for the environment impact assessment (EIA). The National Environmental Act has played a major role in the decision making process regarding this project. Some of the programmes introduced and implemented by government in response to socio-economic challenges include the comprehensive rural development programme (CRDP) and the extended public works programme (EPWP). The questions are: Where are the gaps in existing policies and strategies? Are the strategies and programmes implemented? Some of the objectives of government strategies and initiatives are to link rural areas with urban areas and promote sustainable development.

## **1.8 Theories on Infrastructure and Economic Growth**

According to Fedderke and Garlick (2008:1), inadequate infrastructure is one of the factors that limit growth in South Africa. In the paper by Fedderke and Garlick (2008:4), the following theories are discussed:

### *Infrastructure as a factor of production*

Infrastructure is regarded to be an input in production. If one increases stock of input this will result in an increase of output, and will subsequently trigger economic growth.

### *Infrastructure as a complement to other factors*

By having up-to-standard infrastructure, various industries and sectors are able to produce effectively and efficiently and the cost of production can be reduced significantly.

### *Infrastructure as a stimulus to factor accumulation*

It is argued that infrastructure can influence growth indirectly. Let us consider having easy access to schools. Both school proximity to residential areas and high fee subsidies from the government (possibly even schools with no fees) enable and promote education amongst the various income earners. With an increase in the number of educated people in society or communities, the country stands a better chance of reducing the levels of poverty as there will be more productive human capital.

### *Infrastructure as a stimulus to aggregate demand*

Investing in and developing infrastructure can trigger demand. For example: Once a road, a bridge or a stadium has been constructed there will be a need to maintain the infrastructure. In telecommunication, technology is constantly changing and to be competitive, both the public and the private sector need to constantly monitor this industry and keep up to date with the latest trends and technologies.

### *Infrastructure as a tool of industrial policy*

The government formulates and implements policies and adopts various strategies to try and influence private sector investment decisions. For example, the Industrial Development Zones programme (IDZ) aims to provide investment opportunities for the private sector.

### *Growth as a determinant of infrastructure spending*

An increase in collective output of products produced may stimulate demand for new infrastructure. For example, the demand for new infrastructure should result in spending on the development of infrastructure such as road networks, water supply and electricity grids. Better-quality infrastructure is crucial for economic development, improving the living conditions of communities and their working environment.

Lack of adequate infrastructure limits development and economic growth, and restricts efforts aimed at poverty reduction. The logic is that by investing in new infrastructure communities

should be able to transport goods, create water reserves and set up communication facilities to communicate with consumers of their produce.

In a study undertaken by Umoren, Ikurekong, Emmanuel and Udida (2009:53), they highlighted the importance of having access to road infrastructure, as it facilitates communication and transportation of agricultural products from rural areas to the markets and consumers. In South Africa a local municipality is responsible for the maintenance of a minor collector road. Umoren, Ikurekong, Emmanuel and Udida (2009:59) recommend that community participation should be encouraged in the development of roads and rehabilitation. Local government should have transportation policies to enable growth.

Various studies have been undertaken on rural infrastructure and agriculture, and there is consensus that agriculture is key in alleviating poverty. The success of this sector in achieving this is dependent in the synergy between the public sector, private sector and communities. According to Meyer, Breitenbach, Fényes and Jooste (2009:12) the employment capacity of the agricultural sector exceeds any other sector as it connects with other sectors. The agricultural sector can help create jobs, reduce unemployment and levels of poverty. Meyer, Breitenbach, Fényes and Jooste (2009:13) suggest that for the rural and agricultural sector to be successful, prioritisation of fundamental infrastructure is crucial.

Klasen and Woolard (2008:41) highlighted in a study looking at surviving unemployment without government support that the unemployed tend to live with their relatives and transfer schemes end up supporting the unemployed. Families maintained by social pensions are mostly found in rural areas. It is recommended that an effort be made to improve job prospects by improving education, skills or self-employment options.

In a study by Thornton (2008), the effects of transfer schemes, i.e. “social welfare schemes” as a source of income for poor households, were investigated and it was revealed that urban and peri-urban agriculture (UPA) was overlooked in households where members had formal employment. It was predominantly practised in households where members received grants. Peri-urban agriculture was not widely practised because transfer schemes were seen as an easy way-out and

a guarantee to food security (Thornton, 2008:258). Households with multiple recipients of social grants did not feel pressured to undertake agricultural activities as the social grants guaranteed them a certain income. There was minimal support from various stakeholders such as institutional and non-governmental actors, whether individually or in partnership (Thornton, 2008:258).

Traditionally, agricultural activities were undertaken by the various age groups. The study also revealed that one of the setbacks for this sector is the negative attitude of the youth towards agriculture, as they associated it with apartheid. According to Thornton (2008:258), although the Reconstruction and Development Programme (RDP) and social grants have helped poor households to push back the frontiers of poverty, grants did not encourage a culture of saving, but has instead promoted and encouraged dependency on government. Thornton (2008:259) recommends re-evaluating the social welfare policy to reduce dependency on social welfare. Both Thornton (2008:259) and Klasen and Woolard (2008:39-41) agree that in response to challenges associated with unemployment the focus should be on skills development and pursuing agricultural activities. Policies should also be responsive to the socio-economic challenges.

Government contributes minimum investment in rural urban areas and rural areas. According to Asfaha and Jooste (2006:90), urban-bias policies accelerate rural-urban migration. Rural-urban migration can be lessened by creating an environment conducive to agricultural activities by investing in agricultural infrastructure and enhancing land resources and technology can boost agricultural income. According to Meyer, Breitenbach, Fényes and Jooste (2009:9), after 1994 fixed investment in the economy increased to R221 583 million (in 2006), whilst fixed investment in the agricultural sector decreased.

The community at Mpofu district was faced with a number of challenges, including poverty and unemployment. This was partially due to the lack of external support, limited ability of rural local government to intervene and the need for self-reliance. In response to these challenges the community initiated entrepreneurship projects such as the Philani community development project and the Zamukphila and Hertzog Agricultural Co-operation. The community played a

major role in solving their socio-economic problems and by taking charge of their lives circumstances and their action triggered a chain of events into motion including local economic development. Binns and Nel (1999:389). The community's initiatives did not only contribute to the lives of those living in this area, but also contributed to the development of the entire region. Coetzee, Graaff, Hendricks and Wood (2001:340) argue that although communities must be able to support themselves, they do need support during the preliminary stages. Binns and Nel (1999:406) recommend that government should act as a facilitator, offer advice, incentives and not dominate. Thornton (2008:258) and Binns and Nel (1999:389) agree that setbacks for communities is lack of support. Community participation is critical in reducing levels of poverty and unemployment in rural and urban areas.

## **1.9 Key Concepts**

### *Infrastructure*

The United Nations Human Settlement Programme (2011:5) defines infrastructure as “all basic inputs into and requirements for the proper functioning of the economy”. Infrastructure is categorised into two groups, namely, economic and social infrastructure. Economic infrastructure facilitates economic production and helps to produce items that are consumed by households. It is subdivided into three categories: utilities, public works and other transport sub-sectors. Social infrastructure has a direct and an indirect impact on the quality of life; for example, health, education and recreation.

### *Economic Growth*

“Economic growth is the consequence of accumulation of factors that permit an economy to take advantage of opportunities for increasing its income” (Esfahani, 2002:5).

### *Urban and Peri-urban agriculture*

Urban agriculture is agricultural activity occurring on the urban (peri-urban) fringe of a town or city. Peri-urban agriculture occurs beyond city limits up to a certain point. Intra-urban agriculture is agricultural activity which occurs within city limits (Mougeot, 2006:83).



Lynch (2005:63) refers to urban and peri-urban agriculture as agricultural cultivation within city boundary.

### **1.10 Research Methodology**

The research will adopt the case study approach. By interviewing entrepreneurs in different locations (peri-urban areas) the investigator will be able to establish if there are any differences in experiences and circumstances and by so doing will be able to quantify any differences that may exist. The study will therefore combine qualitative and quantitative research methods. Feagin, Orum, Sjoberg (1991:2) define a case study as “an in-depth multifaceted investigation using qualitative research methods of a single social phenomenon”. The small case studies will adopt a comparative approach.

#### *Quantitative Research Methodology*

The quantitative method looks at quantifiable data, which can be shown by social surveys (census) and by experimental investigations (Bryman, 1988:1). Quantitative data in a case study is often used for comparison purposes between different groups. The data is used to identify differences and do an internal validity. Quantitative data has to be subjected to the analysis of what it might mean and whether or not it is statistically significant (Gillham, 2000:85).

#### *Qualitative Research Methodology*

The qualitative methodology allows the researcher to be closer to people and their environment, and by so doing shows in-depth understanding from the perspective of those involved in the study and what they are trying to accomplish. According to Bryman (1988:61) the main characteristic of qualitative research is its ability to view events from the perspective of the people who are being studied.

Policies and programmes that are in place will be scrutinised to establish whether they are achieving their objectives. The historical research method will be adapted as it answers questions such as: Where have we come from? Where are we? Where are we going?

### *Data Collection*

Data collection will include both primary and secondary data. The primary data collection method will include interviews and observation. The interviews will be semi-structured and in-depth on a person-to-person basis. With semi-structured interviews, an interviewer can obtain in-depth information by probing, and questions can be explained. The interviewer can either repeat or re-phrase a question to ensure that the participant understands the questions (Kumar, 2011:150). One of the advantages of a semi-structured interview is its flexibility and ability to adapt to the current situation.

In the qualitative research method the study will be field-based. The researcher will interact with the farmers in detail in their own environment. The semi-structured interviews will enable the researcher to gain insight and have a better understanding of the environment in which the participants practise. This will enable the researcher to identify challenges from the participants' perspectives. Target participants will be the small-scale farmers (entrepreneurs) and local government. For the secondary data collection, existing documentation, including various legislations and policies will be scrutinised, and the role and impact of infrastructure on agriculture and how these contribute to development will be assessed.

The study will be undertaken in different locations in Bizana (Mbizana) for comparison purposes. The study will assess and evaluate the impact of infrastructure on agriculture and how these contribute to development. Sustainability of farms in the current environment will also be assessed and evaluated.

#### **1.11 Ethical Requirements**

The participants will be presented with a letter of consent explaining the purpose of the study. This will be done as a means of promoting transparency of the study to reassure the participants and gain their confidence in the study. Confidentiality and anonymity will be maintained and records identifying participants will be stored at the Graduate School of Business, University of KwaZulu- Natal.

### **1.12 Limitations of the Study**

The study is a small-scale study focussing solely on the Bizana (Mbizana) area. A larger study would probably yield greater information, but the availability of people to be interviewed and securing appointments with the participants might pose a challenge. Geographically the research is restricted to Bizana (Mbizana).

## CHAPTER TWO

### Literature Review



Locality Map: Eastern Cape Province, OR Tambo District Municipality

#### 2.1 Introduction

Like most African countries, rural areas in South Africa have poor infrastructure, dispersed communities and low income. The long walking distances to schools contribute to a high drop-out rate from schools (Department of Transport, 2007:87). The Department of Education provides transport for scholars to promote education and provide access to schools. At the beginning of 2011 the Eastern Cape Department of Education had to suspend this service due to financial constraints. This service has since been transferred and is now administered by the Eastern Cape Department of Transport (<http://www.ectransport.gov.za>).

According to the World Bank Report (2004:5), infrastructure, such as transport and communication, links people in different geographic locations - whether in urban or rural areas - and by so doing eliminates and reduces the effects of long distances. The absence of adequate infrastructure results in fragmented markets and has a negative impact on economic activities. This becomes a barrier which hinders people from actively participating in economic activities such as farming as this leads to high operating costs, and those already in the industry encounter difficulty in growing their businesses (World Bank, 2007:133).

## 2.2 Infrastructure

Chapter One grouped infrastructure into two categories: hard and soft infrastructure. Hard infrastructure refers to tangible structures or facilities that support society and the economy whereas soft infrastructure is non-tangible and supports the hard infrastructure such as policies (Bhattacharyay, 2010:201). According to United Nations Human Settlement (2011:6), roads promote spatial integration and competitiveness for example roads help to reduce operational costs and provide easy access to international markets. According to Weisbrod (2007:3), the returns of investing in infrastructure are not realised immediately, but the following returns can be realised: improved travel time, reliability and capacity.

The benefits of investing in infrastructure include:

- Development of inter-industry trade;
- Reduction of costs and enhancement of reliability;
- Increased markets and productivity;
- Reduction of isolation and enhancement of access to more diverse markets.

The different segments of infrastructure are intertwined; a health care facility cannot be planned and established without considering the human resources, geographic location or the institutional arrangements of the different spheres of government (Kane, 2001:2). For example, the provision of adequate transport infrastructure cannot be achieved and sustained without having in place complementary and enabling policies. The World Bank (2004:38) supports this and suggests that in order to realise positive results government spending must be complemented by appropriate policies.

Banister and Berechman (2000:13) support the notion that infrastructure is intertwined. The authors present the following arguments. For transport infrastructure to promote economic development and increase productivity and competitiveness, it is important that complementary elements such as policies are present to create a conducive and enabling environment for markets. On the other hand, it is argued that if the essential complementary elements are not present, investing in transport infrastructure will only yield transport benefits and enable accessibility.

The Department of Transport (1996) highlights that investing in infrastructure is important, but it is crucial that prior to government spending large sums on infrastructure development, authorities need to understand the environment and the dynamics faced by communities. Incorrect implementation and provision of infrastructure will result in inefficient use and spending of limited financial resources. Failure to undertake an environmental scanning exercise prior to investing in infrastructure will not yield the required outcomes from a specific project. In chapter One Binns, Hill and Nel (1997:1) argued that the top-down rural development strategies in Africa failed because they did not understand the social and cultural issues of rural communities.

### *2.2.1 Infrastructure Prioritisation Tool Kit*

The Department of Co-operative Governance and Traditional Affairs (CoGTA), formerly known as The Department of Provincial and Local government (DPLG) in South Africa, has a project identification process. This process is used by municipalities to identify infrastructure needs and priorities. The process is to analyse the situation: the project location, description and condition of present infrastructure and the needs. The strategic plan of the National Department also needs to be considered. Although the Department of Co-operative Governance and Traditional Affairs (CoGTA 2006:20) refers to this process as project identification when making use of the municipality infrastructure grant (MIG), this process is similar to some international infrastructure identification models.

The Municipal Infrastructure Grant (MIG) is a complementary programme introduced and implemented by the Department of Co-operative Governance and Traditional Affairs. It seeks to increase access by the poor to basic services, improve the social and economic circumstances of all and promote job creation and the development of enterprises. This programme was established through a strategic alliance by the following government departments: Water Affairs, Public Works, Co-operative Governance and Traditional Affairs, Sports and Recreation and the Department of Transport (CoGTA, 2006:1).

The screening and assessment procedure adopted by the Department of Co-operative Governance and Traditional Affairs is similar to the Integrated Rural Accessibility Planning

(IRAP) adopted by the International Labour Organisation (ILO). See Figure 2.1. The planning tool is used by planners to identify priority infrastructure needs in rural areas and assists in identifying what needs to be done and where. The ILO seeks to create an enabling environment and improve access to transport systems and services by people living in rural areas (International Labour Organisation, 2003:2).

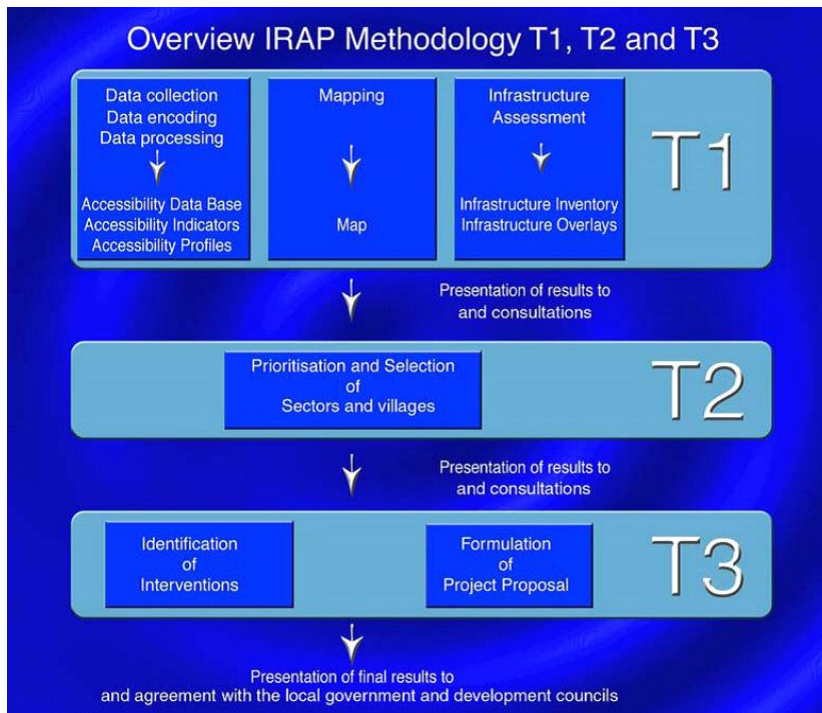


Figure 2.1: ILO planning tool

Adopted: INTERNATIONAL LABOUR ORGANIZATION, 2003:2

### 2.2.2 Institutional Arrangements

Due to numerous and constant social and economic challenges, countries opt to decentralise certain functions. The Philippines and India decentralised the development responsibilities to local government. Integrated Rural Accessibility Planning (IRAP) is used by planners as a planning tool to execute its functions and duties (International Labour Organization, 2003:3).

South Africa supports and promotes decentralisation of government functions. The Constitution of the Republic of South Africa (No. 108 of 1996, Section 40; Chapter 3:40) highlights that

government is comprised of the national, provincial and local government spheres. The authorities responsible for the provision of rural transport infrastructure are the municipality and the provincial government (Department of Transport, 2007:9). The Municipal Infrastructure Grant (MIG) programme promotes the decentralisation of responsibilities amongst the various spheres of government. Local government is responsible for the management and utilisation of funds. Provincial and national government are responsible for policy making and regulatory functions. Provincial government is also responsible for providing support to local government by developing planning capabilities. One of the conditions attached to the awarding of this grant to a municipality is that the projects to be funded by MIG must be aligned to the Integrated Development Programme (IDP), as this programme cuts across other sectors. The grant may only be used to fund the capital initial project and not for operational activities. The municipality is required to invest a certain portion of the funds on rehabilitation of existing infrastructure.

The decisions that government makes and strategies implemented at the different spheres of government must always consider the impact they might have on the environment. The initiatives undertaken and implemented to improve the living conditions of the people in urban and rural areas must be done in such a way that they promote sustainable development. Hence, one of the requirements of the MIG requires that an environmental impact assessment (EIA) be conducted as part of project identification (CoGTA, 2006:21).

In addition to the above-mentioned decentralisation strategies implemented by government, in 1999 the South African government introduced the concept of the Thusong Service Centre programme, which aims to decentralise government services even further to serve disadvantaged and rural communities (<http://www.thusong.gov.za/about/history/index.html>). The Department of Transport proposes using the Thusong Services Centres as district logistics centres for products and related commodities. The strategy recommends using these centres to offload and store local supplies. The centres will have cool rooms to store fresh produce and agricultural products (Department of Transport, 2007:23). The proposed strategy aims to promote optimum use of existing resources and centres.



### *2.2.3 Transportation Infrastructure*

The Department of Transport refers to transport infrastructure as structure upon which transport operations take place. This includes roads, railways, airports, harbours, pipelines, interchange facilities and the associated dedicated power and communication systems (White Paper on National Transport Policy, 1996). To have an efficient and effective transport system it is important that the following are in place: institutional arrangements, policies and capital and human resources (Kane, 2001:2). According to Minkley and Phiri (2010:26), the Eastern Cape Province has a huge backlog of access to adequate roads infrastructure. It is estimated that about 12 000 km of access roads are required to enable communities to access health services, schools and their communities.

Due to various reasons, the condition of infrastructure in South Africa has been deteriorating which is partly due to low budget allocations for infrastructure investment. Between 1976 and 2002 annual infrastructure investment allocations dropped from 8.1% to 2.6% and this resulted in poorly maintained infrastructure, while the need to access services in previously disadvantaged communities increased (Development Bank of Southern Africa, 2008).

When government realised the impact and consequences of under-investing in infrastructure, new legislation was implemented together with complementary programmes. For example, the White Paper of 1996 on transport policy by the Department of Transport paved the way for the National Land Transport Transition Act (No. 22 of 2000). The main objective of the Act is to transform and restructure South Africa's land transport system focusing on public transport through the provision of necessary mechanisms (Department of Transport, 2000:11)

Despite the identified shortfalls of under-investing and taking corrective steps, the Development Bank of Southern Africa (2006:22) reports that when compared to other countries on the same level of development, South Africa continues to lag behind. For infrastructure, South Africa was rated 58 out of 60. This highlights that despite government initiatives and interventions, government activities continues to be disjointed. There is a need to re-evaluate priorities and adopted strategies in providing the infrastructure.

A report by the Tanzania Forum Group (2003:4), highlights that one of the contributing factors affecting the fight against poverty is that government does not pay enough attention to rural accessibility and mobility. As we highlighted in the previous chapter, poverty and inequality are global problems (Anríquez and Stamoulis, 2007:1). South Africa is rated as one of the countries globally with high income inequalities despite the efforts by government to address this through policies focused on poverty alleviation (World Bank 2006:1). According to the Development Bank of Southern Africa (2008:17), the issues of inequality have not improved much since 1994 and many poor households are mostly dependent on government grants. With the high unemployment rate, government grants serve as a source of income.

Some of the contributing factors to the poor state of rural infrastructure include poor co-ordination between authorities, insufficient budget allocation and absence of clear and comprehensive responsive policies to community challenges. Although a country will not be able to allocate sufficient funding to infrastructure development, according to Tanzania Forum (2003:23) other African countries on a par with Tanzania regarding development, spend between 15% and 25% of their budget on infrastructure development.

#### *2.2.4 Infrastructure Challenges*

Taking into consideration the rural transport strategy by the Department of Transport, the department highlights and promotes various aspects including the importance of synergy amongst the different government departments. Government co-operation is important for rural development, as programmes and projects like Integrated Sustainable Rural Development Programme (ISRDP) and Integrated Development Plan (IDP) cut across the different spheres of national, provincial and local government (Department of Transport, 2007).

The Department of Transport in South Africa identified fragmented activities by the different spheres of government. For example some infrastructure projects within municipalities were administered by other entities and this was identified as one of the contributing factors to poor infrastructure provision. For those implementing and providing services in a particular area, it is important that they are in sync with the challenges affecting communities to ensure that projects are not implemented in isolation to people's needs. By so doing this will ensure that appropriate

infrastructure is provided at the right time and this will ensure that it is optimally utilised (Department of Transport, 2006:62). The Development Bank of Southern Africa emphasises that incorrect implementation and provision of infrastructure has a negative impact as funds are not effectively and efficiently utilised (Development Bank of Southern Africa, 2006:68).

In Tanzania the rural transport is mostly non-motorised, i.e. walking and head-loading (Tanzania Forum, 2003:23). South Africa has various motorised and non-motorised modes of transport. Non-motorised transport includes cycling, walking and riding in animal drawn carts. (Department of Transport 2006:3).

In Chapter One, we highlighted a study by CSIR which investigated the state of municipal infrastructure and the causes of its current state. The study revealed that many municipalities, especially rural municipalities, were struggling to maintain their infrastructure. (CSIR, 2007:15). The Development Bank of Southern Africa (2006:178) supports this and highlights that infrastructure challenges are not only due to funding (the availability of initial capital to fund national municipal infrastructure programmes) but in some municipalities there is a lack of technical and institutional capacity to plan for the implementation and operation of infrastructure services. The Department of Provincial and Local Government (2006:26), through the municipal infrastructure grant, encourages adequate budgeting for personnel and maintenance of infrastructure to promote sustainable services.

### **2.3 Agriculture**

The performance and agricultural output of countries is dependent on factors such as climate, population density and infrastructure. The levels of rainfall, temperatures and access to adequate infrastructure are some of the elements used to determine whether an area is viable for agricultural activities. These factors are also used during the decision-making process to decide whether an area favours or does not favour commercial farming. Population density is used for various reasons during this process, for example identification of infrastructure priorities (World Bank Report, 2008:55).

Traditionally, according to the World Bank (2008:118), people used to sell their products in their communities. This has evolved, and farmers now trade and compete in local and global markets. Farmers offer markets unprocessed and processed products. These activities have created opportunities for farmers and non-farmers and they have created employment and promoted rural income. According to the World Bank (2008:6), although agricultural activities can promote growth and reduce levels of poverty, agriculture is not optimally utilised to promote development. The World Bank also identifies access to land, water, education and health as being key necessities in promoting development through agriculture.

Households participate in agricultural activities due to various reasons, and these include home consumption, income generation and job creation (Mkwambisi, Fraser and Dougill, 2010:182). The Department of Transport (2007:1) considers agriculture to be the driver of economic development in rural areas. The ability of agriculture to promote rural economy and development can be realised by ensuring that there is appropriate logistical support in place to support productivity. An effective logistic system requires complementary and appropriate infrastructure such as roads, and it also promotes spatial integration and rural development (Department of Transport, 2007:9).

For infrastructure to make a significant impact and promote growth, it is important that the producers and consumers are at the same location as the infrastructure facilities. Having access to different types of infrastructure often results in integrated economic activities, improved production, consumption and competitiveness (Development Bank of Southern Africa, 2006).

The rural transport strategy of the Department of Transport promotes government cooperativeness. It takes into consideration strategies by other government departments, for instance the agri-logistics strategy by the Department of Agriculture. In support of this strategy priority rural roads for development which are used to access farms will be identified by the Department of Transport, together with the Department of Agriculture (Department of Transport, 2007:23).

The agri-logistics by the Department of Agriculture will have its benefits and disadvantages to rural communities. An efficient transport network in place will enable easy transportation of agricultural produce from the farms to the consumers, but on the other hand it will lead to an increase in truck traffic volumes on rural roads. For the responsible authority a large budget allocation will be required to maintain and rehabilitate roads frequently, as their life span is reduced by increased truck traffic volumes. One of the reasons for the fast deteriorating conditions of provincial roads is that transport operators divert from national roads and use provincial roads to avoid paying toll fees (Department of Transport, 2005:15).

The Department of Agriculture encourages farmers to form cooperatives and establish strategic marketing alliances. This will improve logistic process of transporting goods from the farms to markets and consumers. The formation of farmer co-operatives will improve farmers' bargaining powers. The logistic alliances between farmers and distribution companies will ensure the distribution of quality products and provide access to a wider market. For all the participants to benefit in the agro-logistic, it is imperative that the farmers, logistic companies and consumers have access to appropriate marketing infrastructure as this will determine the success or the failure of this initiative (Department of Agriculture, 2010:3).

The Department of Agriculture defines agricultural marketing infrastructure "as any facility or tool that can be used by farmers and traders to facilitate trade, transform raw agricultural products into value-added products through processing and packaging, store agricultural products to smooth out supply and fulfil demand, transport agricultural products to satisfy demand, collect, collate, synthesise and disseminate agricultural market related information". Some of the components of agriculture marketing infrastructure include storage units, ripening chambers, ice plants, facilities for washing fruits and vegetables, communication facilities and office administrative components such as computers (Department of Agriculture, 2010:3).

As part of the agri-logistic strategy the Department of Agriculture is involved in the administration and issuing of agricultural market import and export permits for some agricultural products (Department of Agriculture, 2010:6). The envisaged benefits of such initiatives include:

- Improved access to market facilities;
- Increased numbers of new entrants/farmers locally;
- Creation of environment and opportunities to benefit the previously disadvantaged;
- Removal of barriers to enter the market.

To boost domestic markets, the Department of Agriculture (2010:7) suggests applying preferential procurement when buying food for school feeding schemes, hospitals and correctional services facilities. The Department of Agriculture has tasked the private sector (agri-business) with the responsibility of identifying agricultural development hubs that will require shared agricultural marketing infrastructure (Department of Agriculture, 2010:9).

### *2.3.1 Situation Analysis of Agriculture in South Africa*

According to the Department of Agriculture (2010/11:38), it is estimated that approximately 8.5 million people depend on agriculture for employment and income directly or indirectly. The country's surface area suitable for crop production is estimated to be 12%. Agriculture contributes 3% to South Africa's gross domestic product (GDP) and 7% to formal employment. Agriculture export contributed about 6.5% of total South African exports. For over a decade agricultural exports increased from 5% (1988) to 46% (2009). Crop farming contributed the most to exports.

The Eastern Cape's provincial growth and development strategy identified priority areas for investments and these included agrarian development and food security and infrastructure development. Mbizana has great agricultural development and tourism potential (Mbizana Local Municipality Integrated Development Plan Review, 2010/11:103). According to the World Bank (2008:38), agricultural growth is difficult to achieve and this is due to various challenges, which include soil degradation, population density and poor functioning markets.

In its effort to improve the quality of life for the poor, the government introduced and implemented the Masibuyele Emasimini Mechanisation Scheme in 2010. This programme seeks to create an environment conducive to rural communities and small scale farming by providing them with essential equipment like tractors for them to be self-reliant. The programme also

encourages and promotes the use of uncultivated land and revival of land reform projects which are in trouble (The Presidency, 2010).

### *2.3.2 Agriculture Transformation*

The post-1994 South African government transformed the agricultural sector by introducing and implementing the land reform programme. Many people's lives and circumstances were changed both in rural and urban areas. The land reform programme is segmented into three components: Restitution, Redistribution and Land Tenure. The programme seeks to give access to agricultural land to those who were previously disadvantaged and excluded from actively participating in the economy (Kirsten, Van Zyl and Vink, 1998:129).

According to Swinnen (2005:1), when change occurs it does not only affect the immediate environment but also affects other elements such as politics, economic systems, culture and society at large. To encourage people to participate and benefit from the land reform programme, the Department of Rural Development and Land Reform (formerly known as the Department of Land Affairs) provided enabling mechanisms in the form of grants which consists of financial support. The land reform grants include the following:

*The Land Redistribution for Agricultural Development (LRAD) Grant* aims to provide financial assistance to the land reform beneficiary, more specifically the land redistribution programme. The funds can be used to acquire land, make land improvements, invest in agricultural infrastructure, acquire short term agricultural inputs and lease options.

*Settlement Land Acquisition Grant (SLAG)* funds are used for land acquisition, improvement of tenure rights and investment in infrastructure

*Grant for the Acquisition and Development of Land for Municipal Commonage:* The objectives of this grant are to enable municipalities to acquire land to extend/create commonage and provide infrastructure on the land to be acquired or on existing commonage.

*A Settlement Planning Grant* can be used to source professionals to assist applicants for both SLAG and the restitution discretionary grant, and to prepare grant applications and post-transfer support.

*Grant for the Purpose of Determining Land Development Objectives (LDOs):* This grant is accessible to the under resourced, poor or rural local authorities. Its objectives is to assist authorities in the planning process ensure that land reform is aligned with the local integration plan.

*The Restitution Discretionary Grant* seeks to create an enabling environment for the beneficiaries of the restitution programme, those who are either restored to their land or compensated with alternative land (Department of Land Affairs, 2001:2).

### *2.3.3 Agricultural Challenges*

Clover and Darroch, (2005:238) undertook a study to investigate factors regarded by farmers to be hampering their growth. The following are some of the factors reviewed and discussed in the study:

*Socio Economic Constraints:* Because of the geographic location of rural areas and urban areas, long distances present a challenge to famers due to lack of access to infrastructure services. This confines entrepreneurs to operating in their locations as they cannot access urban markets.

#### *Institutional Constraints:*

- Lack of government support: Due to the absence of title deeds which are required and are used as collateral farmers, were unable to secure start-up capital or capital to make improvements on their properties;
- Lack of private sector support: Entrepreneurs encountered difficulties when trying to secure finance to expand their businesses, this was partly due to the fact that financial institutions did not prefer to finance them.



Randela (2003:164) undertook a study investigating post-harvest constraints. Farmers identified the following as some of the post-production constraints: weevils, rodents, mould, infrastructure and lack of storage facilities. According to Randela (2003:170), rural communities have access to a poorly maintained road network. In rainy seasons the roads are often impassable, and this has a negative impact on farmers as their products have to be transported from the farm to the consumers. The study also highlights that farmers suffer post-harvest losses due to lack of storage facilities. Insects have easy access to harvested crops and this can result in loss of agricultural produce. This is a setback on efforts aimed at reducing levels of poverty, as income is lost by farmers. Those participating in agricultural activities do not only lose produced crops and income in the period of harvesting, but with lack of appropriate post-harvest facilities they also lose grains of seed for the next season.

In addition to the discussed constraints above the following were also identified in the study: Lack of access to services, complex legislation and lack of management skills. When these constraints were rated, lack of government support was considered to be the main drawback to business growth and survival. Policies and legislations were considered to be biased towards large businesses, and government officials were not adequately trained. Clover and Darroch (2005:258) suggest forming alliances between the farmers and the public or private sector to overcome the institutional constraints. Further to this the study recommends developing more flexible loan procedures and investing in management skills to improve the bargaining power of the farmers.

In the light of the above study and the land reform financial support offered by the Department of Rural Development and Land Reform and other government departments, for example the co-operative incentive scheme offered by the Department of Trade and Industry, [www.dti.gov.za](http://www.dti.gov.za), is enough being done to disseminate information and educate people about government programmes and support?

## **2.4 Situation Analysis of Mbizana Local Municipality**

Bizana (Mbizana) is estimated to be 5% urban and 95% rural (mostly communal). Of 246 516 people living in this region, 57% are estimated to be unemployed. The population profiled is 54% female and 46% male. Because of urban bias development and service delivery the region has a growing trend to rural urban migration (Mbizana Local Municipality Integrated Development Plan Review, 2010/11:98).

In support of existing literature Todaro (1997:287) recommends the following strategies in controlling migration and unemployment: Extending the coverage of “small scale labour industries to the countryside”. The idea in this strategy is to shift the focus of economic and social activities from urban areas to rural areas. Technologies used in the production process should be carefully considered as these have an impact on the successful implementation of programmes aimed at job creation. It is argued that institutions tend to invest large sums on labour-intense time-saving technologies/equipment and these are often imported from developed countries. When organisations acquire labour saving equipment this at times tends to defeat the efforts aimed at job creation as few people are employed. It is recommended that more effort be made to develop small scale labour-intense enterprises both in urban and rural areas. Because of the large pool of the educated unemployed, Todaro (1997:288) recommends creating economic opportunities in rural areas. It is argued that by so doing it will be easy to “redirect education system towards the needs of rural development”.

According to the United Nations Environmental Programme (2002:248), rural urban migration is worsened by declining agricultural productivity, inadequate access to services and unemployment. The unemployment rate at Bizana (Mbizana) is estimated at 57%. The municipality aims to address unemployment and lack of skills through the principle of the extended public work programme (EPWP).

In response to the shortfall in rural development the municipality identified priority development activities which include the following:

- Improving access to household basic services;
- Rural Service infrastructure installation;

- Integration of settlements to mainstream economic participation and contribution, focusing on agriculture, farming, cultural tourism and agro-processing initiatives.
- The provision of access to services and partnerships will be biased towards women and youth.

The provincial and district roads are administered by the provincial office whilst the access roads are administered by the local municipality. Local government development priorities include transport infrastructure, local economic development, food security and rural development. Most areas at Bizana (Mbizana) have access roads, and the municipality plans to provide “all weather access roads to all social service centres, e.g. schools, clinics and the community hall by 2011”. (Mbizana Local Municipality Integrated Development Plan Review, 2010/11:91).

Weisbrod (2007:3) defines economic development as the growth and development of the economy of a nation or region. Growth and development is measured by the accumulation of a region’s income and job creation over time. Blakely and Bradshaw (2002:25) argue that for economic development and job creation to yield positive results it should commence from community level. This supports existing literature that community participation is important as communities have a better understanding of their environment and can possibly provide viable solutions to their challenges.

## **2.5 Conclusion**

Roads promote spatial integration and provide easy access to the markets locally and internationally, United Nations Human Settlement (2011:6). Because of this, rural communities cannot contribute effectively and play a role in improving their social and economic circumstances, i.e. to reduce levels of poverty and unemployment.

This potential labour force, whether unskilled or semi-skilled, can play a role in reducing levels of poverty and improving the rural economy through agriculture. For communities to succeed in doing this, it is important that there is co-operation and synergy in activities amongst the different government departments (Department of Transport, 2007).

A decision by one government department to invest in a particular infrastructure has an impact on another department. A decision to make a Thusong Service Centre a logistics centre for agricultural activities will not yield the desired outcomes if activities and infrastructure implementation is done disjointedly and in isolation by the different government departments. The responsible authority must co-ordinate activities and should ensure that appropriate infrastructure is in place. The Integrated Development Plan forum at district level is responsible for the co-ordination and implementation of programmes (Thusong Service Center, Government Services). For rural economic development to be realised and agri-logistic strategy to be a success, local government must review its infrastructure priorities and investment decisions and align them to infrastructure needs to ensure that appropriate infrastructure is provided.

In all that is to be done to promote rural economic development it is also important that community participation is encouraged to achieve long-term sustainable development. Community participation should be encouraged in all the development stages, i.e. planning, implementation and maintenance (Asian Development Bank, 2006:11). By involving communities in these stages, this will encourage a problem-solving and self-reliance culture. The next chapter will outline how the study will be conducted.

## **CHAPTER THREE**

### **Research Methodology**

#### **3.1 Background**

Salkind (2009:2) defines research as “a process through which new knowledge is discovered”. This process involves undertaking own investigations as a researcher, and also reviewing the work of others. Prior to undertaking a research it is important that one has a plan as this will help guide the research process. Kumar (2011:94) refers to this plan as research design, and defines research design as a plan which outlines how the researcher will go about answering the research questions. The research design also outlines the following: how the information will be collected and analysed, who will be the participants, the criteria used to identify the participants and how the findings will be communicated? The research design also helps to determine the validity and reliability of the results.

#### **3.2 Research Strategies**

There are many research strategies from which a researcher can choose, and these include quantitative and qualitative methods. A researcher can use one or both of these research methods to answer a question, Creswell (2003:13).

##### *3.2.1 Methodology Applied in the Study*

The research project adopted the case study approach. Feagin, Orum and Sjoberg (1991:2) define a case study as an in-depth investigation into a particular event. The objective of this study is to determine the role and impact of infrastructure on agriculture and its influence on development. The previous chapters highlighted the importance and the role of transportation infrastructure in promoting and enabling commercial farming. A research project was undertaken to determine whether transport infrastructure has an impact on commercial farming in Bizana (Mbizana). By adopting the case study approach the researcher was able to gain a better understanding of the phenomenon and a holistic view of the environment in which it occurs in. The research used both the qualitative and quantitative research methods.

Salkind (2009:12) emphasises that the qualitative research method is often used to study the behaviour of humans in their own natural environment. Kumar (2011:394) highlights that qualitative research also looks at perceptions and feelings instead of facts and figures.

Gillham (2000:9) highlights that the quantitative research method involves calculating and quantifying. One of the benefits of the quantitative research method is that it tends to adopt a structured approach. This method is often used to determine whether there is a link with the hypothesis, and the research outcome helps to either confirm or reject the hypothesis (Bryman, 1988:18).

### **3.3 Data Collection**

Data is mainly categorised into two types, namely primary and secondary data. Kumar (2011:393) defines primary data as data collected for a specific purpose or project. The data source for primary data includes conducting an interview or a questionnaire. Secondary data is data collected by someone else for their own purpose or project. For example, sources of secondary data include journals and census data.

#### *3.3.1 Qualitative Data Collection Method*

Creswell (2003:185) highlights that there are four fundamental data collecting methods in qualitative research approach: observations, interviews, documents and audio visual material.

According to Creswell (2003:186), observations allow the researcher to record information as it is uncovered. One of the disadvantages of this method is that the researcher can be considered to be invading someone's privacy. Interviews allow face-to-face and one-on-one personal interviews. One of the disadvantages of interviews is that the information is presented through the views of participants. Observations and interviews enable the researcher to interact with the participants directly. The qualitative research method is more interactive and often involves the participants in the data collection process, which helps to build relations and credibility (Creswell, 2003:181).

Documents containing policies and guidelines can be used as reference documentation. According to Gillham (2000:21), documents provide a “formal framework”. Creswell (2003:186) identifies the following as some of the challenges encountered when using documents: incomplete data; data classified as sensitive information to which the researcher cannot have access; audio-visual material (which includes photographs and video recordings). The latter captures real life events of participants and frames them for future referencing and sharing of personal experiences. The challenge with this data is that at times it is not easily accessible.

### *3.3.2 Quantitative Data Collection Method*

Bryman (1988:11) acknowledges that there are numerous ways used by the researchers to collect data for the quantitative research method. These include surveys, experiments, existing statistics data, structured observation and content analysis. The most commonly used methods to collect data include surveys and experimentation. A survey can produce measurable data, and according to Bryman (1988:11), a survey is often built upon correlating or cross-sectional research design. Correlating research is often undertaken when the researcher seeks to examine and understand a relationship between events or variables. Creswell (2003:153) describes a survey as a process whereby a sample is quantified or explained using numbers. In an experimental research the researcher seeks to understand behaviour and determine the cause and effect of an activity (Salkind, 2009:13).

### *3.3.3 Methodology applied in the study*

#### *Data Collection*

The qualitative research method was used to collect data. According to Creswell (2003:181) the qualitative research method often involves going to the area of interest. This enables the researcher to gain more insight and have a better understanding of the study area and the participants. This research method is descriptive, as it tends to focus more on what the participant tells the researcher (Gillham, 2000:10). This helps to paint a clear picture of the area of interest for the researcher.

The two categories primary and secondary data, were used for the research project. The data was collected using the following methods: interviews, observations and documents. According to Creswell (2003:186), interviews can bring to light historical information. This was confirmed during the interview sessions, as some of the participants took the researcher years back and painted a picture from their first decision to participate in commercial farming to date. Although the interviews were time consuming, one of the benefits of this data collection method was better understanding of the phenomenon, people and their environment.

An interview schedule was used to gather data and guide the proceedings of the interview. Kumar (2011:389) defines an interview schedule as a list of questions and an instrument used in interview proceedings to collect data. The formulation of the interview questions was guided by the research objectives and questions were formulated for each research objective.

#### *Testing of Interview questions*

The research questions were tested by posing the interview questions to knowledgeable people. This was done so as to identify unclear questions. Once the questions were simplified the interview schedule was then adapted.

The interviews were one-on-one, face-to-face and semi-structured. This enabled direct and easy interaction with the participants. The advantage of a semi-structured interview was that if the participant did not understand the question, it could be rephrased to ensure the participant understood the question and had the ability to respond appropriately. One of the advantages of undertaking a research project in the study area was that language was not a barrier. During the interviews notes were made of participants responses. These were then captured and summarised on an excel spread-sheet to enable easy analysis.

Site visits, i.e. observations, helped to contextualise and visualise the phenomenon, the study area and to link up the interview and responses to reality. Gillham (2000:11) argues that if one seeks to understand human behaviour in real life, the researcher must observe and analyse this in a natural environment. This approach helped to put the subject matter into perspective, and also to answer the research question about the conditions in which the farmers practise.



### *Sampling*

The key participants were identified prior to undertaking the fieldwork. One of the objectives of the study was to establish the role of local government in creating an environment conducive to commercial farming. Small-scale farmers who participated in commercial farming in rural areas and the local government were identified as key sources of data. The purposive sampling method was used for the research project. Denscombe (2007:17) describes purposive sampling as a deliberate and intentional targeting of specific participants in a study. The participants identified were considered to be the relevant sources most likely to yield and bring to light valuable information about the research project.

During the planning phases and the initial stages of the project, relations were established with some community members to assist with the identification of small-scale farmers. This process helped to pave the way for the interview processes. This also helped to build relations and avoid issues regarding trust and being seen as an outsider. Additional participants, e.g. farmers, were identified by asking the interviewed participant to refer the investigator to other possible participants. Denscombe (2007:17) refers to this method as the snowball sampling. Snowball sampling is developed through a process of referencing and this arises when one participant refers the researcher to other possible participants. One of the benefits of this referencing approach is that it helps to build credibility.

### *Consent and Ethical Behaviour*

Prior to undertaking the research, an application for ethical clearance was submitted to the university and consent was given. To ensure acceptable and ethical behaviour before embarking on data collection processes, participant consent was acquired. A gatekeeper's letter was forwarded to Mbizana Local Municipality requesting permission to interview local government officials, and approval was granted. Upon identification of possible participants, e.g. small scale-farmers, the purpose of the study was explained and the participants were presented with consent letters and these were signed by the researcher and the participant. Salkind (2009:80) argues that a researcher using human participants must get consent from the participants. By so doing, this ensures ethical behaviour.

One of the objectives of the research project was to understand the conditions under which farmers practice. A number of government department documents were consulted and scrutinised. The documents were from various sources including government departments and parastatals. The investigations sought to establish whether these departments had any programmes in place focusing on agriculture.

### *Data Analysis*

One of the benefits of the qualitative research method is its ability to draw the researcher into the study, as during the analysis process the researcher is able to communicate findings and present conclusions from both personal and theoretical perspectives (Creswell, 2003:181). The data for the research project was collected through interviews, and the interview responses were summarised into an excel table. The data was analysed using the quantitative method. The statistical package for the social science (SPSS) was used to analyse data and present it in graph and statistics format.

### **3.4 Reliability and Validity of Data**

A research project was undertaken to uncover information and to answer questions. It is therefore important that the instruments used in the research project are reliable as this will help to determine the validity of the study. There are numerous ways in which the reliability and validity of data for a project can be determined. Reliability can be confirmed if an event can be measured consistently (Leedy and Ormrod, 2005:29). Salkind (2009:110) concurs with Leedy and Ormrod (2005:29) that reliability can be confirmed when a test is performed repeatedly for the same event and yielding the same results.

Salkind (2009:112) identified some strategies that can be adapted to increase reliability, and these include:

- Increase in the number of observations or events;
- Standardisation of conditions under which the test is taken.

Because the research project was a case study in a small town, it was important that the sample size was representative. In order to be statistically sound a sample of thirty was determined. It was important that the sample size was not too small to increase the reliability of the study. The interviews were conducted in different locations the objective was to establish whether there was consistency in the experiences of the farmers, and this enabled comparison of interview responses.

### *Validity*

According to Denscombe (2007:297) validity tends to focus on the relevance, suitability and correctness of the data used in the study. Creswell (2003:196) identifies the following to be some of the key validation strategies that can be used to illustrate the validity of the study.

- Use of different data sources to be able to justify arguments as a researcher;
- Use of participant verification to confirm the accuracy of the study.

Different data sources were used in an effort to establish the validity of the study. The responses of the farmers were checked against each other to establish consistency and reliability. The responses of the farmers and of the representative from the municipality were checked against each other to establish the validity of the data. Creswell (2003:196) recommends using participants to confirm the validity of the study. This could have been achieved by forwarding interview notes to the participants via email for validation. This was not possible due to the fact that the participants, i.e. the farmers, reside in rural areas and do not have access to email.

### **3.5 Challenges Encountered and Limitations of the Study**

The data collection process was time-consuming as the participants resided in different areas. One of the major challenges was time. Some farmers were willing to share information to such an extent that some interviews took longer than what was anticipated. Farmers were very keen on showing off their farms and shedding light about their sector and due to limited time site visits were not possible for all participants. This resulted in some interviews having to be rescheduled.

The participants were not always available to participate in the research project due to other commitments. Site visits could not be undertaken for all the participants due to limited resources. The study is limited to the Bizana (Mbizana) area.

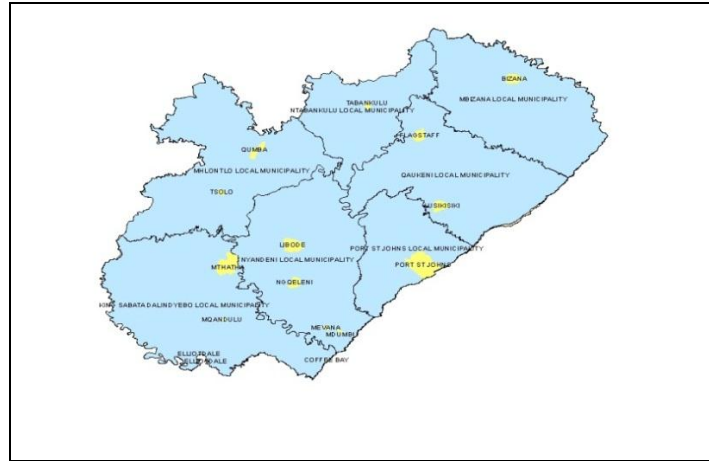
### **3.6 Conclusion**

A research plan is a tool used by researchers to identify key activities before embarking on a project. When formulating this plan, it is important that the researcher always bears in mind the objectives of the study so as to adopt an appropriate strategy as this will help to answer the research questions. The strategy must clearly outline the research method to be used (whether the study is qualitative or quantitative), the data collection method and its analysis.

The plan must clearly outline what the researcher will do, how the activities will be done and the reason for these activities. This will enable the researcher and the audience to determine the reliability and validity of the study. With this in place the researcher will be able to collect data, analyse the data and present findings. Data analysis and presentation will be discussed in the next chapter.

## CHAPTER FOUR

### Presentation and Discussion of the Results



**Locality Map: Mbizana Local Municipality**

#### 4.1 Introduction

This chapter comprises the study findings discussed under different sections, based on the objectives of the study. The discussions focus on the infrastructure and the socio-economic factors which are considered to be vital in helping to understand the trend and answering the research questions.

#### 4.2 Infrastructure

Table 4.1 shows infrastructure to which farmers currently have access, i.e. water, roads, land and health.

VARIABLE	NUMBER	PERCENTAGE
Water		
Borehole	4	13.33
Water fetched from river	15	50.0
Water tank	3	10.0
Rain	3	10.0

Community tap	4	13.33
Self-made dam	1	3.33
Roads		
Gravel roads, muddy when raining	11	36.67
Gravel roads	19	63.33
Land		
Residential	11	36.67
Agricultural fields	13	43.33
Residential agricultural fields	6	20.0
Health		
Town	13	43.33
Clinic	17	56.67

Table 4.1 Distribution of Water, Road, Land and Health

#### 4.2.1 Water

The absence of water poses serious problems for farmers, as 50% of the participants indicated that they derive their water from nearby rivers. On the other hand, out of 26.66% of participants, half (13.33%) source water from boreholes and the remaining half (13.33%) fetch water from community taps. The source of water for some 3.33% of farmers is a self-made dam. Some 20% of the farmers reported that their main problem is lack of access to water.

#### 4.2.2 Roads

According to the World Bank Report (2004:5), infrastructure such as roads promotes spatial integration, and inadequate access results in fragmented markets. The study area is linked to Port Edward and Flagstaff by a provincial road, the R61, which also links Bizana (Mbizana) to Kokstad, which is on the N2. Umoren, Ikurekong, Emmanuel and Udida (2009:53) argue that road infrastructure is essential to enable easy transportation of agricultural produce from rural areas to the markets. Untarred access roads are used by farmers to travel from their farms to the tarred provincial road, and from the provincial road to the urban area and the market place. Some

36.67% of the responding farmers indicated that the gravel access roads used by them are slippery when it rains and this makes it difficult to transport produce from the farm to the market place. Because of this, some farmers are forced to explore and use different modes of transportation for their produce (for example head-carry and the use of cattle/horse carts) to enable them to reach the market place. Pick-up trucks present the easiest and quickest option to transport produce.

#### *4.2.3 Health Services*

Human resources are one of the key components in agriculture. For the land to yield the desired or ideal outputs it is important that those working on the farms and in the community at large have access to health facilities, which will promote good health and give the farm a better chance of producing at maximum output. A total of 56.67% of the farmers indicated that they have easy access to health services, as they reside close to local clinics in their communities and need not travel long distances to access health services. On the other hand, 43.33% of the farmers have to travel to town to access them. This basically means that the farmers and the communities spend more time and resources (portion of their income spent on transport) travelling to town to access health services. This results in reduced disposable income. In the areas where the gravel roads become slippery when it rains, it takes longer to access the health facilities in town.

#### *4.2.4 Land*

According to the World Bank Report (2008:10), agriculture promotes development and this can be realised in various ways; for example, increasing access to land, water and education. Some 36.67% of the farmers undertake agricultural activities in their residences, whereas 43.33% have agricultural fields. Some 20% of the participants undertake agricultural activities in both residential and agricultural fields. In the previous chapter it was highlighted that Mbizana is predominantly rural. The Bizana (Mbizana) Local Municipality Integrated Development Plan Review (2010/11:103) highlights that some areas in the region still practice traditional land allocations. One of the requirements for an applicant to qualify for or be considered for the awarding of financial support from the municipality, is that he/she must submit a letter from the chief or headman acknowledging that the applicant has land and that indeed has a project.

### **4.3 Challenges Hindering Growth**

Farmers have difficulty in accessing markets, and as a result the markets to which the farmers have access do not serve their interests. The absence of water and equipment presents a challenge to farmers, as their success in commercial farming is greatly dependent on having appropriate equipment, having access to water resources and markets, and the ability to transport produce to the consumers. A total of 20% of the farmers are dependent on rain; of this 20% half (10%) depend solely on rain to water their crops and as a result these farmers partake in commercial farming in rainy season, as in winter the land is unproductive. The farmers require irrigation schemes yet due to financial constraints these entrepreneurs cannot acquire this valuable farming aid. The other half of the participants in this category (10%) use water tanks to store rain water, and use it for both irrigation purposes and for daily residential consumption. The majority of the farmers do not have their own tractors, and as a result they hire tractors to plough and also use traditional techniques such as cattle to plough or else they employ workers to hoe the land. This has resulted in farmers being trapped and confined to operate within the given markets. Farmers do not receive rewarding incomes from their agricultural endeavours.

Transport presents additional problems for the marketing of agricultural produce. It is a challenge to transport produce to the market if there is no reliable private transport, as produce must be delivered as soon as possible after being harvested if one is to get prime prices. The absence of mechanical transport limits the majority of farmers to selling to their local communities and in the local town, and thus receiving lower selling prices in most instances. Some 16.7% of the farmers transport their produce to Harding, Umtata and Flagstaff in order to make sales. Of this 16.7% of the participants, only two of the farmers (6.67%) who sell in these towns have their own transport. The remaining 10.03% of the farmers who sell in the other towns either hire pick-up trucks/trucks or the customers collect the produce from the farmers. This reduces the income generated by the farmers as they must sell at a cheaper rate to compensate customer collection.

According to the results in Mbizana, 36.6% of the farmers reported that their main problem is the scarcity of water, the absence of irrigation schemes and slippery gravel roads when it rains. The World Bank report (2007:119) highlights that the availability of road networks links farmers to



local and international markets. The O.R. Tambo District Municipality Integrated Development Plan (IDP) (2010/11:13) points out that community consultation undertaken revealed that access roads in the local municipalities were poorly maintained and some were inaccessible. A total of 33.3% of the participants complained about fencing, electricity and drought. Farmers also require fencing to ward off stray livestock such as goats. For the farmers who require irrigation systems and boreholes, electricity is essential to make this a reality. Though diesel generation is possible, that also adds to the logistical and financial burdens of the farmers.

One of the constraints common to all the farmers in pursuing and achieving growth was of a financial nature, where they lack capital and adequate cash flow to improve their businesses. The farmers complained about lack of access to financial support. Market competition is a major problem. Farmers are forced to sell at low prices due to outside competition from large-scale farmers and who are more efficient producers, and this results in reduced profits and income. Problems also encountered by farmers include pests, hail, drought, manual labour and absence of agricultural inputs such as fertilizer, fencing and seedlings. According to 73.3% participants it is a challenge to transport produce in time, to the market as they do not have their own private transport. This forces farmers to explore various channels to ensure that their produce reaches the markets and these include hiring a pick-up truck, making use of a wheelbarrow or head-carrying.

#### **4.4 Financial and Government Support**

When the participants started with commercial farming, all the farmers (100%) used their own finances. When asked whether they received government support/assistance, the majority of farmers (76.7%) stated that they are not receiving government support. Seven farmers (23.3%) are receiving government support from either local government and/or the Department of Agriculture (see Table 4.2). These institutions supplied agricultural inputs such as seedlings and fencing, and provided farmer training and support. Some farmers receive support from the Ntinga O.R. Tambo Development Agency, which contributed 50% of the production costs. The agency provided inputs such as fertiliser, seeds and tractors for ploughing and planting. In 2011 the farmers indicated that the tractors were provided late into the season, and as a result the farmers started planting late, resulting in low yields.

VARIABLE	NUMBER	PERCENTAGE
Finance		
Own	30	100.0
Government support		
Yes	7	23.3
No	23	76.7

Table 4.2: Distributions of Financing and Government Support

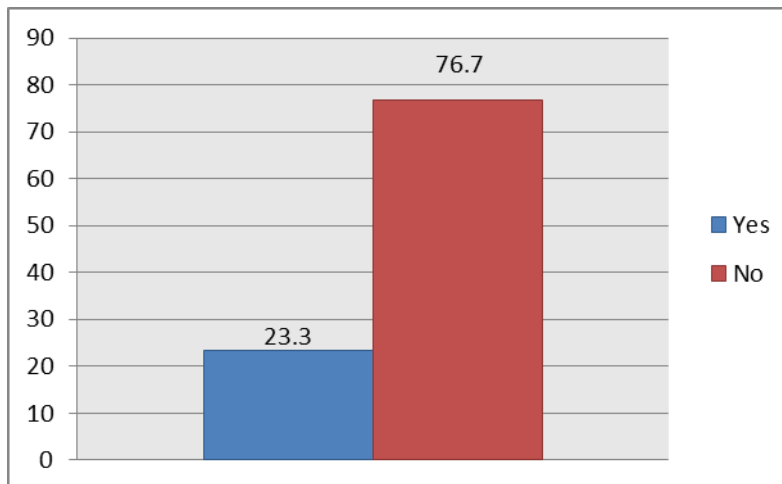


Figure 4.1: Distributions of Farmers Receiving Government Support

Local government provides support to farmers both in the form of financial support, and as a facilitator. There are two key programmes in which the municipality provides financial support to the farmers and these are the Income Generating Projects (IGP) and the Anchor Projects. An Income Generating Project is awarded to farmers to a value of R10 000, and an Anchor Project is valued between R100 000 and R250 000. The awarding of these grants is dependent on various factors, e.g. the qualifying requirements for financial assistance by the Anchor Project stipulate that the project must employ between four or five people. Due to a limited budget, the municipality often provides financial assistance to one or two Anchor projects annually. On the

other hand, the financial assistance for Income Generating projects is often awarded to more people, as this involves small amounts. It is important to note that local government provides financial assistance to farmers, ensuring that monies for goods and services are paid to the suppliers of the inputs and not to the farmers.

Many farmers and communities often plant maize, and a few years back the region experienced over-production of maize. One of the challenges that the region encountered during this period was limited markets. When markets are scarce farmers are forced to sell at low prices or risk a loss with a deteriorating crop. In an effort to address challenges related to limited access to the markets, the municipality also acts as a middle man between the farmers and the markets.

Taking this, and the problems encountered during maize over-production, into consideration, the municipality encourages diversification of agricultural produce, e.g. planting sunflowers and soya beans. As an incentive to encourage people to diversify, the municipality provides funding to purchase inputs, and this is partly due to the fact that people are often sceptical to start new ventures, as they are often associated with high risk. The project of planting sunflowers and soya beans is at a trial stage, and if the trial projects succeed, the municipality will increase its target of cultivated land. At this stage the municipality is carrying the risk of this new initiative. By providing input, the municipality is trying to introduce and get buy-in from the communities and farmers. Once there is enough interest and confidence from communities and farmers in planting sunflowers and soya beans, the municipality will slowly withdraw from subsidising, and financing the project will be sustainable.

In its efforts to build confidence amongst the farmers and communities on the sunflower initiative and to address the issue of limited markets, there are arrangements and collaborations with some organisations to buy the sunflowers produced by the farmers.

#### **4.5 Challenges Encountered by Farmers when Starting a Business**

Apart from the absence of farming inputs such as fertilisers, seedlings and fencing, access to markets was the second hurdle the farmers encountered. Another problem was the presence of barriers in penetrating the market, caused by various factors such as scarce resources, lack of

access to information and inadequate institutional support. Limited resources could be segmented to a number of components including finance and scarce labour. According to participant number three, people were not keen on partaking in agricultural activities as they were earning an income through social grants. This supported Thornton (2008:258) findings of a study undertaken to establish the effects of transfer schemes. The study revealed that grants encouraged a culture of dependency on government. Further to this households with multiple recipients of social grants did not feel pressured to undertake agricultural activities as they had a guaranteed specific income.

The farmers listed a number of challenges that they encountered and these included drought, spoilage and lack of information on planting, which resulted in farmers using traditional techniques. Poor access to infrastructure reduced the opportunities for farmers to optimally produce, operate and interact effectively with the markets and generate maximum profit. The consequences of this also resulted in increased transaction costs and difficulty to penetrate the markets. The absence of equipment, for example tractors, was one of the frequently encountered obstacles by farmers when they initially pursued commercial farming.

According to local government most people in general have resources to undertake agricultural activities for their households, but the challenge arises when one wants to get into commercial farming, often requiring start-up capital.

#### **4.6 Employee Recruitment**

Figure 4.2 illustrates whether the business is family-owned and operated, or whether the farmer recruits employees. The results below show that 18 (60%) of the farmers recruit employees. The recruitment demographics reflect that most farmers tend to recruit mostly females, followed by youth and then adult males. Amongst various reasons females and youth are the most preferred candidates during the recruitment process, is the perception that the youth can do the more labour-intensive work and women are more familiar with gardening and hoeing. Although some farmers when recruiting have no selection criterion, that is no priority when recruiting, 10% of the farmers focused on women-headed households, youth, orphans and the disabled. When prioritising the women-headed households, disabled and orphans the farmers considered this

recruitment and selection criteria as contributing in improving the socio-economic standing of those mostly disadvantaged, by creating employment opportunities and ensuring that these people have food on the table. Farms which are family-owned and operated numbered 12 (40%, as per Figure 4.2 below).

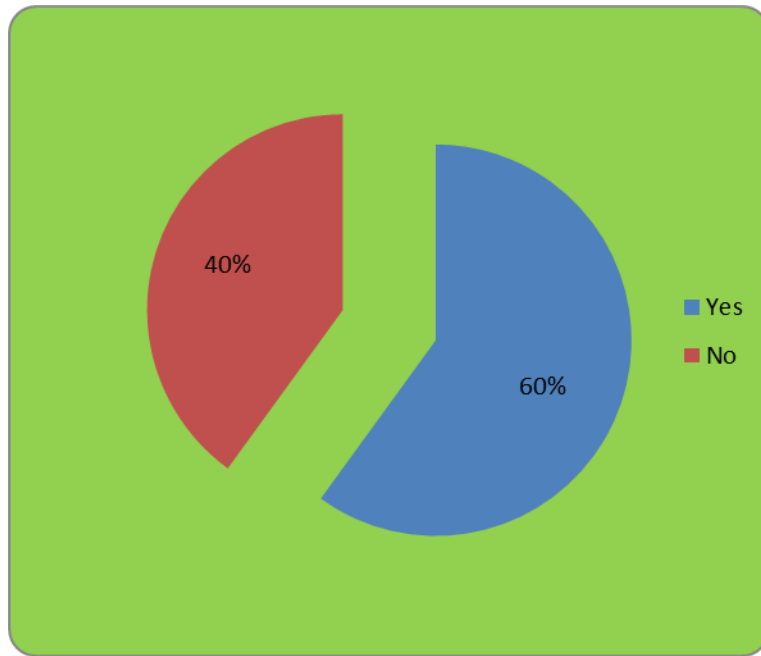


Figure 4.2: Distribution of the Farmer Recruits

#### 4.7 Skills Transfer and Training

According to figure 4.3 the results reflect that in Bizana (Mbizana) 18 farmers (60%) trained new employees on how to execute their tasks. Some farmers train employees to such an extent that some have been able to venture out and start their own small-scale farming projects. One of the participants sends employees on courses. Twelve of the farmers (40%) do not offer training, but rather recruit people who know how to do the work, whilst 13.33% of the farmers impart knowledge through knowledge-sharing sessions.

In addressing skills development for the farmers, the municipality works closely with the Department of Agriculture. The municipality provides the Department of Agriculture with the

list of beneficiaries and the Department provides extension support and training. In some cases, the municipality sources the required training from a service provider.

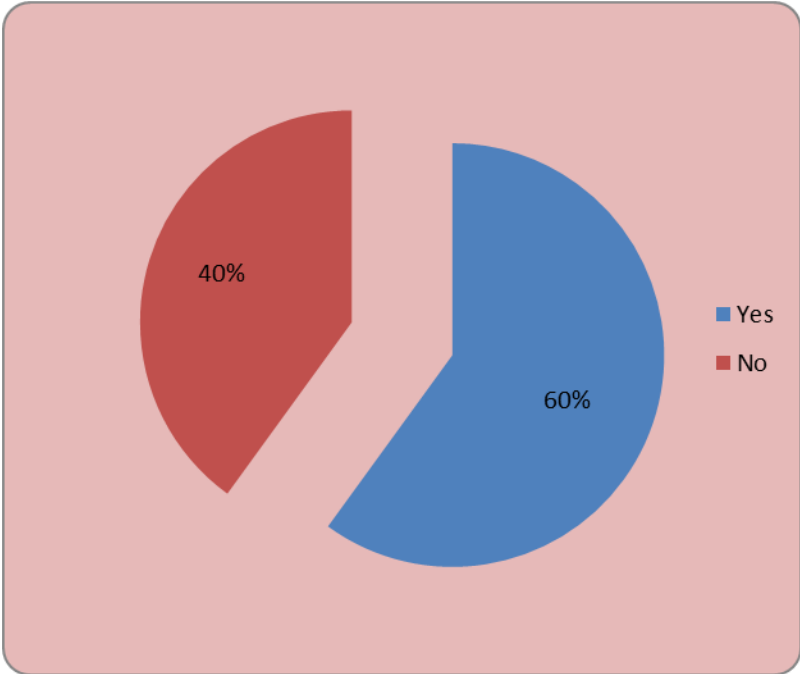


Figure 4.3: Skills Transfer and Training

**4.8 Storage Facilities**

Access to post-harvest and storage facilities helps to ensure and guarantee the quality of perishable agricultural produce. Post-harvest storage facilities are one of the major challenges facing the farmers. Figure 4.4 shows that most farmers (76.7% of the participants) do not have access to adequate storage infrastructure and end up harvesting and having to sell their produce on the same day as harvest. Some 23.3% of the farmers have storage rooms without coolers and on hot sunny days there is a higher risk of spoilage of produce.

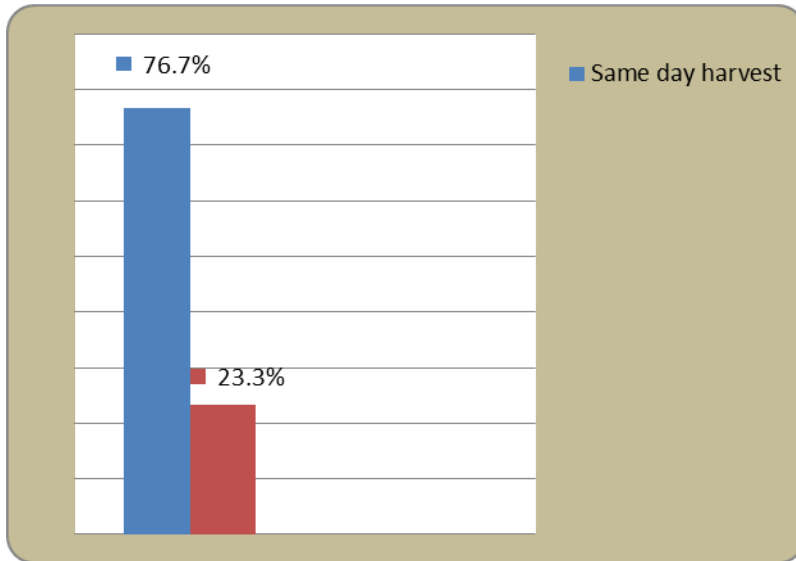


Figure 4.4: Access to Storage Facilities

#### 4.9 Planting Activities

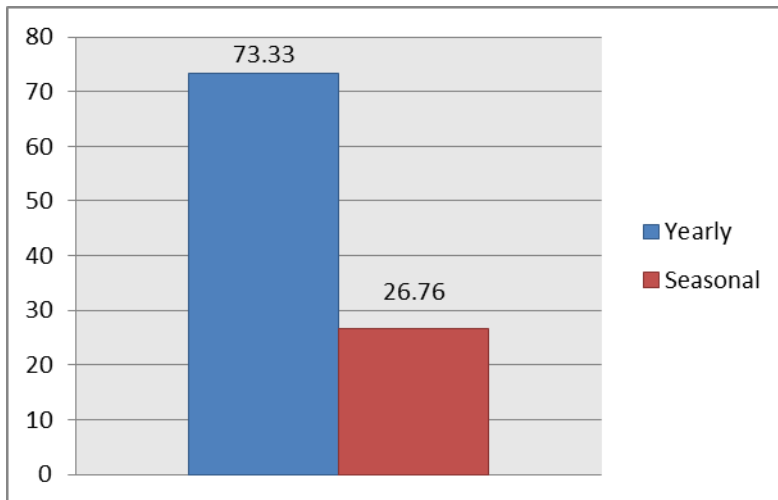


Figure 4.5: Distribution of Planting Activities

When farmers were asked when they undertake agricultural activities, 22 (73.33%) of the farmers plant throughout the year, whereas 8 (26.67%) farmers plant in certain seasons. One of the reasons for seasonal planting is the scarcity of water.

VARIABLE	NUMBER	PERCENTAGE
Pick-Up truck	10	33.33
Customers buying at residence	6	20.0
Public transport/Hire Pick-up truck	6	20.0
Horses	1	3.3
Walk	7	23.3

Table 4.3: Distribution of Travel between the Farm and the Market Place

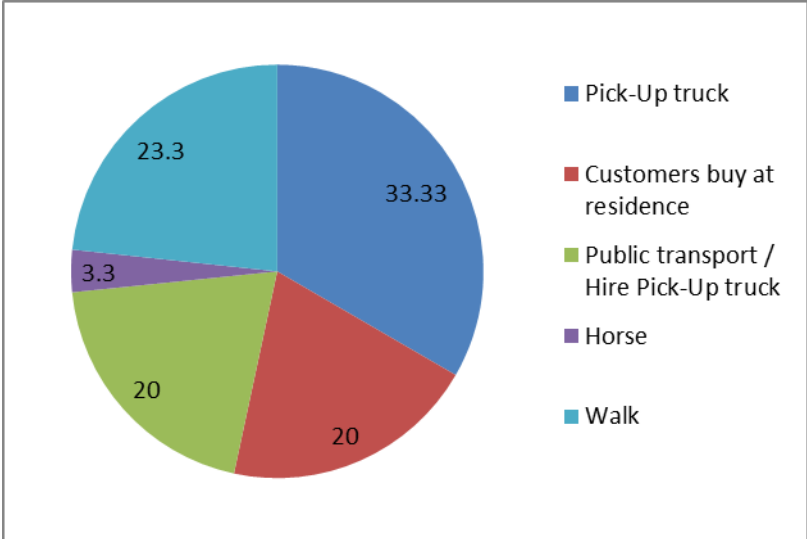


Figure 4.6: Distribution of How Farmers Travel between the Farm and Market Place

Figure 4.6 explains how the farmer travels between the farm and the market place. The absence of reliable private transport is a challenge for the farmers, and this has a negative impact on the marketing of the produce and threatens the ability to deliver quality produce on time to the market and the consumers, and this may result in spoilage and losses. The majority of the farms are located and operated close to town. The absence of reliable private transport increases transaction costs for farmers, as the farmer incurs costs for hiring transport and this reduces income and profits. These additional costs reduce the chances of farmers expanding and operating in other areas. In Bizana (Mbizana) 9 participants (33.33%) owned pick-up trucks, 6



(20.0%) used public transport and hired pick-up trucks and 6 (20%) had customers buying at residence. Walking is the second most frequently used method of travelling between the farms and the market places. A mere 3.33% of the farmers use a horse cart to transport produce.

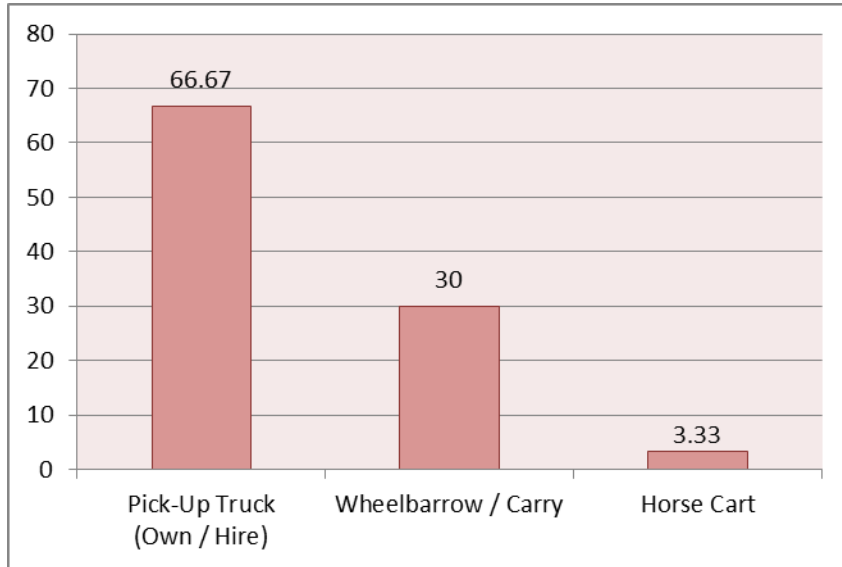


Figure 4.7: Distribution of the Mode of Transport Used to Transport Produce to the Market Place

Figure 4.7 shows the mode of transport that farmers used to transport their products to the customers and the market place. The most frequently used mode of transportation is the pick-up truck at 66.67%. Thirty percent (30%) of the farmers either use wheelbarrows or carry their produce. The decision on the mode of transportation by these farmers is determined by various factors, which include distance to be travelled and the quantity to be transported.

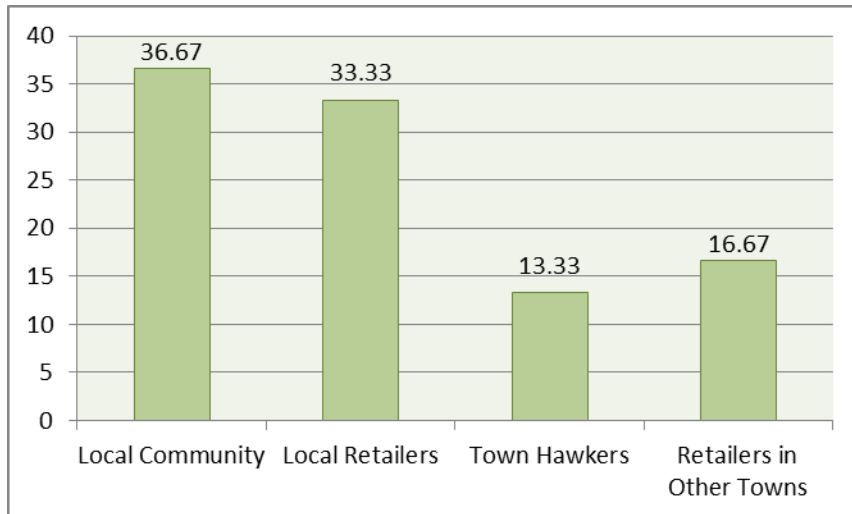


Figure 4.8: Distribution of the Location of Customers

All the farmers sell to their communities, with 36.67% farmers selling exclusively in their own communities. Apart from selling to their communities, some 33.33% farmers sell to retailers in town, and 13.33% farmers sell along the streets in town. A total of 16.67% of farmers have expanded their target market to towns such as Umtata, Flagstaff, Harding and Seaview.

VARIABLE	NUMBER	PERCENTAGE
Consider partnership		
Yes	20	66.7
No	10	33.3
Type of Crops		
Cabbage & Spinach	29	96.67
Maize	19	63.33
Root crops	23	76.67
Other	5	16.67

Table 4.4: Distribution of Partnership and Crops

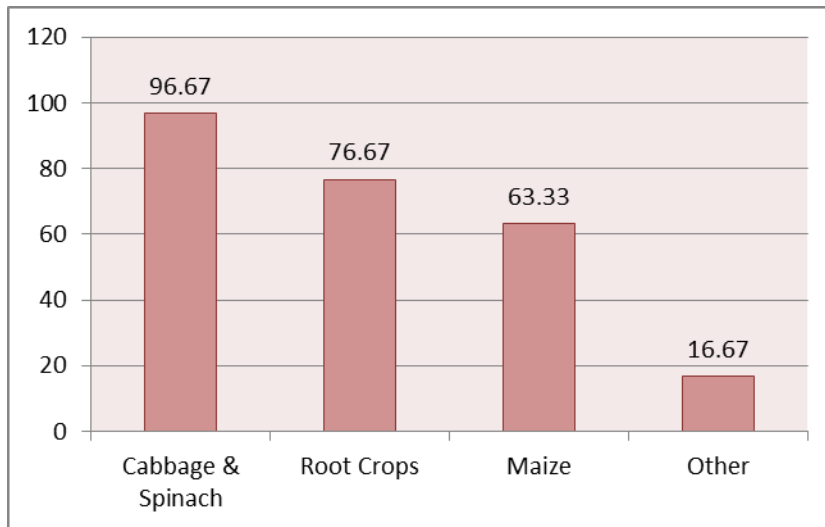


Figure 4.9: Distribtuion of Crops

All of the farmers consider expanding their target market and consumers. Although all the farmers wish to expand their market, only 66.7% of farmers supported the notion of forming partnerships with other people and entrepreneurs. Due to various reasons, a total of 33.3% farmers were against the establishment of partnerships. Their reasons vary from bad past experiences with partnerships or co-operatives, to witnessing challenges encountered by others and failure of other partnership initiatives. The perception of the farmers who do not support partnerships is that only a few individuals work in partnerships and that some people tend to be ‘free riders’. These ‘free riders’ are only visible at the initial stages of the projects when receiving government support and when dividends need to be paid out. A large percentage (96.67%) of farmers plant cabbage and spinach, and the second most planted crops are root crops at 76.67%, followed by maize at 63.33%. Only a handful of farmers diversify and plant other crops including sunflowers, beans, onions, sorghum, butternuts and pumpkins.

Based on the data collected it is evident that many people realise the benefits associated with agriculture and the potential of commercial farming as a source of food, income and employment opportunity creation. There is room for growth in the region only if certain aspects are put into place for example adequate access to infrastructure. One of the setbacks for the region is that the agricultural activities undertaken by the various stakeholders (i.e. communities, farmers, the private sector and the different spheres of government) are disjointed and uncoordinated. The

majority of the farmers prefer to work in isolation. The Mbizana Municipality can play a bigger role in promoting synergy and this can lead to the development of this region. The benefits of this will not only be realised by the farmers and by Bizana (Mbizana) communities but also by the district municipality and the Eastern Cape Province. This will contribute towards growth and development, but for this to be realised certain factors need to be in place.

#### **4.10 Conclusion**

This chapter presented the data collected and its analysis, and also gave insight into the research problems and the environment in which they occur. The discussions looked at the environment in which the farmers practice, the infrastructure challenges that the farmers encounter and how they overcome them. The discussions gave further insight into whether the agricultural activities by the farmers can contribute towards development, the impact of roads on agricultural development and the role of local government in creating an environment conducive to commercial farming. The next chapter contains the conclusions and recommendations of this research.

## CHAPTER 5

### Conclusions and Recommendations

#### 5.1 Introduction

This chapter presents a brief summary of the findings of the study and the recommendations on how the agricultural sector can overcome some of the challenges highlighted by the farmers and in the process even realise growth in other sectors.

#### *5.2 Summary Discussion and Recommendations*

Agriculture plays a diverse role; it is a source of food, it generates income and also creates employment opportunities. Like any other sector agriculture faces a number of challenges. The challenges faced by rural farmers vary from limited access to markets, scarcity of farming inputs to inadequate access to infrastructure, and the challenges experienced by the farmers in the study area are no different. As evidence that the small scale farmers have challenges with acquiring farming inputs in the SABC 1 news bulletin on the 28 January 2012, it was reported that some farmers in the Eastern Cape Province did not receive farming inputs that is seedlings and fertilisers which were purchased and supposed to have been distributed. Chapter One introduced the study and the research problem and sought to establish how farmers are affected by infrastructure gaps and how they overcome them. The study sought to answer this through the following objectives:

#### *Objective 1*

To establish the infrastructural challenges hindering agricultural development in Bizana (Mbizana) peri-urban areas.

The UN Habitat (2011:1) highlighted the fact that many African countries have poor infrastructure such as roads and ports and this is due to insufficient investment in infrastructure maintenance. It is further argued that poor maintenance of infrastructure results in “reduced life span” of infrastructure. The study conducted by the CSIR (2006:9) looking into the state of infrastructure in South Africa revealed that one of the causes for the poor quality of roads was infrequent road maintenance. The study further highlighted that overloading of existing

infrastructure, for example increase in traffic volume on roads that were not initially designed to carry high traffic volumes, resulted in rapid deterioration of road infrastructure.

### *Findings of the Study*

The study revealed that the farmers are faced by a number of infrastructural challenges including: inadequate access to water, shortage of dams, absence of storage facilities and insufficient transport system. Some access roads are not easily navigable as some roads have potholes and the others are affected by gulleys (dongas). Health facilities in some areas are not located at close proximity and as a result some farmers when they seek health services they make use of the facilities in town.

### *Recommendations*

The fundamental infrastructure, which forms the foundation for the agricultural sector to be functional and enables the sector to be in sync with other sectors, should be prioritised. For example, roads in the most deteriorated state should be prioritised in balance with routine maintenance of other roads. Dams should be built to increase the supply and storage of water. These facilities will especially be helpful to those who are not close to rivers and do not have the means to put up boreholes.

### *Objective 2*

To investigate the conditions under which small-scale farmers in Bizana (Mbizana) practice in their locations.

The World Bank report (2007:50) highlighted that the development of the agricultural sector differs from region to region and this is due to various reasons, which include poor investment in infrastructure and unpredictable changing climate conditions. The Asian Development Bank (2006:18) argued that investing in road infrastructure results in improved travel time.

### *Findings of the Study*

The gravel roads used to commute between the farms and the market places are not easily navigable, and as a result farmers spend too much time travelling between the farms and the market places. Due to the absence of post-harvest facilities, farming is labour-intensive and as a result farmers must be in the fields very early every day to harvest produce and to be able to supply the markets. The absence of these facilities has an impact on income generated, as the produce not sold within a particular time are forced to be sold at cheap prices by the farms, to avoid spoilage and loss. The majority of the farmers still use the traditional planting techniques.

Access to the markets is one of the major challenges that face the farmers. The majority of the farmers do not own private transportation, and as a result most farmers are confined to the existing markets. To increase their target market, farmers at times hire pick-up trucks to transport their produce.

### *Recommendations*

The provision of a marketing and production infrastructure which includes storage units, cold storage and ripening chambers will help to overcome challenges associated with post-harvest storage and spoilage.

The provision of mechanical transportation should be considered, as this will help to meet market demands and eliminate competition from farmers coming from other areas. This will also enable easy access and transportation of agricultural produce to the markets.

The agricultural marketing information system offered by the Department of Agriculture should be availed to create an enabling environment for information sharing. Access to this system will help to bridge the gap between farmers and the markets and the key stakeholders can make use of the system to identify focus areas.

To minimise the effects of agriculture being perceived to be labour-intensive, for example planting techniques and harvesting, the agricultural sector must consider making use of a plastic mulch. Participant 3 uses plastic mulch when planting vegetables. Some of the benefits of this

technique include easy weed control which results in less labour, control soil moisture and improved quality of produce. As this planting technique is less labour-intensive, it has a potential to draw more people to participate in agricultural activities.



*Plastic mulch*

### *Objective 3*

To establish whether the agricultural activities by the small-scale farmers in Bizana (Mbizana) can contribute towards development.

The World Bank Report (2007:3) argued that agriculture is a diverse sector which can promote growth and development. When Fedderke and Garlick (2008:4) discussed the theory, “Infrastructure as a factor of production”, it is argued that when infrastructure is an input and the supply of infrastructure is increased this results in increased output and will subsequently encourage economic growth.

### *Findings of the Study*

Based on the data collected, the agricultural sector in the region has great potential and can play a major role in improving the socio-economic circumstances of communities in the region. All the participants wish to grow their commercial farming activities and wish to tap into other markets. The majority of the farmers employ local community members, and if farmers are able to expand to other regions more job opportunities will be creation.



### *Recommendations*

Based on the above discussion, an Agri-supply chain is considered to be an ideal strategy that local government should consider adopting and implementing. The farmers will be able to trade in other areas. The Agri-supply chain will create employment opportunities for the local community in the various units within the supply chain process; i.e. collection of produce from the farmer, delivery of produce to the storage facility and transportation of produce to the markets. Apart from job creation the benefits of implementing an Agri-supply chain in the region will provide easy access to the market, improve farmers bargaining power and growth will be realised not only in the region but in the district and the Eastern Cape Province.

### *Objective 4*

To evaluate the impact and influence of the roads infrastructure on agricultural development of the area.

According to Fedderke and Garlick (2008:4), investing in transportation infrastructure helps to create a suitable environment in which organisations can operate. One of the benefits of this is that it helps to reduce production costs, for example the lack of adequate infrastructure results in organisation making use of other means to transport goods. United Nations Economic and Social Council (2001:1) highlighted some of the factors that influence the economic development of a region and these include agro-climate and geographic location that is the distance to the economic hubs.

### *Findings of the Study*

The majority of the gravel roads used by the participants are in a fairly good condition and the study revealed that some gravel roads are slippery when it rains and some roads are also affected by dongas; as a result some farmers use multiple modes of transportation to transport their produce to the markets. When it has rained the mode of transportation to be used by the farmers determines the quantity of produce to be harvested and transported, and as a result this reduces the income generated by these farmers and also opens up opportunities for competition from other towns to come and trade in this region, as the local farmers cannot meet the market demand.

### *Recommendations*

Although the Mbizana IDP review 2010/ 11(2010:92) highlights that the municipality plans to provide all-weather roads to the social service centre, local government should also prioritise the roads to be used in the Agri-supply chain process. For the Agri-supply chain programme to be a success complementary road networks will be required to enable easy access and transportation of agricultural produce. It is important that infrastructure such as roads are in a good condition, for poor access can easily discourage potential investors. Local government and the small scale farmers in the region should take advantage of the N2 Wild Coast toll route as it will open up opportunities for the farmers to expand their target market.

### *Objective 5*

To determine the role of local government in creating an environment conducive to commercial farming.

Mbizana Local Municipality Integrated Development Plan Review 2010/11 (2010:98) acknowledges that development in the region in the past often favoured the urban area and this has resulted in rural-urban inequalities. The municipality plans to integrate the primary sectors, which include agriculture and agro-processing initiatives, into the mainstream economy. According to Warburton (1998:20), when the top-down development approach was considered to have failed community-based programmes were developed to enable communities to participate in resolving their own problems. Chapter One noted Binns and Nel (1999:406) argue that government should act as a facilitator, offer advice, incentives and not dominate.

### *Findings of the Study*

The Mbizana Municipality provides various forms of support to the farmers in the region and these include financial and technical support. One of the challenges highlighted by the farmers was access to funding to expand their commercial farming practices. Local government also performs the duties of the middleman between the farmers and the markets. Another challenge that faces local government is the negative attitude by farmers towards co-operatives.

Municipalities hold road shows whereby the community comes up with a list of what they need and the finds are used to identify priority areas.

### *Recommendations*

The farmers need to work together and form a co-operative to make the Agri-supply chain programme a success. This will enable local government to market their produce into the mainstream economy.

In response to the negative attitude of farmers towards the formation of co-operatives, the co-operative should adopt the following strategy: farmers produce on their farms and put their harvests/produce in a single basket, i.e. the logistics facility - this will increase the supply of produce and the farmers will be able to meet market demands.

A database of institutions which provide financial support to the farmers should be developed to promote synergy and inter-government relations. The database will promote sharing of information amongst the different spheres of government and also provide farmers and communities with valuable information.

The challenges discussed above are not exhaustive of the problems encountered by the farmers, but these were considered to be some of the fundamentals that determine the performance of the agricultural sector in the region. It is of the view that the proposed Agri-supply chain programme discussed will play a vital role in resolving some of the challenges encountered in the sector.

### **5.3 Limitations of the Study**

The study was confined to the Bizana (Mbizana) area. The time spent with the farmers was limited. Due to time constraints the researcher could not spend more time with the farmers to observe and contextualise all the challenges highlighted in the study. The researcher could not interact with the youth involved in agricultural activities in order to gain a different perspective from a different demographic age group, as all the participants were adults.

#### **5.4 Suggestions for Further Research**

Further research needs to be undertaken in the management of co-operatives. The study revealed that some participants are against co-operatives. The research needs to look at how to better manage the co-operative initiatives and change the perception of society to support and take part in co-operatives. Co-operatives have a great potential to promote and rapidly realise agricultural growth and rural economic growth.

#### **5.5 Conclusion**

There is basic infrastructure which forms the foundation for agricultural economic development. This infrastructure includes transport, access to water and telecommunications. The study sought to establish the impact of roads infrastructure on agricultural economic development in Bizana (Mbizana). The study revealed that the small scale-farmers in this region were affected and limited by poor road infrastructure and that access to suitable water for irrigation was far from ideal. As a result, the sector did not perform to its full potential and this hinders economic development. Suitable and appropriate recommendations have been made to address the shortcomings identified in this research. If the recommendations made in this study are adopted and carefully implemented, one would expect to see an improvement in the underlying conditions for these rural farmers. It is vital that the recommendations when implemented are closely monitored for any deviation from the intended outcome so that adjustments may be made to ensure improved circumstances for rural farmers.

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## APPENDIX 1 Site Visits



Farmer needing a fence



Borehole



Agricultural field





Plastic mulch

## **APPENDIX 2: Questionnaire:**

### **Interview Schedule:**

1. What infrastructure do you currently have access to and are currently using?
2. What challenges do you encounter that you feel hinder your growth?
3. When you started farming did you require financing?
4. Are you receiving government support/assistance?
5. What were the challenges that you encountered when you started your business?
6. Who are your employees? What is the demographic breakdown of your employees?  
When recruiting, do you prioritise women and youth?
7. Do you do skills transfer to those working on your farm? How?
8. Where do you store your products once harvested?
9. When do you plant your crops? Is it seasonal or a yearly activity? What crops do you grow?
10. How do you travel between the farm and the market place?
11. What mode of transportation do you use to transport your products to the consumers?
12. Where do you sell your products? Where are your customers? Do you sell in town or do the consumers come to you? Or do you sell within your community area?
13. Have you ever considered expanding your target market and selling in other areas?
14. What impact does the distance you travel to the market place/consumers have on the quality of your products?
15. Would you consider forming a partnership with other people/entrepreneurs?
16. What is the local municipality doing to support the small-scale farmers?
17. Are there any efforts by the local municipality to facilitate collaborative partnership with the private sector?

### APPENDIX 3 Supporting Tables

#### What infrastructure do you current have access to and are currently using

Water	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Borehole	4	13.3	13.3	13.3
Fetch water river	15	50.0	50.0	63.3
Water tank	3	10.0	10.0	73.3
Rain	3	10.0	10.0	83.3
community tap	4	13.3	13.3	96.7
Self made dam	1	3.3	3.3	100.0
Total	30	100.0	100.0	

#### What infrastructure do you current have access to and are currently using

Roads	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Gravel road muddy when it rains	11	36.7	36.7	36.7
Gravel road	19	63.3	63.3	100.0
Total	30	100.0	100.0	

#### What infrastructure do you current have access to and are currently using

Land	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Residential	11	36.7	36.7	36.7
Agricultural field/ Residential	13	43.3	43.3	80.0
Agricultural field	6	20.0	20.0	100.0
Total	30	100.0	100.0	

**What infrastructure do you current have access to and are currently using**

Health	Frequenc y	Percent	Valid Percent	Cumulative Percent
Valid Town	13	43.3	43.3	43.3
Clinic	17	56.7	56.7	100.0
Total	30	100.0	100.0	

**When you started farming did you require financing?**

	Frequenc y	Percent	Valid Percent	Cumulative Percent
Valid Own	30	100.0	100.0	100.0

**Are you receiving government support/assistance?**

	Frequenc y	Percent	Valid Percent	Cumulative Percent
Valid Yes	7	23.3	23.3	23.3
No	23	76.7	76.7	100.0
Total	30	100.0	100.0	

**When recruiting, do you prioritise women and youth**

	Frequenc y	Percent	Valid Percent	Cumulative Percent
Valid Yes	18	60.0	60.0	60.0
No	12	40.0	40.0	100.0
Total	30	100.0	100.0	

**Do you do skills transfer to those working in your farm**

	Frequenc y	Percent	Valid Percent	Cumulative Percent
Valid Yes	18	60.0	60.0	60.0
No	12	40.0	40.0	100.0
Total	30	100.0	100.0	

**Where do you store your product once harvested?**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Same day harvest	23	76.7	76.7	76.7
Same day harvest	7	23.3	23.3	100.0
Storage room has no coolers				
Total	30	100.0	100.0	

**When do you plant your crops? Is it seasonal or a yearly activity?**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yearly	22	73.3	73.3	73.3
Seasonal	8	26.7	26.7	100.0
Total	30	100.0	100.0	

**How do you travel between the farm and the market place?**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Walk	7	23.3	23.3	23.3
Pick-Up truck	10	33.3	33.3	56.7
Horses	1	3.3	3.3	60.0
Public transport / Hire	6	20.0	20.0	80.0
Pick Up truck				
Customers buy at residence	6	20.0	20.0	100.0
Total	30	100.0	100.0	

**What mode of transport do you use to transport your products to the costumers?**

	Frequenc y	Percent	Valid Percent	Cumulative Percent
Valid Pick-Up truck	20	66.7	66.7	66.7
Wheelbarrow /Carry	9	30.0	30.0	96.7
Horse Cart	1	3.3	3.3	100.0
Total	30	100.0	100.0	

**Where are your costumers?  
(Common customers to all the farmers)**

	Frequenc y	Percent	Valid Percent	Cumulative Percent
Valid communit y	30	100.0	100.0	100.0

**Do you sell in town or do the cosumers come to you or do you sell within  
your community area?**

	Frequenc y	Percent	Valid Percent	Cumulative Percent
Valid Local Community	11	36.7	36.7	36.7
Local Retailers	10	33.3	33.3	70.0
Town hawker	4	13.3	13.3	83.3
Retailers in other towns	5	16.7	16.7	100.0
Total	30	100.0	100.0	

**Have you ever considered expanding your target market  
place/ consumers have on the quality of your products?**

	Frequenc y	Percent	Valid Percent	Cumulative Percent
Valid Yes	30	100.0	100.0	100.0

**Would you consider forming a partnership with other people/  
entrepreneurs?**

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Yes	20	66.7	66.7	66.7
No	10	33.3	33.3	100.0
Total	30	100.0	100.0	

## **APPENDIX 4 Gatekeeper's Letter**

Municipal Manager

Mbizana Local Municipality

Mbizana

4800

### **RE: REQUEST CONSENT TO INTERVIEW OFFICIALS FOR RESEARCH PROJECT**

I am a Masters in Business Administration (MBA), student at the Graduate School of Business, University of KwaZulu-Natal (UKZN) and request consent to interview key officials within your organisation for my research project, titled: The Impact of Infrastructure on Agricultural Economic Development in Mbizana, Eastern Cape.

The research project will be conducted in accordance to the guidelines of UKZN research ethical policy. The interviews will be conducted in strict confidentiality. The responses will be stored at the Graduate School of Business and ultimately destroyed in accordance with university rules

If you have any queries about the research you may contact: Mrs Wendy Clarke on 031-2601626 or by email: [clarkew@ukzn.ac.za](mailto:clarkew@ukzn.ac.za) or my supervisor Mr Alec Bozas, on 082 33 444 77; email address [mwbozas@mweb.co.za](mailto:mwbozas@mweb.co.za)

Kind Regards,

Badikazi L Ntshebe



**APPENDIX 5 Letter to Respondents**

**Informed Consent Letter 3C**

**UNIVERSITY OF KWAZULU-NATAL  
SCHOOL**

Dear Respondent,

**Masters in Business Administration Research Project**

**Researcher:** Badikazi Ntshebe (Cell no. 082 82 706 38)

**Supervisor:** Alec Bozas (Cell no. 082 33 444 77)

**Research Office:** Ms P Ximba 031-2603587

I, Badikazi L Ntshebe an MBA student, at the School of Business, of the University of KwaZulu Natal. You are invited to participate in a research project entitled: The Impact of Infrastructure on Agricultural Economic Development in Mbizana, Eastern Cape. The aim of this study is to investigate the impact of infrastructure on small scale farmers in Mbizana.

Through your participation I hope to better understand the environment in which small scale farmers operate. The results of the focus group are intended to contribute towards improving the conditions and the environment in which the farmers function and live in.

Your participation in this project is voluntary. You may refuse to participate or withdraw from the project at any time with no negative consequence. There will be no monetary gain from participating in this survey/focus group. Confidentiality and anonymity of records identifying you as a participant will be maintained by the School of Business, UKZN.

If you have any questions or concerns about completing the questionnaire or about participating in this study, you may contact me or my supervisor at the numbers listed above.

The interview should take you about 15 minutes to complete. I hope you will participate in this research project.

Sincerely

Investigator's signature \_\_\_\_\_ Date \_\_\_\_\_

**UNIVERSITY OF KWAZULU-NATAL  
SCHOOL**

**Masters in Business Administration Research Project**

**Researcher:** Badikazi Ntshebe (Cell no. 082 82 706 38)

**Supervisor:** Alec Bozas (Cell no. 082 444 77)

**Research Office:** Ms P Ximba 031-2603587

**CONSENT**

I.....(full names of participant)  
hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project.

I understand that I am at liberty to withdraw from the project at any time, should I so desire.

SIGNATURE OF PARTICIPANT

DATE

.....

15 September 2011

**Ms BL Ntshebe (203511687)**  
Graduate School of Business  
Faculty of Management Studies  
Westville Campus

Dear Ms Ntshebe

**PROTOCOL REFERENCE NUMBER: HSS/0867/011M**

**PROJECT TITLE: The Impact of Infrastructure on Agricultural Economic Development in Bizana, Eastern Cape**

In response to your application dated 9 September 2011, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted **FULL APPROVAL**.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number.

**PLEASE NOTE:** Research data should be securely stored in the school/department for a period of 5 years.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully



.....  
**Professor Steven Collings (Chair)**  
**HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE**

cc. Supervisor: Mr A Bozas  
cc: Mrs C Haddon, Faculty of Management Studies, J Block, Westville Campus