April 2016

XHARIEP DISTRICT MUNICIPALITY: MASTER AGRI-PARK BUSINESS PLAN

FINAL REPORT

rural development & land reform

Department:
Rural Development and Land Reform
REPUBLIC OF SOUTH AFRICA

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DOCUMENT APPROVAL

The **Xhariep District Municipality Agri-Park Master Business Plan**, submitted on the **13th April 2016** has now been received, fully reviewed, and accepted by the following key members:

Approved: _____ Date: / /2016

(**Pule Sekawana:** PSSC – Head, Free State Province)

Approved: _____ Date: / /2016

(**Mapurunyana Bapela:** Director – DRDLR REID)

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(**Momelezi Twantwa:** Director – DRDLR RID)

Approved: _____ Date: / /2016

(**Mr Martin M Kubeka:** Xhariep District Municipality Municipal Manager)

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Agri-Park Master Business Plan Road Map

Chapter 1: Introduction

Key words: concept, smallholder/small-scale farmer, FPSU, AH, RUMC, capital expenditure

Must read if the reader:

- does not have any background on the Agri-Park Project.
- does not know what the goal and objectives of the Agri-Park are.
- would like to know what approach the project team took.

Summary: An introduction to the Master Business Plan report is provided in this chapter through: the project background, goals and objectives, the project's purpose, and a demonstration of the project methodology.

Key words: introduction, goals, objectives, purpose, methodology, Agri-Park Programme, Master Business Plan

Chapter 2: Agri-Park Model

Summary: This chapter provides an overall overview to the Agri-Park model, which was developed by the DRDLR.

Key words: Agri-Park model, small-scale/smallholder farmers, FPSU, AH, RUMC, production, facilities, information, large-scale/ commercial farmers

Must read if the reader:

- Is not familiar with the Agri-Park's concept.
- Seeks to understand the 3 units of the Agri-Park model.

Chapter 3: Policy Review

Summary: The important policies that affect the XDM Agri-Park are reviewed in this chapter and the policy implications for the Agri-Park are identified.

Key words: policies, strategies, national, provincial, local, implications, alignment

Must read if the reader:

- Is not familiar with policies that are influential to the XDM Agri-Parks Programme.
- Is not familiar with the policy implications for the Agri-Park.

Chapter 4: Location Context

Summary: This chapter provides an overview of the XDM and its features that are important for the development of the Agri-Park.

Key words: local municipalities, location, economic infrastructure, economic activities

Must read if the reader:

- Does not know the location of the XDM
- Does not know the status of important locational features of the XDM.
- Does not know the Agri-Hub location and its selection.

Chapter 5: Agricultural Industry Analysis

Summary: In this chapter, an analysis of XDM's agricultural features is provided, as well important factors that are influential to agricultural development. In addition, the 3 agricultural commodities to be produced in the district's Agri-Park are identified.

Key words: agricultural activities, GVA, commodities, climate, resources, projects, selection criteria, prioritisation, top-3 commodities.

Must read if the reader:

- Is not familiar with the current agricultural status of the XDM.
- Is not familiar with the status of resources and climate features affecting agriculture in the XDM.
- Needs to know of the process of selection used for the 3 commodities.
- Needs to know the three selected commodities.

Chapter 6, 7 & 8: Commodity Analysis

Summary: The 3 commodities that have been selected to be produced in the initial phase of the Agri-Park programme are individually analysed according to:

- The market
- Value chain
- Agro-Processing opportunities
- Stakeholders and service providers
- Technology
- Socio-economic contributions and influences
- Emerging/ Potential entrepreneurs
- SWOT analysis

Must read if the reader:

- Is interested in the commodities' market trends
- Is interested in commodities' business enabling features
- Needs to know the value chain relations.

Chapter 9: Agri-Park Concept Development

Summary: The concepts for the XDM Agri-Park are developed, based on the Agri-Park Model, and a basic capital expenditure breakdown is provided in this chapter.

Key words: concept, smallholder/small-scale farmer, FPSU, AH, RUMC, capital expenditure

Must read if the reader:

- Needs to know what the concept of the XDM Agri-Park is.
- Needs to know how the 3 units in the Agri-Park model will function.
- Is interested in how the commodities' value chains align with the Agri-Park model.

Chapter 10: Organisational Structure

Summary: This chapter provides the organisational structure to guide approval, advisory and implementation bodies for the development of the XDM Agri-Park.

Key words: approval, advisory, bodies, implementations

Must read if the reader:

- Is interested in the organisation of the XDM Agri-Park.
- Seeks to better understand the responsibilities of the different bodies within the organisational structure

Chapter 11: Implementation Guidelines

Summary: This chapter provides implementation guidelines to guide the development of the XDM Agri-Park.

Key words: implementations, concept, guidelines, recommendations, process, programmes, action plan, timeframes

Must read if the reader:

- Is interested in the implementation of the XDM Agri-Park.
- Seeks guidelines on the implementation of the concept.
- Needs to know how the existing government programmes are aligned to by the XDM Agri-Park.
- Seeks the recommended action plan and timeframes for the implementation of the XDM Agri-Park.

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EXECUTIVE SUMMARY

The concept, together with the introduction of an Agri-Park per each district municipality, is a relatively new notion in South Africa. This document represents the Xhariep District Municipality (XDM) Master Business Plan, which will serve as a guiding document in the implementation of the Agri-Park model that was developed by the Department of Rural Development and Land Reform (DRDLR).

Chapter 1: Introduction

The introduction provides the background information on the concept of an Agri-Park. The chapter provides the goals and objectives of the project. Lastly, the chapter also presents the purpose of the Master Business Plan and outlines the various steps that are undertaken in completing the Master Business Plan, i.e. the project methodology.

Chapter 2: Agri-Park Model

Chapter 2 provides an insight into the Agri-Park model, provides the definition of the Agri-Park, and describes the three basic units within the Agri-Park. All the basic functions, together with how the basic units will interact, are also described in this chapter.

Chapter 3: Policy Review

In order to achieve set objectives, the Agri-Park Model seeks to align with some of the key government strategies and existing policy frameworks. For this reason, Chapter 3 of this document provides an overview of the national, provincial, and local policies that will guide the development of the Agri-Park Project. The policy review chapter provides a background on the relevant policies; identifies key focus areas and targets; and discusses the implications of the policies for the XDM Agri-Park.

Chapter 4: Locational Context

It is important to have a good understanding of the strengths, weaknesses and the comparative advantages that the district holds in order to establish an Agri-Park in the XDM. Chapter 4 therefore, describes some of the main features and major economic infrastructure that are crucial to the development of the Agri-Park in the XDM. The proposed location of the Agri-Hub, together with some of the existing infrastructure that can be utilised by the Agri-Park, are also described.

The purpose of this chapter is further to also describe the economy of the XDM in relation to population and economic growth; job creation; and income and poverty level, as viewed against the economic performance of Free State Province. A sectoral analysis is also provided, setting out the structure of the XDM economy with respect to the different economic sectors and their output and employment contributions to the district's economy.

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Chapter 5: Agricultural Industry Analysis

Part of the objectives of the Agri-Park project is to identify the three dominant, or most feasible commodities within the district. Hence, this chapter provides an overview of the main agricultural activities occurring in the district, focusing on the types of commodities or products farmed and produced. Part of the purpose of this chapter is to provide relevant information regarding the current agricultural practices, as well as the various opportunities and constraints that the XDM's agricultural sector presents. Furthermore, this chapter identifies the three dominant commodities in the XDM, through a prioritisation process. Products related to the three (3) selected commodities are also briefly discussed during this chapter.

Chapter 6: Venison Analysis

This chapter provides an analysis of the local, global, capital, and commodity markets for the venison industry. Other major topics covered in the chapter include: a alue chain assessment, agro-processing opportunities, main inputs suppliers, competitors, stakeholders, technology requirements, a demand and need analysis, job creation opportunities, the contribution to food security, regulatory requirements, substitute products and services, barriers to entry, societal and cultural trends, and a SWOT analysis.

Chapter 7: Aquaculture Analysis

This chapter provides an analysis of the local, global, capital, and commodity markets for the aquaculture industry. Topics such as: agro-processing opportunities, technology requirements, a value chain assessment, main inputs suppliers, competitors, stakeholders, regulatory requirements, societal and cultural trends, a demand and need analysis, job creation opportunities, the contribution to food security, substitute products and services, barriers to entry, and a SWOT analysis are also explored within this chapter.

Chapter 8: Livestock (Beef and Mutton) Analysis

This chapter provides an analysis of the local, global, capital, and commodity markets for both the beef and mutton industries. Other major topics covered in the chapter include: a SWOT analysis, a value chain assessment, agro-processing opportunities, main inputs suppliers, competitors, stakeholders, technology requirement, the demand and need analysis, job creation opportunities, contribution to food security, regulatory requirements, substitute products and services, barriers to entry, and societal and cultural trends.

Chapter 9: Agri-Park Concept Development

This chapter describes the Agri-Park concept in relation to the three (3) identified commodities in the XDM. The purpose of this section is to align the value chain, wich has been developed for each commodity, with the Agri-Park model.

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Chapter 10: Organisational Structure

This chapter deals with the required organisational structure showing the approval, advisory, implementation and monitoring functions and structuring for the AP. Each of the structures deal with the different bodies and their responsibilities as well as how they will interact with each other.

Chapter 11: Implementation Guidelines

In this chapter, the implementation guidelines describe the processes that will be applied in executing the Agri-Park project. The purpose of the implementation guidelines is to provide the relevant stakeholders with a practicable document that will ensure that the project is implemented in an efficient and agreed-on manner, based on the concept spelled-out in the previous chapters. The implementation guidelines cover the areas such as: the implementation process, alignment with government programmes, specific recommendations, as well as the roll – out plan.

Summaries of the three (3) main components (namely: The Farmer Production Support Units, Agri-Hub, and the Rural-Urban Market Centre) of the Agri-Park will be illustrated the below in the form of canvases.

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The Development Concept for the Farmer Production Support Unit (FPSU) in the XDM Agri-Park.

Key Role

The FPSU will serve the following core functions:

1. Agricultural input supplies,
2. Primary produce collection,
3. Mechanisation support,
4. Local logistics support,
5. Extension support,
6. Primary production facilities for some commodities,
7. Limited sorting, packaging, storage,
8. Through-put to Agri-Hubs,
9. Some processing for local markets,
10. Transportation of produce destined for processing directly from the farm to the AH,
11. Some marketing and distribution, and
12. Auctioning of produce where applicable (e.g. auctioning of live animals).

Location

The FPSUs will be located in various locations within the AP with some of the functions overlapping for different commodities. The proposed locations are:

- Petrusburg
- Edenburg
- Luckoff
- Smithfield
- Bethulie
- Koffiefontein
- Fauresmith
- Zastron
- Jacobsdal
- Springfontein
- Reddersburg
- Philippolis
- Rouxville

FPSU

Human Resources

The FPSU will provide the follo facilities:

1. Agricultural extension officers,
2. Machine operators etc. needed for mechanisation units,
3. Commodity Specialists and researchers,
4. Primary production personnel as applicable, and
5. Voluntary/Established commercial farmers.

Training

The following forms of training would be provided at the FPSUs:

1. Training of training personnel(s) on how to disseminate information to the small-scale farmers.
2. Primary production and processing skills as required per specific commodity
3. Supply chain and logistics skills.
4. Trading techniques (local and international).

Capital Expenditure

The estimated capital expenditure for the MMM FPSU's are provided per R/m² in order to guide capital planning. This will be within context of the different functions as indicated within each of the FPSU's under AP Concept Development

Infrastructure/ Equipment

The FPSU would require to put in place the following major equipment / infrastructure:

1. Transport (e.g. small transport bakkie or pick-up truck).
2. Extension offices and preliminary training facilities,
3. Aquaculture processing facilities at relevant FPSUs as well as related equipment,
4. Small-scale processing facilities for local markets,
5. Venison preliminary processing equipment such as the mobile abattoirs and related equipment,
6. Storage facility, and
7. Farming/mechanisation equipment required for farming activities.

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The Development Concept for the Agri-Hub (AH) in the XDM Agri-Park.

Key Role

The Agri-Hub will serve the following functions:

1. Training of staff,
2. Logistics,
3. Agro-Processing/value – addition,
4. Storage and transport of processed goods to the markets,
5. Packaging, and
6. Product distribution.

Location

There would be only one Agri-Hub at the initial phase of the project. It was proposed by the Province that the Agri-Hub should be located in **Springfontein**.

AH

Human Resources

The AH will provide the following H

1. Abattoir personnel,
2. Inspection and quality control personnel,
3. Administrative staff,
4. Quality control personnel,
5. Processing/floor staff,
6. Research and demonstration personnel, and
7. Training personnel.

Training

Some of core training activities that would take place within the Agri-Hub include:

1. Training of processing staffs on how to handle and operate various processing equipment,
2. Training on best practices, based on changing demand and supply,
3. Training on new innovations as they surface,
4. Processing skills,
5. Health and safety training, and
6. Management skills.

Capital Expenditure

The estimated capital expenditure for the MMM AH is provided per R/m² in order to guide capital planning. This will be within context of the different functions under the AH within AP Concept Development

Infrastructure/ Equipment

The AH would require to put in place the following equipment / infrastructure:

1. Administrative facilities,
2. Rental facilities,
3. Agro-Processing facilities,
4. Packaging facilities,
5. Quality control facilities,
6. Agricultural input distribution and sales centre,
7. Retail facilities,
8. Training centre, and
9. Logistics and transport facilities.

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The Development Concept for the Rural-Urban Marketing Centre (RUMC) in the XDM Agri-Park.

Key Role

The RUMC will serve the following functions:

1. Market intelligence.
2. Assist farmers, and processors in managing a nexus of contracts.
3. Large warehousing and cold storage facilities.

Location

It is proposed that there should be one RUMC at the initial stage of the project. It is suggested that the RUMC should be strategically located in Bloemfontein.

RUMC

Human esources

The RUMC will provide the following HR;

1. IT expert/personnel
2. Administrative manager
3. Training personnel
4. Marketing personnel

Training

The following forms of training would be provided at the RUMC:

1. Training of the training personnel on how to disseminate information to the SHF, AH and the FPSU.
2. Market analysis skills.
3. Supply chain and logistics skills.
4. Trading techniques (local and international).
5. Agriculture computer programme training.

Capital Expenditure

The estimated capital expenditure for the AH is described as follows:

The capital expenditure covers the cost of infrastructure, building costs, and equipment. However, this will be conducted under the detailed Agri-Park Business Plan.

Infrastructure/ Equipment

The RUMC would require to put in place the following equipment/infrastructure:

1. Large warehouses/ holding facilities
2. Cold storage facilities
3. Administrative facilities/ information centre
4. Customer service desks

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LIST OF ABBREVIATIONS:

Abbreviation	Description
APAP	Agricultural Policy Action Plan
ABR	Agricultural Business Resources
DARD	Department of Agriculture and Land Reform
DAFF	Department of Agriculture, Forestry and Fisheries
DRDLR	Department of Rural Development and Land Reform
DM	District Municipality
EU	European Union
FDC	Free State Development Corporation
FSPSDF	Free State Provincial Spatial Development Framework
FPSU	Farmer Production Support Unit
FS	Free State Province
GDP	Gross Domestic Product
GVA	Gross Value Added
Ha	hectare
LM	Local Municipality
LSU	Large Livestock Unit
MM	Metro Municipality
MMM	Mangaung Metro Municipality
NDP	National Development Plan
RUMC	Rural Urban Marketing Centre
SADC	Southern African Development Community
SEDA	Small Enterprise Development Agency
SWOT	Strengths Weaknesses Opportunities and Threats
ToR	Terms of Reference
WRSA	Wildlife Ranching South Africa

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1. INTRODUCTION

The Agri-Parks initiative is a national drive from the government to assist in developing the 44 district municipalities across South-Africa. This will be done through the development of rural economies by initiating catalytic projects that will stimulate economic growth. This will primarily be focussed within the agricultural industry, with specific emphasis on the agro-processing of local agricultural resources. The initiative is driven by the National Department of Rural Development and Land Reform (DRDLR), with the support of all other sector departments; however, the role of the District Municipalities within which these Agri-Parks and subsequent functions will take place, plays a critical role in the entire development process. The establishment of these Agri-Parks is set to start within the 2015/2016 budget year, but will continue for the next 10 years in order to create a sustainable model that will ultimately be handed over to the relevant local stakeholders.

The initiative was instigated by His Excellency, Jacob G Zuma to address the declining agricultural sector amongst emerging farmers and to improve the manufacturing sector within South-Africa. The aim is that the 27 poorest Districts will be focused upon firs, and then the project will be extended towards all 44 Districts. As such, the DRDLR started the process by drawing a Terms of Reference (ToR) as a framework by which masterplans for these Agri-Parks should be developed for each of the 44 Districts. Urban-Econ Development Economists were appointed by the DRDLR to conduct 20 of these master Agri-Park business plans in order to act as a starting point for the development of these Agri-Parks, and to act as an overarching framework throughout the country for the implementation of the underlying projects. As such, the following objectives have been identified for the Agri-Parks model:

- Establish Agri Parks in all of South Africa's Districts, starting first on state land within the 27 Priority District Municipalities that will kick start the Rural Economic Transformation for these rural regions;
- Promote growth of the smallholder sector by creating 300 000 new small-scale producers, as well as 145 000 new jobs in agro-processing by the year 2020 (as set out in the NGP);
- Promote the skills of and support to small-holder farmers through the provision of capacity building, mentorship, farm infrastructure, extension services, production inputs and mechanisation inputs;
- Strengthen existing, and create new partnerships within all three spheres of government, the private sector and civil society to develop critical economic infrastructure such as roads, energy, water, ICT and transportation/logistics corridors that support the Agri-Park value chain;
- Enable producer ownership of the majority of Agri-Parks equity (70%), with the state and commercial interests holding minority shares (30%);

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- Allow small-holder producers to take full control of the Agri-Parks by steadily decreasing state support over a period of ten years;
- Bring under-utilised land (especially in Communal Areas Land and land reform farms) into full production over the next three years, and expand irrigated agriculture; and
- Contribute to the achievement of the NDP's "inclusive rural economy" and target of 1 million jobs created in the agriculture sector through creating higher demand for raw agricultural produce, primary and ancillary inputs, as well as generating increased downstream economic activities in the sector. *(Source: DRDLR, 2015)*

In accordance with these objectives, and those set out in the ToR, Urban-Econ Development Economists will embark on formulating a Master Agri-Park Business Plan for the Xhariep District Municipality, which speaks to the local character and opportunities within the region. As such, introductory meetings and continuous consultations have already been held to facilitate the development process and to gather local knowledge, information, and buy-in. Urban-Econ Development Economists is currently busy conducting the three Master Agri-Park Business Plans for the Free State Province for: Xhariep DM; the Mangaung MM, and the Thabo Mofutsanyana DM.

This report is also prepared with the following objectives and goal in mind, as set out in the ToR and the Inception Report for this project:

"The goal of the Xhariep District Municipality will be to develop an Agri-Park Business Plan that aligns with the Master Agri-Park Model that was developed by the Department of Rural Development and Land Reform and the dominant Commodity Value Chains within the Xhariep District Municipality."

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The methodology that was followed is illustrated step by step in the figure below:

Figure 1: Study Methodology

The report layout for the XDM Business Plan is illustrated below, and the main points per section are indicated as well:

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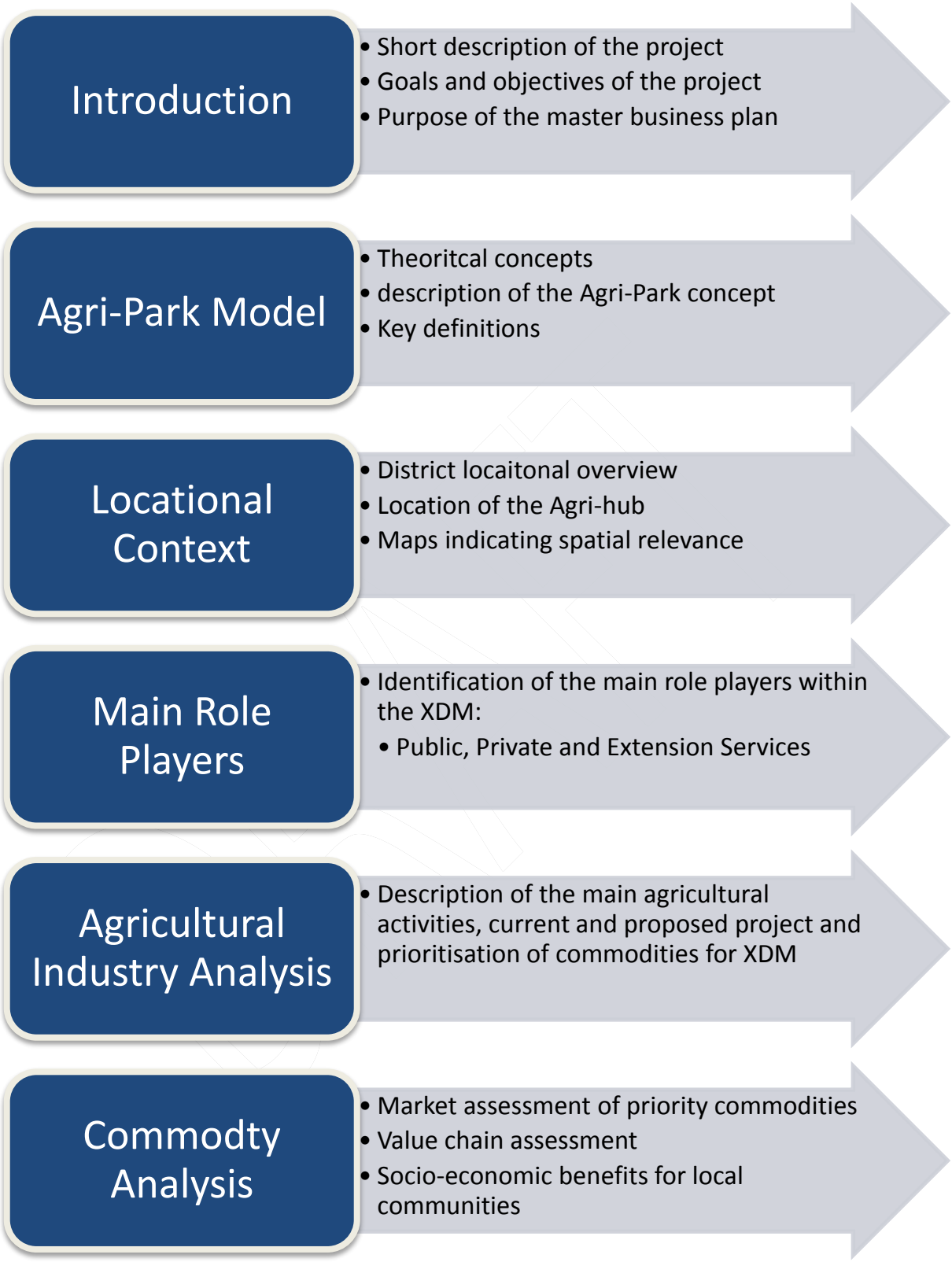

Figure 2: Report Layout

(Source: Developed by Urban-Econ, 2015)

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2. AGRI-PARK MODEL

2.1. AGRI PARK DEFINITIONS AND CONCEPTS

An Agri-Park is a combination of working farms, designed for multiple uses and that accommodate small farmers, which all converge at the Agri-Hub. They provide small-scale farmers access to secure markets, both locally and outside of the vicinity of the farming communities. The Agri-Parks provide fresh food and other primary sector supplies to the agri-hubs for further processing. Although the concept is still rather new in the South African context, it is developing well, drawing from existing international models such as educational farms, collective farming, market gardens, agri-clusters, and eco-villages. Agri-Parks are implemented in land use management as the buffer zones between urban and agricultural uses and are largely aimed and land reform.

The grouping of Agri-Parks is a great manner in which networks and connections can be provided and shared between farmers. Furthermore, they can provide the infrastructure required, especially with the agri-hubs, to increase productivity. In South Africa, the main aim of the Agri-Parks goes beyond just the individual farmers, but is aimed at the elevation of the local communities through training and knowledge impartation. The concentration of economic activities in Agri-Parks and agri-hubs holds great economic advantage as it can result in newer and better ways to compete in order to bring forth faster, more innovative markets. The design of an Agri-Park is also one of the most vital aspects thereof. A well-designed Agri-Park with all the necessary facilities has a high potential for commercial success, which is the aim.

Commercial success of the Agri-Park projects can bring South Africa closer to its aim of rural development and land reform. Essentially, Agri-Parks should create jobs for the local community, but more importantly, they should promote entrepreneurial skills and develop managerial skills within the rural context, in which the raw materials are extracted. Rather than simply extracting rural primary materials and transporting them for further processing in other more urban regions, the Agri-Parks promote value adding within the rural localities.

The Agri-Park is illustrated in **Figure 3** and shows the interaction between the different components of the Agri-Park. The idea of the Agri-Park Model is that a number of different activities will interact in an integrated manner to promote the objectives of the Agri-Park. These different components will be explained in more detail after the figures below.

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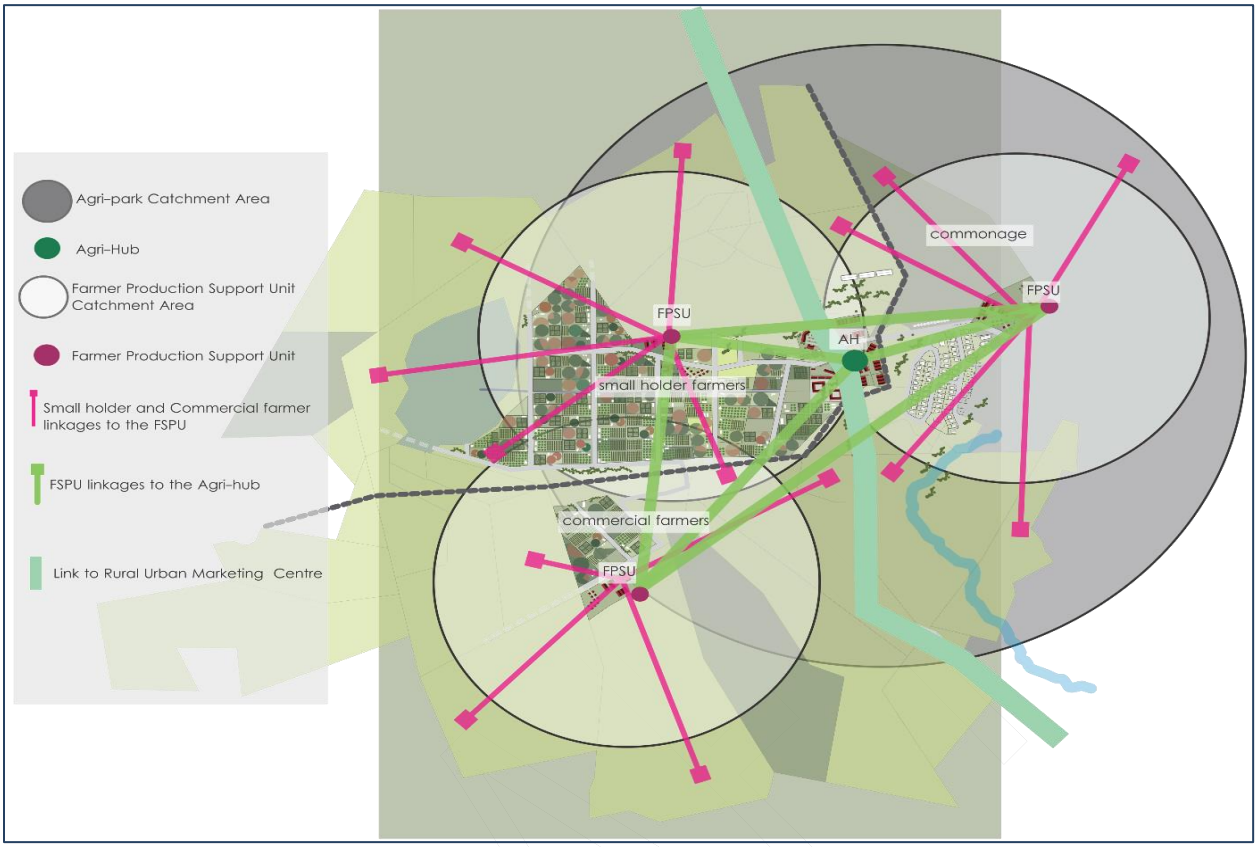

Figure 3: XDM Agri-Park Model

(Source: DRDLR, 2015)

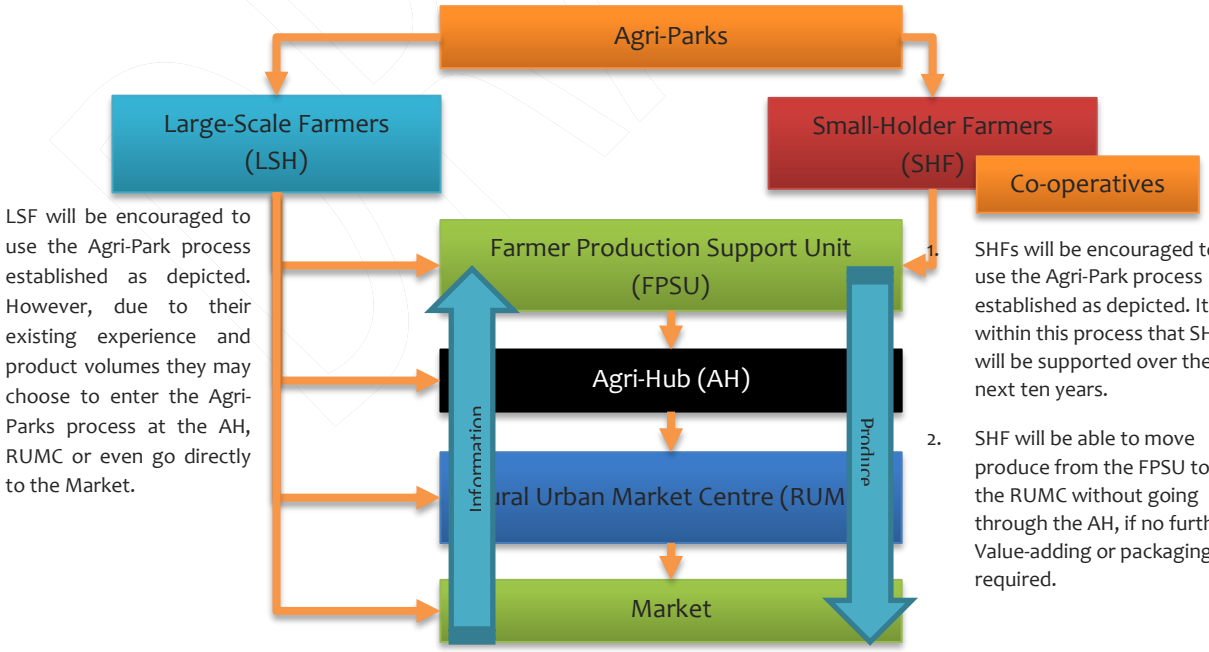

Figure 4: Components of the Agri-Park produce and information flows

(Source: DRDLR, 2015)

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The Farmer Production Support Unit (FPSU) focuses on the initial value chain activities such as storage, supply control, etc. The idea is to provide strategic support to emerging farmers by means of these FPSUs. There will be several FPSUs throughout the XDM, with the influence radius being 30km in low density areas and 10km in areas with a high density. The following activities will take place within the FPSU:

- Agricultural input supply control, in terms of quality, quantity and timeous deployment of inputs.
- Extension support and training, using the private sector, provincial departments of agriculture, universities, agricultural graduates and National Rural Youth Service Corps (NARYSEC) working in a symbiotic relationship to "hold-hands" with farmers over the next 10 years.
- Mechanisation support (tractor driving, ploughing, spraying, harvesting, etc.)
- Machinery, servicing workshop facilities.
- Local logistics support, which could entail the delivery of farming inputs, transportation post-harvest, transportation to local markets.
- Primary produce collection.
- Weighing of produce and stock.
- Sorting of produce for local and other markets.
- Packaging of produce for local markets.
- Local storage.
- Processing for local markets (small scale mills etc.)
- Auction facilities for local markets.
- Provide Market information on commodity prices (ICT).
- Farmers wanting services and support from the FPSU will register with the FPSU of their choice.
- Small Business Development and Training centre.
- Banking.
- Fuel (energy centre).

The following facilities will be situated within the Farmer Production Support Unit:

Agricultural extension support office;	Local packhouse
Local mechanisation centre and workshop	Small scale processing facilities for local market
Primary logistics collection support centre	Local market
Produce sorting facility	Auction facility
Aquaculture and Agri-Tourism facility	Storage facility

The Agri-Hub Unit within the Agri-Park will comprise of the main agro-processing activities within the district municipality. This will be where the main activities of the value chains will be developed and established. The agri-hub's catchment area will be 120km in low density areas and 60km in areas where there is a high density. These agri-hubs will be centrally located within the Xhariep District Municipality; it will receive the produce form the FPSU and process it further. There will also be training facilities, business development services, and retail activities at the agri-hub. These hubs will also be located close to the

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rural population and other areas where it will have a strategic advantage for agro-processing activities.

Also, the AH unit will be divided into various zones, with each of the zones interacting with one another in their activities (synergetic relationships). The different zones that will be present are:

- Production Zone
- Retail Zone
- Agro-Processing Zone
- Research and Industrial Zone
- Logistic Zone
- Aquaculture Zone

The following facilities will also be present within the Agri-Hub Unit:

✓ Retail facility	✓ Logistics and transport facility
✓ Administrative facility	✓ Agricultural input distribution and sales centre
✓ Machinery rental and mechanisation support	✓ Silos
✓ Packaging facility	✓ Abattoirs
✓ Quality control facility	✓ Feedlots
✓ Agro-Processing facility	✓ Aquaculture facility
✓ Training centre	✓ Green houses
✓ Research and Demonstration Plots	✓ Railway line
✓ Student and staff housing	✓ Rental space

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The Rural Urban Market Centre Unit (RUMC). The main purpose of the RUMC, in the context of the Free State is to ensure that the following is achieved;

- The RUMC must play the role of being the main holding-facility. This means that the Rural Urban Market Centre Unit must ensure that produce is supplied to the urban markets, based on seasonal trends.
- A connection needs to be established, through the RUMC between the rural, urban, and international markets ensuring that they remain successfully contractually bound to each other.
- Market intelligence and information feedback to the AH and FPSU must be prioritised to maintain cohesion. This is to be maintained through the use of the latest Information and communication technologies.

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3. POLICY FRAMEWORK

This section of the business plan provides an overview of the national, provincial, and local policies that will have a direct influence on the development of the Agri-Parks concept in each District Municipality. The first sphere of government considered was the national policy framework.

3.1. NATIONAL POLICY OVERVIEW

3.1.1. National Growth Path

Government adopted the *New Growth Path (NGP)* in 2010 as the driver of the country's job creation strategy. The NGP suggests that in order to achieve growth and transformation of economic imbalances, firm choices and shared determination are required from every structure within the South African society. The goal is to grow employment by five million jobs by 2020; to ensure that half of the working-age population in South Africa will be employed and that unemployment would be reduced from 25% to 15%. The NGP is also formulated to reduce inequality and eliminate rural poverty by identifying areas where long term structural and feasible changes can be made.

STRATEGIC PRIORITIES / FOCUS AREAS
The strategic focus of the NGP is to support employment creation. Efforts will be prioritised in key sectors such as infrastructure, the agricultural value chain, the mining value chain, green economy manufacturing, tourism, and certain high- level services. To achieve these objectives, the framework seeks to: ➢ Identify areas that have potential for large scale employment creation. ➢ Develop a policy package to facilitate employment creation in the areas identified. ➢ Create a consensus on the new local and global opportunities, and see how these opportunities can be seized in order to achieve socially desirable and sustainable outcomes. ➢ Strengthen the domestic and regional agricultural markets by supporting smallholder farmers. ➢ Broaden the markets for South African goods and services through a stronger focus on exports. ➢ Provide quality basic and secondary education. ➢ Invest in health including effective measures to address HIV/AIDS.
IMPLICATIONS FOR THE AGRI-PARKS DEVELOPMENT
The agricultural value chain has been prioritised to play an important role in the provision of job opportunities and improve the standard of living of farm workers. The NGP targets opportunities for 300,000 households in agricultural smallholder schemes, plus 145,000 jobs in agro-processing by 2020, while there is potential to upgrade

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conditions for 660,000 farm-workers. It can be concluded that the NGP supports the development of the Agri-Parks.

3.1.2. National Development Plan – 2030 (2010)

South Africa's first National Planning Commission was set by President Jacob Zuma and inaugurated in May 2010. The objective posed to the National Planning Commission was to take an independent view of South Africa, and from that, derive a Vision and a Plan that is focused on enabling a much better quality of life for all South Africans by 2030. The primary channels through which improvement in quality of life are likely to come about, are through eliminating poverty and reducing inequality - the two single biggest problems in South Africa. These aspects affect every other aspect of development and every aspect of life for the citizens of this country. As both a cause and result of these primary problems, the NDP has identified nine specific and predominant challenges:

1. Too few people work.
2. The quality of school education for black people is poor.
3. Infrastructure is poorly located, inadequate, and under-maintained.
4. Spatial divides hobble inclusive development.
5. The economy is unsustainably resource-intensive.
6. The public health system cannot meet demand or sustain quality.
7. Public services are uneven and often of poor quality.
8. Corruption levels are high.
9. South Africa remains a divided society.

STRATEGIC PRIORITIES / FOCUS AREAS

The three broad frameworks identified to ensure the proposed vision set out by the NDP is achieved are the following:

1. Raising employment through faster economic growth.
2. Improving the quality of education, skills development, and innovation.
3. Building the capability of the state to play a developmental, transformative role.

Given the complexity of national development, the plan sets out six interlinked priorities by which the main challenges will be addressed:

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- Uniting all South Africans around a common programme to achieve prosperity and equity.
- Promoting active citizenry to strengthen development, democracy, and accountability.
- Bringing about faster economic growth.
- Higher investment and greater labour absorption, focusing on key capabilities of people and the state.
- Building a capable and development state.
- Encouraging strong leadership throughout society to work together to solve problems.

IMPLICATIONS FOR THE AGRI-PARKS DEVELOPMENT

The National Development Plan views agriculture as critical to employment and food security. It is estimated that Agriculture would potentially create a million jobs by 2030. Agri-Parks will serve as important mechanisms to execute the NDP's proposed rural development strategy due to their potential for supporting small-scale agricultural production and stimulating agro-processing in rural areas.

One core element of this approach is conducting commodity and value-chain analyses and mapping exercises to determine the best areas to establish Agri-Parks based on the growth potential of value-adding commodities. As such, each Agri-Park will focus on specific prioritised commodities that have the highest prospect of succeeding in their region. This is directly in line with the NDP's approach of targeting high value commodities (most of which are labour intensive) to stimulate industrial growth, accompanied by measures that ensure sustainable production on redistributed land and an improved institutional support system.

In this regard, the NDP identifies certain agricultural sub-sectors that have the most potential for development, which are categorised into large labour-intensive industries, smaller labour-intensive industries, and large existing industries with significant value-chain linkages. For instance, small-scale labour intensive agriculture, including macadamia, pecan nut, rooibos tea, olive, fig, cherry, and berry industries, are found to have the greatest expansion potential due to the significant market demand for these products. The NDP projects that approximately 80 000 jobs can be created by further developing these particular areas of small-scale agriculture. By providing the necessary inputs, facilities, institutions, market-linkages, and partnerships, Agri-Parks can enable small-scale producers and rural residents to create new, and expand existing enterprises in these industries, which will have positive growth impacts on the rural economy.

The NDP states that in South Africa a highly centralised, vertically integrated agro-processing sector already exists for staple foods such as maize, wheat, sugar, sunflower oil, tea, flour, peanut butter, cigarettes, beer, fruit juices, and canned goods. Key proposals identified for the agriculture and agro-processing sectors include the following:

- *Greater investment in providing innovative market linkages for small-scale farmers in communal and land-reform areas.*

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- *As part of a comprehensive support package for farmers, preferential procurement mechanisms should be put in place to ensure that new agricultural entrants can also access these markets.*
- *Growth in agricultural production has always been fuelled by technology, and the returns to investment in agricultural research and development are high. Technology development should therefore, be prioritised.*
- *Policy measures to increase intake of fruits and vegetables, and reduce intake of saturated fats, sugar and salt, as recommended in the South African food dietary guidelines, to accompany strategies to increase vegetable and fruit production.*

3.1.3. Industrial Policy Action Plan (IPAP)-2013/14 – 2015/16

The *Industrial Policy Action Plan (IPAP) 2013/14-2015/16* is in the fifth iteration of IPAP and the apex policy document of the Department of Trade and Industry (DTI). It is drawn from a range of visions set out by successive industrial policies such as the NDP, NGP, and National Industrial Policy Framework (NIPF). The IPAP sets out an industrial policy framework with overriding interventions that will prevent industrial decline and support growth, as well as diversifications of South Africa's manufacturing sectors. IPAP will ultimately lead to a restructured economy with more value-adding, labour intensive, and environmentally sustainable industrial activities.

STRATEGIC PRIORITIES / FOCUS AREAS

IPAP focuses on building on, and fulfilling, the plans set out in IPAP 2012/2013 in its transversal and sector-specific interventions. These transversal interventions are in the areas of:

- Public procurement
- Competition policy
- Innovation and technology
- Skills for the economy
- Industrial financing
- Developmental trade policy
- Regional integration
- Special economic zones

IMPLICATIONS FOR THE AGRI-PARKS DEVELOPMENT

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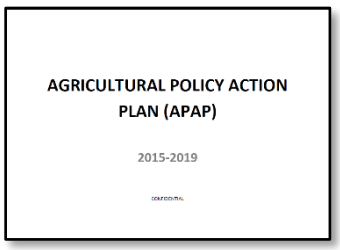
IPAP identifies the agro-processing industry as a sector with potential to spur growth and create jobs, because of its strong backward linkage with the primary agricultural sector. The agriculture and agro-processing value chain represents an important source of labour intensive growth. In addition, this value chain is central to the rural development and smallholder farmer development objectives of government.

The key-programmes identified for agro-processing within the IPAP are the following:

1. Development of a Food-processing Strategy and Action Plan with the objective of accelerated growth in the food-processing sector.
2. Development of a small-scale milling industry to enable small-scale maize milling enterprises to produce for local markets at competitive prices.
3. Enhancement of competition in the fruit and vegetable canning industry - The creation of a sustainable platform for the long-term growth and competitiveness of the industry.
4. Development of a Soybean Action Plan promoting market linkages between primary agricultural producers and processors.
5. Development of the organic food sector – The development of a competitive organic sub-sector producing high-quality food products for both local and export markets.
6. Supporting the Public-Private Partnership (PPP) for Food Security – Entails smallholder farmer access to formal retail chains, Government procurement, and small scale processing opportunities.

With infrastructure investment as one of its main components, upon which all other proposed actions rest, the Agri-Park Programme is key in advancing the objectives of IPAP. The Agri-Parks Programme will further promote an approach to land reform and rural development consisting of comprehensive spatial planning, appropriate categorisation of land and beneficiaries to ensure sustained agricultural development, associated/targeted skills development, employment creation, significant infrastructural expansion, improved public service delivery, more dedicated investment in agriculture through a targeted approach, and the increased involvement of the private sector in land reform and rural development initiatives.

3.1.4. Agricultural Policy Action Plan (APAP) (2015-2019)



The *Agricultural Policy Action Plan (APAP) (2015-2019)* aligns itself to other existing national plans such as the NGP, NDP, and the IPAP. These plans were geared towards providing decent employment through inclusive growth, rural development, food security/ protection, as well as enhancement of environmental assets and rural resources; with key job drivers identified as agriculture, infrastructure, mining, manufacturing,

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tourism, and the green economy. The APAP sets an action plan for a five-year period (2015-2019), and seeks to translate the high-level responses offered in the Integrated Growth and Development Plan (IGDP) into tangible, concrete steps.

STRATEGIC PRIORITIES / FOCUS AREAS

The APAP seeks to provide both a long-term vision, and focused interventions in a 5-year rolling schedule, to be updated annually. APAP is based on Sectoral Key Action Programmes (commodities) and Transversal Key Action Programmes (e.g. research and innovation). It furthermore, presents institutional arrangements and processes for achieving this objective –especially to integrate planning, M&E between DRDLR and DAFF across 3 spheres of government. The APAP has 4 policy levers which are:

1. ***Equity and Transformation:***
   - Ensuring a more producer-friendly (and consumer-friendly) market structure
   - Accelerating implementation of the Charters and the Small-scale fisheries policy;
   - Promoting local food economies; and
   - Investment in agro-logistics
2. ***Equitable Growth and Competitiveness:***
   - Promoting import substitution and export expansion through concerted value chain/commodity strategies;
   - Reducing dependence on industrial and imported inputs;
   - Increasing productive use of fallow land; and
   - Strengthening R&D outcomes.
3. ***Ecological Sustainability:***
   - Climate Smart Agriculture
4. ***Governance:***
   - Support services;
   - Skills development;
   - Research and development;
   - Knowledge and information management (integrated spatial economic planning);
   - Market access, information and regulation; and
   - Institutional arrangements

IMPLICATIONS FOR THE AGRI-PARKS DEVELOPMENT

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The evaluating measurements used within the APAP to meet its short- and medium-term in objectives are the following:

1. Contribution to food and security
2. Job creation
3. Value of production
4. Potential contribution to trade balance

The APAP informs the Agri-Parks Business Plan through the identification of the following specific sub-sectors for key action programmes:

1. Poultry/Soybeans/Maize Integrated Value Chain
2. Red meat value chain
3. Wheat value chain
4. Fruits and vegetables
5. Wine industry
6. Forestry
7. Small scale fisheries

The developments of Agri-Parks are in line with the APAP policy levers and would help in achieving its set out goals.

3.1.5. Department of Agriculture, Forestry and Fisheries Agro-processing Strategy (2012)

The *Department of Agriculture, Forestry and Fisheries' (DAFF) Agro-Processing Strategy* was developed to create a strategic direction on agro-processing for both national and provincial government. The strategy seeks to provide a response on the agro-processing job creation and related government priority targets set out in existing policy frameworks such as the NGP and IPAP.

STRATEGIC PRIORITIES / FOCUS AREAS

The strategic objective is to articulate how government should intervene to support and develop Small and Medium Enterprises (SMEs), agro-processing in the local and global agricultural sector, as well as forestry and fisheries value chains. The following strategic interventions are set out by this strategy:

1. Facilitate access to incentives and support packages
2. Facilitate access to infrastructure
3. Promote value chain linkages
4. Support technical and managerial training
5. Facilitate access to appropriate technology

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6. Facilitate access to business development services

The implementation of this strategy is to be aligned with the implementation of the Smallholder Development Programme, the Zero Hunger Plan, and the Marketing Strategy of the DAFF to realise its intended objectives.

IMPLICATIONS FOR THE AGRI-PARKS DEVELOPMENT

Developing and supporting the currently underserviced agro-processing SME has been identified as key to achieving government's priority targets of promoting job creation, economic growth, and equity. The findings of the Department of Agriculture, Forestry and Fisheries Agro-processing Strategy forms a vital input in formulating the Agri-Parks Master Business Plans due to the scope of agro-processing in the national economy.

3.1.6. Strategic Plan for the Department of Agriculture, Forestry and Fisheries (2013/14 – 2017/18)

The *Strategic Plan for the DAFF* was guided by other key policies such as NGP, NDP, IPAP and the work of the Presidential Infrastructure Coordinating Commission (PICC); aimed at tackling the challenges of poverty, inequality, and unemployment. The Strategic Plan for the DAFF sets out programmes of action and projects for a period of five years (2013/14 – 2017/18), and is formulated to improve and develop production by means of entrepreneurship promotion in the AFF sectors.

STRATEGIC PRIORITIES / FOCUS AREAS

The Strategic Plan of the DAFF aims to address the social and economic challenges that the AFF sectors are faced with. It further sets new opportunities for service delivery with relation to job creation, food security, rural development, and skills development. The opportunities or action areas highlighted for key policy development include the following:

- Food security production programmes
- Strategic plans for supporting small producers
- Aquaculture programmes
- Agro-processing strategic frameworks

The strategic goals set out in the document are the following:

- Increased profitable production of food, fibre, and timber products by all categories of producers.
- Sustained management of natural resources.
- Effective national regulatory services and risk management systems.
- A transformed and united sector.

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- Increased contribution of the sector to economic growth and development.
- Effective and efficient governance.

IMPLICATIONS FOR THE AGRI-PARKS DEVELOPMENT

The Strategic Plan of the DAFF supports the development of the Agri-Parks development. Agro-processing is highlighted to play a key role in ensuring an equitable food-secure economy. Interventions should focus on developing processed agricultural products, while at the same time targeting increased export-trade. Investment in agro-processing should be increased as a means of reinvigorating specific strategic value chains such as soya beans, rooibos, beverages, fruit and vegetables, as well as forestry. An equitable food-security economy will improve access to markets, especially for smallholder farmers.

3.1.7. National Policy Framework on the Development of Small and Medium Agro-Processing Enterprise in the Republic of South Africa

The *National Policy Framework on the Development of Small and Medium Agro-Processing Enterprise* in *the Republic of South Africa* was initiated by the DAFF.

STRATEGIC PRIORITIES / FOCUS AREAS

The objectives of this document are the following:

- Rural industrialisation through the establishment of agro-processing industries that are closer to production areas.
- Local economic growth through increased trade in rural areas.
- Job creation through the establishment of SME agro-processors to improve livelihoods of both smallholder agro-processors and producers.

However, the specific challenge that this policy aims to address is the limited active participation of rural-based SMEs agro-processors in the agro-processing mainstream value chain. The strategic objective is to create a profitable, competitive and thriving small and medium agro-processing industry. To achieve this, the policy seeks to:

- Provide entrepreneurial support to small and medium agro-processors.
- Support enterprise development through facilitating access to markets, finance, incubation, and mentorship.
- Facilitate agro-processing industry research and technology transfers.
- Facilitate infrastructure investment specifically within rural areas.

IMPLICATIONS FOR THE AGRI-PARKS DEVELOPMENT

The major constraints to developing the thriving agro-processing value chain identified in the framework are lack of appropriate technology, inadequate infrastructure, access

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to finance, and low levels of technical and entrepreneurial skills. The Agri-Parks developments will focus on providing continuous support to small and medium scale agro-processing enterprises. Continuous support will assist in increasing the number of enterprises and address the challenges they face with integrating and actively participating in the mainstream economy.

3.1.8. Strategy for the Development of Small and Medium Agro-Processing Enterprises in the Republic of South Africa (2014 – 2019)

The *Strategy for the Development of Small and Medium Agro-processing Enterprises in the Republic of South Africa* was developed to support increased participation of small and medium scale agro-processing enterprises in the agro-processing sector. The strategy aims to support the vision of the DAFF, which aligns with the NDP and IPAP, while linking directly to the outcomes of the Medium Term Strategic Framework (MTSF, 2009).

STRATEGIC PRIORITIES / FOCUS AREAS
The strategy seeks to articulate how the small and medium agro-processing enterprises within the agriculture, forestry and fisheries sector in South Africa can be supported and developed at all levels of government (national, provincial, and local).
IMPLICATIONS FOR THE AGRI-PARKS DEVELOPMENT
The *Strategy for the Development of Small and Medium Agro-processing Enterprises in the Republic of South Africa* informs the Agri-Parks Master Business Plan through identifying the following four intervention pillars needed to for the development of Small and Medium Agro-processing Enterprises: 1. Entrepreneurial support 2. Enterprise development (Access to finance, market access and incubation) 3. Industry research and technology transfer 4. Infrastructure investment

3.1.9. Agriculture, Forestry and Fisheries: Integrated Growth and Development Plan 2012

The *Integrated Growth and Development Plan (IGDP)* was developed for the Medium Term Expenditure Framework (MTEF) (2011/12 – 2014/15) with the aim of providing a long-term strategy for the growth and development of the agricultural, forestry and fisheries sector in South Africa. The IGDP seeks to address the current realities and challenges that these sectors face, and to develop a common vision that will ensure equitability, productivity, competitiveness, and sustainability.

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STRATEGIC PRIORITIES / FOCUS AREAS
The strategic priorities of the IGDP for the agricultural, forestry, and fisheries sector are the following: • Attaining equity and transformation • Equitable growth and competitiveness • Environmental sustainability • Good governance
IMPLICATIONS FOR THE AGRI-PARKS DEVELOPMENT
The IGDP identifies that in terms of agro-processing, there is a need to support South African exporters to position their products better in fast-growing, developing country destinations and Africa. This may require focused export intelligence and marketing support, as well as intergovernmental assistance to ensure that South African products are not unfairly subject to nontariff barriers. Greater emphasis and investment is required in the understanding and managing of international trade standards and regulations, especially in the areas of food safety and sanitary and phytosanitary measures.

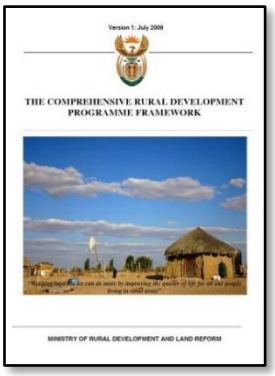
3.1.10. Linkages to National Government Programmes

The Agri-Parks concept will be in support of existing rural development programmes implemented by government. A description of the key programmes in this regard is provided.

3.1.10.1. Department of Rural Development and Land Reform: Comprehensive Rural Development Programme

rural development & land reform
Department:
Rural Development and Land Reform
REPUBLIC OF SOUTH AFRICA

The Comprehensive Rural Development Programme (CRDP) is aimed at being an effective response against poverty and food insecurity through maximising the use and management of natural resources to create vibrant, equitable, and sustainable **rural communities**. A CRDP must improve the standards of living and welfare, but also rectify past injustices through rights-based interventions and address skewed patterns of distribution and ownership of wealth and assets. The strategic objective of the CRDP is therefore, to facilitate integrated development and social cohesion through participatory approaches in partnership with all sectors of society. This document therefore, serves as the policy framework document for the Comprehensive Rural Development Programme - or 'CRDP'. The document thus, aims to set out the programme principles.



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STRATEGIC PRIORITIES / FOCUS AREAS

The vision of the CRDP is to create vibrant, equitable, and sustainable rural communities include: contributing to the redistribution of 30% of the country's agricultural land; improving food security of the rural poor; creation of business opportunities, de-congesting and rehabilitation of over-crowded former homeland areas; and expanding opportunities for women, youth, people with disabilities, and older persons who stay in rural areas.

The ultimate vision of creating vibrant, equitable, and sustainable rural communities will be achieved through a three-pronged strategy. The components of this three-pronged strategy are also the key elements that characterise the CRDP and are as follows:

- Coordinated and integrated broad-based **agrarian transformation**,
- Strategically increasing **rural development**,
- Improved **land reform**.

IMPLICATIONS FOR THE AGRI-PARKS DEVELOPMENT

The types of priorities that are typically catered for in the CRDP, categorised according to the three key strategies mentioned above, include – but are not limited to – the following:

A. Economic Development

Agrarian Transformation

- Livestock farming and related value chain development (exploring all possible species for food & economic activity).
- Cropping and related value chain development (exploring all possible species, especially indigenous plants for food and economic activity).

Rural Development

- The establishment of business initiatives, agro-industries, cooperatives, cultural initiatives, and vibrant local markets in rural settings.

B. Social Development

Rural Development

- The empowerment of rural communities, especially women and the youth, through facilitating and mediating strong organisational and institutional capabilities and abilities to take full charge of their collective destiny.
- Capacity building initiatives, where rural communities are trained in technical skills, combining them with indigenous knowledge to mitigate community vulnerability to, especially, climate change, soil erosion, adverse weather conditions and natural disasters, hunger and food insecurity.

C. Physical and Infrastructure Development

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Rural Development

- Revitalisation and revamping of old, and the creation of new economic, social, and information communication infrastructure and public amenities and facilities in villages and small rural towns.

D. Institutional Development

Land Reform

- Projects will be linked to the acquisition of, and access to, land through the three land reform programmes (redistribution, tenure, and restitution). All projects implemented through the three programmes will be implemented efficiently but in a sustainable manner linked to the strategic objective of the CRDP.

3.1.10.2. Other Programmes

Other programmes implemented by the DRDLR are the following:

1. LAND REFORM PROGRAMME

The Land Reform Programme aims to initiate a sustainable land reform programme in South Africa, based on the following three strategic objectives:

1. Strategically located land acquired
2. Farm development support provided to smallholder farmers
3. Functional system and institutional arrangements

2. RECAPITALISATION AND DEVELOPMENT PROGRAMME

The Department of Rural Development and Land Reform's Recapitalisation and Development Programme seeks to operationalise the policy on the same name, published 23 July 2014. It focuses on human (capacity development), infrastructure development and operational inputs on properties in distress or that are newly acquired through the land reform redistribution, restitution and other programmes since 1994, as well as other agricultural properties in distress acquired without grant funding. The approach is to ensure that the enterprises are profitable and sustainable across the value chain in line with the Business Plan, which stipulates comprehensive development requirements of targeted properties over a 5-year recapitalisation and development cycle.

3. PROVINCIAL SHARED SERVICES CENTRES

Provincial Shared Services Centres (PSSCs) are established to coordinate land reform programmes. The PSSC's focus on the following services:

1. Redistribution in terms of the Pro Active Land Acquisition Strategy (PLAS)
2. Tenure (ESTA, IPILRA)

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3. Recapitalisation
4. State Land Administration

3.1.10.3. Department of Agriculture, Forestry and Fisheries

The following rural development programmes are driven by DAFF:

1. COMPREHENSIVE AGRICULTURE SUPPORT PROGRAMME (CASP)

To ensure the commercial viability of emerging farmers from a household food security level to a commercial level, a farmer-to-farmer mentorship policy has been developed. The department regards skills development as one of its critical focus areas and this obviously includes providing hands-on training to emergent farmers in various fields of farm management.

2. MICRO-AGRICULTURAL FINANCIAL INSTITUTIONS OF SOUTH AFRICA (Mafisa)

The Micro-Agricultural Financial Institutions of South Africa (Mafisa) encourage partnerships between established agricultural enterprises and emerging farmers and entrepreneurs by providing access to finance for farmers, especially beneficiaries of the land restitution, redistribution, and land tenure reform programmes. The Land Bank administers the credit scheme on behalf of the department and provincial departments provide assistance to access the scheme. Four development finance institutions are currently participating in the disbursement of Mafisa funds in the provinces.

3. ILIMA-LETSEMA

The grant provides for farmers who lack access to credit to be assisted to access agricultural production inputs. The inputs are necessary to increase agricultural production and hence, to improve household and national food security. Jobs are sustained and new ones created when farm enterprises are made operational, and this requires provision of the production inputs

4. AGRICULTURAL BROAD-BASED BLACK ECONOMIC EMPOWERMENT (AgriBEE)

The AgriBEE Charter seeks to provide direction on the integration of emerging participants into mainstream agriculture by creating linkages, partnerships, and networks for balanced, mutually benefiting results for all concerned. It specifically encourages partnerships between established agricultural enterprises and emerging farmers and entrepreneurs. It seeks to ensure enhanced competitiveness and sustainable development with improvement/expansion of the existing businesses, rehabilitation of ailing agricultural business concerns, and expanded entry for new businesses in the sector.

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3.2. PROVINCIAL POLICY OVERVIEW

The purpose of this subsection is to outline the provincial legislative framework of the Free State Province. The following polices and strategies are analysed within this subsection:

- Free State Provincial Spatial Development Strategy,
- Free State Provincial Growth Development Strategy,
- Free State Export Strategy, and
- Free State Investment Strategy.

3.2.1. Free State Provincial Spatial Development Strategy

The Free State Provincial Spatial Development Strategy (FS PSDF) is a policy that is used for spatial and strategic planning within the provincial boundaries of the Free State. The policy is compiled in accordance with two national plan, not excluding several other applicable directors.

Free State Provincial Spatial Development Strategy
Vision & Mission
The National Development Plan (NDP) Vision 2030 as well as the National Spatial Development Perspective (NSDP) have the greatest influence on the Free State PSDF. In accordance with these policies, all spheres of government are encouraged to prepare spatial development plans and frameworks in order to reap greater socio-economic prominence. Plans such as the PSDF should be in line with the principles of global sustainability, thus, promoting a developmental state.
Development Objectives
The NDP, individual municipalities IDP's and the local challenges and opportunities facing the province have a large influence on the FS PSDF. These dynamics are what make the FS PSDF a very strategic document. It assesses development scenarios from a provincial viewpoint, as a basis of integrating and aligning local and national plans, with the aim of development objectives such as the following: • Economic Infrastructure Development • Better roads and decent housing • Developing of Arts, Sports and Culture facilities, especially sports
Strategic Priorities
The Key Performance Areas (KPAs) of the Free State Provincial Spatial Development Strategy may be summarized as follows:

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- The plan should act as a spatial and strategic supplement to the Provincial Strategic Growth and Development Pillars embodied in the Free State Growth Development Strategy.
- The PSDF should endorse environmental sustainability throughout the province, while integrating land-use activities with defined sustainability objectives.
- The FS PSDF should further be used as a tool for the improvement of the well-being of the residents of the province, as well as the environment of.

Focus Areas

- Ensuring uniformity in spatial planning and land-use management for the Free State in a way that makes the systems effective and comprehensive.
- Encouraging social and economic inclusion in the system of spatial planning and land-use management.
- Promoting development principles, norms, and standards.
- Ensuring that land and other forms of environmental capital are utilized in a sustainable and efficient manner.
- Promoting cooperative government and intergovernmental relations between the three spheres of government.
- Ensure that spatial development planning and land-use management application are carried out equitable, as a means of rectifying the imbalances of the past.

Implications for the Agri-Park Development

The key benefits that will be realised through the implementation of the Agri-Park system with regard to the Free State Provincial Spatial Development Strategy includes:

- The Agri-Park system will promote sustainable and efficient land-use;
- Promotion and investment in the agro-processing sector of Province;
- Improvement in competitiveness of the local economy by optimally using the local resource base and locational advantages; and
- Stronger integration between the different economic sectors of the Province.

3.2.2. Free State Provincial Growth and Development Strategy

The Free State Provincial Growth and Development Strategy (FS PGDS) is a multi-stakeholder strategy which sets out to create inclusive and sustainable development, which promotes an equitable society. The FS PGDS primarily addresses the first strategic priority of the creation of decent work while also build a growing, inclusive economy.

Free State Provincial Growth and Development Strategy

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Vision & Mission

The key focus areas for the Free State is the creation of sustainable jobs and increased job opportunities for all residents of the province. This, along with protection of natural resources, encouragement of foreign investment and the various noted and undiscovered local opportunities in each municipal areas became the driving force for the FS PGDS. This strategy should form the cornerstone of all municipal IDPs, which must align with the contents and aspirations of this document. Provincial programmes and projects and the Spatial Development Framework must be aligned with the PGDS and other appropriate budgets.

The FSGDS is an important tool in guiding the implementation of plans and visions for the next decade. It is also used to promote good governance, and this is proposed through above standard service delivery and appropriate coordination between National, Provincial and Local government. Based on the cross-functional, interdepartmental approach that is proposed for development planning within the strategy, this coordination is essential.

Development Objectives

The Free State Province identified various primary development objectives which re vital for the success of the FSGDS, in accordance to the unique social and economic development challenges which face the province.

These primary development objectives include the following:

- The stimulation of economic development.
- Enhancement of infrastructure in order to attract the necessary economic growth and social development.
- Using human and social development as a tool for eradicating poverty.
- Promote an environment which is safe and secure for all the residence of the province.
- Endorse effective and efficient governance and administration.

Strategic Priorities

It is also crucial that all stakeholders are familiarized to the FSGDS in order to enable better interpretation of the specified goals, objectives and conceptual framework policies collectively. Unique actions need to be taken depending on levels of development and necessity, in order to improve the living standards of communities within the province. A pivotal aspect of the FSGDS is thus the encouragement and emphasis on the economic development of the province as a whole, in order to fuel the other objectives of the strategy.

Implications for the Agri-Park Development

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With cognisance of the productive potentials of township enterprises, the FSGDS specifies that the Agri-Park's Master Business Plan is crucial to support and develop agro-processors that will produce and manufacture products within and around the township space.

This will play a key role in transforming townships into sites for productive activities, contributing to improved standards of living, job creation, and social cohesion. Agro-processing and infrastructure is needed to expedite economic growth as well as attract and retain investors.

3.2.3. Free State Investment Strategy

The Free State government intends on focusing all investment in a manner that is both geographically as well as functionally strategic, and the Free State Investment Strategy (FSIS) is to be a driver of this initiative. The intensions of the strategy will facilitate in reaching a more strategic economic approach to development. It is imperative that infrastructure and investments be well aligned spatially across the province, in order to encourage the development of strategic areas which will be of economic advantage.

In order for LED strategies to be successful, it is crucial that they remain aligned with this investment framework. The FSIS will further be of assistance in identifying the type and focus of investment, which must be ventured into, that will have the highest likelihood of generating capital and creating sustainable jobs. The FSIS highlights the need for investments which will have a beneficial impact on the province at large.

Implications for the Agri-Park Development
The Agri-Park system supports the FSIS, as the Agri-Park system serves as an investment which will promote sustainable development. The Agri-Park will also play a key role in ensuring an equitable food-secure economy as well as reducing unemployment within the province, thus, allowing for more investments and further growth.

3.2.4. Free State Export Strategy

The Free State Export Strategy is a tool for efficiently directing public investment to areas which have greater export volumes. Areas which are identified as containing the potential to significantly increase export production are also prioritized by the FSES. The Free State export strategy will thus work as a vehicle for sustainable development within the Free State Province.

Implications for the Agri-Park Development
The Agri-Park's FPSUs will produce goods such as apples and dairy which will be utilised by the Agri-Park's Hub. The Agri-Hub will process the goods into products such as cheese and beverages, which will then be sold locally and abroad.

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Thus, the Agri-Park system will promote in the growth of the provincial economy by providing a larger amount of agro-processed goods that may be exported to foreign countries.

3.2.5. Free State Agricultural Master Plan

The Agricultural Master Plan of the Free State Province is divided into two phases each with their own specific focus. The first phase gives sound environmental foundation for the socio-economic analyses which is scientifically backed. The second phase of the Agricultural Master Plan of the Free State explores the individual context of the 4 districts and the Mangaung Metro.

Phase 1

The key purpose is thus to describe the natural resource base and the opportunities offered by it for sustainable and profitable use. In order to ensure the scientifically backing, the first phase of the Agricultural Master Plan of the Free State Province contains a wide array of numeric data and data analysis. Furthermore, numerous maps are examined within the document and an analysis is carried out to extract the key information presented on the maps. This phase explores the three main soil zones which may be recognised from a provincial perspective and then goes on to explore the availability and quality of water for agriculture in depth.

Phase 2

The individual analysis of the 5 regions within the free state specifically explores the physical, social, demographic and environmental aspects of each region. In line with the first phase, specific attention is granted to the availability and distribution of water in each district. An overview of the districts agricultural standing and land capital advantage is also provided through this section. The last section explores four Water Management Area which will influence the free state Agri-Parks in detail, this includes the Upper Vaal, Middle Vaal, Lower Vaal and Upper Orange water management areas.

Implications for the Agri-Park Development
Agricultural Master Plan of the Free State Province is the guiding document for the Agri-Park Development in the province. The document grants a scientific standard from which implementation can be carried out. Furthermore, a vast background is obtained from the Agricultural Master Plan as it is researched specifically for the province.

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3.2.6. Free State Commodity Business Plans, May 2015

Serval commodity business plans were reviewed as part of this study in order to establish comprehensive background. The Free State commodity business plans which were analysed were all developed by the Agricultural Research Council in collaboration with AMT. Each of documents where reviewed and information was included in commodity specific areas. The information obtained from all the business plans included an industry overview and current trends. A farmer production plan is also established within the documents to support the implementation plan. The Free State commodity business plans also provides an estimated capital outlay for farmers to utilise when establishing farming activities for each of these commodities. These commodities for the Free State include the following and those applicable were used to inform this Master Business Plan:

- Beef Production;
- Broiler Plan;
- Grain Crops;
- Milk Production Plan;
- Sheep and Goat Production Plan;
- Vegetable Production Plan;
- Wildlife Production Plan
- Business Plan for Veldt Management; and
- Business Plan for Water Management.

Implications for the Agri-Park Development
The Commodity Business Plans are used as a yardstick in the analysis of each of the commodities in order to ensure that a clear understanding is obtained of the potential for each commodity.

3.3. DISTRICT POLICY REVIEW

3.3.1. Municipal Structures Act

The Municipal Structures Act of 1998 is used as a tool for classification of the different types and categories of Municipalities found nationally. It sets out the way in which functions and powers should be divided within Municipalities, as well as the regulation of internal systems at municipal level. The MSA emphasises the need for co-operation amongst national, provincial and local spheres of government as a manner of better achieving set goals and targets.

The MSA sets to achieve specific target, as a tool set at national level, but used at individual local municipal levels. Individual municipality must ensure that the necessary support is in

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place to endorse the objective of the MSA. Some of the main objectives of the Municipal Structures Act are noted below.

- Ensuring the establishment of municipalities, according to the requirements specified for the various categories and types of municipality.
- The development of a specific criteria that will be used to determine the category of municipality to be established in an area.
- Specifying the types of municipalities which can be established under each category.
- Make necessary provision for the manner in which powers and functions can be divided well, between the categories of municipality.
- Regulation of the internal systems and structures of a municipality, as well as the municipality's office-bearers of.
- Ensuring that all electoral systems are standardised and appropriate and do not leave room for irregularities.

3.3.2. Municipal Systems Act

The Municipal Systems Act of 2000 empowers Municipalities to make a gradual move towards the social upliftment and economic development of local communities. The MSA achieves this through specific guidelines which are used as a tool for ensuring that basic services may be met more sufficiently. The MSA also provides the duties of municipalities, which must be carried out to ensure sustainable economic and social development. According to section 4 (2) of the MSA, the municipal council, must within its financial and administrative capacity perform the following duties to ensure that the municipality runs smoothly.

The MSA ascertains that all municipalities need to safeguard the following three duties, in order to ensure it serves the local community. The municipality must

- Prioritise the basic needs of the local community
- Encourage local economic development that benefits the local community.
- Ensure sufficient deliver of at least the basic municipal services to all member of the local community.

Additionally, Section 26 stipulates that every Municipality is bound by law to produce an integrated development plan (IDP) of which LED is a core component.

3.3.3. XDM Integrated Development Plan

According to the Xhariep District Municipality's IDP, the primary land use in the district is agricultural in nature. As a result of various regional characteristics, the main industries identified within the district focus on agricultural-beneficiation and tourism development

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(which is another prominent sector). Specialised agricultural technologies are to be applied and appropriate irrigation infrastructure is to be construction in order to sustainably use the full capacity of available water bodies thus creating various high profit niche crop within the municipality.

The IDP notes the northern end of the municipal area as good for cultivated agricultural activities, the southern end has however bee deemed good for livestock farming. The XDM IDP thus notes various regions within the municipality which have good agricultural potential. It is thus further prioritised to promote effective infrastructural development in areas where agri-processing is dominant. Springfontein/Maphodi, which is located within Kopanong Municipality is noted as serving as a general agricultural service centre in which greater access to land has to be prioritised.

Access to agricultural land for emerging farmers is deemed as a key spatial issue, within the municipal IDP. The long-term sustainability of all land development practices is viewed as the key factor for the environmental and economic future of this predominantly agricultural region. Within the identification of nodes and as a basis for any further identification agricultural land has been protected. Land which has agriculture use, will not be converted to other uses unless there be a real need. In this way, prime agricultural land will be encouraged to remain in production.

3.3.4. XDM Spatial Development Plan

The SDF is the land use framework for the district, guiding the way in which land is used and managed. The XDM SDF encompasses all the land use management for the local municipalities which fall under XDM, where disputes arise or border issues becomes problematic. The Xhariep SDF tries to focus development in those areas, within the district, where development is most likely to occur.

The XDM lays a foundation of equality, stating that everyone who is affected by the spatial panning, land use management and development actions and decisions within the XDM, must enjoy equal protection and benefits without discrimination. Along with this principle of equality, the SDF also sets specific other principals to ensure orderly development within the district.

- Principle of Sustainability,
- Principle of efficiency,
- Principle of Integration and
- Principle of fair and good governance.

A variety of agriculturally based districts have been identified as part of the Xhariep District Municipalities Spatial Development Framework:

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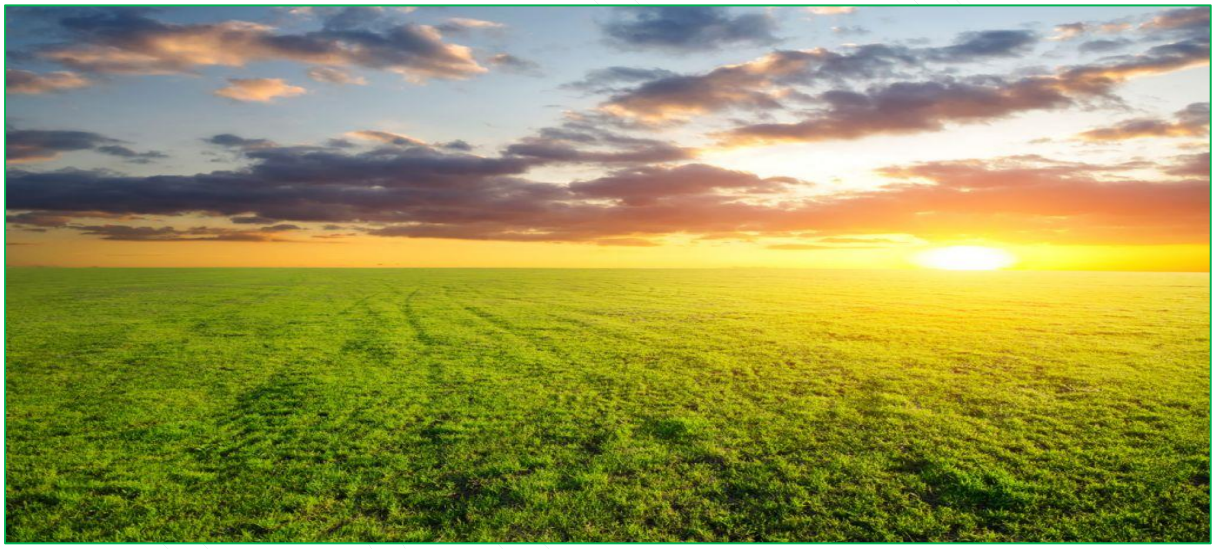
Commercial agricultural districts – are larger agricultural land units, accommodating diverse agricultural production which is intended for the commercial market.

Intensive agricultural districts (irrigation) – are smaller agricultural units, still with commercial focus and normally have higher production yield per hectare. Irrigation schemes are usually incorporated in these units, which are generally concentrated along water courses.

Emerging farmer agricultural districts – are areas which are largely used for communal grazing, forestry and or agricultural activities. This is a space controlled by the local community and usually supporting subsistence farming activities.



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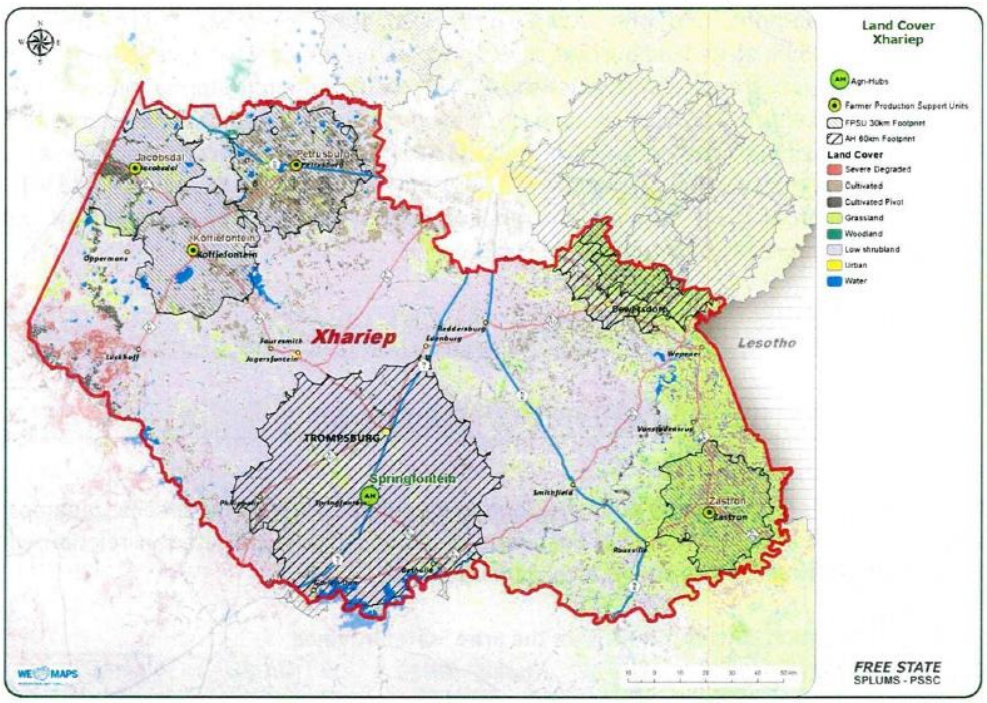
4. LOCATIONAL CONTEXT

4.1. XDM LOCATIONAL ASPECTS

It is necessary to understand the spatial, or locational context for both the Xhariep Agri-Park and the proposed Agri-Hub at Springfontein and as such, this sub-section will focus on the locational aspects of the area. The Xhariep District Municipality is bordered by the Mangaung Metropolitan Municipality to the north, and the Eastern Cape to the south. To the east, Lesotho borders Xhariep and to the west, when crossing the Orange River, the Northern Cape is situated. Springfontein is in close proximity to other small towns with similar statistical characteristics, such as Philippolis and Trompsburg. The Gariep Dam, situated 50km to the south of the town, is a prominent feature within the area and plays an important role within the agricultural sector of the larger area.



Map 1: Geographical Land Cover of the Xhariep DM

(Source: DRDLR, 2015)

As illustrated in **Map 1** with regard to the land capability of the Xhariep District Municipality, it is important to note that the Xhariep District can be considered semi-arid or marginal in terms of agricultural utilisation. In terms of the national land cover, the area surrounding that of Springfontein is covered in 84.45% shrub land, but only 1.23% the land is cultivated. A further 1.06% is classified as severely degraded. Water bodies cover 2.05% of the district, most of which are covered either by the Gariep Dam or the Orange River. Intensive cropping only occurs along the Orange River where lands can be irrigated; the rest of the land is used for livestock farming, with sheep the most prevalent. The area covered by Springfontein's footprint is a vast area covering 650 000 hectares according to the

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Department of Rural Development and Land Reform, making Springfontein's locality ideal for the spatial focus for a agro-processing hub.

4.1.1. Population Distribution

Population distribution acts as a good development indicator as it plays an influential role in economic growth. It further assists in understanding the effect of a development on local communities. The Kopanong Local Municipality, where Springfontein is located, has the highest population within the Xhariep District Municipality as illustrated in the figure below. With a population of 51 300 residents in the Kopanong Local Municipality, it has 10 909 more people than the Letsemeng LM, with the second highest population. The high population number within the Xhariep District Municipality, coupled with the geographical location, further amplifies the rationale surrounding the establishment of the Agri-Hub within the Springfontein area.

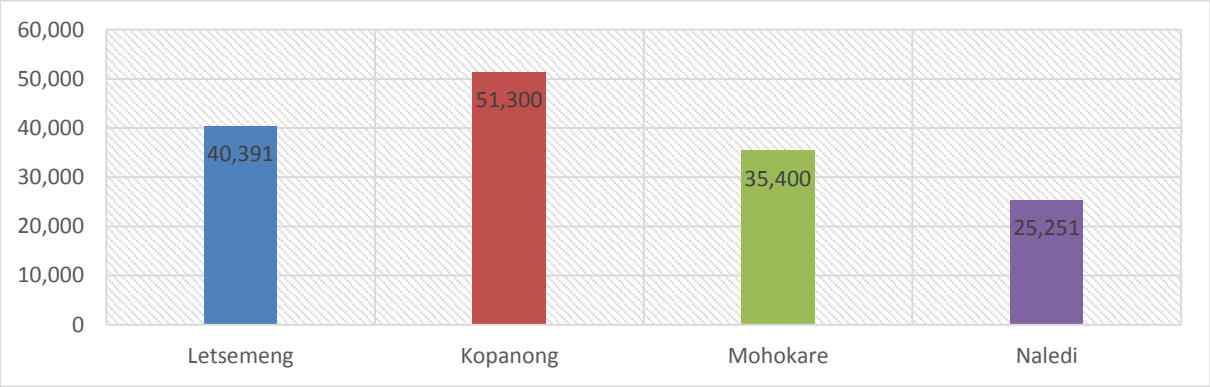
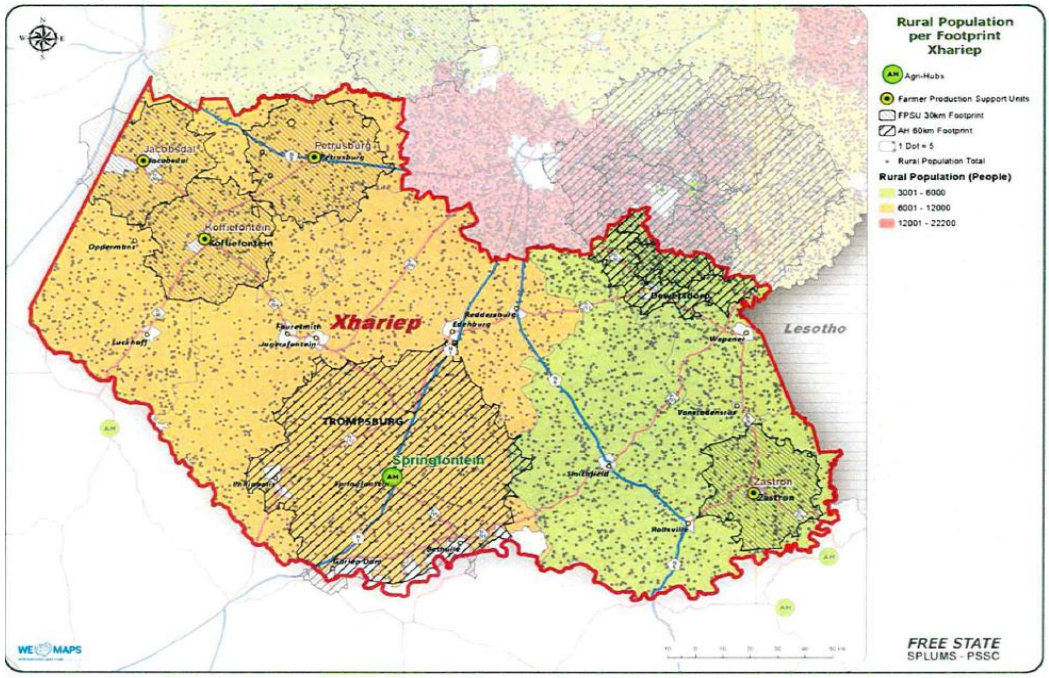


Figure 5: Population Distribution within Xhariep DM

(Source: Adapted from StatsSA, 2011)



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Map 2: Population Distribution throughout Xhariep DM

(Source: DRDLR, 2015)

As exemplified by ***Map 2***, population distribution is a good development indicator as it plays an influential role in economic growth and assists in determining the effects of a development on the local communities. The Free State Province has the second lowest population, 2.7 million (*Census 2011*); this is just 5.30% of South Africa's total population. Population growth has also been slow with a 0.14% growth rate since the 2001 census; this is also reflected with an average density of 21 persons per km^2. The context for the Xhariep District Municipality is that it has the lowest density in the Province due the vast area covered. Thus, strategically placed nodes for the rural development of these scattered communities are crucial for the socio-economic development of these communities.

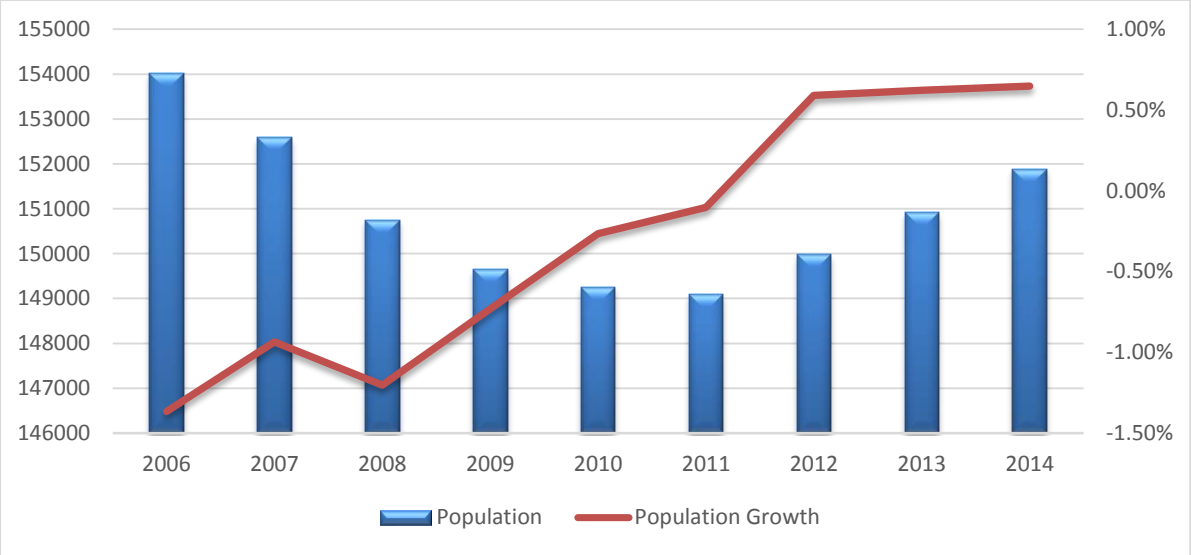

Figure 6: Population Growth, Xhariep DM

(Source: Adapted from StatsSA, 2011)

Figure 6 illustrates the population growth pattern of the Xhariep Municipality over a period of 10 years, which has been increasing at a very steady rate since 2012. Further population distribution acts as a good development indicator as it plays an influential role in economic growth. It further assists in understanding the effect of a development on local communities.

Comparisons show that while population numbers for the Free State Province have increased, populations within the Xhariep DM have dwindled. This is due to the migration to larger economic nodes, such as Mangaung, in search of employment opportunities. This necessitates interventions such as the Agri-Hub development in order to increase economic opportunities for the local communities.

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Table 1: Population Changes, 2011 and 2015

Study Area	Population 2014	Population 2015	
Free State	2 791 880	2 805 865	↑
Xhariep District Municipality	151 888	151 425	↓

(Source: Adapted from StatsSA, 2011)

4.1.2. Education Levels

Education levels is an indicator of the current capacity of local communities within the Xhariep DM to influence economies of scale. **Figure 7** below illustrates the educational levels of the Xhariep Municipality through a comparison of the individual local municipalities. What is indicated, is that there is a workforce within the XDM Agri-Park that can potentially adapt quickly to skills development initiatives due to the level of education.

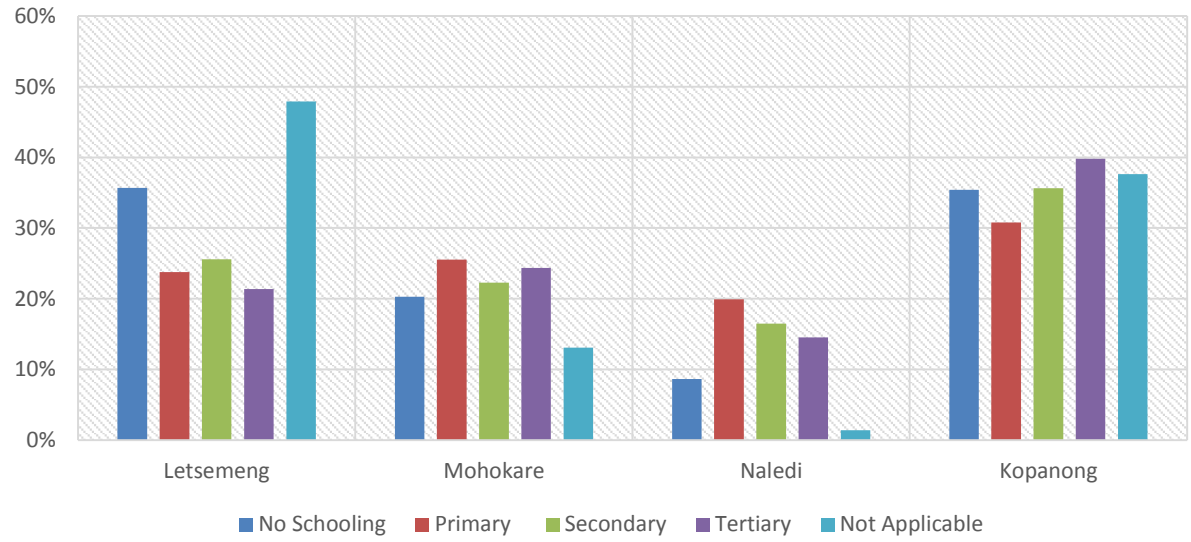

Figure 7: Education Levels, Xhariep DM

(Source: Adapted from StatsSA, 2011)

Drawing from the figures above, it is clear that most (57.53%) of those who are 20 years and older have had secondary education, but only 9.04% have a tertiary education. The education status also has a great influence on the structure of the employment sector in terms of the ratio of skilled and unskilled workers within the labour force. The ratio between skilled and unskilled labourers is highly influenced by rurality, where more rural areas will have less skilled workers.

4.1.3. Labour Market Profile

The number of people with jobs within an area should always be on the increase, as this means that more of the community is able to sustain themselves. Joblessness is one of the problems that the Agri-Parks aims to address so it is thus, vital that the employment pattern of the Xhariep District Municipality be explored and understood. ***Figure 8*** below

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illustrates the employment growth pattern of the Xhariep Municipality over a period of 10 years.

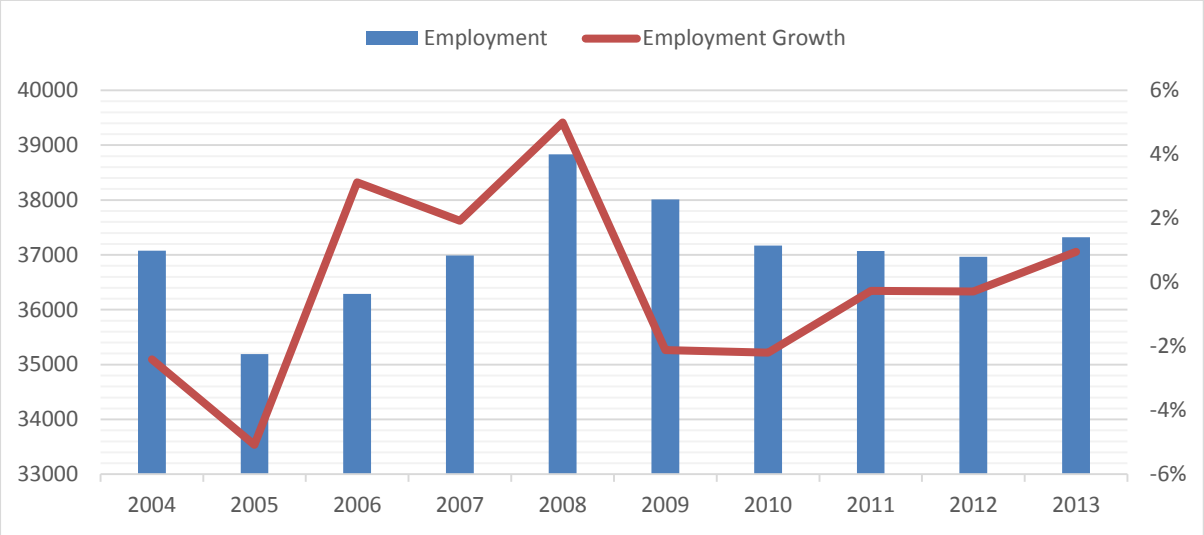

Figure 8: Employment Numbers and Growth, 2004 – 2013

(Source: Adapted from Adapted from StatsSA, 2011)

4.1.4. Employment by Skill

Figure 9 below reveals that the proportion of people who are semi-skilled and unskilled is higher than that of skilled labour. These figures can be linked to the education levels as most individuals are likely move into the workforce after their secondary education. The current skills levels within the Xhariep DM will not have a negative impact on the proposed Agri-Park developments; instead, the Agri-Parks will assist addressing further skills development. Training and information facilities will be encompassed as a part of the Agri-Park in Springfontein, which means that this project will address the issue of unskilled labour.

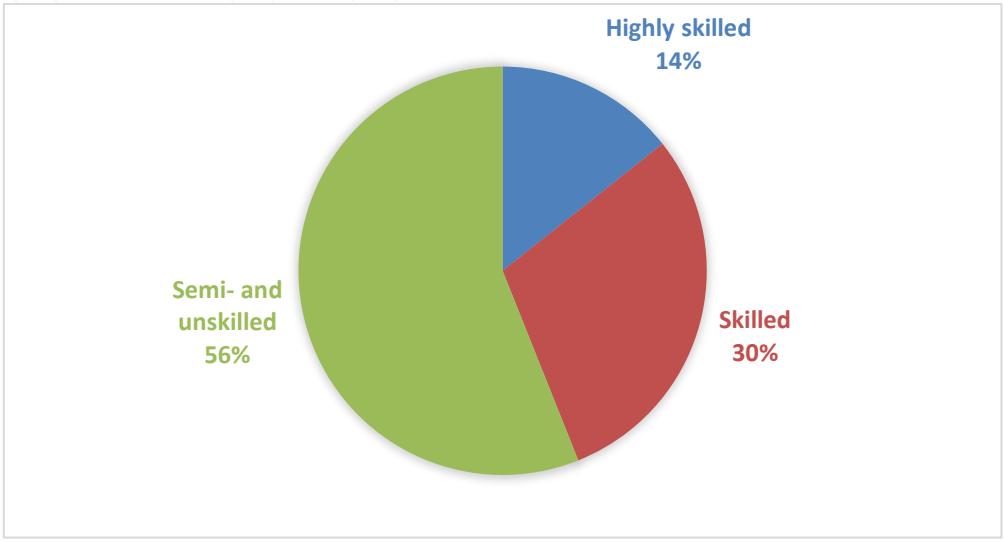

Figure 9: Employment per skill, Xhariep DM

(Source: Adapted from StatsSA, 2011)

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4.1.5. Employment Status

The employment profile is essential in giving deeper insight into the economic trends of the area. The analysis of the employment profile is vital as these trends will have a significant influence on the success of the Agri-Parks.

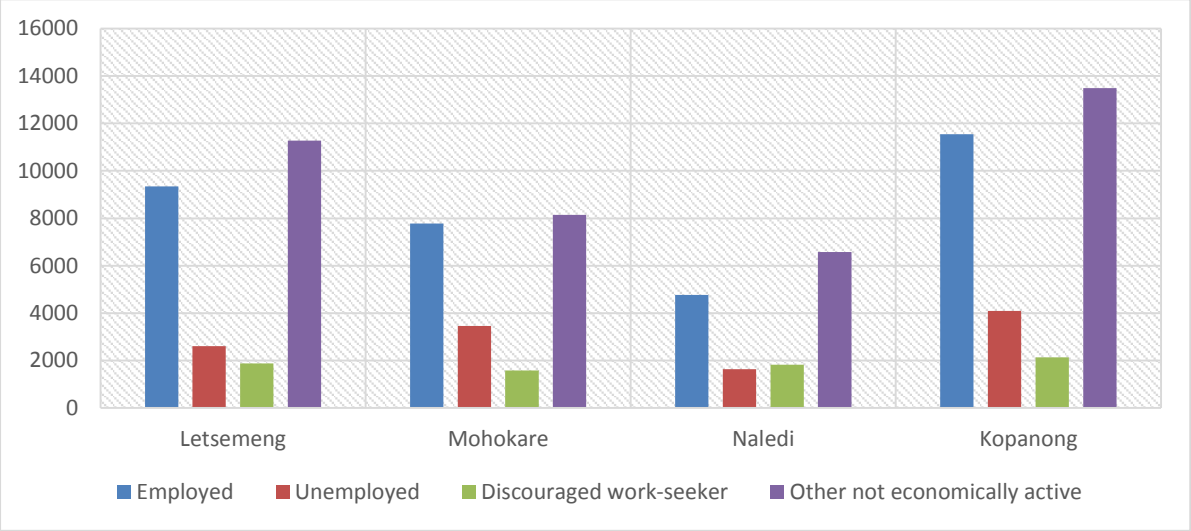

Figure 10: Xhariep DM Employment Profile

(Source: Adapted from StatsSA, 2011)

The development of the Agri-Parks and the Agri-Hub, which is to be in Springfontein, will have a large impact of the employment profile of the Xhariep District Municipality at large, in various ways. The development of the Agri-Parks will support local farmers, meaning they will be better capacitated to employ more people within the primary sector. The development will further supply more jobs within the secondary sector in the agri-hubs in the agro-processing value chain, which will be occurring there. The agro-processing within the Agri-hubs and the subsequent FPSUs, is envisioned to increase the skills level in the employment profile, through training.

4.1.6 Employment per Sector

The sectoral distribution of employment within an area often gives a good indication towards the character of an area in terms of its rurality or urbanisation. For this study, it is vital as it will express the available market in terms of agricultural labour and skills development in that sector.

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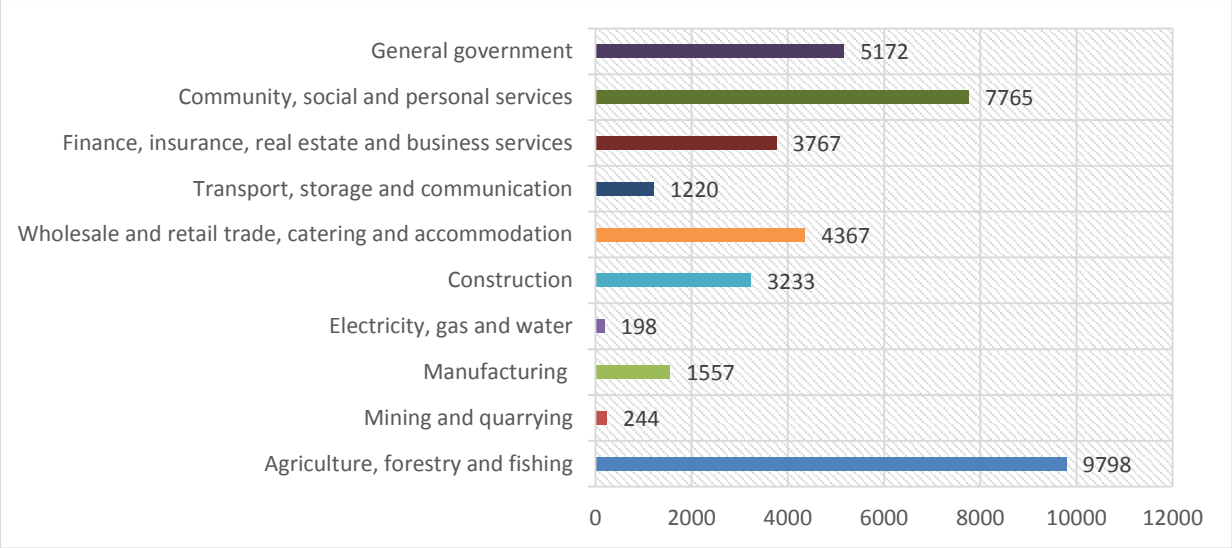

Figure 11: Employment per sector, Xhariep DM

(Source: Adapted from StatsSA, 2011)

The figures above illustrate the employment levels by each economic sector within Xhariep DM. The agricultural sector is clearly the highest employing sector, employing 26.25% of the Xhariep DM's workforce. Community, social, and personal services is the second highest employer, with 20.81% of the Xhariep DM's workforce. The high number of employment within the agricultural sector is a positive indicator for the development of the Xhariep Agri-Park's initiatives within the region as there is already a high prevalence of agricultural activities with high employment. Furthermore, as the Agri-Parks are focused on reducing unemployment, the rural communities within the Xhariep DM will benefit from further development within the agricultural sector.

4.1.7. XDM HH Income

One of the best indicators of demand within a local market area is the amount of disposable household income within individual households. Disposable income refers to the total income – after deductions – received by each household. This figure gives an indication of the amount of money that is available for households to spend, known as household expenditure. An increase in the amount of disposable income per household results in the growth of segmented market demand.

The monthly household income distribution for both the Xhariep District Municipality and the Free State Province is illustrated comparatively in Table 2. The income categories as illustrated in Table 2, have been adjusted using the yearly inflation rate; this is based on the assumption that the population ratios within the categories will remain fairly constant. The adjustment is done in order to portray a more realistic depiction in line with the current economic status.

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Table 2 - Household Income Comparison

Income category	Free State	XDM
No Income	11,92%	11,32%
R 1 - R 471	5,63%	5,25%
R 472 - R 943	8,64%	8,43%
R 944 - R 1 887	20,50%	25,20%
R 1 888 - R 3 775	21,40%	23,15%
R 3 776- R 7 551	13,00%	12,05%
R 7 551 - R 15 101	8,35%	7,43%
R 15 102 - R 30 203	5,94%	4,27%
R 30 204 - R 60 406	3,19%	1,89%
R 60 407 - R 120 813	0,94%	0,57%
R 120 814 - R 241 626	0,28%	0,22%

(Source: Adapted from StatsSA, 2011)

It is undoubtable, from the figures depicted in Table 2, that most of the XDM population fall within the income categories of R944 and R3 775 per month. Of the total households analysed in the XDM, 73.36% of t hem are living with a total monthly income that is less than R3 775. The Free State reveals a similar pattern, with 68.08% of the total number of households living with a total monthly income that is less than R3 775.

Table 3 - Average Household Income

	Average Annual Household Income	Average Monthly Household Income
Free State	R81 716,65	R6 810
XDM	R64 415,07	R5 368

(Source: Adapted from StatsSA, 2011)

The average monthly income per household within the XDM is R 5 368, which is less than that of the Free State, which is R6 810. The fact that the district averages are lower than that of the Free State may be viewed as a positive indicator for the proposed development.

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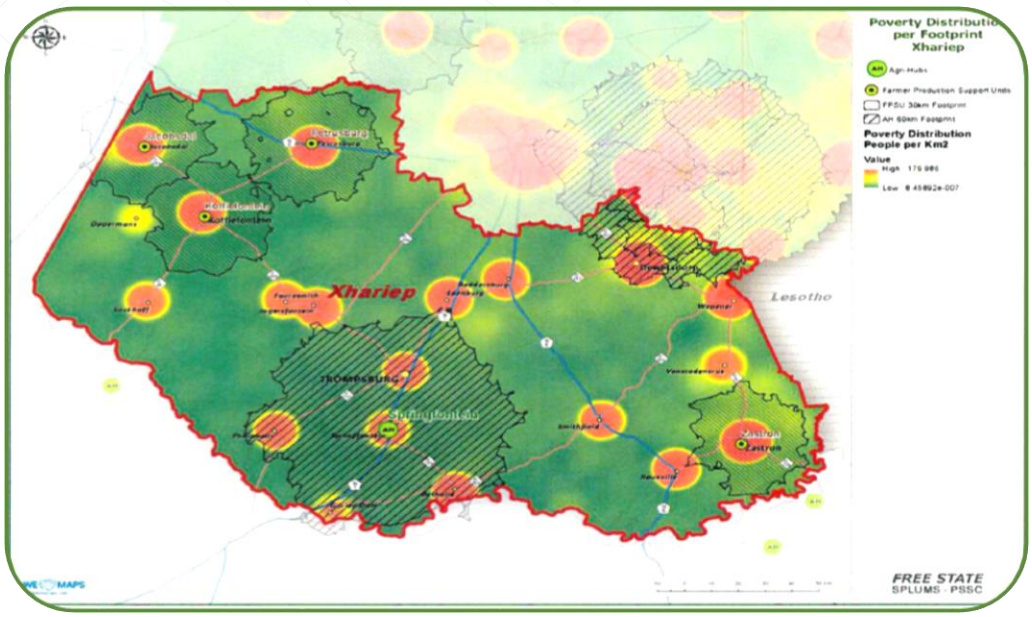
The reason for this is that the shortfall reveals that there is plenty of room for income generation in the region. The average monthly income of the XDM, illustrated in Table 3, does not correlate with the figures in Table 2, which reveals that 73,36% of the population are living with a total monthly income that is less than R3 775. The reason for the increased figure in the average monthly income is the fact that the 26.64% of people earning above R3 775 create an outlier.

4.1.8. Economic Analysis

While population demographics is a good indicator of development and the state of a town, the economic structure is the clearest indicator and the most relevant in the context of this Agri-Parks development. Poverty distribution, employment, unemployment, skills levels, and the Gross Value Added (GVA) are all to be explored within this section as economic indicators. ***Map 3*** below gives a spatial representation of the areas that have the most economic struggles, i.e. areas that are poverty stricken. Springfontein, along with Koffiefontein, Petrusburg, and Jacobsdal all have more than 80% of their population living below the poverty line and are classified as extremely poor. The distribution of the poverty shows that most of the Xhariep District Municipality is thus, poverty stricken.

The current structure of the Xhariep District Municipality as well as the poverty distribution indicated below, reveals that there is a need for the development of the Springfontein Agri-Park. As discussed, the Agri-Park project seeks to address the increasing poverty levels and fight unemployment within the Xhariep District Municipality. An increase in the number of people who have jobs within the district, and the development of more opportunities for them to improve their living conditions, will improve the lives of the rural poor.



Map 3: Poverty Distribution, Xhariep DM

(Source: DRDLR, 2015)

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4.1.9. Economic Growth

The GVA is an economic measure that is used to portray the profile of an economy within a specific geographical area; it can be likened to the Gross Domestic Product (GDP). The GVA encompasses the value of all the goods and services produced in a specific area, giving an indication of the level of productivity within that specific area. The GVA is a key indicator of the economic state of an area, as it measures the difference between output and intermediate consumption, and is inclusive of the ten sectors of the economy. The GVA expresses the amount of goods and services that have been produced (in Rand), deducting the costs of inputs and raw materials directly inferable to the production. This makes the GVA more accurate than the GDP and this is the reason this measure is used.

The GVA growth rate is helpful to give insight towards the performance of a municipality over an extended period of time. It is a good indicator, especially to interpret the sustainability of the municipality's economy. As indicated in the figure below, the Xhariep DM has had a steady growth since 2004; there has been years of decline due to the global recession. However, since then there has been an increase in economic growth, which is a positive indicator for the region.

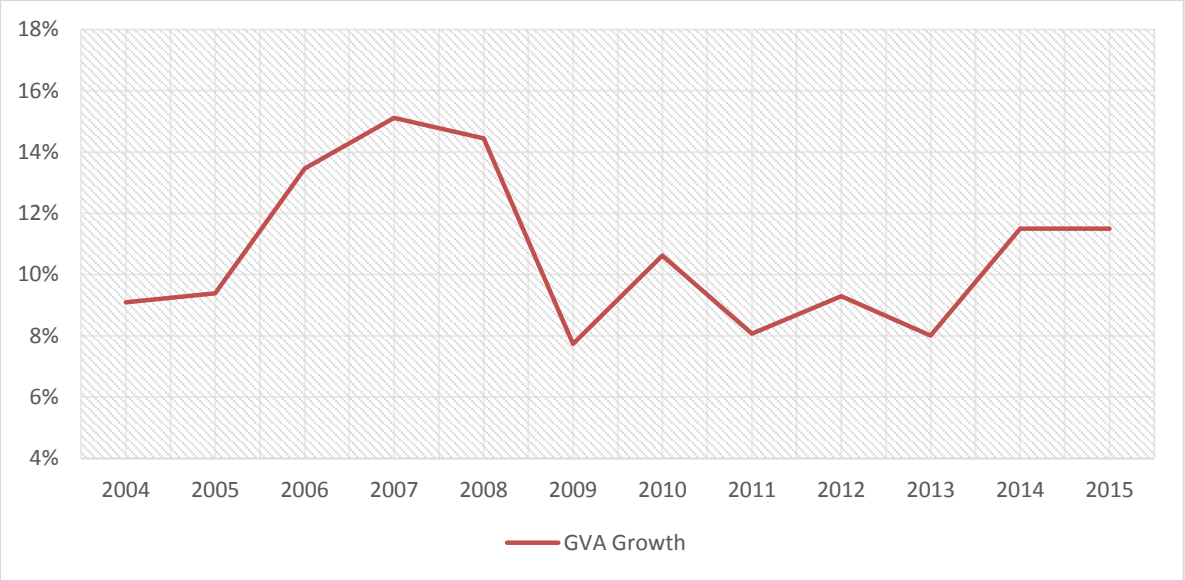

Figure 12: Xhariep DM GVA Growth Rate, 2004 – 2015

(Source: Adapted from StatsSA, 2011)

4.1.10. GVA Contribution per Economic Sector

As illustrated in the figure below, the sector of Finance, Insurance, Real Estate, and Business Services is the greatest contributor to the Xhariep DM's economy. Agriculture, which is the focus of this study, only contributes 9.49% to the economy even though it is the largest employer; this necessitates intervention. This perpetuates the importance of the Agri-Park initiatives within the District, as it will help to increase both the GVA level and the contribution of agriculture to the economic growth of the area.

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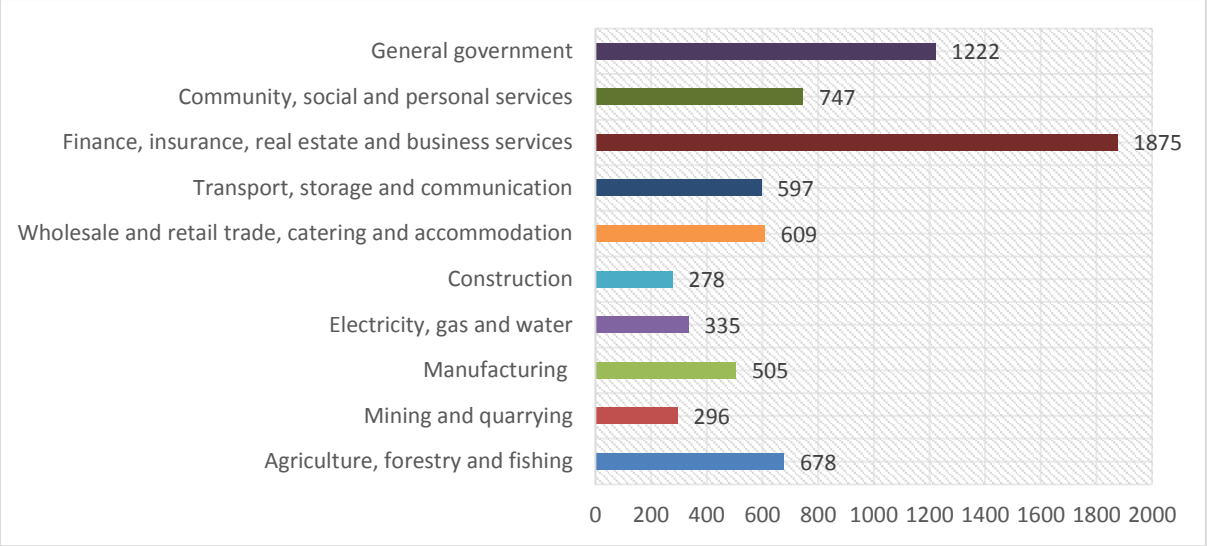

Figure 13: GVA Contribution in R millions, 2015

(Source: Adapted from StatsSA, 2011)

4.2. XDM AGRI-PARK AND AGRI-HUB

The XDM Agri-Park encompasses the whole of the southern Free State, and borders the Northern Cape to the south and west, as well as the Eastern Cape to the south-east; it also borders the Kingdom of Lesotho to the east. The significance of this is that the area covered is vast and this needs to be taken into consideration. As such, the towns to the west should be considered as FPSUs due to the distance that needs to be covered and the condition and nature of the roads between the Agri-Hub that will be situated in Springfontein and the FPSUs. As seen in **Map 4,** the footprint of the Agri-Hub and FPSUs are some distance from each other. The areas identified as potential FPSUs are that of:

- Petrusburg;
- Jacobsdal;
- Koffiefontein; and
- Zastron.

What is evident, is the overlapping footprints of the FPSUs and the agri-hubs, e.g. the MMM Agri-Hub overlaps within the Xhariep District Municipality, and some of the XDM's footprints overlap with the Northern Cape. This is not seen as a hindrance for development within a certain district, but rather as a complementing attribute that will help with cross-border trade and collaboration. Critical for the development of the Xhariep District Municipality, is the vast area that needs to be taken into consideration and the strategic planning with regard to the locality of proposed agricultural activities. This is then also what the FPSUs plan to accommodate and address.

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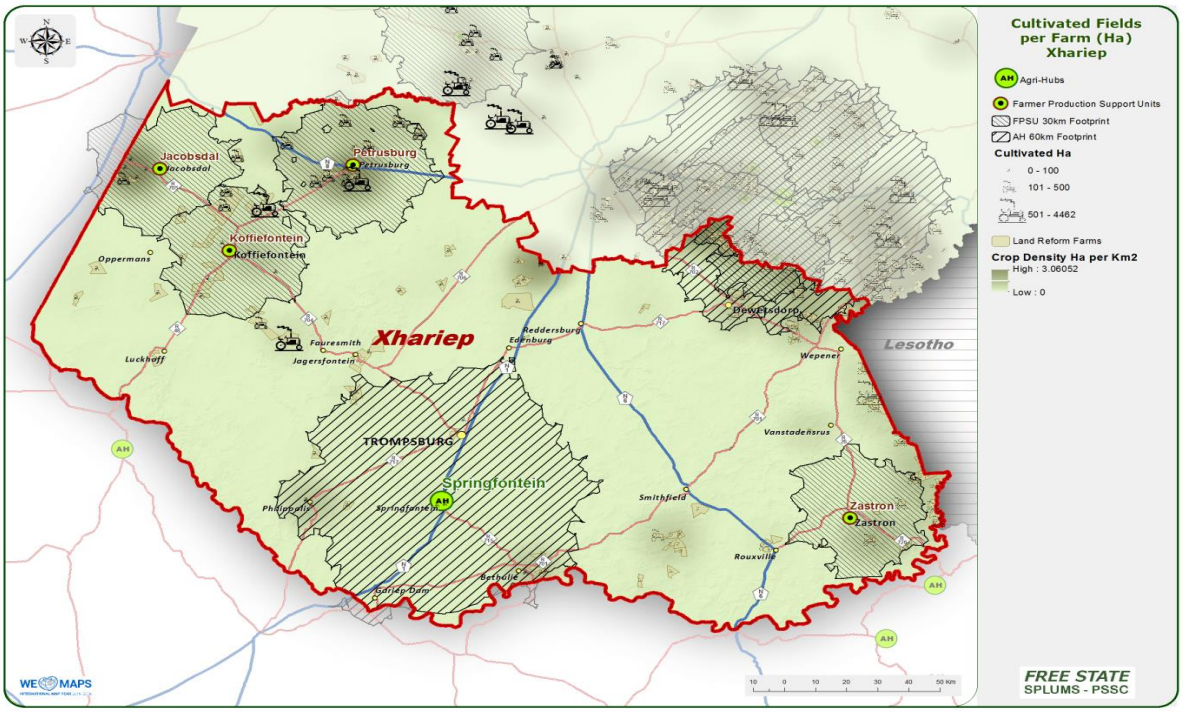

Map 4: Xhariep Agri-Park and footprint

(Source: DRDLR, 2015)

The Agri-Hub within the Xhariep District Municipality Agri-Park will be within the town of Springfontein. The Agri-Hub itself will be located next to the N1, for easy access by people driving past the area. The hub will be developed in phases, and supporting services to the main agro-processing functions are planned; such as training facilities, a retail outlet that will have products of the hub on offer, etc. The proposed layout[1] can be seen in the figure below. The intention of the Springfontein Agri-Hub is that the hub will act as a catalyst for agro-processing development within the area, which in turn will stimulate job creation and economic development.

Development has already started, with some developments that were already conducted by Dikopo Construction in August and September of 2015. Part of the onsite work done was site preparation, the fencing of the site area, and other professional services such as engineering structural plans, quantity surveying, etc. Some of the identified endeavours for the site was the fencing of the property, upgrading of the road towards the site, a potential auction facility, a mechanisations centre, and a fodder bank. Furthermore, a retail centre is planned at the site together with potential ICT infrastructure for the local community. The idea with regard to the retail centre is to sell some of the products, which was produced within the Agri-Hub and the FPSUs, at the site The site is adjacent to a filling station that has been in existence for a long period of time.

[1] *This layout is subject to site-, engineering plans and related plans that is currently being developed and with some development already being implemented such as fencing, etc.*

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Figure 14: Springfontein Agri-Hub Proposed Layout

(Source: DRDLR, 2015)

4.3. ECONOMIC INFRASTRUCTURE OVERVIEW

4.3.1. Road and Rail Networks

The Xhariep District Municipality is highly accessible, with three major national roads cutting across it, bringing major linkages to urban centres as illustrated in Figure 15. The N8, which connects Kimberly and Bloemfontein, is located on the northern tip of Xhariep. The N6 – which is the shortest route from Bloemfontein to East London – cuts through the district from the north to the south-eastern boundary. The N1, which is the major road route from Johannesburg, through Bloemfontein, to Cape Town, dissects the Xhariep District Municipality right through the centre.

Various other provincial and local road networks within the district connect the towns with each other. These networks are essential in connecting the Agri-Parks and Agri-Hub with each other as well as any plausible markets. Various Railway networks dissect through the XDM, binging connectivity for large transporting, shipments and exporting networks, especially for the products of the Agri-Parks.

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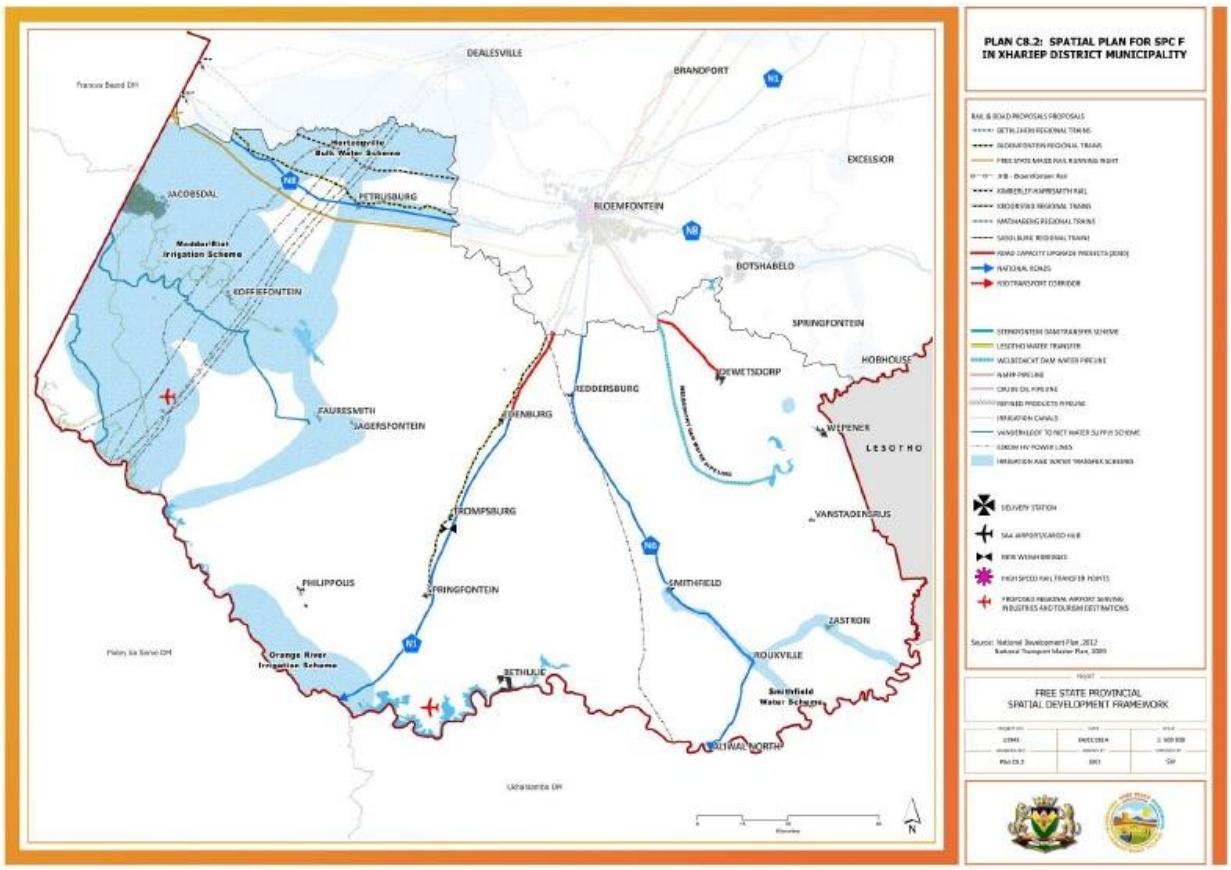

Figure 15 - Spatial Plan Xhariep

(Source; FSPSDF, 2015)

4.3.2. Water bodies

For the most part, the south-eastern end of XDM is dry land, with very few water bodies. The major compensation there is the proximity of the large Gariepdam, which runs just outside of the border of the district. The Kalkfontein dam is the first major water body when moving away from the south-east. Situated in the north-western side of XDM, the Kalkfontein dam is the largest water body within the district. The prevalence of other waterbodies and dams begins to increase in the northerly direction after the Kalkfontein dam. Within the XDM, 36 544 of the households have a steady access to the Municipal water supply.

4.3.3. Electricity

Electricity is now found in most neighbourhoods and most households have basic access to it through various electrical powerline networks through the district's various substations, including the Valleydora substation. Many of the households within the XDM have basic access to electricity, most of which are in urban areas. A lot of the rural areas are now also connected, adding to a total of 41 866 households being connected to the

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grid. Electrical infrastructure in Xhariep is good, but the district is also affected by the recent Eskom electrical power outages, which impact reliability nationwide.

Table 4: XDM Access to Basic Services

Service	Percentage of population that has access to basic services
Electricity	92.3%
Telephone/Cell phone	81.6%
Municipal Water	80.6%
Internet Access	25.3%

As can be seen from the above table, most of the XDM has access to basic services, except for access to internet, which can be ascribed to the rural character of the District Municipality's population and the lack of adequate soft infrastructure.

4.4. Main Role Players: Xhariep District Municipality

The main role-players for the development of the Xhariep District Municipality as identified, is presented as follows:

Table 5: Main Stakeholders: XDM Agri-Park

Stakeholder	Role
Government	
DRDLR	Monitoring and Evaluation Provision of institutional support Provision of funding Project facilitation
Department of Agriculture (Koffiefontein) **Department of Agriculture (Petrusburg)** **Department of Agriculture (Zastron)**	Provision of Agricultural Support to emerging farmers Value chain development support and guidance
The Free State Department of Economic Affairs and Tourism	Information provider Entrepreneurial support

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ARC	Principle agricultural research institution Provide information on agro-processing, technology development, etc.
FDC	Institutional support
DAFF	Institutional support Information provider
DARD	Agricultural institutional support
National Empowerment Fund	Supports black enterprise development. Align with government's New Growth Path. Information provider.
MAFISA	Micro and retail agricultural financial scheme. Saving and banking services available at approved financial institutions. Loans are available for small and emerging farmers and other target groups.
Xhariep District Municipality	Facilitation of districts initiatives Liaison with local stakeholders Institutional support and facilitation
Department Labour	Employment equity and support Creating linkages between employers and employment opportunities
Tribal Authorities	Facilitating linkages between tribal and rural communities and potential/created opportunities. Identification of best positioned community individuals to benefit from initiative. Encouraging rural collaboration and buy-in.
Department of Public Works and Transport	Infrastructural support and coordination Site preparation and bulk services implementation support

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Glen Agriculture Institute	Provision of training programmes to emerging farmers, farm workers, etc.
SEDA	Facilitation of agri-business development Small business development Institutional and soft skills support to emerging farmers and entrepreneurs
DBSA	Provides funds. Information provider.
DTI	Development facilitation Institutional support
Mohokare Local Municipality **Naledi Local Municipality** **Kopanong Local Municipality**	Local facilitation of development processes. Liaison functions with local communities. Provision of information and development support. Alignment of local government processes and projects to that of the Agri-Park.
Private Companies	
OVK	Provision of supporting agricultural equipment and services. Main Input suppliers of agricultural equipment and necessities.
Senwes	Provision of supporting agricultural equipment and services Main Input suppliers of agricultural equipment and necessities
Free State Agri	Private institutional support Facilitating/creating linkages with commercial farmers
University of the Free State	Provision of training programmes to emerging farmers, farm workers, etc.
Central University of Technology	Provision of training programmes to emerging farmers, farm workers, etc.

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Sereba Training	Provision of training programmes to emerging farmers, farm workers, etc. Mentoring, project management and facilitation of project implementation.
Agriculture Resource Council	Agricultural research support Institutional support
Dikoppo Construction	Implementation Agent Construction of agricultural infrastructure
National African Farmers' Union (NAFU)	Emerging farmer support Facilitation of access to land for small farmers
Land Bank	Financial solutions and support for emerging farmers and agri-businesses. Business skills training.
ABSA Agribusiness	Financial solutions and support for emerging farmers and agri-businesses. Business skills training.
First National Bank	Financial solutions and support for emerging farmers and agri-businesses. Business skills training.
Standard Bank Agriculture	Financial solutions and support for emerging farmers and agri-businesses. Business skills training.
ABR	Training of farm workers and agri-business staff Development support and facilitation
DIY Superstore	Provision of agricultural tools, equipment, and infrastructure
Afrivet	Agricultural Training Services Veterinary services and support
Emerging Farmers	Provision of agricultural produce Identification of agricultural and training needs and requirements

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Associations and Organisations	
State Veterinarian (Smithfield)	Veterinary services and support Local involvement in quality control and monitoring
Agri Sector Unity Forum (ASUF)	Support for farmers. Serves as a representative for farmers. Information provider.
African Farmers Association of South Africa (AFASA)	Encouragement and supports for farmers (particularly black farmers). Information provider.
South African Veterinary Association (SAVA)	Veterinary services and support Local involvement in quality control and monitoring
WRSA	Provision of support to emerging game ranching activities. Quality control and monitoring. Training and development to assist value chain development.
RPO	Provision of support services for red meat producers. Assistance in the value chain development. Provision of standards and quality guidelines.
AgriSETA	Provides training and skills development. Provides information.
Agri SA	Provides support for farmers. Promotes agricultural development. Provide information.
Field Guides Association of South Africa (FGASA)	Provides training and skills development. Provides information.

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5. AGRICULTURAL INDUSTRY ANALYSIS

5.1. XDM AGRICULTURAL AND ENVIRONMENTAL SUITABILITY

Climate change vary over time; the climate influences agricultural practises due to effects such as increases in average moisture content. Therefore, this section discusses those climatic elements of the Xhariep DM, and also looks at major climatic elements that can influence agricultural practises and production in the area; including, rainfall, wind, sunshine days, and temperature. Rainfall is important because it is received through precipitation from the atmosphere and the hydrological cycle. It is related to the atmospheric moisture content (water vapour and cloud cover), which can be used as yardsticks to measure the probability of rainfall at a particular time. Rainfall represents moisture and moisture serves an important function related to biochemical reactions, as it affects evapotranspiration and also affects the growth rates of fungal bacteria and pests, which could lead to plant disease and droughts due prolonged dry atmospheric conditions. Therefore, it is important to learn about this element and how it might affect agricultural productivity.

The area under consideration is mostly a summer-rainfall region, with most of the local parts receiving rain in summer and warms periods of the year (September – March) depending on the climatic systems that prevail. The average annual rainfall is about 500mm for the District, and varies across local municipalities; such as Naledi, Kopanong, and Letsemeng ranging at about 350mm – 750mm rainfall per year. Temperature relate to the magniture of coldness and hotness of a particular substance; this element is a measure of the average dynamic energy of molecular motion. It is however, influenced by the amount of radiation, cloud cover, topography, and nature of surface cover present. Different agricultural products and practises are affected differently by temperature, whereby in cold temperatures some crops and animals cannot survive, while some cannot survive in warm temperatures. Hence, it important to study and understand these developments. Temperatures range from a high, or maximum levels of up to 31°C in summer periods (December – March) and can go drop to as low as 0°C in winter periods. The areas also experience frosty conditions, particulalry in April and September.

Xhariep Land Cover refers to features that are presently covering the landscape in the area; this includes vegetation, water bodies, soil typologies and related surface features.The soil types that are mostly found in the region are the Red appedal soils, which commonly appear with lithosoils, hydromophics, and grey and dark clayley soil forms. The soil depth increases as one moves towards the north of the district towards Koffiefontein

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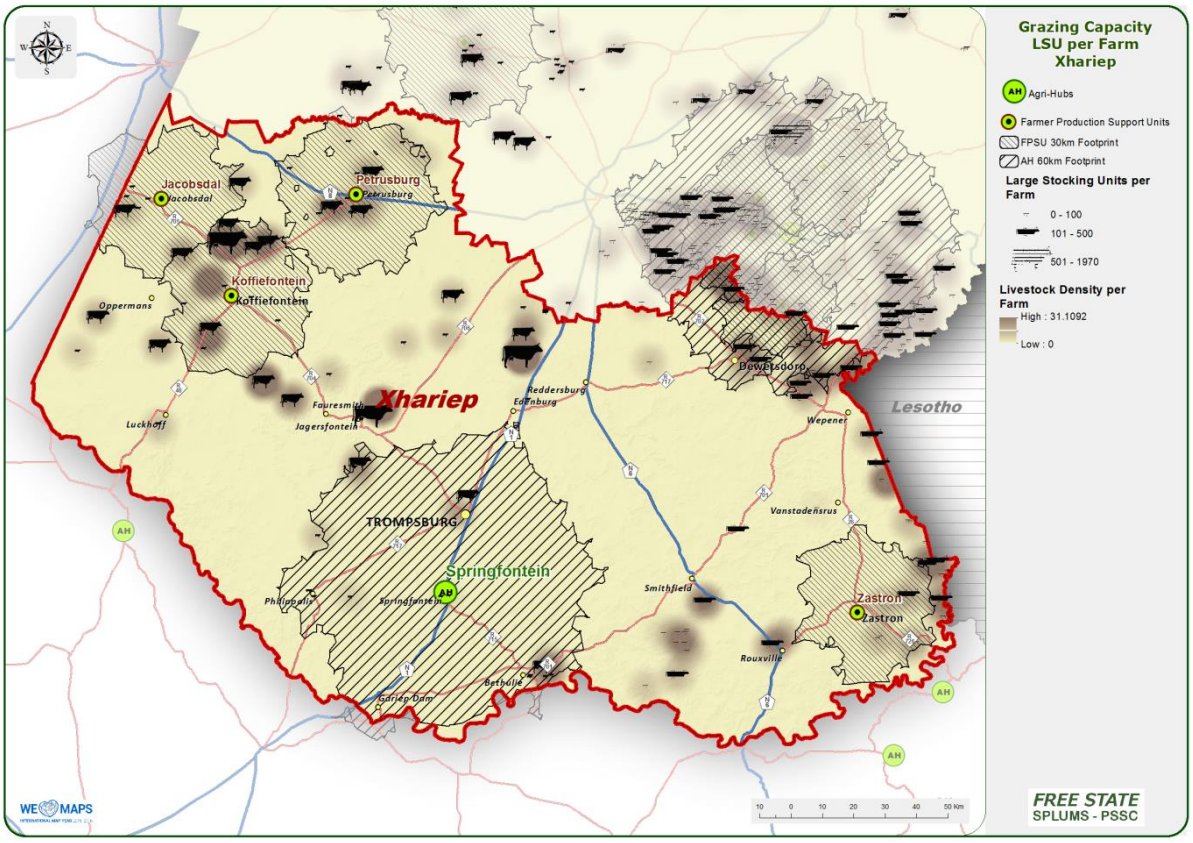
and Petrusburg, at a depths class of 900mm – 1200mm, while other areas have soil depths ranging bewteen 0mm – 300mm and 300mm – 600mm. Most of the top soil's composition within the larger area has a large clay content that ranges from about 6% – 25%. Major land uses in the area comprise of farming activities. The area identified is suitable to establish farm businesses operating in a cattle or game animals. There are various veld types found in the region; this acounts also for veld types such as the Transitional, Dry and Cymbopogon-Themenda, which is suitable for grazing and varies from the west to the east. The veld coverage for the XDM can not accommodate more than 4 – 5 live stock units (LSUs) per hectare and has low grazing capacity on average, with higher (6 – 8 LSU's per hactare) carrying capcity to the north of XDM. This is due to the environmetnal characther and low rainfall in the area.



Map 5: XDM Indicating Grazing Capacity

(Source: DRDLR, 2015)

The Xhariep Distrct Manucipality's environmental conditions in terms of soil, weather patterns, availability of water and rainfall are distinctly different than that of the rest of he Free State due to its proximity to the more arid Northern Cape. Because of these distinct diffrences, agricultural activities are affected more severely than that of the rest of the Free State. This makes the already difficult task of farming even more daunting, esspecially for emerging farmers that are more often than not substinance farmers. The difficult environmental conditions influence the profit margins and higher assertiveness to

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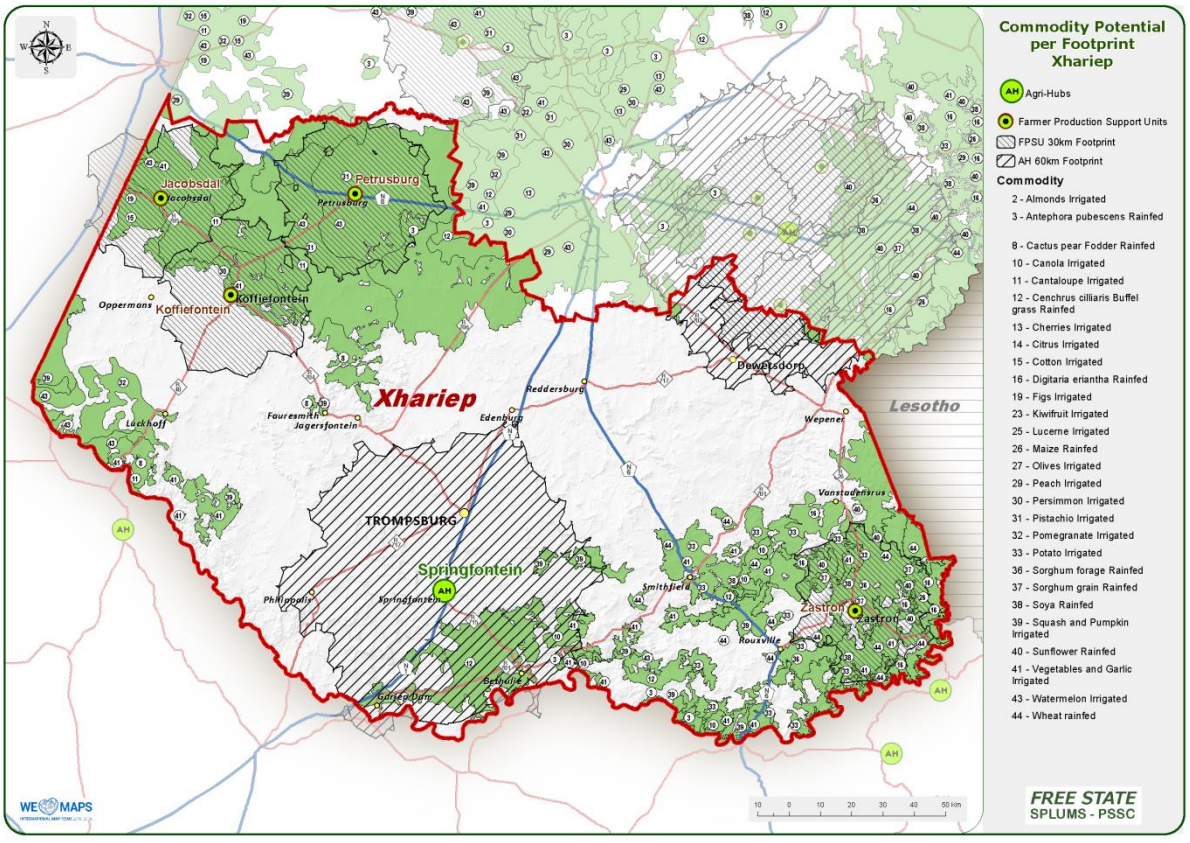
vegetation and crop management practices. Most of the area is categorised by rain-fed farming practices, with most irrigation schemes to the south along the Orange River and the west in the Jacobsdal area. This limits the large-scale production potential and capacity of the XDM area and in addition, requires proper farming practices to account for the challenging environmental conditions.

The area has substantial water bodies in dams and water sources like the Kalkfontein Dam and the Gariep Dam for water supply in municipal areas like Letsemeng; but also includes several water fountains, canals, and rivers that are found in close vicinity to the Kopanong Municipality, which houses Riet and Orange Rivers. The water quality is considered to be of good quality within the area; however, this is not the case in towns where the synthetic water circulation systems are not well maintained. This mostly has a negative impact on water sources, particularly surface water contamination, and has the potential risk to damage most of the water circulating in these hydrological systems in the area.



Map 6: XDM Crop Production Capability

(Source, DRDLR, 2015)

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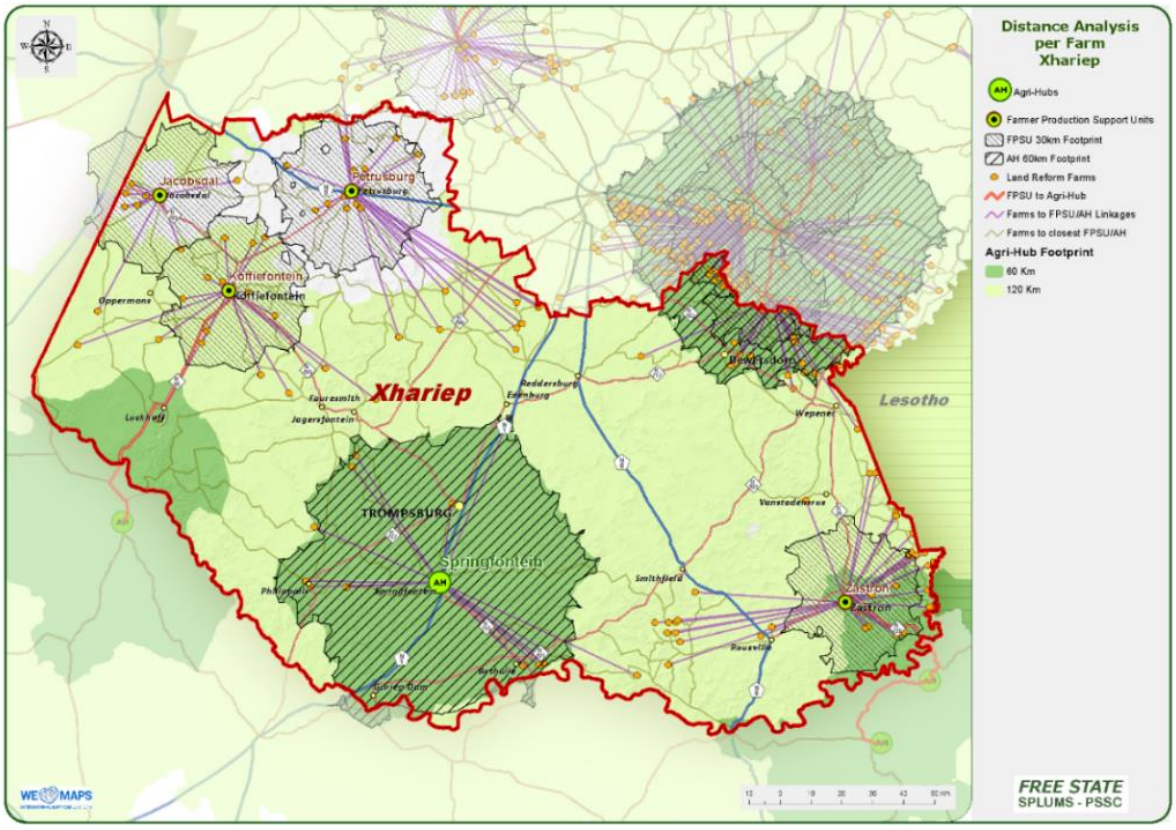
5.2. XDM AGRICULTURAL PROJECTS

The following projects have been identified, which have bearing on the development footprint and establishment of the Xhariep District Municipality Agri-Park. It is important to understand what is currently been planned within the proposed development area in order to better align future endeavours, and particularly, to form areas where collaboration can be achieved. There is a number of aquaculture projects that have been initiated by the FSDARD within the following towns:

- Petrusburg;
- Fauresmith;
- Bethulie;
- Koffiefontein; and
- Zastron.

The Department Rural Development and Land Reform currently has 96 farms within the borders of the Xhariep District Municipality operating as projects under their custodianship. These will be pivotal in providing the necessary land for the production of the required commodity value chains. A full list is available from the DRDLR with the relevant areas that these farms are situated in. In addition, the following map indicates the linkages that could be created with current initiatives that are either currently operational, or being planned.



Map 7: Potential Linkages between current projects and the Agri-Park

(Source: DRDLR, 2015)

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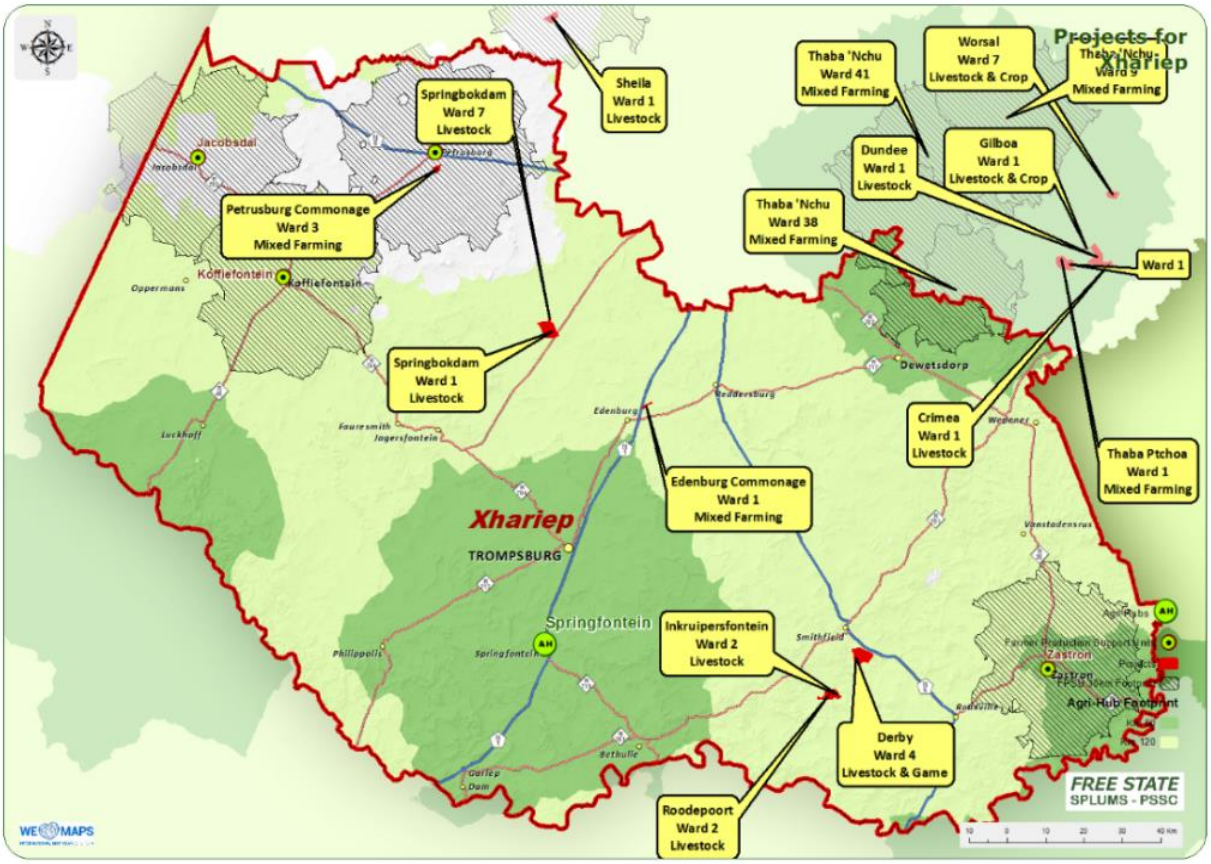
The following map indicates the DRDLR's projects that are currently in operation within the Xhariep District Municipality and that could be linked to the XDM Agri-Park development.



Map 8: DRDLR Projects within the XDM region

(Source: DRDLR, 2015)

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5.3. COMMODITY SELECTION, IDENTIFICATION AND PRIORITISATION

This subsection focusses on the appropriateness of commodities that should be selected for the XDM. The commodity selection criteria were based to a large extent based on the APAP as well as the following criteria: biophysical, enterprise viability and economic development, and political and social considerations. The following APAP key levers were incorporated within the selection of the listed commodities:

Equity and Transformation:	• Ensuring a more producer-friendly (and consumer-friendly) market structure; • Accelerating implementation of the Charters and the small-scale fisheries policy; • Promoting local food economies; and • Investment in agro-logistics
Equitable Growth and Competitiveness:	• Promoting import substitution and export expansion through concerted value chain/commodity strategies; • Reducing dependence on industrial and imported inputs; • Increasing productive use of fallow land; and • Strengthening R&D outcomes.
Ecological Sustainability:	• Climate Smart Agriculture
Governance:	• Support services • Skills development • R&D • Knowledge and information management (integrated spatial economic planning) • Market access, information and regulation • Institutional arrangements

Figure 16: APAP Key Levers

(Source: Adapted from APAP, 2014)

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In addition to the APAP criteria, the following criteria in the table were used to evaluate the weight of the selected commodities. The scores were allocated based on the importance of commodities in relation to the criteria, with 3 being the most optimal, and 0 being impossible and highly unlikely to succeed. As such, the following categories with their descriptions are indicated in the subsequent table:

Table 6: Commodity Scoring Criteria

1. Biophysical criteria	
Temperature	➢ Does the area experience a favourable temperature through the year as required?
Water/moisture	➢ Will there be a sufficient quantity and quality of water available, and are air and soil moisture levels likely to be within acceptable levels?
Land type, capability and soil	➢ Are there extensive patches of land covering the area, which are suitable for the particular crop/animal in terms of soil (texture, drainage and depth), land type (steepness, rockiness and soil depth regime of the landscape) and land capability (grazing capacity and arable potential)?
Weed, pest and disease resilience	➢ Is the enterprise generally resilient against threats associated with weeds, bush encroachment, poisonous/unpalatable plants, pests and disease, or are intensive control measures required?
Adaptability to adverse conditions	➢ Is the crop/animal generally resilient and adaptable to hail, extreme weather conditions, and climate change?
2. Enterprise viability criteria	
Transport, market access and demand	➢ Distance to markets and transport cost ➢ Current demand ➢ Future market growth potential ➢ Market openness
Strategy, payback and profitability	➢ Business strategy and positioning ➢ Payback period ➢ Profitability
Human, physical and financial capital	➢ Familiarity and local knowledge/skills ➢ Labour cost and productivity ➢ Implements and infrastructure ➢ Ease to finance

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3. Economic development criteria	
Linkages and processing opportunities	➢ Forward and backward economic linkages ➢ Processing opportunities at district level
Job creation	➢ Direct on-farm job creation ➢ Indirect and induced job creation ➢ Job quality/decency
Local development	➢ Local opportunities and agglomeration ➢ Agro-intensification and local GDP growth
Global competitiveness and trade	➢ Global competitiveness ➢ Export potential ➢ Import substitution potential
4. Political and social criteria	
Political and institutional issues	➢ Government priority including APAP ➢ Shortlisted by the district ➢ Existing successful or planned projects ➢ State/communal land suitability
Social criteria	➢ Acceptability (Local "buy-in") ➢ Income equality ➢ Black smallholder suitability ➢ Crime and vandalism resilience
Food security and sustainability criteria	➢ Contribution to food security ➢ Sustainability

In line with this selection and prioritisation criteria, each commodity's relevance to the Xhariep District Municipality was evaluated and a score out of a potential 210, as guided by the maximum weight, was established in the table below. These scores are also accompanied with key notes towards the decision. As seen from the table is that red meat, venison, ostrich, potatoes, walnuts, and pecan nuts have the highest score. This is line with the land capability and vegetation cover as livestock is more suitable within the Xhariep District Municipality. Potatoes have a high score due the development of the commodity and appropriate markets within the larger Petrusburg area. The high score for pecan and walnuts is also due to appropriate climate conditions for the growing of these trees. The main downside towards the growing of these trees is the time needed before the trees can produce nuts, only from year 6 or 7. They also require a sustainable water source to sustain a high production of nuts. The three selected criteria for the Xhariep District Municipality's Agri-Park as selected by the DM are; Venison, Livestock and Aquaculture.

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Table 7: Prioritisation Criteria Scoring per Commodity

Commodity	Scoring per Prioritisation Criteria				
	Biophysical	Enterprise Viability	Economic Development	Political and Social	Total Out of 210
Red meat production	29	65	49	54	**197**
Venison / wildlife	30	59	42	52	**183**
Ostrich	28	58	46	52	**184**
Aquaculture	28	45	43	47	**163**
Pecan and Walnut	22	55	56	51	**184**
Citrus	25	51	48	44	**168**
Potatoes	27	59	41	53	**180**
Pumpkin	26	53	35	48	**162**
Cabbage	26	51	33	47	**157**
Wheat	26	54	47	35	**162**

Table 8: Commodity Prioritization Selection

Commodity	Overall total	Accompanying notes
Red meat	**93.8%**	High potential for extensive (good grazing) and intensive (relative proximity to grain and other feedstock sources) beef, and especially mutton sheep production. Excellent grazing for cattle towards the east, and the most suitable breeds include Angus, Bonsmara and Taurus. There is excellent mutton sheep grazing towards the west. Overall, the district is more suitable for mutton sheep than beef cattle.
Venison/ wildlife	**87.1%**	Some areas with non-transformed vegetation and possibly complex topography have excellent potential for game farming and venison production, as well as eco-tourism and hunting. Ideal

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		use of large patches of land of low or marginal agricultural potential.
Ostrich	87.6%	High potential due to environmental and economic factors. The export and niche market is likely to expand significantly in the future.
Aquaculture	77.6%	In addition to temperature controlled pond production systems, the possibility of using the Gariep Dam and the Van Der Kloof Dam for aquaculture (cage systems) could be investigated so that a viable freshwater fish value chain infrastructure could be established. Alternative species should be considered since Tilapia may not be the most suitable for the local climate.
Pecan and Walnut	87.6%	Parts of the district are highly suitable for Pecan Nut production under irrigation.
Citrus	80%	The Luckhof area has strong potential to produce high quality oranges
Potatoes	85.7%	Very high suitability from an agronomic (e.g,. around Petrusburg, Jacobsdal, Koffiefontein) and food security perspective.
Pumpkin	77.1%	High suitability from an agronomic perspective.
Cabbage	74.8%	High level of suitability from an agronomic perspective. Competitive only or mainly at a local or district level rather than regional or national level.
Wheat	77.1%	Highly suitable for winter wheat production under irrigation.

5.4. XDM SELECTED COMMODITIES

In relation with the above identified and prioritised commodities, XDM have identified the following commodities to be identified as part of the initial phase for development within the XDM Agri-Park. A brief description is given that relates to what these commodities entail, after which a more detailed analysis of each of the commodities will be investigated. As such, the chosen commodities are indicated as follows:

1. **Venison;**

Venison is a meat product produced from wildlife (game) animals like antelopes, blesbuck, buffalo, duiker and springboks which lives in various grassland, savanna and biomes regions in and outside South Africa. Venison meat is used as an alternative red meat (beef, pork, and mutton) due to high red meat prices. Wild animals classified as game then also survives better under the dry Southern Africa conditions. Game are mainly browsers and

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eat woody plants for survival due to them not requiring large pieces of land per animal to survive. As such game have lower maintenance cost to maintain compared to their counter-red meat species for example beef and sheep. (NWGA, 2014).

Venison comprise different species that are adapted to various different feeding methods such as grazing; these are animals that depend on grazing (concentrate grazers are selective about their preferable plant species and bulk grazers' non-selective feeders). There is also game who is mixed feeders that are adapted to both leafy and grassy plants as feed, depending on the food availability, and then there are browsers, which feed selectively on leaves and the fruits and the flowers of plants. Venison is harvested for different purposes including for consumption as foods, as stated above, and can be used for generating income through tourism activities like safari outings and trophy hunting (Smith, 2006).

2. Aquaculture;

Aquaculture is becoming the global most prominent food production method. It is characterised by the production of marine or water-borne species used as food like fish, prawns, catfish and shrimp which is the world most produced fish meat. Aquaculture is primarily known to grow fish, water-borne plants and crabs which are produced and used as staple food in most regions around the globe, including Asia (China and India), Europe, and Africa. Mostly the farmers, breeders and aqua-culturists are the ones who are responsible for producing aquaculture and the production of fish species for the market, where demand, supply and prices are parallel and steadily increasing. The production methods vary from region to region depending on the different preferences and conditions. As such extensive productive, semi-intensive and extensive methods are used through various techniques like marine, fresh and brackish water breeding. Fresh water technique refers to the suitable fresh water quality. The produce is collected and sold to the fish market, processor or private consumers at live body mass (Clay, 2004).

The harvesting of aquaculture mainly involves production and are concerned with the transforming of fish into market and fish food products. The processing staff are responsible for cleaning, preserving, canning, and cutting of fish, then labelling and grading. The aquaculture foods are mostly available at restaurants, and the following product offerings are available if processed accordingly; canned meat, dried fish, molluscs, brine and salted fish which is used to feed animals. South African production areas includes Western Cape, KwaZulu-Natal and Eastern Cape (DAFF, 2014)

3. Livestock (Beef & Mutton);

i. Beef

It is a red meat derived from cattle, the name describes the use of the animal meat or flesh as food; hence cattle meat would normally be referred to as beef which denotes its kitchen name. Beef is harvested mostly from large domesticated mammals such as bovine animal

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species including heifers, bulls and steers. Bovine is a widely used to describe animals' species namely Buffalos, Cattle, Antelope, and Bison of which the consumption as a source of food varies across the global landscape and traditions. Cattle breeds that are found in South Africa and suited to be produced include; Bonsmara, Angus, Afrikaner, Brangus, and Nguni. Depending on the methods of breeding and production, cattle can be further categorised into free-range, that is organic and growth hormones free cattle; and feeder cattle, which is cattle are raised and fed in a lot.

Beef is one of the world's most consumed meaty food products. That is, about 28% of the world's meat consumption is beef, which follows pork and poultry, which accounts for 38% and 30%, respectively. According to the South African Beef Taxonomy System, a beef carcass is classified and categorised into different meat classes, grades and cuts based on the culinary use and identified by designated roller marks. The grading includes characteristics like the age of the animal that is used to define tenderness of the meat, the grades that define fatness and the leanness and classes of cuts, which includes; Flank, Loin, Rib, Shoulder, Shin, Chump and Leg. Some of the cuts can be furthermore processed into secondary and tertiary products, including well-used secondary cuts like steak, ribs and brisket and tertiary processed meat like corned beef and sausages. Furthermore, the animal skin, internal body parts and accessories (heart, livers, stomach and kidneys, etc.), the head and legs can be used as meat; while the skin and hides can be processed and used to make leather and leather products.

ii. Mutton

Mutton refers to the name of mostly domesticated sheep animals like of different ages. According to the classification and taxonomic system of South Africa, sheep meat can be classified as mutton for older sheep, lamb for younger sheep, and hogget for sheep of about 3 months of age. Mutton carcasses, like other red meat products found in South Africa, can be graded and classified according to age, fat content or conformation. Similarly, grades and classification characteristics can be used to determine the tenderness of the meat and the quality of the sheep breed such as Meat Merino, Afrikaner, and Dohne Merino (NWGA, 2014).

Sheep meat is the most familiar and expensively consumed red meat product in the world and has many variable uses including uses for cultural practices, use for consumption as a food source, and use of by-product such as the skin and hides that are usually used to produce wool and mohair. According to the meat standards and grading systems, sheep meat differs with maturity; thus, mutton refers to a mature to adult sheep, while lamb refers to a sheep younger than a year, or prime lamb, which refers to lamb meat that is specifically produced for meat (NWGA, 2014).

Mutton or sheep meat is an expensive and furthermore, it is categorised into classes of cuts including; Flank, Loin, Rib, Shoulder, Shin, Chump and Leg, which can be processed

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into value-added products like stew blocks, chops, and ribs. Furthermore, the animals' skin, internal body parts and accessories (heart, livers, stomach and kidneys, etc.), head and legs can be used as meat; while the skin and hides can be processed and used to make wool and mohair (NWGA, 2014).

5.5. FUTURE COMMODITY DEVELOPMENT

It is anticipated that as the Agri-Park and the agriculture sector develops that other commodities will also get traction within the XDM AP. As such, the three commodities evaluated within this report are chosen to get the development and establishment of the XDM Agri-Park underway, and to act as catalysts for district agricultural development in general as well. As such, future commodities that should be considered for development within the Xhariep District Municipality Agri-Park are those of:

1. Ostrich;
2. Pecan and Walnuts; and
3. Potatoes

A number of projects are already established for these commodities, both commercially and also as government projects. As such, it provides for an ideal situation for further diversification and development of the XDM AP development. Efforts to create synergies will be helpful in creating a strong agro-processing sector between the different commodities and related supporting functions.

It is also expected that the commodity prioritisation can potentially change over time due to a change in the different selection criteria. These changes will be influenced by future prices, market trends, technological advances, human preferences, climate change, water challenges, etc. As such, future commodity development and priorities may change due to these factors and the priority model will also have to be revisited in future. This guiding document encompasses the initial commodity selection prioritisation; however, development planning principles and the implementation of specific projects will need to take cognisance of the current context within that specific environment and timeframe.

5.6. XDM COMMODITY SOCIETAL AND CULTURAL TRENDS

Culture and social norms can effect food consumption and selection in different communities and households, particularly food source derived from animals. Gittelsohn & Vastine (2003) argues that the consumption of a particular food source is limited by factors that has to do with affordability, social norms, standards and cultural practices that directly relates to a specific cultural or social environment, which also includes those at the household level.

The limitation to food consumption in various population groups and their subsequent communities are issues of concern to the United Nations Development Programme Sustainable Development Goals, the National Development Plan, and Free State Growth

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and Development Strategies. In light of these concerns, the mentioned policies aim to reduce poverty and inequality to zero by 2030. These policies advocate for equal access to food and nutritious food sources such as meat, grains and dairy products across populations and reducing number of people with marginalised access to these food products. However, food has a different cultural and social significance to different people at different regions, for example, African people eat and slaughter animals as a cultural norm during social gathering such as funerals, wedding, and other related celebrations.

Furthermore, it is argued that meat and other animal sourced foods are important sources of nutrients required in child and adult growth. It stresses that food originating from animals has major health benefits and the consumption thereof has marked improved impacts on health and child development. (Gittelsohn & Vastine, 2003). Thus, there is a need to analyse and understand some of the underlying socio-cultural issues and its impacts relating to animal and vegetable foods.

There exist cultural elements in food categorisation to different individuals and communities. In South Africa where there are different cultures, people, and 11 official languages, cultural practices are often seen during normal household events like dinner, breakfast, and social gatherings. This food and cultural categorisation from different individuals, communities, and households is used to determine what foods should be gathered, who is allowed to eat the food, and the methods of preparation. Taxonomy of food plays a critical role in determining the values and the qualities that are used to benchmark the particular food as acceptable or not acceptable to a particular group (Gittelsohn & Vastine , 2003).

The Xhariep District Municipality, consists of four local municipalities, with various cultures and societal norms. This is further seen in the different languages used and spoken in these areas includes Setswana, English, and Afrikaans. Social status and practises also includes the poor that constitutes about 50% of people that relies on limited access to water and electricity to prepare food for consumption. (StatsSA, 2011). The various cultural and social groups within the XDM will have an influence on the food categorisations systems that these groups employ. For instance, red meat would normally be used during traditional and social gatherings like weddings, initiation schools and other celebrations. These can then be found as further example within XDM areas such as Ficksburg and Rouxville where there is a prevalence of traditional authorities and farm lifestyle practices. The availability and access to meat products in relatively poor households will be in accordance with affordability.

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6. COMMODITY ANALYSIS: VENISON

This section focusses on the first of the 3 commodities selected by the Xhariep District Municipality for analysis; that of Venison. Venison refers to animals that would normally be referred to as game, i.e. animals normally considered as 'wildlife'. As such, a brief overview will be given towards the venison industry. There are a number of game species within South Africa and the country is known to attract tourists on an annual basis not only to observe South Africa's rich game variety, but also hunt these animals as trophies. The domestic hunting industry is also well-known and these hunters are known as "biltong hunters", referring to hunting as a means of providing meat for their own consumption.

South Africa is in a unique situation with regard to the venison market, as it not only has a thriving hunting and wild life tourism market, but also has a large population of wildlife that can be hunted. This is uncommon in the rest of Africa as species have seen a significant decline in the last century. The variety of game that South Africa has on offer also provides it with a unique competitive advantage, as very few other countries in the world can boast this opportunity. South Africa is also no stranger to the processing of game meat for export as in fact, it is the domestic market that is underdeveloped with regards to commercialised game meat availability. This is due to the impact of biltong hunters and the effect this has on the commercialisation and the availability of game meat in retail stores domestically.

Game meat has numerous advantages to that of traditional red meat as it is a healthier option, easier to maintain due to them being more immune to regular sicknesses, has considerably more health benefits, and is more profitable on the international market. It is however, necessary to understand the competitive advantage that South Africa has when the history of the game industry is considered. As such, a brief overview of the history of the game industry and opportunities will be provided.

Prior to 1652, game in South Africa was widespread and could move freely; there was no fencing to prohibit movement and these animals trekked from available grazing and water sources freely. The initial purpose of this game was as a food source, but was later hunted for sport. In 1991, laws were passed by the South African government that recognised the legal, private ownership of game. This lead to a huge increase in game farming, hunting and game trading, which is still evident today.

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The privatisation of game farming and related activities have however, seen an unprecedented increase in the number of game stock within the country, showing that it can help with the conservation of these animals if managed and regulated appropriately. Case in point is that in Kenya, which has a similar agricultural industry to that of South Africa, has seen a significant decline in game numbers. Kenya has banned private ownership in 1977, and has since, seen a 70% decline in the number of game within the country as hunting and poaching takes place without any regulation nor control. Some key species have seen the following declines within Kenya:

Table 9: Comparison of key game species, Kenya

Game Species	1960/70	Currently
Rhinos	20 000	< 1 000
Elephants	150 000	30 000
Lions	20 000	2 000

In turn, South Africa has seen an increase in not only the general game population but in the population of endangered species. Within South Africa, there are approximately 20 million head of game, with 6 million of those being in protected areas compared to the ± 14 million head of cattle (±8 million under commercial control and 6 million under communal control), and it is further estimated that the wildlife industry employs 120 000 people.

Although game farming is seen more in light of the revenue it generates form tourism, hunting and breeding, the meat market is still relatively underdeveloped and could also assist with emerging farmers as game, if managed properly, is a better farming option on marginalised vegetation areas with more financial yields than traditional livestock animals. This, coupled with the competitive advantage that the South African industry has in the international market, could provide local emerging famers with a unique competitive advantage in the market.

6.1. MARKET ASSESSMENT

6.1.1. Local Market

The domestic market within South Africa for formalised game meat consumption is to a large extent, still untested and underdeveloped. This is mainly due to South Africa's strong biltong hunting structure, with an estimated 100 tonnes of biltong hunted locally each year. This, together with the limited and soft focus on domestic control, results in a market that is difficult to assess in terms of demand. It is estimated that during the hunting season, 20% of fresh meat consumption is game meat (SAMIC, 2012). A further 41% of the animal protein is used in the food industry within South Africa. (Van der Merwe, 2012).

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Game hunting, as part of the wildlife industry, is a large contributor to the economy as it not only increases the demand for trophy breeding, but simultaneously contributes to wildlife tourism as hunters often visit wildlife parks with their families. According to 2014 data, approximately 8 950 international trophy hunters visited South Africa, spending roughly R138 000 each, per visit. Biltong is another driver for game hunting, with roughly 200 000 biltong hunters in South Africa, spending an average of R31 000 per annum on hunting. In South Africa, the game hunting segment of the wildlife industry is estimated to total a R7,5 billion turnover. Hunting can thus, be noted as the backbone of the South African private wildlife industry. This hunted meat is however, except for the case of local biltong hunters, discarded of cheaply as it is not the main focus of the hunting expedition. This provides both the opportunity of using this meat obtained via trophy hunting to be processed further and sold.

There are however, a few local restaurants that have different types of game meat on offer, but to a large extent, there is still some misconceptions about game meat. (Food and Beverage Reporter, 2015). These perceptions relate to domestic consumers viewing game meat as tough, that it has a 'wild' taste, it is hard to prepare, is more expensive than that of its cheaper counterparts of beef or lamb, and that it is a niche product to consumers in South Africa. However, game meat in South Africa can supplement the need for the growing meat demand domestically, with an annual 48% of South Africa's red meat demand currently imported. (SAMIC, 2014). The local markets are comparatively much smaller than that of the potential for exports, with an estimation of an annual turnover of just under the R10 million mark domestically. However, there is a growing awareness amongst consumers with retail outlets such as Shoprite, Woolworths, Pick n Pay, and Checkers improving the availability of game meat products to consumers.

6.1.2. Global Markets

Established markets, such as the European Union (EU), does exist; however, strict regulations and policies apply when exporting to the EU. The EU was, and still is, the main focus of game exports from South Africa; however, the market has slowed down significantly since the 2011 foot-and-mouth disease ban on South African meat. There are still some exports that are exported to the EU and that are not influenced by the foot-and-mouth disease, with some 2000 tons still exported; however, this is significantly less than before 2011. (SA Exports, 2014). Demand declined significantly, with only approximately 4 000–5 000 game hunted in the years of the ban, in comparison to the 50 000 springbok, 5 000 blesbuck, 2 000 wildebeest, and 1 000 kudu hunted before the ban, explicitly for the export market. (Farmer's weekly, 2015)

Other markets that can be pursued is that of the BRICS Forum, as commercial cooperation is encouraged by these countries. The markets of China and Russia are especially markets of interest as they have growing economies, especially with China's large and ever-

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growing population. In 2012, China surpassed the US to become the world's largest importer of agricultural products. In January 2013, Chen Xiwen[2] noted that China decided to stop trying to become a self-sufficient agricultural country and that they could not stop the trend of importing commodities, goods, and services. Reportedly, China's agricultural imports would rise with $10 trillion annually from 2012 onwards for 5 years (Perkowski, 2013). This provides South Africa, in the wake of established diplomatic and trading ties with the country, with a golden opportunity to enter the Chinese market with an estimated demand in the excess of 400 000 tons per annum. The trade regulations and standards will also be more relaxed than that of the EU markets, with a wider product selection that can also be exported to the nearly 1.357 billion people, with a growth rate of 0.5% per year. (World Bank, 2015)

Another market that has not been explored yet, is that of the Middle Eastern countries and Northern Africa, with a combined population of approximately 317 070 000 people (Desilver, 2013). This market has already been identified by Ethiopia for exports of agricultural products and live animals (Mideksa, 2015). A nation with huge potential in this regard is the Kingdom of Saudi Arabia, with an estimated increase of just over the 35 million people towards 2030 (Pew Research Centre, 2011). The Kingdom of Saudi Arabia is dependent upon the importing of 70% of its food requirements (Royal Embassy of Saudi Arabia Washington DC, 2015), with the country phasing out government subsidies to end entirely in 2016 (Mann, 2015). This provides an opportunity to export game to this country subject to their import requirements, which will in principle, be cantered on if the meat was slaughtered in the halaal method. The figure below indicates the increase of imports for beef and veal meat per year for Saudi Arabia.

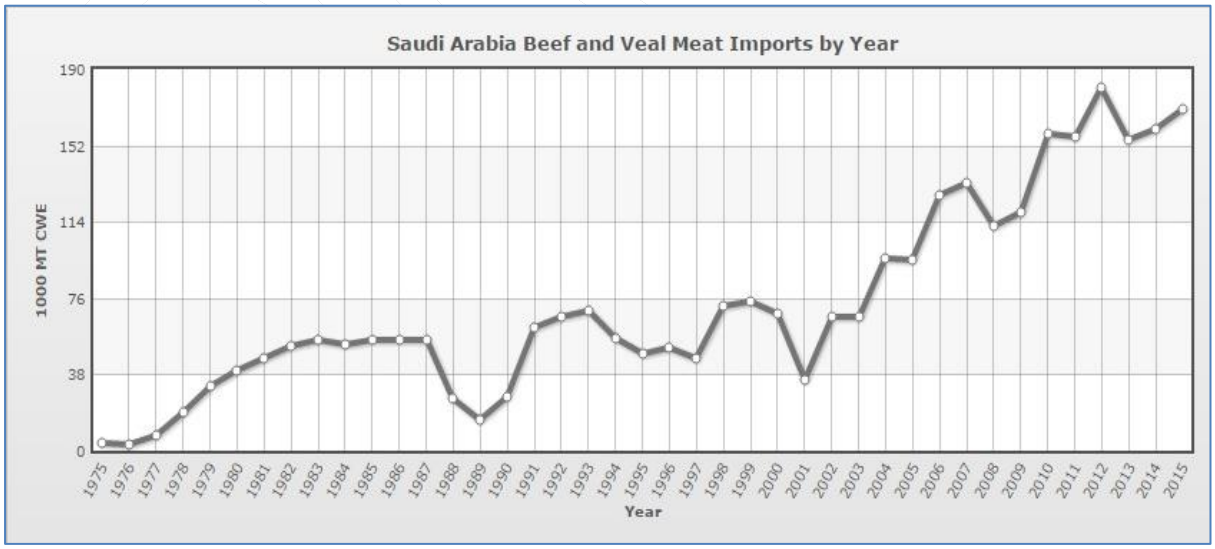

Figure 17: Saudi Arabia Beef and Veal Imports by Year

(Source: Index mundi, n.d.)

[2] *Chen Xiwen: Director of the Chinese Communist Party's rural affairs policy making body*

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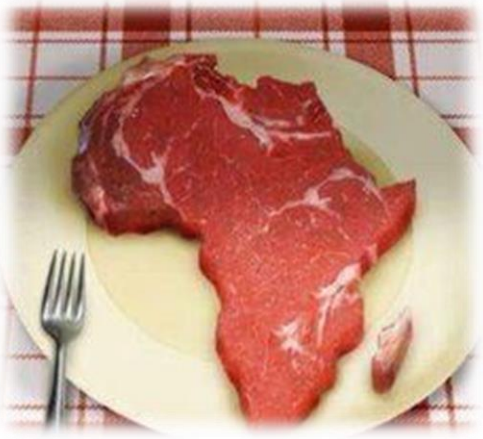
6.1.3. Demand and Needs Analysis (Market Segmentation)



Due to the lucrative markets abroad, the export market for venison proves an attractive option. This is evident as prior to the foot-and-mouth disease in South Africa, the EU was a lucrative market with a well-established trading structure (Mokhema, 2015). The rationale behind the exporting of goods is basically that the product will fetch a better price than it would on the domestic market. This can clearly be seen with game products fetching prices of up to ten times per kilogram than it would in South Africa.

Prime cuts such as the different steak cuts should be considered for the export market due to the high prices it will fetch. The following countries or areas have been identified for the export of venison products:

- EU: prior to the 2011 foot-and-mouth disease, it was a primary export market with a high exchange rate.
- US: building on the influx of trophy hunters from the US, exports of game meat could prove an added avenue for the generation of income streams.
- BRICS: the strong relationship between these countries and the focus on encouraging trade between these countries, may act as catalyst for accessing a market that will expand to a combined population or over the 3 billion people by 2020 (Statista, 2015).
- Middle East: the Kingdom of Saudi Arabia and the United Arab Emirates currently import 70% *(Royal embassy of Saudi Arabia Washington DC, 2015)* and 90% (Sathish, 2015), respectively, of all its food requirements; creating a market for the export of halaal game meat to these countries.
- Other: the unique and indigenous quality coupled with the diversity on offer, provide an opportunity to exploit even more global potential.

The domestic market is also an important market, with venison becoming increasingly popular. A study conducted by Professor Melville Saayman (2015) indicating that venison biltong contributes R237 772 288 to South Africa's economy.

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6.2. VALUE CHAIN ASSESSMENT AND POTENTIAL AGRO-PROCESSING OPPORTUNITIES

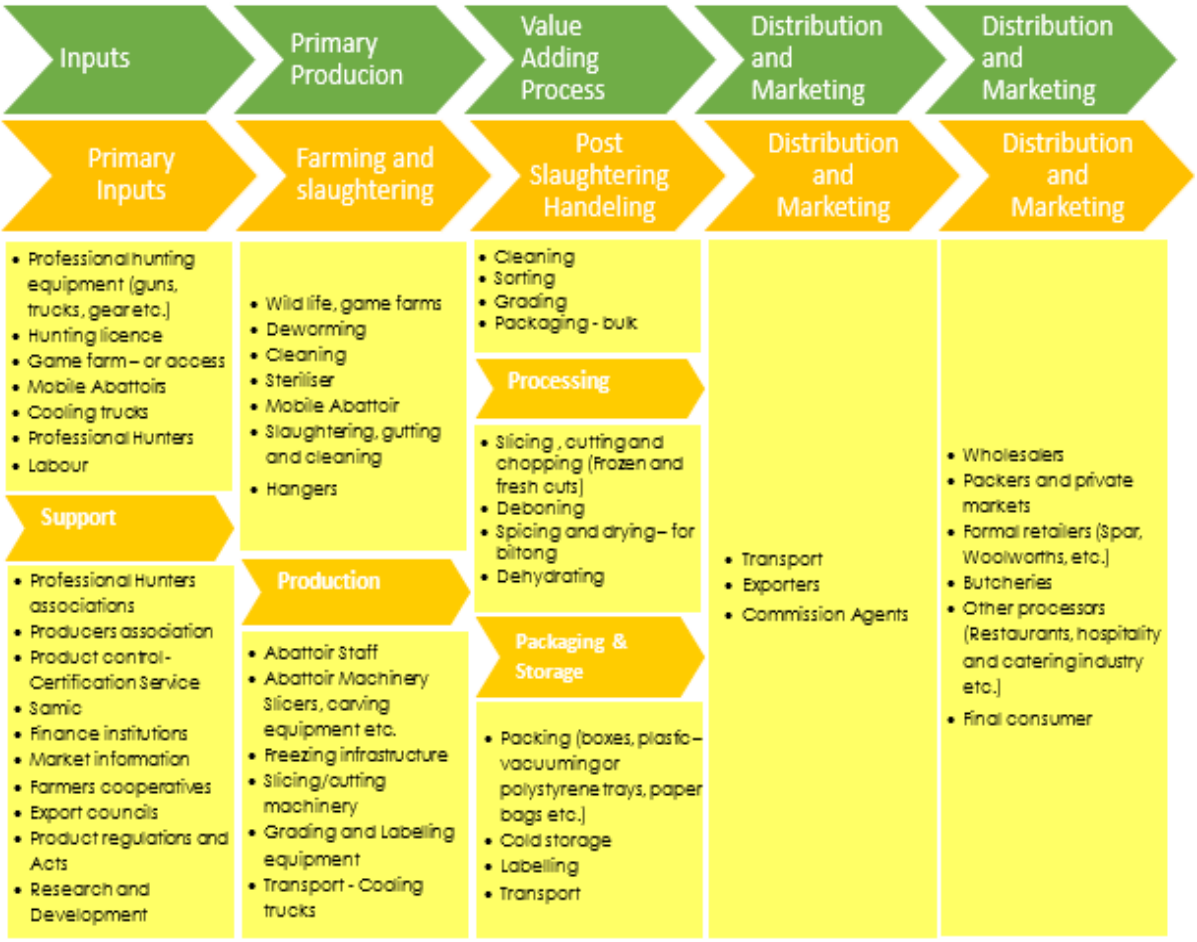

Figure 18: Venison Value Chain

The southern Free State, where the Xhariep DM is situated, is regarded as a semi-arid region with marginalised vegetation cover. Farming opportunities and activities are considered to be challenging due to these conditions, and numerous traditional farmers have moved away from livestock and rain fed-crop production activities in order to farm with game. This is due to the number of opportunities that exist within this industry; the least developed of which is meat production. Other activities such as game hunting (both domestically for biltong hunters and internationally for trophy hunting) and tourism opportunities are well documented and facilitated within the South African game market. However, there is a number of both backward and forward linkages that can be derived from developing the game meat processing value chain.

Backward and Forward Linkages

The main backward linkages refer to the supplies that are needed to successfully operate the production cycle of game on gaming farms. As such, the main supplies needed will be the infrastructure to ensure that game will remain on the farms (higher fences and gates),

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roads earmarked for fire control, equipment for the operation of the farm, labour and training of staff, feed and water, as well as veterinary services. This will also include research and development knowledge of the game industry and procurement of game through auction facilities or other means.

Other backward linkages refer to the supply of game meat for processing. These are predominantly provided by farmers who have an excess of animals on their farms in need of culling. These are then shot in the veld and immediately processed in mobile abattoirs.

Downstream activities or forward linkages, which can be developed are typically products derived from the game meat and utilising the correct marketing channels. Products that can be acquired from the slaughtering of game have the same 'cuts' than that of traditional red meat sources such as cattle. The difference is however, with regard to the yields per carcass, the quality, taste, and texture of the meat. However, for venison meat, the biggest considerations are towards the type of animal that is demanded. For the export market, the focus is more on the prime cuts as they fetch a higher fee. As such, the following wildlife species are popular for game meat due to their availability, cost, and yield per carcass:

Springbok	Blesbuck	Eland
Gemsbok	Kudu	Impala
Lynx	Nyala	Reedbuck
Wildebeest	Zebra	Warthog
Hartebeest	Bushbuck	Rhebok

As stated, the prime cuts are the most popular meat segments; however, the domestic market can be developed in order to sell a larger variety of products. As such, the following meat products can be derived from game meat:

- Neck;
- Shank (shin);
- Steaks;
- Tenderloin;
- Roasts;
- Sausages;
- Biltong and related products; and
- Offal.

The price for each of these cuts will vary depending on the species and the distributor or retailer, as the domestic market is not as of yet fully established. Furthermore, due to the export market that has been closed since 2011, different international markets have yet to be established and the fluctuating nature of applicable currency rates and new

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international prices will first need to be determined. However, it can be safely assumed that prices for game meat will fetch a minimum of 6 times the price it will in South Africa due to stronger currencies.

In order to generate larger yields, bigger species such as the blue and black wildebeest, kudu, eland, and zebra should be considered. One of these animals typically create a yield that is much higher than that of smaller antelope species such as the springbok and blesbuck. In addition to the main meat products, other products such as the bones form the carcasses, hides, etc., can also be developed and sold as by-products. It does however, require that a market is established or that a distributer is found. It however, provides the local community with potential spin-off opportunities to produce additional products that can either be sold at the local retail shop or sold in other towns, etc.

The health benefits of game are illustrated in the table below, with the health benefits of grass-fed game also compared to that of grain fed beef:

Table 10: Red Meat Vs Venison Meat Properties

Species	Protein (%)	Fat (%)	Cholesterol (%)	n-6; n-3[3]
Beef[4]	19.2	14.2	76	15.6 – 20.1
Springbok[5]	20	2.2	54.45 – 59.34	3.28:1
Blesbuck	22.15 – 22.19	0.92 – 1.19	49.74 – 54.56	3.62:1
Impala	23.8	2.45	52.54	3.76: 1

(Source: Wildlife Stud Services, 2015)

To promote the organic products associated with game even more, the organic products can be endorsed by the Grass Fed Association of South Africa. The association aims to promote the free range and grass-fed red meat producers in South Africa, as well as act as a certifying body for Free Range and Grass-Fed meat. This will go a long way in helping with establishing the organic validity of the products.

Product development can be furthered by ensuring that processed products are done in such a way that they meet the applicable Halaal standards in order for these game meat products to be readily available for the domestic and international Muslim communities. Retailers also require the halaal standards to be met in order to cater for their customers and as such, this market should be targeted. In addition, the Wildlife Ranching South Africa

[3] *Ration of Omega-6 (n-6) to Omega-3 (n-3) polyunsaturated fatty acids (PUFA's). The lower this ration the healthier the meat.*
[4] *Grain fed*
[5] *Grass fed*

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Standard should also be adhered to in order to make traceability and health standards for game meat produced, a norm.

Thus, a proudly unique South African Halaal meat product with excellent health and organic benefits, and qualities that can be traced from a plate in Munich, Midrand, or Phoenix to a Xhariep game farm, can be produced.

6.3. MAIN SUPPLIERS AND COMPETITORS

6.3.1. Suppliers

Most of the supply of venison meat is obtained through the process of culling on farms, which have an excess of game. The process is facilitated by an expert marksman and with the use of mobile abattoirs that are used for slaughtering operations in the veld. The process is however, a very clean operation as there isn't the high amount of water needed, which would be required for a conventional abattoir. As such, there is no clear indication to the exact extent of the supply on farms. The main supply has come from commercial farmers with game farming still new and untested with emerging farmers.

There are however an adequate number of game and additional info on the extent of the game farming industry under commercial farmers to formulate the rationale for supply in the South African context. This rationale is further strengthened by the important factor arguing that game farming has as a competitive advantage; that of marginalised land that can be utilised effectively for game farming within South Africa:

- Today in South Africa, private game ranchers own 16.8% of South African agricultural land, with 28 000 000 hectares of marginal land that has been converted, increasing the land area available for the production of the whole red meat industry within South Africa;
- In addition, SANPARKS has 3 751 113 ha under their supervision across South Africa. This amounts to substantial hectares that can be used as either supply for emerging farmers (cheaper than buying game on auctions), or for culling purposes; (South African Government, 2014)
- There are currently approximately 20 million head of game within South Africa, 6 million of those located within protected areas compared to the ± 14 million head of cattle (±8 million under commercial control and 6 million under communal control) showing the large scale of game available for utilisation as a commodity to empower emerging farmers; and
- The industry represents 20% of red meat produced within South Africa annually.

Larger and established enterprises such as the 3 large game abattoirs in South Africa however, have a tried and tested a supply chain, by which either culling is applied or meat is obtained directly from the farms they own, and as such establishing a consistent supply of game meat for the abattoirs.

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6.3.2. Competition

An analysis of the exact extent of the competition within the game meat industry proves challenging due to the influence of South African biltong hunting. The reason is that there is as of yet, no legislation nor restrictions on abattoirs and butcheries for the processing of domestically produced game meat. This implies that supermarkets and retailers can buy game meat from anyone; making the assessment of exactly how competitive this area of processing is, difficult. However, when focused on the export market, there proves to be 3 main competitive players within the South African context.

Mosstrich Abattoir is situated in the Western Cape and was one of the largest exporters of game meat before the EU ban of 2011, accounting for 50–60% of South Africa's venison exports (Food & Beverage Reporter, 2013). The abattoir is situated on the outskirts of Mossel Bay, near the N2. Game meat that was exported comprised of mainly springbok, kudu, blesbuck, and also smaller quantities of eland and gemsbok. Despite the ban, Mosstrich still exports a total of approximately 90 tons of Zebra meat to European markets as Zebra meat is immune to the disease that effected the ban on South African game meat. Before the ban, during 2008–2010, the abattoir produced on average 331 zebra's, that accounted for 46 427kg of game meat that was exported per annum. During 2011–2014, a total of 172 622kg of zebra meat was exported, totalling a decline of more than half their produce (approximately 52%). For the same period, a total of 883 846kg of antelope were harvested, some 40 336 head of antelope.

Mosstrich's influence however, doesn't just relate to the export market; but after the EU ban, the focus shifted towards the domestic market. This resulted in a total of 108 761kg of game shot and processed for the local market during 2011–2014 (Uys, 2015). The capacity of Mosstrich is telling in the large quantities of game meat that can be processed and exported, as it shows the fact that the necessary domestic capabilities and potential does exist to export large quantities of venison meat. Mosstrich was built with the capacity to slaughter 200 ostriches per day in 1998, and has since expanded to slaughter 450 ostriches per day. Game slaughter lines were expanded together with the capacity of the deboning halls in order to accommodate the slaughtering of 70 000 ostriches per year, and 40 000 different antelope head annually. Most of Mosstrich's turnover is still based on ostrich products, which accounts for 80% of the abattoir's annual income.

The second game abattoir that is a competitor within the South African context is that of Camdeboo Meat Processors, which is situated within Graaff-Reinet. They are a privately-owned company that supplies both ostrich and game meat both locally and internationally (Camdeboo Meat Processors, n.d.). Abattoir and deboning facilities that are on par with EU standards, are responsible for producing game and ostrich meat that is exported to countries within the EU and the Far East. Ostrich and other game hides are also processed by a tannery that is available to Camdeboo through Exotan.

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Gondwana Abattoir is also a game meat abattoir in South Africa that is proved to be a sizeable competitor. The company was established in 2005, and although situated in Gauteng, it privately owns a processing farm, exploiting the opportunity for forward linkages from the ostrich farm that is situated in the Limpopo Province. They slaughter and process game meat that originates from the Limpopo area, with species such as Zebra, Springbok, Blesbuck and Wildebeest processed in the game season. The company is accredited with a license to supply the EU with crocodile meat, and also exports deboned beef to the SADC region.

There are also a few local hunting organisations that export meat from culling operations. Operators such as Vasvat Skietspan harvested 467 692kg of game meat, with a total of 239 692kg bound for the export market in 2010. However, following the EU ban, only 197 335kg of game was harvested the next year; however, since then operations have picked up as the domestic markets have grown. In 2014, a total of 354 412kg of game meat was harvested, mostly for the domestic market; however, a total of 30 000kg of Zebra meat was exported.

There are a few abattoirs within the Xhariep District that may also pose as competitors. In the context of the anticipated growth in the game meat market, these abattoirs can start processing game meat for the local markets due to the lack of laws to enforce quality control. These abattoirs, together with their locality and administrative adherence, are indicated in the following table:

Table 11: List of Xhariep Abattoirs

NAME OF ABATOIR	LOCAL MUNICIPALITY	TOWN
Bulderg Abattior	Kopanong	Reddersburg
Edenburg Vleishandel	Kopanong	Edenburg
Excell Vleis BK	Mohokare	Rouxville
Jacobsdal	Letsemeng	Jacobsdal
Jagasfontein	Kopanong	Fauresmith
Jimmie Roosskool	Naledi	De Wetsdorp
L & B J Abattoir	Kopanong	Phillipolis
M&Z	Naledi	Dewetsdorp
Ons Abattior	Mohokare	Zastron

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NAME OF ABATOIR	LOCAL MUNICIPALITY	TOWN
Phillipolis Abattior	Kopanong	Phillipolis
Rodenbeck	Letsemeng	Petrusburg
Springfontein	Kopanong	Springfontein
Smithfield Abattior	Mohokare	Smithfield
Umfasa Abattior	Letsemeng	Jacobsdal
Wolla Terblanche	Naledi	Dewetsdorp
Zastron Abattior	Mohokare	Zastron

(Source: DAFF, 2011)

As can be seen, there are 16 abattoirs operating within the Xhariep District Municipality. It should however, be taken into consideration that these abattoirs focus on the production of red meat and not exclusively on game meat. These abattoirs can however, also have a supporting role within the FPSUs in providing local slaughtering services for communities and game farmers. New Zealand is one of the top exporters of venison globally when international competitors is considered. The New Zealand exports represented a NZD[6] 180 million industry, which focused on the export of red deer meat to mostly Europe. Countries that are exported to are illustrated in the following table; more than 90% of New Zealand's deer industry is exported:

Table 12: New Zealand Venison Countries of Export

Country	Percentage of total exports
Germany	34%
Belgium	11%
Netherlands	11%
USA	9%
Switzerland	9%
UK	4%

[6] *New Zealand Dollar*

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Sweden	3%
Others	15%
Total	**100%**

(Source: Deer Industry New Zealand, 2012)

The export of deer meat doesn't account for nearly that of other food and meat related exports from New Zealand, with dairy (NZD 8.41 billion), lamb (NZD 2.25 billion), beef (NZD 1.81 billion), and wool (NZD 686 million) all earning more. It does however, show the potential of New Zealand and the consistent export towards EU countries that make them major players globally. It should be stated however, that these exports rely on a single species of red deer exports, and on little to none diversification of other species to export (Drew, 2012). This provides South Africa with a competitive edge in this regard, as South Africa has a huge variety of game meat that could potentially be exported.

The New Zealand picture however, does not look as rosy as it did 5 years ago, with a decrease of almost 34% in income generated from venison exports. In 2009, venison exports from New Zealand accounted for NZD 273 million, but then it declined until Statistics New Zealand reported in 2014 that it only accounted for NZD 180 million. This is in response to the New Zealand deer herd, which has been in decline since 2009 and this trend is expected to continue with deer breeders, which are leaving the industry. The revenue from exports were expected to drop even further with declines expected until 2019, and exports for June 2015 at NZD 174 million (Otago Daily Times. 2015).

The concern is also that venison may compete with other meat products from the red meat range within South Africa. However, experts within the market state that they do not foresee this to happen, but rather that game meat is another type of meat that is not comparable with that of beef (MAQUTU, 2014).

There is considerable completion within the domestic game meat industry, with large slaughtering and deboning operations and a capacity for exports established. However, despite this, the game export market (before the ban) only captured a mere 1% of the meat imports to countries within the EU. The biggest international competitor's, New Zealand, exports have dramatically declined and cannot compete with the vast area of land, diversity, and environmental conditions on offer within South Africa. However, what South Africa can learn from the NZ industry is that there was one marketing entity that was responsible for marketing and selling of venison meat for all the local NZ producers to the global community. Thus, providing a unified national product that could be sold, and the producers under this umbrella could benefit from the growth in gains by selling not only the products but the nation as a venison exporter.

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6.4. COMMODITY SPECIFIC STAKEHOLDERS

This subsection focusses on the commodity-specific role players or stakeholders that can assist in further developing the value-chain for venison:

Table 13: Commodity Specific Stakeholders

Stakeholder	Core Activities
Afrivet	Provision of training services throughout the whole value chain (has already expressed interest in forming partnerships).
South African Meat Industry Company (SAMIC)	A quality assurance organisation that will assist in the development of quality products throughout the venison value chain
Wildlife and Environment Society of SA (WESSA)	A stakeholder group that will assist in the promotion of wildlife practices within the Xhariep District Municipality
Wildlife and Environment Society of SA (WESSA)	A stakeholder group that will assist in the promotion of wildlife practices within the Xhariep District Municipality
Game Rangers Association of SA (GRA)	An organisation and professional body for game rangers in South Africa that will assist in the training and monitoring of game ranchers within the Xhariep District Municipality
Field Guides Association of South Africa (FGASA)	Body for training and accreditation of field guides that can further assist and support the training and empowerment of the local community and farm workers
Game SA (Game Abattoirs and Meat Exporters of SA)	Representative organisation of the largest game abattoirs and meat exporters of that will lend training assistance and institutional support
Professional Hunter's Association of South Africa (PHASA)	Hunter's Association that will assist in the training and hunting procedures of local hunters. This organisation will also provide knowledge for the local emerging farmers to utilise to better manage their herds.
Game abattoirs and exporters	Specialist game and ostrich abattoirs and exporters need to be developed in order to strengthen the value chain of venison. As such game abattoirs and exporters will provide a major point of reference for the development of the venison value chain.

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South African Veterinary Association (SAVA)	Veterinary Association that will help with the improvement of livestock quality on farms and at abattoirs. Institutional and knowledge support in order to breed and produce better stock on the emerging farmer's farms.
Wildlife Vets	Specialist game and wildlife veterinarians that will provide training and support programmes for local community members in order to stimulate entrepreneurial activities and strengthen the local support base and value chain development.
Game Auctioneers	Main selling and distribution channel of game meat that will help in the provision of stock and diversifying the value chain to increase competitiveness.
National Emergent Red Meat Producers' Organisation (Nerpo)	Commodity Organisation that will provide institutional support and help emerging farmers establish good and quality practices when dealing with both livestock and at the abattoirs where the red meat will be handled.
Red Meat Producers' Organisation (RPO)	Commodity Organisation that will provide institutional and knowledge support. Will assist with key areas along the value chain that will need development and interventions for the export and domestic markets.
OVK (Bethulie) **OVK (Edenburg)** **OVK (Fauresmith)** **OVK (Koffiefontein)** **OVK (Reddersburg)** **OVK (Rouxville)** **OVK (Smithfield)** **OVK (Trompsburg)** **OVK (Zastron)** **Boesmanskop OVK**	Regional offices that will assist in providing both emerging farmers in each of the FPSUs with input supplies and the necessary equipment, etc. to successfully operate their farms. The locality of these regional offices/retail facilities increases the accessibility of emerging farmers with the supporting services. It also provides the opportunity for PPP to be formed and retail and marketing support for the produce of the emerging farmers as well as synergies between the commercial and emerging farmers.
Senwes (Petrusburg)	Provision of input supplies and development support within the Petrusburg and surrounding area, where potato production is paramount. As such the regional office can provide local agricultural support. Together with the regional OVK offices all of the FPSU's and emerging farmers will be able to be serviced with much needed agricultural support.

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ABR	Provision of wildlife incubator development services and training services (has expressed interest in providing assistance).
The Grass-fed Association of SA	Is a representative body for grass fed meat producers in South Africa that consist of members from various sectors; the list includes retail and farming enterprises, to promote the development the industry and promotion of Grass-fed meat producers' interests in the industry bargaining processes.
Wild Life Ranching South Africa (WRSA)	Coordination and monitoring of venison quality and providing institutional infrastructure for the development of the venison value chain (has already expressed interest in forming partnerships).

6.5. TECHNOLOGY

Meat scanning technology has been growing in numerous meat industries as a means of advanced quality control. This technology has recently also been introduced in venison production. In 2012, the Alliance Group's new venison processing chain introduced new meat scanning technology for Venison. This was a world first for venison scanning, specifically. Although the technology was previously successfully developed for lamb in 2003 and later for cattle, it had never been used for venison.

The new technology means that the venison is graded though VIAscan, which ensures the quality levels of the meat. Kill sheets provide a profile of how the venison performs when benchmarked against ideal market requirements. One of the great components of this new technology is that the venison meat industry can eventually have clear standardisation of product grading.

The WRSA standard will also further assist in the promotion of a quality product that can assist emerging farmers in acquiring a competitive advantage and establish a known quality standard, both domestically and abroad. This, coupled with the GreenFed Association, will help in creating an organic and unique product for the market that will assist in accessing difficult markets such as the EU and American markets.

ICT initiatives that can be incorporated with farming practices are that of an SMS system, which help emerging farmers with communication by providing transportation services to help with the transport of produce to the FPSUs or Agri-hub. This concept is already under development by the DRDLR, and would go a long way in assisting emerging farmers. Together with this, free Wi-Fi at the Agri-hubs is also planned, which can assist in the business activities associated and needed for basic business management of emerging farms.

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6.6. SOCIO-ECONOMIC BENEFITS

This subsection focusses on the socio-benefits that could potentially be created by developing the commodity value chain of venison. Socio-economic benefits can either have a direct or indirect impact on local communities in the primary, secondary, and tertiary economic sectors. As such, the benefits will be presented in the table below:

Table 14: Venison Socio-Economic Benefits

Socio-Economic Benefit	Description
Job Creation	The Free State has a significantly large population living in poverty, along with low skills, and high unemployment. It is perceived that the use of venison as a job creator will help in reducing the unemployment rate. The effect of job creation is however, more widespread than just at the agri-hub, as farmers in the area will need to employ more workers in order to meet the supply of animals. As such, it has already been indicated in the analysis that it is estimated that the wildlife industry has created over 120 000 jobs.
Developing skills	Skills development is an important consideration to create better jobs and to achieve higher productivity. As such, the use of venison as a commodity will develop skills throughout the whole value chain as skills will be needed from the farming practices, through the culling and slaughtering of venison, towards the packaging, etc. Skills development can also be achieved through the development of spin-off opportunities.
Spin-off opportunities	There are numerous spin-off opportunities that could be developed from using venison as commodity. One of these is the utilisation of the hides for further processing and the creation of shoes (there is already an initiative in Trompsburg that produces shoes), handbags, etc. Other opportunities include the training of tour guides, the development of game farms, hunting, training, and fitting of equipment, etc.
Increase in monthly household income	The creation of employment opportunities will have an increase the local communities' monthly household income base, and this will influence the other economic sectors such as retail and trade. This will, in effect, stimulate job creation and economic growth in these other sectors, creating a more sustainable local economic base due to the retention of generated income by households. The presence of the abattoir within the Free State will result in a decrease in **rural-urban migration**. As job creation increases in the Free State, individuals will have more incentive to stay within the Free State.

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Support to emerging farmers	This is also an additional benefit of the project due to the creation of a market for their produced products. The development and provision of the required soft and hard infrastructure to create a supply for this said market will also help in providing expensive support that could not have been achieved by their own means. Mentorship programs and training for these emerging farmers, is another benefit that will not only helps these farmers to be more productive, but also help in creating a more skilled labour force to help with higher production of a better quality product.
Food Security	This will be an important socio-economic benefit derived from using venison as a commodity. Not only will the production and processing of venison increase the supply of meat products, but it will also increase the supply of halaal products.
Utilising marginal land	One of the most prominent considerations for venison is that venison can be produced on marginal land to a much higher success rate than that of their traditional red meat livestock. This becomes even more important if the global climate changes are taken into consideration towards the local conditions.
Healthier food source	As discussed during the analysis, the use of venison is an alternative healthier food source that could be produced, and with the global community becoming more and more health and organic conscious, this will be an added benefit.

6.7. CONTRIBUTION TO FOOD SECURITY

Food insecurity, poverty and inequality are major global issues interlinked and used interchangeably in various contexts and concepts; food security refers to the aggregate availability of food, accessibility, and the usage thereof. The UNDP and National Development Plan (NDP) asserted that in the SDG's goals and the NDP 2030 respectively, poverty should be eradicated and standards of living of many people should be improved. Agriculture and development plays a critical role in the fight against food insecurity, poverty, and inequality. Africa and other developing countries are urbanising rapidly and the need for animal-based value-added products is increasing, notably meat and value-added products.

About 33% of food and diet sources in Africa are meat-based, with the expectation to increase this within the next decades to about 60%. This is due to demand pressures, a raising population, urbanisation, and increasing per capita incomes. Local livestock producers are presented with challenges to meet these demands and are tasked to produce even more efficiently. Food insecurity presents a challenge both as a supply and demand issue - on the demand side, the increasing urbanisation and population needs a

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consistent supply of food to address the outstanding demand; thus market shortage concerns are to increase food production. The increase in agricultural food production, particularly meat-based products, increases supply and drives prices down for local consumers and increase access to decent and protein-based diets. Similarly, a shortage in supplies drives prices upward and reduces the ability of consumers' access to meat and proteins sources of food, and incentivises producers to produce more due to a high income from sales.

- **Venison contribution to world food supply**. It is estimated that global livestock production will need to double by 2050 to keep up with the demands of a global population, which keeps on growing at an alarming rate. Global food security has also been identified as one of the key initiatives by the UN due to the growing population worldwide and the impact of global warming on agricultural production (United Nations, 2015). As such, a surplus of meat production on marginal land and with higher profit margins will not only aid in this initiative, but also grow the rural and agricultural benefits from foreign exchange earnings.
- **Venison as an alternative food source**. Venison represents a fraction of edible animals from the wild. Venison as compared to domestically farmed meat products (beef, pork, and mutton), has wide-ranging animal categories such as rabbit, antelope, springbok, ostrich and ducks to name a few. Although these are not widely available, they can be used as substitutes for regular meats and are indeed a growing industry.
- **Venison production contributes significantly to the nutrition, wellbeing and organic food demands**. In farming and hunting communities, venison contributes as a source for important organic and wild meat. In the majority of the areas, meat derived from venison animals is consumed in the wild by the rural and urban populations, which contributes to high nutrition more notably because of the low fat content as compared to beef; it does not have growth hormones and has a high protein content. Consumers' behaviour towards food has changed over time; there are major shifts in foods preferences and consumer tastes, healthy food choices are more preferred lately with the majority of consumers showing increased interest in organic and healthy diets.

6.8. REGULATORY REQUIREMENTS

Although the venison meat industry within the South African market is not as established as its red meat counterpart, almost all of the statutory requirements that are applicable for the red meat industry apply to the venison industry. This is especially true for the slaughtering of animals as there is little distinction between the different meats processed at abattoirs. As such, these regulations have been included.

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There has however, been an impetus by the relevant venison role-players to implore government to formulate and implement venison-specific guidelines and regulations. This has however, not seen any fruition and will need further investigation and consideration. There have however, been private initiatives to better manage and address concerns by export trade blocks such as the EU regulations to establish a consistently quality export product on the market. This is however, voluntary with relative success; it will however need broader exposure and approval to be fully effective. These private regulatory drives have also been discussed within this subsection.

The livestock activities within the larger Agri-Park will need to be identified and in accordance with these, the following credentials will apply; this will be before any meat products can be sold within South Africa or abroad.

- FSSC 22 000 certification will be required. FSSC 22 000 is supported by the American Groceries Manufacturing Association and the European Food and Drink Association. Thus, the certification will ensure that any abattoir's meat is up to international standards and will have the opportunity to be exported.
- If any feeding operation for venison is planned, especially for abattoirs will require an ISO credential. The ISO system encompasses various management systems, such as the ISO 14001 (environmental), the ISO 9001 (quality), ISO 22000 (food safety), and OHSAS 18001 (non-ISO) operational health and safety standards.
- For abattoirs, meat products to be certified as halaal, an application form will need to be filed to the National Independent Halaal Trust. Within the form, the name of the abattoir, description of products, and commencement date, among other questions, will be stated. Once the form has been filed, an inspector will inspect the slaughtering method of the livestock, the abattoir itself, the packaging methods, etc., before the abattoir and its meat can be considered halaal. If the abattoir fails the inspection, a set of guidelines (towards halaal practices) will be given to the abattoir. If the abattoir is considered halaal, the South African National Halaal Authority (SANHA) will need to certify the meat before the abattoir can specify that the meat is halaal.
- The Meat Safety Act 40 of 2000, regulations need to be followed.
- HACCP regulations, with regard to the handling, processing and the storing of raw meat, need to be evaluated.
- Foodstuff, Cosmetic and Disinfectants Act 54 of 1972
- Regulation 962- Food Hygiene; Regulation 146 of 2010- Labelling
- Animal diseases Act 35 of 1984
- Animal Health Act 7 of 2002

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- Air Quality Management Act 39 of 2004
- Product Standards Act 119 of 1990
- Stock Theft Act 57 of 1959
- Occupational Health and Safety Act 85 of 1993
- Stock Remedy Act 57 of 1959
- Water Act 54 of 1956
- National Environmental Management Act 107 of 1998
- Labour Relations Act 66 of 1995
- Consumer Protection Act 68 of 2008
- Health Act 61 of 2003

In order for livestock activities within the Agri-Park to become more competitive in the red meat industry, the abattoir should register for association memberships with the following associations:

- **The Red Meat Abattoir Association (RMAA)**

RMAA provides services and representation to the abattoir industry. RMAA ensures that meat safety and quality is of the highest standard. RMAA also provides training to abattoir personnel in order to improve safety and hygiene.

- **International Meat Quality Assurance Services (IMQAS)**

Established in 2001, IMQAS serves the quality and hygiene needs of South Africa's meat industry on an independent basis.

- **South African National Halaal Authority (SANHA)**

Established in 1996, SANHA promotes professionalism in the certification of halaal products. SANHA is a non-profit organisation. SANHA provides a support base for both the producers and consumers of halaal products.

Once the abattoirs within the Agri-Park, or more specific within either the FPSUs or Agri-Hub itself, have all the required certifications, meet all the requirements, and become associated members of the aforementioned associations, the abattoirs will become active players in the red meat industry and the halaal industry.

- **The WRSA Standard**

The WRSA Standard is a result of the time consuming and frustrating process of getting the Game Meat Scheme implemented by government. The WRSA decided on their one accord to develop a standard that will address the quality and safety standards within the

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game industry. Members of the WRSA subscribe to a code of conduct that helps with the implementation of this standard.

The WRSA Standard is on par with international standards[7] to guarantee the quality of game meat for the export market. The standard aims to guide the standardisation of the quality and safety of game meat for both the export and domestic markets. Currently, 90% of game meat in South Africa is not regulated by any legal guidelines or control. The rationale is that such a WRSA standard will limit the impact of disease and the improper handling and processing of meat and ensure a product that will be easily accepted by international markets. The following are the main objectives of the WRSA Standard:

- Compliant with international standards;
- Ensure safe game meat of a high quality;
- Guiding the process of harvesting on the ranch;
- Game meat inspection;
- Registered facilities for all slaughtering processes;
- Training requirements;
- Traceability; and
- Independent auditing processes.

The need for such a standardised process is evident in the imposed EU ban and the potential of the game meat export market in future. With all the different legislation and international standards to adhere to, a streamlined process to help organise the export process from the veld to the consumer's plate will be instrumental in achieving an internationally recognised approved product of quality, which benefits all the role players involved in the value chain.

Organic Standardisation: Grass Fed Association of South Africa

The Grass fed Association of South Africa is a red meat producer's organisation with membership available to all livestock farmers in South Africa. The Association serves as a support base for all free range and grass fed red meat producers in South Africa, as well as a certifying body for Free Range and Grass Fed meat. The Association supports producers with regard to compliance to protocol, traceability, branding and certification as well as industry co-ordination, skills and information transfer. The main goal is to create a brand mark so that when consumers see it, they know with certainty that what the label says they can believe in.

The Grass-fed Association of SA was formed during 2014 as a result of activities taking place around the world. At present, countries such as the UK, Europe, Canada, Australia, New Zealand, Japan, Russia and China have either totally banned the use of growth hormones/additives, or have taken precautionary measures. Grass-Fed SA developed a production protocol to ensure a high quality product that will be consistent with the

[7] *These include the ISO 22000 and the EU Standards for Export (VPN's)*

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regulation and maintaining required for full traceability of those products produced. This was approved by Government in July, 2015 together with Grass-Fed / Free Range logo's and Best Practices prepared by Grass-Fed SA. All of which can be obtained by requesting it from: The Grass Fed Association. *(Grass Fed Association of South Africa, 2015)*

Incorporating the Grass-Fed/Free Range logos would result in a higher authentication of the meat products produced by the Springfontein Abattoir and may also result in higher profits for rural communities who still farm with livestock on the free range principles. Skills development and better practices will also help improve the quality and condition of rural communities' livestock and result in a better supplier's network for emerging farmers.

- **Planning Legislation**

It is vital that the development application requirements for the Agri-Parks is explored and properly addressed as they are mandatory. In accordance with SPLUMA – which governs land use nationally - it is crucial that a development application to be submitted to the Local Municipality before any development can be considered. SDF alignment is of optimal importance while the IDP and Local Municipality Land Use Planning By-law should also guide implementation. Failure to comply with the specific planning and development policies and legislation may cause stunting delays to the process. As such, alignment with each of these documents is of optimal importance before any development of the Agri-Hubs or FPSUs commence. The following pertinent legislation is applicable to a development application:

- Spatial Planning and Land Use Management Act, 16 of 2013
- Mangaung Spatial Development Framework
- Mangaung Integrated Development Plan
- Subdivision of Agricultural Land (Act 70 of 70)
- Mangaung Metropolitan Municipality Land Use Planning By-laws

6.9. SUBSTITUTE PRODUCTS

When venison is not dried and used as biltong, it is classified as a type of red meat, which means that is competes with pork, beef, lamb, mutton and Ostridge meats. Beef is likely the greatest competitor for venison as it is also a larger, dense meat. When beef is matured, it has a taste very similar to that of venison, and many of the cuts that can be extracted from venison can also be extracted from beef as well, meaning it can fully replace it. Pork and lamb can also be used to replace venison, but to a lesser extent as a result of their tenderness.

Mutton is another type of red meat that can be used to replace venison as a product. This type of meat is diverse and protein filled, thus making them the largest direct competing

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products. Another factor that makes mutton a great substitute for venison, is the fact that it is much cheaper than venison.

Chicken is a great substitute product, as it produces all the taste and all the protein but for half the price. The pricing is thus where chicken becomes rather prominent – although it does not produce similar dishes, such as steak, chops or ribs – chicken is a favourite for its price.

Various meat replacements have also been developed to be used in foods to act as meat replacements. These replacements were initially widespread for vegetarians, but have now spread to a variety of people for dietary, religious and personal choices.

Biltong is the most prominent product of venison and is a great healthy snack. Biltong, as a dry meat-based snack, has very little direct competition. Competition does however, exist within the bracket of biltong itself, as one can buy, beef, chicken an even bacon biltong. Of course, as a snack, biltong has an endless list of substitute products, ranging from nuts, potato chips and pop-corn. Biltong is very unique however, making it difficult to substitute.

6.10. NEW ENTRANTS: POTENTIAL ENTREPRENEURS

This subsection focuses on the potentially new entrants or potential entrepreneurs that form part of the venison value chain in the Xhariep District Municipality Agri-Park. As such, a table has been provided that indicates a total of 24 emerging farmers with 27 331.2 ha of farmland available for potential game farming. There are additionally 10 potential emerging farmers who want to farm with venison, but is in need of farmland.

Table 15: Potential Venison Beneficiaries

Contact Person	Local Municipality	Farm size (ha)/ access to land	Want to farm with game
AW Buckland	Mohokare	291	Yes
Rahlaho	Letsemeng	324	Yes
M Siwakwi	Letsemeng	273	Yes
R Siditi	Letsemeng	152	Yes
RS Speek	Letsemeng	298	Yes
SA Dube	Mohokare	1829	Yes
JG Ramatlame	Kopanong	632,5	Yes
MJ Mabokwe	Kopanong	687,6	Yes

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Monne	Letsemeng	1400	Yes
Medupe	Letsemeng	232	Yes
PM Thekisho	Letsemeng	646	Yes
I Kordom	Letsemeng	850	Yes
J Tsiloane	Letsemeng	1200	Yes
L Tlhapuletsa	Letsemeng	8000	Yes
L March	Letsemeng	936	Yes
W Barnes	Letsemeng	1200	Yes
Michaels & Van Rooyen	Letsemeng	1200	Yes
J Barnes	Letsemeng	1000	Yes
A De Koker	Letsemeng	1000	Yes
S Barnes	Letsemeng	1000	Yes
J Gubian	Letsemeng	1000	Yes
J September	Letsemeng	1000	Yes
G Lamekies	Letsemeng	1000	Yes
K Middelton	Letsemeng	1180	Yes
NM Daka	Letsemeng	*No*	Yes
GB Ngqiskia	Letsemeng	*No*	Yes
NA Molt	Letsemeng	*No*	Yes
DS Ntje	Letsemeng	*No*	Yes
MA Tutubala	Letsemeng	*No*	Yes
Tyunotyathwa	Letsemeng	*No*	Yes
J Wesi	Letsemeng	*No*	Yes
Mpata	Letsemeng	*No*	Yes

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Moliti	Letsemeng	*No*	Yes
Raditlhare	Letsemeng	*No*	Yes

(Source: FSDARD, 2015)

6.11. SWOT ANALYSIS

This subsection presents the SWOT analysis for using venison as one of the commodities for the development of the Agri-Park initiative. This is presented in tabled format as follows:

Table 16: Venison SWOT Analysis

Strengths	Weaknesses
• Venison is more resilient to sicknesses than traditional red meat livestock. • Established game ranching infrastructure and industry in South Africa. • Large venison population and high quality animals available. • Culling practises are well established. • Uniquely South African product, minimal countries worldwide that can compete with the venison quality, variety and quantity worldwide. • Healthier food source than traditional red meat sources. • Requires less intensive farming practices to maintain and produce. • Has already created 120 000 jobs within the wildlife industry.	• High quality meat processing needed to unlock export opportunities. • Minimal data available on the exact venison stock numbers and opportunities for meat production. • Strong biltong culture under domestic users, may hinder market development. • Lack of infrastructure on emerging farms to support venison production and farming. • Lack of training may hamper emerging farmers' progress or market penetration capability. • Cannot be slaughtered at traditional abattoirs, need mobile abattoirs and culling practices.
Opportunities	**Threats**
• Opportunities for the export of game meat to earn extra foreign exchange. • Large Asian market is still untapped. • EU ban on South African meat has been lifted in 2015. • Halaal market provides an additional market for meat. • Training of skilled workers throughout the whole value chain with established	• Most of the venison industry is under commercial control. • Expensive prices of venison stock. • May need large capital investment to supplement emerging farmers' venison stock. • Sicknesses such as the mouth-and-foot disease can severely hinder export markets.

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training enterprises within South Africa. • Potential further tourism spin-off opportunities for emerging farmers. • Domestic commercial market to a large extent still unexplored and untapped. • Venison can be provided cheaper to emerging farmers from the excess on national run game farms and reserves under the control of SANPARKS. • Entrepreneurial opportunities on local level with hunters, transport, tanneries, arts & crafts, etc.,	• If there is no consistent venison supply for the export market, the market fluctuations may cause the industry to falter.

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7. COMMODITY ANALYSIS: AQUACULTURE

The growth of aquaculture within South Africa has significant potential, owing to the shortfall in traditional fishery products and the high demand for affordable meat. Aquaculture has become increasingly important since the 1970s as a source of fish production, which is suitable to meet the global demand for fish. In the late 1990s, fisheries products represented a major export revenue for developing countries. The revenue obtained from the fisheries products was far greater than that acquired from other exports among which include dairy, cereal, meat and fruit (Adebayo & Daramola, 2013).

The aquaculture industry has been expected to become an increasingly important source of fish production. In 2012, it was discovered that 49% of the global seafood consumption was farm raised fish; it has been expected to increase exponentially to 62% in 2030. On the African continent, Egypt is the largest producer of farmed fish, followed by Nigeria and Uganda. In 2012, the African continent contributed 2.2% of global aquaculture production of food fish; South Africa contributed 0.24% to the total volume of the African aquaculture production of food fish.

7.1. MARKET ASSESSMENT

7.1.1. Local Markets

The South African aquaculture industry is separated into two major variables – freshwater and marine aquaculture – each of which are made up of various species. Nationally, aquaculture mainly encompasses freshwater species such as Rainbow trout, brown trout, Koi carp, crocodiles, Ornamental fish, African catfish, Mozambique and Nile tilapia, Marron, and Waterblommetjies. The main marine species in the country are abalone, white prawns, oysters, seaweeds, Spanish &Brown mussels, Dusky & Silver Kob; yellow tail, Atlantic Salmon, Clownfish, White Margined Sole, West and East coast rock Lobster, Scallop, as well as Blood Worms.

Freshwater aquaculture

- Highly dependent on the supply of suitable water, and this can often be its greatest limitation. Limpopo, the Mpumalanga Lowveld, and northern KwaZulu-Natal hosts the areas of most significance in the production of fresh water species nationally. Trout species are farmed nationally along the Lydenburg high mountain areas, the KwaZulu-Natal Drakensberg, as well as in the Western Cape. Freshwater crayfish,

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catfish, and tilapia species are other forms of freshwater species that are cultivated on a small-scale in South Africa.

Marine aquaculture

- Is developing rather fast as an aquaculture sector, and is mainly focused on oysters, prawns, mussels, seaweeds, and abalone. Mussel farming far exceeds the other marine species in terms of the length of time it has been established in South Africa. An abalone culture has also become more established and frequented on the Cape south coast in the Hermanus area. An experimental offshore farm (cage culture) has also developed in Gansbaai, which harvests salmon.

The national gross value of aquaculture production has shown a trend of steady increase in the period between 2004 and 2013, with minor fluctuations throughout. The oscillation may be as a result of fluctuations in the prices of aquaculture products, which reached a record high of US$63 078 000 in 2013. The accumulative increase in the gross value of aquaculture production from 2004 until 2013 adds-up to a total of 103%.

Most of South Africa's marine aquaculture farms are located within the Western Cape, which dominates the market with a total market share of 67%. The Eastern Cape, Northern Cape, and KwaZulu-Natal, accounts for the remaining 37%, meaning that the Free State, Mpumalanga and Limpopo have no market share in marine aquaculture farming. The Western Cape has an even larger dominance within the production of marine aquaculture species in South Africa. The Western Cape Province has a local market share of 87%, while the Eastern Cape only manages a mere 13%, in terms of the Marine aquaculture production per province in 2013. The national growth profile reveals that there has been a constant increase in the market. The increase observed runs synonymously with that of the national gross value of the aquaculture production profile as they are interdependent.

Figure 19: Tilapia fish

7.1.2. Global Markets

7.1.2.1. Exports

On average, South Africa exported 100 million kilograms of fish and other aquatic invertebrates during the year of 2013. The amount of produce that was exported totalled into a financial contribution of R3.96 billion for South Africa. Australia was the major export destination for South African fish and aquatic invertebrates during the year of 2013. Italy was the second highest market share at 15%; followed by Spain, which had a 13% share. Other regions such Israel (8%), Japan (5%), China (5%), Portugal (4%), and the United States

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(4%) also had devisable shares; Greece and numerous other regions had shares of 2% or lower.

Table 17 - Provincial Share of Fish and Aquatic Invertebrates' Exports (%)

	Motheo District	Xhariep	Thabo Mofutsanyane	Total
2004 - 2011	0	0	0	0
2012	0	73	27	100
2013	68	32	0	100

During the nine years from 2004 to 2011, the Free State Province reflected no export records of fish and aquatic invertebrates; however, this changed in 2012 when the Province began to show some exports potential. In 2012, the Xhariep and Thabo Mofutsanyana district municipalities started exporting, and recorded R43 758 for Xhariep District Municipality, while Thabo Mofutsanyane District Municipality recorded R15 952 in export value. The Motheo District (which is now the Mangaung Metropolitan Municipality) also joined in, and in 2013 receiving a provincial record high of R150 093. The exact provincial shares for each municipality over these two years is illustrated in Table 17.

7.1.2.2. Imports

The fish and aquatic invertebrate products that were imported the most during the past decade were frozen fish, which accounted for approximately 20 000 kilograms during 2013. Molluscs and crustaceans follow at second and third place with exports ranging between approximately 5 000 and 10 000. Live Fish, Fresh or Chilled Fish, Fish Fillets and Other Fish Meat, Dried/ Salted Fish, Fish in Brine, or Smoked Fish all accumulated below 5 000 kilograms each. On average, the quantity of frozen fish that was imported during the period 2004 to 2013, totalled 19.5 million kilograms. Molluscs claimed a 46% share of that with (9 million kilograms), while crustaceans claimed 39% of it with imports of 7.6 million kilograms per annum. During 2004 to 2010, it was largely profitable to import fish and aquatic invertebrates as a result of the higher quantities that were imported at a consistently lower value. From 2011 to 2013 however, importing fish and aquatic invertebrate products were not as profitable. On average, approximately 42 million kilograms where imported per annum, with a total worth of R833 million over the past decade. The Falkland Island was the greatest source of South African imports during the year of 2013, with a 29% share. India was the second highest source of imports of fish and aquatic invertebrates at a market share of 29%. New Zealand (10%), Morocco (9%), and Norway (9%) took the third, fourth, and fifth place; while all the other countries had a market share that was lower than 5%.

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7.2. VALUE CHAIN ASSESSMENT AND AGRO PROCESSING OPPORTUNITIES (PRODUCTS)

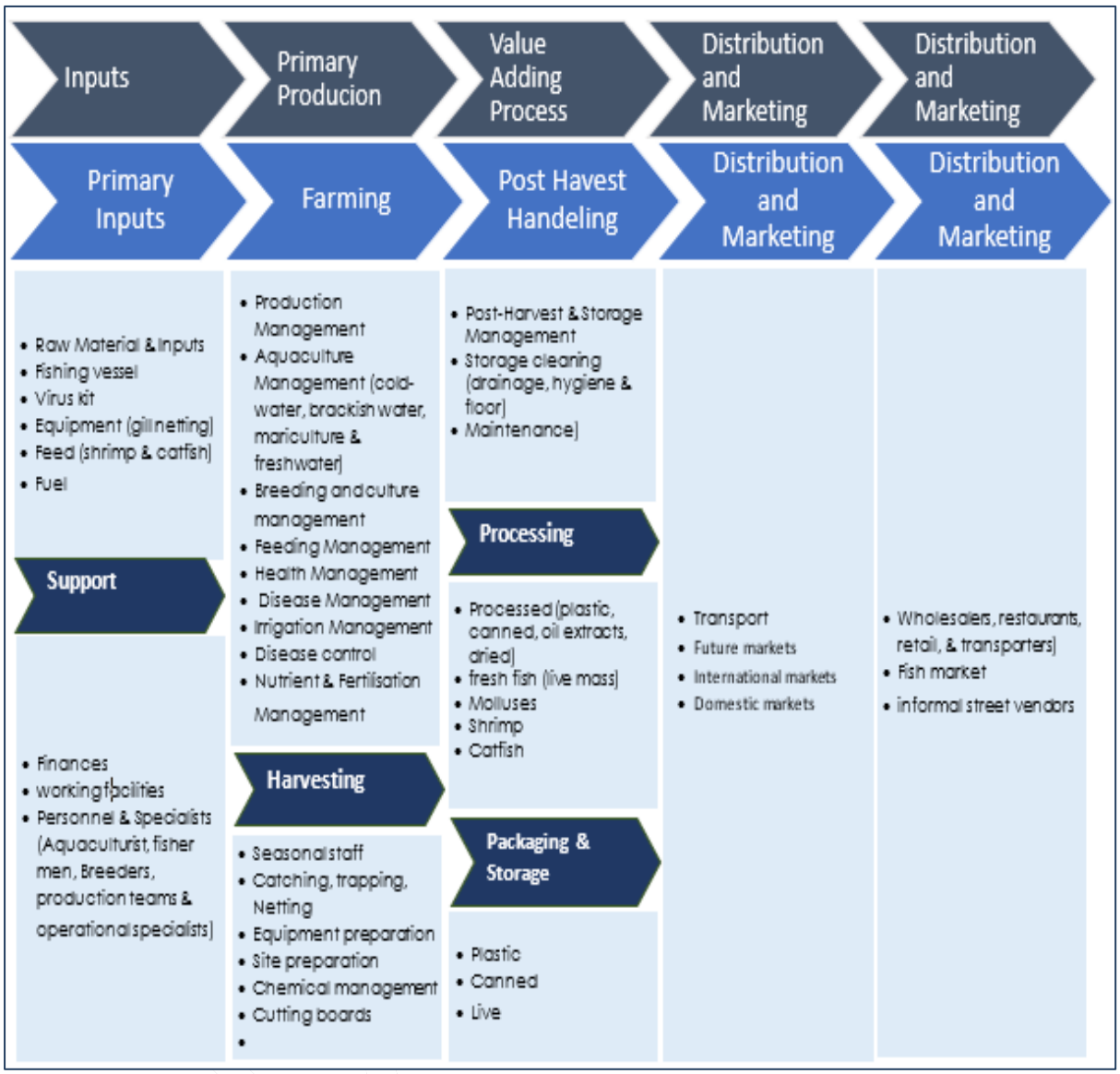

Figure 20: Aquaculture Value Chain

Backward and forward linkages

The aquaculture value-chain is characterised by the production of marine food like prawns and various fish such as catfish, tilapia, trout, etc. The backward linkages for aquaculture are those of fish-feed and vessels producers, which are the primary raw materials in the fish market. These and various other factors of production are included under the backward linkages found within the value chain. Furthermore, the backward linkages also include the farmers, breeders and aqua culturists who are responsible for production of the chosen fish species for the market. Additional backward linkages would be the construction needed for the fish production facilities and the processing facilities. The

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emerging farmers and beneficiaries are viewed as critical in the value chain at this stage, and the training and mentoring will be crucial at this stage as well, as the production and operational management of the fish production systems and techniques will impact on the downstream activities of the value chain. More backward linkages relate to the breeding of the appropriate fish for the farms and the suppliers of the relevant fish species for the aquaculture production facilities at the various Farmer Production Support Units.

It is envisaged that these facilities will not be located at the Agri-Hub due to the water requirements and that these fish production facilities that have already been planned will supply the processing facilities either at the FPSUs or at the agri-hub.

Through various techniques like marine and brackish water breeding, the fish will be produced. The produce is then collected and sold to the fish market, the processor, and private consumers. The processing, packaging and branding of the produced fish are mainly concerned with transforming the fish into market and convenient products. The processors are then responsible for cleaning, preserving, canning, and cutting of fish, then labelling and grading. The distributors are the agents who are mainly responsible for transport and other logistic activities between the processor and the client. Retail is responsible for the selling and marketing of fish and they are responsible for placing the product on the shelf for consumers.

Most of the marketing opportunities for aquaculture within the Xhariep DM Agri-Park context exist within the market segmentation of retailers due to the stable demand that already exists within the domestic markets. Furthermore, the hospitality sector is another segment of the market that can be further pursued because of its low barriers of entry and positive profits that could potentially be made. In addition to these two market streams, the packaging and processing of fresh water fish activities is also strongly proposed due to the potential linkages to the domestic as well as to potentially global markets. As previously discussed, global production of aquaculture has surpassed that of beef production globally and it is foreseen that both the domestic and global markets will continue to grow.

According to Hecht, Uys, & Britz (1988), marketing is an important and final part of aquaculture. The processing and marketing of fish will be one of the main aims of the processing value chain. Before processing can begin, the current market segmentation areas that have the best opportunities need to be investigated in terms of the best products that should be produced and processed. In an open economy, which allows for imports and exports, there are many fish products available to consumers. The products are available fresh, refrigerated, frozen, or preserved. Products can also include breading, flavouring, or dressings.

Fish products available within the world markets include:

- Minced fish

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- Pet food
- Whole fish (gutted, headed with or without the skin)
- Fillets (skinless and boneless)
- Smoked Fillets
- Nuggets, strips or chunks
- Whole dressed fish
- Steaks
- Pickled fish

It is further proposed that aquaculture production and processing opportunities and activities are pursued in order to capitalise on the different market segmentation opportunities that are best. These are simple fish processing, packaging and branding of locally produced fish, the smoking of fish, the salting of fish for preservation, and the drying of fish. The simple processing of locally produced fish is proposed at first as the primary focus in order to establish the facilities within the XDM Agri-Park area. The second phase would be to engage in the smoking, salting and drying of the produced fish. It is also proposed that large investments in commercial processing facilities are considered with care due to the limitations in the natural resources available within the region.

7.3. MAIN SUPPLIERS AND COMPETITORS

In terms of fish, competitors include the different species of fish that are either caught while fishing or farmed. The canned pilchard market is among the most notable competitors. Within the pilchard market, there are five main competitors namely *Saldanha, Lucky Star, Glenryck, Seapride* and *House Brand/ White Labels*. The pilchard market provides a variety of products such as pickled and curried pilchards, minced pilchards, and pilchards in chilli and tomato flavoured sauces, as well as whole pilchards to name a few.

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The price of pilchards contributes to its competitiveness. The price of a kilogram of Glenryck's pilchards in tomato flavour is R27.50; which is cheaper than for instance the price of Karoo Catch, which is catfish; these were priced at R29.95 per kilogram. Even cheaper is the price of a kilogram of Lucky Star minced pilchards, priced at R20.73.

Other canned fish markets that are seen as viable competitors to any inland produced fish are the mackerel and sardine markets. The mackerel and sardine markets provide products similar to that of the pilchard's market, namely canned fish in chilli and tomato sauce, as well as canned in oil. The prices of the mackerel and sardine products are higher than that of the catfish; however, taste and quality could make them competitors.

Rainbow and brown trout are farmed the most in South Africa, accounting for 85% of the freshwater food fish market. Catfish accounts for 9%, followed by tilapia accounting for 6%. Trout from Denmark is currently being farmed in Lesotho and exported to South Africa (15% of exports) and Japan (80% of exports). Lesotho produces twice as much trout than South Africa, and the price of the imported trout depends on the size and quality. The current global market price for trout is valued at $5.00 (R62.05) per kilogram (MacLeod, 2014). There are many trout products that are available in South Africa currently, including smoked trout, fillets, and live fish (Stander & Brink, 2009).

Imported tilapia is another species of fish that must be taken as a competitor for any fish production. In 2013, the local demand for tilapia was 1 491 tons, of which 1 304 tons were imported. Major retailers such as Woolworths and Pick 'n Pay are willing to take on tilapia as a product. Tilapia is described to be a close to, as well as a cheaper an alternative to baby hake. Imported tilapia from China costs R16.50 per kilogram, making it cheaper than catfish and even pilchards; however, the quality and taste is not suitable to be considered as a substitute for hake.

In terms of catfish producers, there are a number of catfish farms within South Africa. South Africa had seven known catfish farms in 2012. The South African catfish farms operate in the North West Province, Mpumalanga, Gauteng and the Northern Cape. In the past there have been several attempts to establish medium-sized catfish farms within KwaZulu-Natal; however, the farms are no longer in operation.

In the Free State, a fish breeding facility was built and it is located near the Gariep Dam. The facility was intended to be the backbone of aquaculture in the Free State, as it was intended to supply fingerlings to fish farmers in the Province (Radebe, 2013). However, the facility remains dormant for undetermined reasons. In 2015, the Free State premier Ace Magashule stated that the Free State has established 6 fish farms since the development of the fish breeding facility. The fish farms are located in Zastron, Fauresmith, Koffiefontein, Springfontein, Pertusburg, and Bethulie (South African Government, 2015).

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7.4. COMMODITY SPECIFIC STAKEHOLDERS

The following commodity specific stakeholders have been identified:

Table 18: XDM Aquaculture Commodity Specific Stakeholders

Stakeholder	Core Activities
The Aquaculture Association of Southern Africa (AASA)	Aquaculture Organisation that will assist in the development of quality products throughout the value chain
Irvin & Johnson Holding Company (Pty) Ltd (I&J)	Private company that can assist in the marketing buying and selling of products as well as forming PPP with local communities.
Aquaculture Value Chain Round Table (AVCRT)	Stakeholder group that can assist in the promotion of aquaculture practices and research within the Xhariep District Municipality.
The Aquaculture Institute of South Africa (AISA)	Organisational and institutional support and services for local emerging farmers and processing businesses within the XDM value chain.
The Abalone Farmers Association of Southern Africa (AFASA)	Association that can assist in the further development of the commodity specific value chain within the XDM Agri-Park
Aquaculture Institute of South Africa	Institute that can assist in the value chain development and identification of key areas for intervention.
Tilapia Growers Association	Commodity specific association that can provide assistance for emerging farmers production and knowledge base
Tilapia Association of South Africa (TILASA)	Commodity specific association that can provide assistance for emerging farmers production and knowledge base
South African Veterinary Association (SAVA)	Veterinary Association that will help with the improvement of aquaculture quality on farms and at processing facilities. Institutional and knowledge support in order to breed and produce better stock on the emerging farmer's aquaculture farms.
Catfish South Africa	Association that can assist in the further development of the commodity specific value chain within the XDM Agri-Park

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SA Tilapia Farmers Association	Association that can assist in the further development of the commodity specific value chain within the XDM Agri-Park
Fish Plants in Free State Province ➢ **Gariep Fish Breeding Station** ➢ **Florida Bass** ➢ **Fish Hatchery** ➢ **Nampo School Educational and Hatchery Plant**	Current projects already underway, would act as key development points for both the FPSUs as well as the Agri-Hub within the XDM Agri-Park establishment process. Key lessons learned and best practices can be shared with other initiatives and new entrepreneurs.
Amanzi Biosecure Veterinary service to aquaculture industry	Commodity Organisation that will provide institutional and knowledge support. Will assist with key areas along the value chain that will need development and interventions for the export and domestic markets.
OVK (Bethulie) **OVK (Edenburg)** **OVK (Fauresmith)** **OVK (Koffiefontein)** **OVK (Reddersburg)** **OVK (Rouxville)** **OVK (Smithfield)** **OVK (Trompsburg)** **OVK (Zastron)** **Boesmanskop OVK**	Regional offices that will assist in providing both emerging farmers in each of the FPSUs with input supplies and the necessary equipment, etc. to successfully operate their farms. The locality of these regional offices/retail facilities increases the accessibility of emerging farmers with the supporting services. It also provides the opportunity for PPP to be formed and retail and marketing support for the produce of the emerging farmers as well as synergies between the commercial and emerging farmers.
Senwes (Petrusburg)	Provision of input supplies and development support within the Petrusburg and surrounding area and as such the regional office can provide local agricultural support. Together with the regional OVK offices all of the FPSU's and emerging farmers will be able to be serviced with much needed agricultural support.

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South African Koi Traders Association (SAKTA)	Commodity Organisation that will provide institutional and knowledge support. Will assist with key areas along the value chain that will need development and interventions for the export and domestic markets.
Ornamental Fish Producers	Commodity Organisation that will provide institutional and knowledge support. Will assist with key areas along the value chain that will need development and interventions for the export and domestic markets.
Consultants and Training Service Providers ➢ **Catfish Supreme** ➢ **AquaEco** ➢ **Manz Umthombo Conultants**	Provision of professional services that will develop best practices for emerging farmers as well as along the value chain. Areas of improvement and management techniques will be critical in order to establish this relatively new endeavour. Guidelines and handbooks to best utilise resources to emerging farmers, producers as well as processors can also be developed to improve and strengthen the aquaculture value chain within the XDM Agri-Park.
South African Koi Keepers Society (SAKKS)	Commodity Organisation that will provide institutional and knowledge support. Will assist with key areas along the value chain that will need development and interventions for the export and domestic markets.

7.5. TECHNOLOGY

The main kinds of technologies that have been developed within the aquaculture industry have been genome-based technologies which are very useful for aquaculture research as well as for genetic improvements of the aquaculture species. According to Burnell, G and Allan G (2002) some of these include

- DNA marker technologies
- DNA sequencing technologies
- Gene discovery technologies
- Genome mapping technologies
- Genome expression analysis technologies

Further advances have also been made in what is referred to as capture-based aquaculture; in which young fish such as tuna that is captured from the wild, is used within the growing/fattening processes.

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7.6. SOCIO-ECONOMIC BENEFITS

An Agri-Park can, and most often does, contain all sectors of production (namely primary, secondary, and tertiary sectors). There are many socio-economic benefits, both direct and indirect, that can be derived from aquaculture processing within the Agri-Park. To name a few:

Table 19; Aquaculture Socio-Economic Benefits

Socio-Economic Benefit	Description
Job Creation	This is a big socio-economic benefit that is acquired from aquaculture processing. Direct jobs will be created in terms of labourers working within the processing value chain. The labourers will deal with cleaning, processing, and packaging the products. However, the number of indirect jobs that will be created is far vaster than that of the direct job creation; to name a few: construction workers will be required to plan and build the required infrastructure, along with the fish farms and transportation routes within the Agri-Park. The farmers will create jobs by hiring their own labourers; and transportation will be another source of job creation.
Developing skills	The labour market within the Xhariep district area in the Free State has significantly more unskilled workers that can be utilised than skilled workers. In 2011, statistics show that 71% of the population in Springfontein were unskilled; in Jacobsdal 76% of the population were unskilled, 71% of Koffiefontein's population were unskilled, and lastly 76% of Petrusburg's population were unskilled The issue of unskilled labour within the above-mentioned area of the Free State can be addressed by the processing value chain of aquaculture, as training and skills development are required for the workers to be efficient and proficient with processing.
Women Participation	According to Statistics South Africa (2015), South African women are more impoverished than South African men; with a poverty headcount of 58.6% among women and 54.9% among men. Thus, women participation is important within the value chain as it will lower the rate of impoverished woman.
Household Income Increase	It is foreseen that with the increase in the number of jobs created, tied with the skills development, there will be an increase in the household income for the local community members. This will result in more disposable income, which will in turn increase household expenditure and stimulate the local economies.

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Food Security	Food security is dependent on three factors namely: food availability, food access, and food use. The fish products will increase the supply of food available in the Free State. It will also be cheaper (thus, increasing access to food), and more nutritional (as a source of protein).

7.7. CONTRIBUTION TO FOOD SECURITY

Aquatic foods contribute significantly to household consumption and nutrition and it is an important source of fatty acids and rich proteins to many Asian and African households. Accordingly, aquaculture has an important role in the fight against food insecurity and malnutrition. It is argued that about 30% of the global population is suffering from malnutrition and that not only more food is needed to address this, but also healthier foods. With the pressure placed on agricultural land due to the rapid global urbanisation the use of the ocean and similar aquaculture production techniques should be pursued. This is further emphasised when considering 70% of the earth's surface is covered by water; therefore, efficient use of water resources to produce aquatic foods presents a window of opportunities to improve and promotion of food safety.

Aquatic products like farmed or captured fish, edible seaweed are an important component of the modern food basket and contribution of fish towards food security and an improved nutritional diet. Demand and consumption of fish products increased dramatically in the past three decades, as evidenced by the strategy to develop aquaculture farming practises, which currently are recorded to contribute more than 40% of the consumed fish products.

- **Aquatic animals as a source of food.** Fish live and survive in water and its role as a source of meat consists of methods such as fishing and specialised fish farms. Fish contributes significantly to food security as a component of the aquatic animal global food contribution. Global aquatic food contribution has increased dramatically over the years since 1970 to the present. Globally, fish contribute about 150 million tons of global food stocks. The global food supply of Aquatic meat is expected to increase to about 70% by the year 2030. This indicates the relative importance and demand of the sector and the importance of the fishery products towards food security.
- **Aquatic animal as a source of protein and fats.** Water based food sources like fish and other aquatic foods are high in protein and amino acids, and they have higher digestibility rates than those meat sources that are based on land. Most aquatic animals produce lean meat that has health benefits due to the lower level of saturated fats that causes health problems such as obesity. They are also important healthy food sources that are necessary for infant development, and also to

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prevent cardiovascular diseases, cancer and mental illness. They are also vital components of important biochemical elements such as iodine, fluorine, and niacin.

- **Fish as a source of employment and livelihood sustainability.** Aquaculture farming creates employment opportunities for the communities located not only in coastal areas, but also inland where aquaculture practices have been developed such as at the Katse Dam (Lesotho); showing the extended dependence of the communities on the aquaculture industry as a resource not only as a food source, but also as a means of income generation.

7.8. REGULATORY REQUIREMENTS

The inland aquaculture/fish food industry is particularly new in South Africa; nevertheless, the industry has a market within South Africa specifically among the low income, blue-collar workers and poorer households. However, there are other available markets within South Africa that are only off the table because of statutory requirements. The markets that are currently non-accessible are the public sector kitchens, which are made up of large national catering companies (that serve hospitals, the military, training centres, etc.), and national and provincial feeding schemes or nutritional programmes.

Using evidence from previous endeavours within the inland aquaculture processing case studies, such as the Karoo Catch study, the following statutory requirements and regulations were discovered: Hake would for instance only be purchased by institutions such as prisons as per the National Policy on Food and Nutrition Security. The military and hospitals are bound by national procurement regulations. The process of the national procurement regulation entails the following:

- The supplier has to be a registered supplier on the national supplier's database, (a product catalogue will need to be developed for registration purposes).
- A supplier would not qualify as a supplier unless the phyto-sanitary and other health certifications where accessible from the premises.
- A tender for the business has to be acquired by the supplier.

Some markets require formal lab reports to communicate the nutritional value of aquaculture; for example, the Schools Food Nutritional Programme, underpinned by the Department of Education, stated that aquaculture such as catfish has a lower Omega 3 level than that of pilchards and thus asked for a full nutritional value comparison between the two products. Large catering companies may also require lab reports. The rationale behind the lab reports is to ensure consistency in the supply of the aquaculture with the original product that was agreed upon, which can be done by using the original lab report and comparing it to a newer lab report.

The target markets, particularly the public sector kitchens, will require proof from the facility supplying the aquaculture products with regard to the basic requirements set out

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by the Department of Health. Proof of Hazard Analysis Critical Control Point (HACCP)[8] credentials will also be required along with proof that the aquaculture processing facility appreciates the recourse and demands of the Consumer Protection Act (CPA).

A full National Regulator for Compulsory Specifications (NRCS) compliance document may be required by many markets but is not always a requirement. It would however, be beneficial during negotiations.

The processing facilities should be able to demonstrate that they will be able to supply products even when there is a sudden increase in orders along with being flexible in supply.

A fully BBBEE-compliant credential is needed by most markets. A BEE level 4 contributor certificate would mark the supplier as an entry level BEE supplier.

There are other regulations that need to be addressed if the product is going to be exported to other countries. The Department of Agriculture, Forestry and Fisheries[9] (2014) provides general advice to farmers, their extended staff, and the exporting community with regard to food import and export standards. The recommendations given for farmers and extended staff (the extended staff will refer to the workers that are processing the aquaculture) are that the individuals must associate themselves with the national standard of food safety and plant health.

The recommendations given for the exporting community is to comply with other countries' import standards "in order to prevent the spread of pests and diseases occurring in such countries, as well as preventing the introduction of hazardous substances in such countries. The transgression of the of other countries' import requirements might affect export programmes between South Africa and such countries, or may result in a fine" (DAFF, 2014). The DAFF (2014) provides legislations on Disease Control, the Animal Diseases Act 1984[10], the Meat Safety Act 2000[11], and the Fertilisers, Farm Feeds, Agricultural Remedies and Stock Remedies Act 1947[12] just to name a few.

In order for the catfish products to be accessible and approved for government markets, the following requirements need to be fulfilled:

[8] HACCP is an internationally recognised "structured operating method that helps organisations in the food and beverage industry identify their food safety risks, prevent food safety hazards, and address legal compliance" (Lloyd's Register LRQA, 2013).

[9] *Henceforth considered as DAFF.*

[10] *Act No. 35 of 1984.*

[11] *Act No. 40 of 2000.*

[12] *Act No. 36 of 1984.*

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- Physical requirements:
  - "All fish should be free of bones.
  - Fish should either have skin, be skinless or be battered.
  - Fish should always be kept frozen" (DAFF, 2012).
- Packaging requirements:
  - "Fish portions must be single wrapped portions, packed into layers.
  - The packaging must contain the product name, the name and address of the supplier, and the inspection mark" (DAFF, 2012).

Government markets require that the vehicle in which the aquaculture products will be transported in, be hygienic and the products should be covered in a suitable manner so that the products will be protected against contaminations such as dust (DAFF, 2012).

Once the above-mentioned statutory requirements are achieved, the products will have a wider market, which will include large national catering companies (that serve hospitals, the military, training centres, etc.), and national and provincial feeding schemes or nutritional programmes.

It is vital that the development application requirements for the Agri-Parks is explored and properly addressed as they are mandatory. In accordance with SPLUMA – which governs land use nationally - it is crucial that a development application to be submitted to the Local Municipality before any development can be considered. SDF alignment is of optimal importance while the IDP and Local Municipality Land Use Planning By-law should also guide implementation. Failure to comply with the specific planning and development policies and legislation may cause stunting delays to the process. As such, alignment with each of these documents is of optimal importance before any development of the Agri-Hubs or FPSUs commence. The following pertinent legislation is applicable to a development application:

- Spatial Planning and Land Use Management Act, 16 of 2013
- Mangaung Spatial Development Framework
- Mangaung Integrated Development Plan
- Subdivision of Agricultural Land (Act 70 of 70)
- Mangaung Metropolitan Municipality Land Use Planning By-laws

7.9. SUBSTITUTE PRODUCTS

Aquaculture substitute products or alternatives relate to that which can be replaced by other products that are used for the same purpose. As such, aquaculture is mainly a product that aims to provide a source of protein and a healthier alternative to red meats

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as it contains less fat and cholesterol. In this regard, there is number of products that can be used as alternatives for aquaculture-related products. These will once again vary depending on the availability, price, location and related considerations such as supply and production trends domestically and globally. The sources of protein that can substitute aquaculture are as follows:

- Chicken;
- Various other Poultry;
- Pork;
- Beef and Veal;
- Tofu;
- Dairy products such as milk, cheese and yogurt;
- Beans;
- Eggs;
- Nuts and seeds;

As mentioned above, there is a number of protein foods that can substitute aquaculture within the consumer market. However, with the growing need to address food security and the increasing global population, it is foreseen that the dependency upon aquaculture will only increase. This is supported by the fact that aquaculture production globally has surpassed that of other food sources such as the production of livestock globally. The availability of masses of oceanic and other aquatic water sources will only underline aquaculture's importance to the global food security issue.

7.10. NEW ENTRANTS: POTENTIAL ENTREPRENEURS

The following table indicates the beneficiaries from all aquaculture projects that are currently underway/planned within the Xhariep District Municipality. It is anticipated that as the value chain for Aquaculture is developed, more beneficiaries will be added to the current list.

Table 20: List of XDM Aquaculture Beneficiaries

INITIAL	SURNAME	Area	GENDER	YOUTH
L.J	Molale	Letsemeng (Petrusburg)	M	Y
K. S	Ngo	Letsemeng (Petrusburg)	F	Y
N. N	Maleke	Letsemeng (Petrusburg)	F	Y
M. P	Sekhova	Letsemeng (Petrusburg)	F	Y
L. M	Kgakatsi	Letsemeng (Petrusburg)	F	Y

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E. T	Leballo	Naledi (Zastron)	M	N
M. D	Mathibedi	Naledi (Zastron)	M	N
M. A	Ntlakane	Naledi (Zastron)	M	N
M. E	Fobane	Naledi (Zastron)	M	Y
X. V	Majenge	Naledi (Zastron)	F	Y
N. P	Shibane	Naledi (Zastron)	F	Y
F	Mathebeng	Naledi (Zastron)	M	N
J. Z	May	Letsemeng (Koffiefontein)	M	N
M. E	Rens	Letsemeng (Koffiefontein)	M	N
T. C	Leeuw	Letsemeng (Koffiefontein)	M	N
L. N	Leeuw	Letsemeng (Koffiefontein)	F	N
J. D	Rens	Letsemeng (Koffiefontein)	F	N
L. M	May	Letsemeng (Koffiefontein)	F	N
A. M	Brown	Kopanong (Springfontein)	M	
H. N. N	Brown	Kopanong (Springfontein)	M	
C. P	Brown	Kopanong (Springfontein)	F	
B. J	Mafata	Kopanong (Bethulie)	M	N
T	Phama	Kopanong (Bethulie)	F	N
M. J	Molo	Kopanong (Bethulie)	M	N
N. J	Fekisi	Kopanong (Bethulie)	M	Y
N. A	Yoko	Kopanong (Bethulie)	F	N
A. B	Mafilika	Kopanong (Bethulie)	F	Y

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N. V	Solani	Kopanong (Bethulie)	F	Y
T. M	Mjiba	Kopanong (Bethulie)	F	N
J. L	Modise	Kopanong (Fauresmith)	M	M
C. P	Salakufa	Kopanong (Fauresmith)	M	M
D. J	Makayi	Kopanong (Fauresmith)	M	M
D. P	Zuma	Kopanong (Fauresmith)	F	F
B. P	Putty	Kopanong (Fauresmith)	F	F
B. B	Williams	Kopanong (Fauresmith)	F	F

(Source; FSDARD, 2015)

7.11. SWOT ANALYSIS

This subsection focusses on the implications of the commodity for the establishment of an Agri-Park within the XDM within a SWOT format. This is presented as follows:

Table 21: Aquaculture SWOT Analysis

Strengths	Weaknesses
• Growing the domestic and international market. • Larger health consciousness under consumers for dietary considerations. • Strong production sector worldwide and growing continuously. • Inland aquaculture production, well-established globally. • South Africa has already started with initiatives to produce inland aquaculture. • Wide range of species available that could be produced. • Gariep Dam, as well as Van Der Kloof Dam, has ample water for the production of inland fish within the Xhariep DM.	• Need large quantities of water in order to produce substantial supply. • Different species have different qualities and specific production needs. • Some aquaculture species are not popular with consumers. • Low skills and technical knowledge of operations and procedures for the production of inland aquaculture. • The whole value chain will need to be developed in order for the endeavour to succeed. • Distance from markets may increase fish prices and make products uncompetitive.

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Opportunities	Threats
• Growing market that will help with profitability. • Domestic market still untested and can be exploited. • Aquaculture can be grown inland with the right infrastructure and quantities of water available. • Price parity between fishery products and other meats. • Potential for export of fish that would increase profitability of enterprises. • Alternative food source than that of beef, poultry, etc.; making it an attributor to food security. • Tool for poverty alleviation and women empowerment. • Growing global fish demand and diversification in food production by taking into consideration the variety of fish species that could lead to an increase in industry value chain development.	• Untested inland production of aquaculture still needs to reach maturity. • High capital investments needed with high risks to produce inland fish plants. • Larger focus on water scarcity and water preservation could limit large scale production due to preference to drinking water. • Quality of the fish seed and lack of organised brood stock production activities, meaning that most fish seeds need to be imported. • Lack of capital formation and movement in government may coincide with failed fish production due to fast action needed within the fish producing industry.

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8. COMMODITY ANALYSIS: LIVESTOCK (BEEF AND MUTTON)

In South Africa, one of the most important farming practices is livestock production. Livestock production contributes significantly to "food security and clothing, and provides many social and economic attributes to the country" (Meissner, Scholtz & Palmer, 2013). Approximately 70% of the 80% of land surface used for agriculture is suitable for livestock production, particularly goats, cattle, and sheep. South Africa is, according to international standards, an arid country. In the drier western and north-western parts of the country, extensive small-stock (sheep, goats, and rabbits) production is the dominant livestock industry, as the grazing capacity is below 12 hectares per large stock unit. In the eastern and northern direction however, the number of extensive beef cattle has increased as the average rainfall increased. In 2012, the gross domestic income of agricultural production in South Africa was valued at R67.7 billion of the total gross domestic primary product (R140.4 billion). Small ruminants (sheep, goats, etc.) have a higher resilience to temperature changes than other livestock. Small ruminants can also adapt to different climate conditions in terms of rainfall. Thus, increasing temperatures (that could be a result of climate change) would result in the increasing number of goats and sheep (Cloete *et al.,* 2014; Bureau of Food and Agricultural Policy, 2015).

Figure 21: Bonsmara Cattle

The *Bonsmara* breed is the most prominent beef cattle breed in South Africa. The breed was developed in South Africa in 1963, and the strengths of the cattle breed, among others, include: tender meat, high fertility rates, and heat and tick tolerance. Beef is farmed throughout South Africa; however, Mpumalanga (22%) accounts for the greatest share of beef production, followed by the Free State (20%), Gauteng (14%), KwaZulu-Natal (11%), and the North West Province (8%) (Bonsmara, 2015; DAFF, 2014).

There are many breeds of sheep that are suitable for mutton production, however, the South African-developed breed called the *Dorper* sheep is most successful in South Africa. Bred for over 60 years, the *Dorper* sheep is considered to be a high quality meat breed. The *Dorper* sheep can adapt to changing climates and thus, can be farmed in arid, cold, and wet conditions. The sheep are also non-selective in their grazing habits (the sheep will graze on any type of roughage or pasture). The majority of South

Figure 22: Dorper Sheep

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Africa's sheep (85%) are located in the Eastern Cape (29%), Free State (20%), the Western Cape (11%), and the Northern Cape (25%); the other 15% is distributed between Mpumalanga, the North West Province, KwaZulu-Natal, Limpopo, and Gauteng (DAFF, 2014; SA Dorper, 2015).

Approximately 24.3 million sheep, 8 000 commercial sheep farmers, and 5 800 communal farmers are estimated to be in South Africa. Sixty percent of South Africa's cattle is owned by commercial farmers, while the other 40% of cattle is owned by emerging and communal farmers. Emerging and small-scale livestock farmers face 5 marketing constrains namely: lack of market information, unwillingness and inability to adopt livestock identification practices, lack of infrastructure, poor conditions of the livestock and, poor production and marketing management.

The South African red meat industry (like various international meat producers) face several other problems apart from the aforementioned issues. The problems include among others, the inability to adapt fast enough to consumer preferences, inappropriate policies and regulations, inconsistencies in quality, import threats, and sub-optimal consumption growth. Thus, the aforementioned problems and market constrains reduce the ability of emerging farmers to establish themselves as meat suppliers in the market (Spies, 2011).

8.1. MARKET ASSESSMENT

8.1.1. Local Markets

The consumption of livestock foods in South Africa, on average, is as follows: 120 to 130 grams per capita per day of milk and dairy products, 15 to 20 grams per capita per day of eggs, and 50 to 90 grams per capita per day of meat (Meissner, Scholtz & Palmer, 2013). In order to satisfy consumers' preferences, new products were developed, "especially in terms of the non-economic factors such as palatability, tenderness, variety, traceability, and ethical factors such as the humane treatment of animals" (Spies, 2011).

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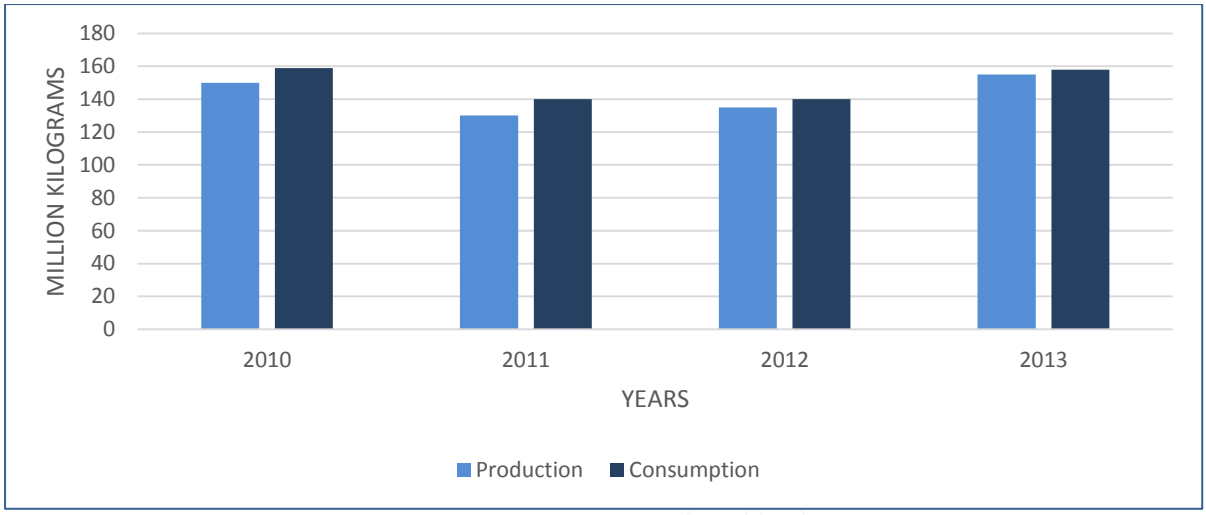

Figure 23: Consumption and Production of Mutton

(Adapted from DAFF, 2014).

Figure 23 above displays the production and consumption of mutton over the years. Since the amount of mutton consumed exceeds the amount of mutton produced, it can be stated that South Africa imports more mutton than it produces. Mutton consumption and production decreased in 2011 due to drought and diseases (such as foot-and-mouth disease), which reduced the mutton and lamb supply. However, from 2012, consumption and production increased. In 2013, consumption was almost as high as it was in 2010 before the drought. Production increased by 3, 33% from 2010 to 2013. Consumption increased by approximately 13% from 2011 to 2013.

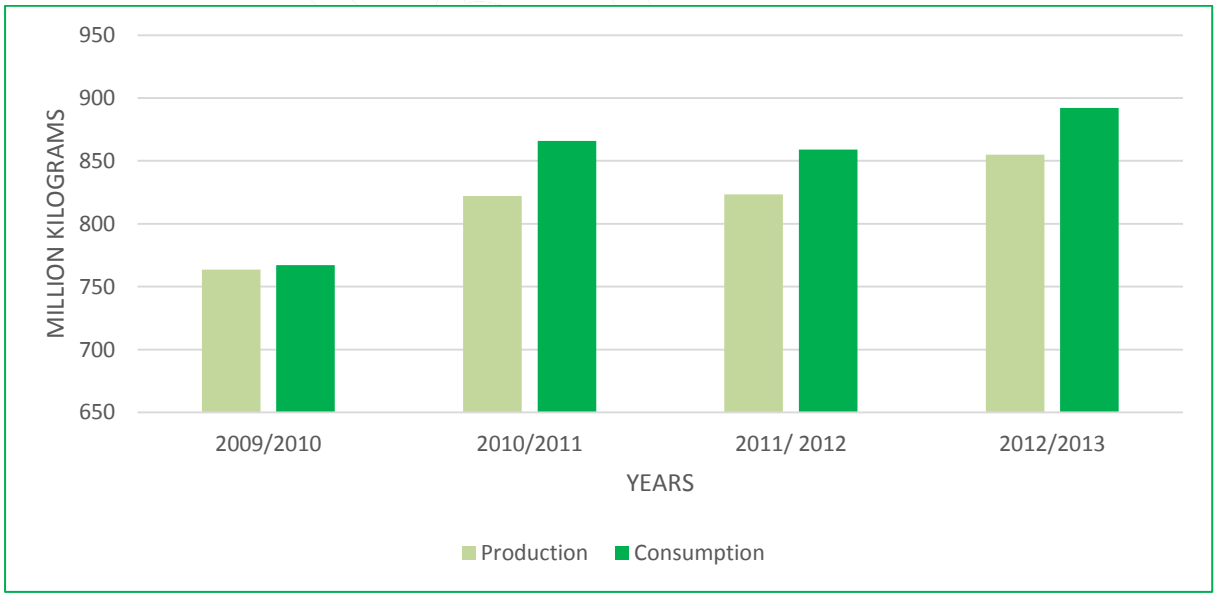

Figure 24: Production and Consumption of Beef

(Adapted from DAFF, 2014).

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Figure 24 displays the production and consumption of beef over the years. Since the amount of beef consumed within South Africa exceeds the amount of beef produced within South Africa, it indicates that South Africa imports more beef than it produces. The consumption of beef increased by 16.3% from 2009/10 to 2012/2013, while production increased by approximately 12% during the same period. Production and consumption decreased during 2011/12 due to drought and diseases.

According to Statistics South Africa (2014), the population of South Africa is 54 million people. Of the total population, the Indian population constitutes some 2.5%, and Durban (an eastern coastal city) is considered to be the largest Indian city outside of India. For Indian consumers, "lamb and mutton represent the major red meat categories as the consumption of beef is forbidden under religious laws" (Foodstuff South Africa, 2015). The Muslim population is forbidden by religious laws to consume pork; thus, the Muslim population also consumes large portions of mutton and lamb, as well as beef, provided the meat products are halaal. Thus, ensuring a market for beef, lamb, and mutton within South Africa.

Despite this, there is a shortage in production (compared to consumption) in South Africa; beef, lamb, and mutton are exported. However, far more red meat is imported into South Africa to supplement the shortage in supply.

8.1.2. Global Markets

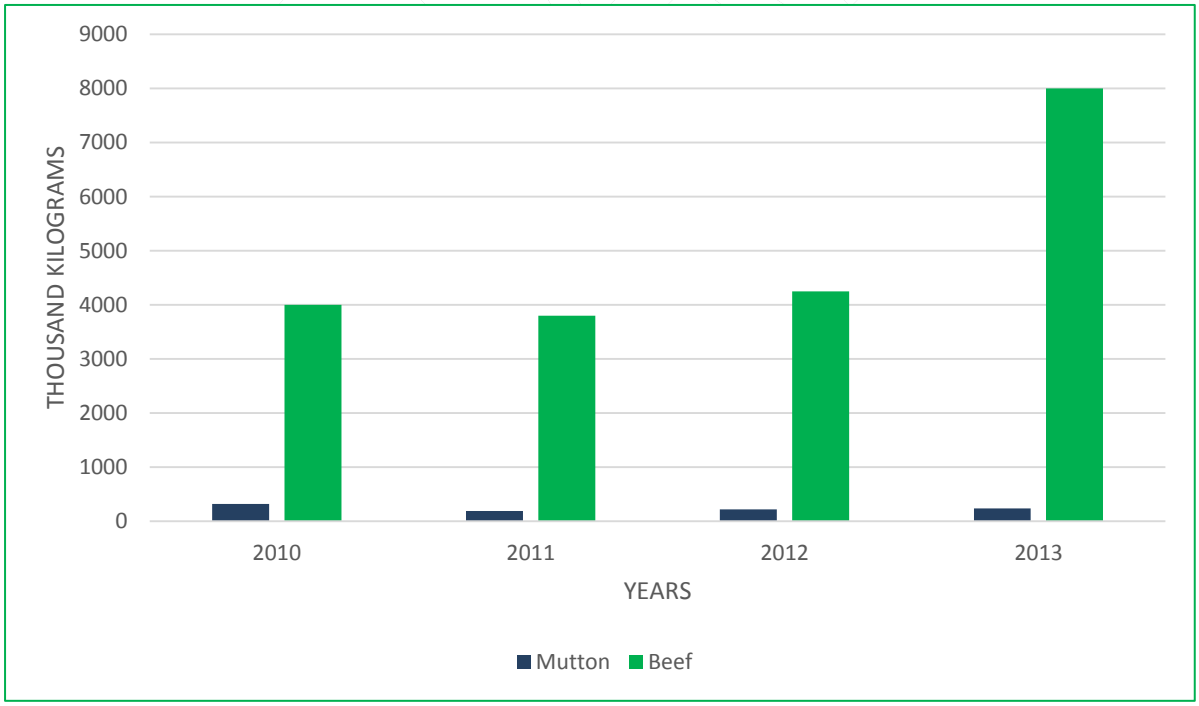

Figure 25: Exports of Mutton and Beef

(Adapted from DAFF, 2014; DAFF, 2014).

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Figure 25 depicts the quantity of beef and mutton that South Africa exports per year. Much more beef is exported than mutton. South Africa's beef exports increased by 88% from 2012 to 2013, while mutton exports increased by approximately 9.1% from 2012 to 2013.

Most of South Africa's mutton is exported to Mozambique (36% of exports), the Democratic Republic of Congo (21% of exports), followed by Angola, Ghana, and Zambia (each command 8% of exports) (DAFF, 2014). Most of South Africa's beef exports are exported to Mozambique (46% of exports), followed by Angola and Kuwait (each command 12% of exports) (DAFF, 2014).

The global Muslim population is approximately 1.6 billion people, and thus, the halaal industry is very large. In Arabic, halaal means "what is allowed". The way the meat products are produced, and delivered should be consistent with Islamic law in order for them to considered halaal. In Arab countries that have a large Muslim population such as for example, the Persian Gulf, the import of halaal foods have increased, which stimulated the growth of the halaal industry. The 6 states of the Gulf Co-operation Council (GCC) imports 60% of the meat products needed, and 90% of the grains needed annually, in order to meet the increasing domestic demand for halaal products. Malaysia is recognised as the world leader in the halaal food industry. Malaysia's halaal industry was established over 30 years ago. However, currently Brazil, New Zealand, and Australia have secured the biggest share of the world's halaal exports to the Middle Eastern countries (Dube *et al.,* 2015).

The price and quality of the mutton meat produced, dictates the gross value of mutton production. The average gross value of mutton production over the past 10 years amounts to approximately R4.3 billion per year. The gross value of beef production depends on the prices (that producers receive from abattoirs) and the number of cattle slaughtered. The accumulated average gross value of beef production over the past 10 years amounts to R11.3 billion (DAFF, 2014; DAFF, 2014).

8.1.3. Demand and Needs Analysis (Market Segmentation)

The consumption of meat is influenced largely by income. On the African continent, on average, South Africa has the 3rd highest disposable household income at approximately R16 710. However, despite the increase in average disposal income, the income gap between the high-income and low-income population remains significantly large. Despite the introduction of the social transfers (16 million poor South African's receive social transfers), income inequality has hardly changed in South Africa (Keeton, 2014).

The wide gap "between those who are employed and those who are unemployed" (Keeton, 2014), also contributes to income inequality. In general, an increase in the Gross Domestic Product (GDP) of South Africa will lead to an increase in income and subsequently, meat consumption (Times, 2015; Food and Agriculture Organisation of the United Nation, 2010). The medium to high-income population within South Africa and abroad, should be the main target markets for both the cattle and mutton production and

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processing within the Xhariep District Municipality. Lamb, mutton, and beef are much costlier than that of poultry products. Thus, despite meat consumption increasing in South Africa over the past decade, the consumption of poultry (preferred by the low-income population) increased more than the consumption of lamb, mutton, and beef. Medium- to high-income consumers in foreign countries should also be part of the target market. The weak South African exchange rate, can contribute to the attractiveness of lamb, mutton and beef products.

8.2. VALUE CHAIN ASSESSMENT AND AGRO PROCESSING OPPORTUNITIES (PRODUCTS)

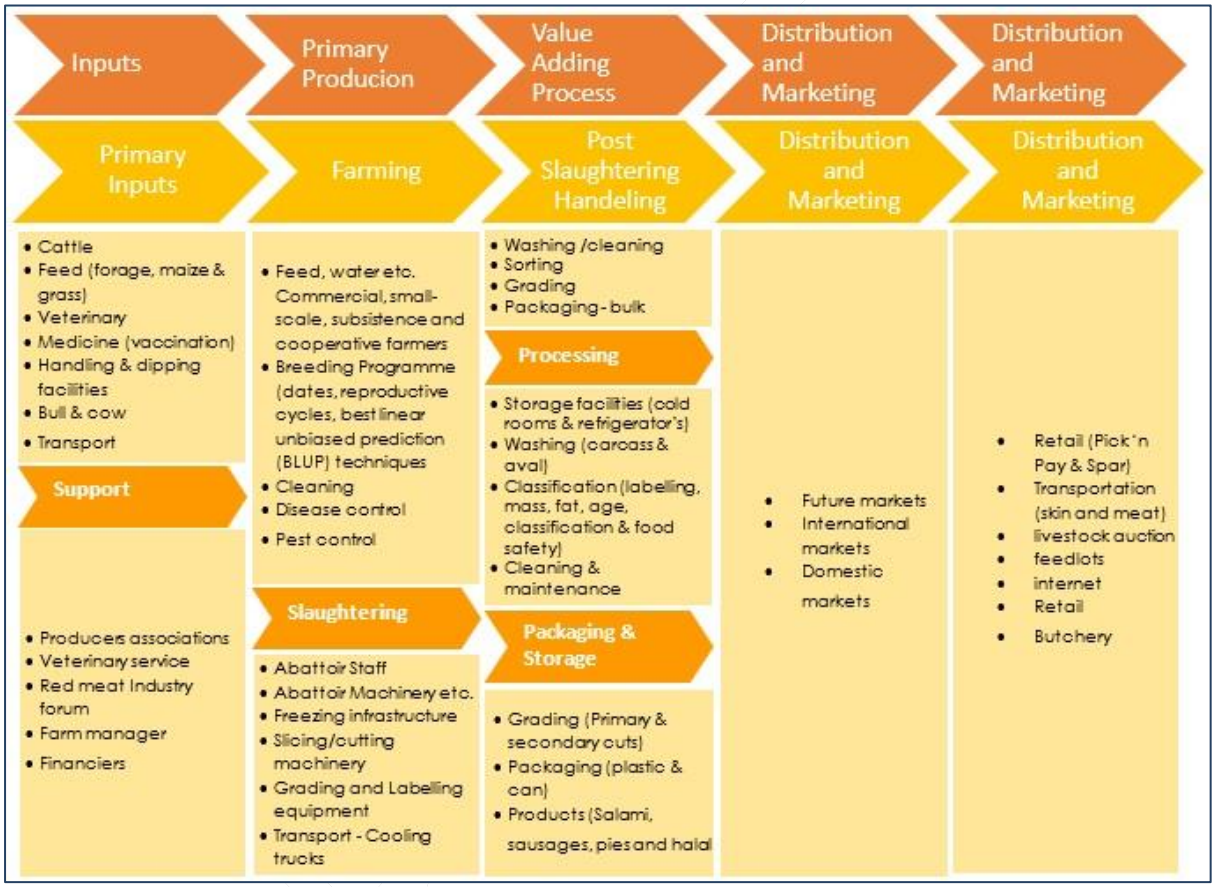

Figure 26: Beef Value Chain

Beef backward and forward linkages

The Producers and breeders' band are the utmost important components of the red meat value chain and they are characterised by activities ranging from the production of bulls, the breeding of artificially inseminated cattle, they highlight the leading steps in the red meat value chain, and they are supported by various institutions and professionals to develop inputs and adhere to standards of industry like the Red Meat Industry Forum and the Agricultural Research Council. The Producer, Breeder and Farmer band is concerned with the managing and making decisions on how inputs are to be used and they are

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involved in operational activities of the cattle production, they manage the farm resources, and manage the staff that is responsible for tactical activities of the farm. Further backward linkages are that of water and feeding management, disease control, as these form part of the production cycle.

The Processors' band is concerned with the transformation of the produced commodity into value-added consumer products. The band is inclusive of meat and food scientists who are involved in advisory services about meat quality and standards; they advise on meat classification and provide training to farmers, butchers and rural communities about meat grades, cuts. The highlight of the processors band is however, the transition of the meat into consumer products and transferring them to proceeding stages of product development, marketing labels, or consumers. The Marketing and distribution band represents a group of service and goods traders, which consist of many retail, wholesale, and fresh produce markets at, and provide producer-consumer interface (market) for the sale of meat and value added products like ribs, canned meat, chops, and steak. The best opportunities for the cattle value chain development is to focus on the leather tanning industry, the dry-, semi-dry-, cooked-, and smoked- sausages markets, further packaging and branding of slaughtered meat and the facilitating of the slaughtering of meat process at abattoirs.

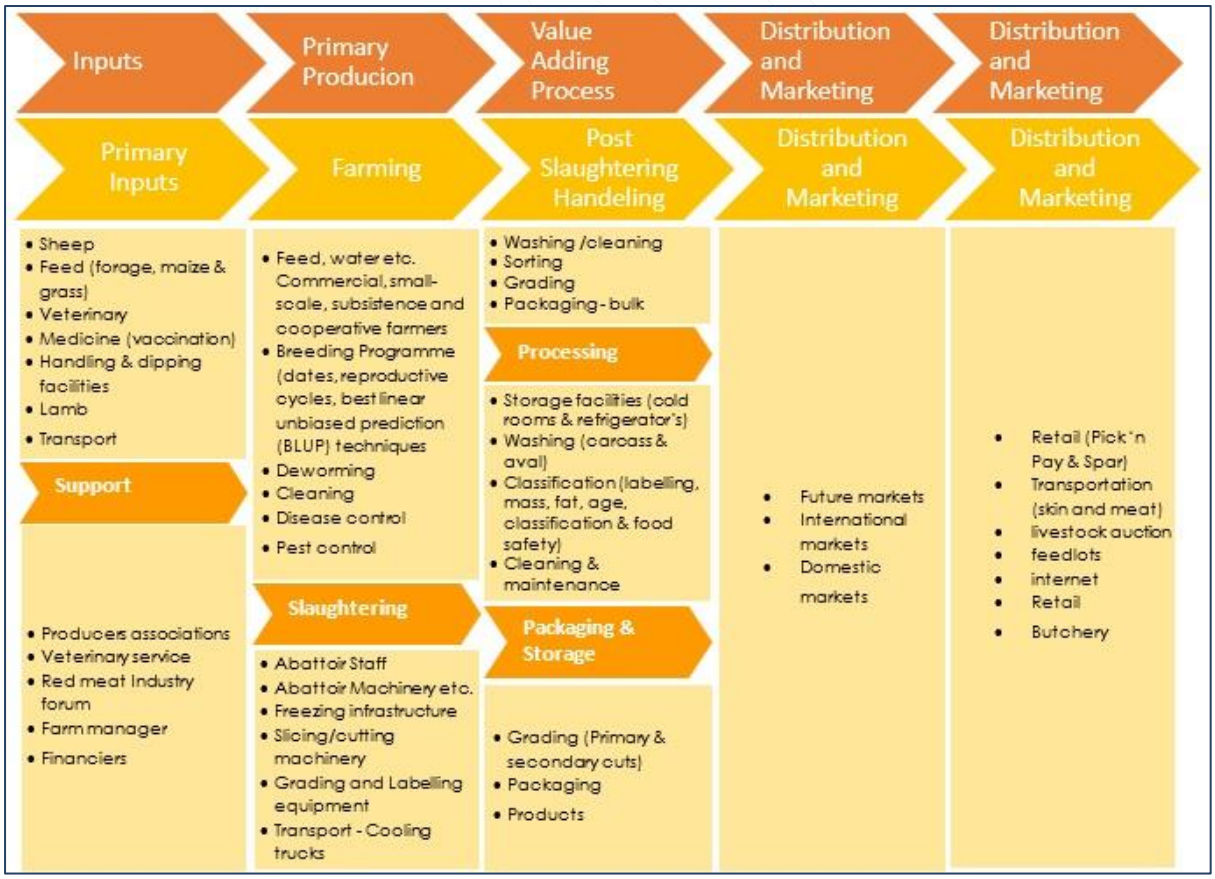

Figure 27: Mutton Value Chain

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Mutton backward and forward linkages

The Producers and breeders' band are the utmost important components of the meat value chain and they are characterised by activities ranging from the production of semen for sheep and breeding of sheep species, they highlight the leading steps in the sheep meat value chain, and they are supported by various institutional and professionals to develop inputs and adhere to standards of industry. The Producer, Breeder and Farmer band is concerned with the managing and making decisions on how inputs are to be used, they are involved in operational activities of the sheep, timing of production, and improving the health and profitability of the farm through day to day activities.

The Processors band is concerned with the transformation of the produced commodity into value-added consumer products. The band is inclusive of meat and food scientists who are involved in advisory services about meat quality and standards; they advise on meat classification and provide training to farmers, butchers and rural communities about meat grades, cuts. The highlight of the processors band is however, the transition of the meat into consumer products and transferring them to proceeding stages of product development, marketing labels, or consumers. The Marketing and distribution band, represents a group of service and goods traders, which consist of many retail, wholesale and fresh produce markets and provide producer-consumer interface (market) for sales of meat and value added products like sausages and pies.

The agro-processing opportunities and proposed targeted markets that have the best prospects for development are; further packaging, as well as the branding of this packaged meat, the drying of pastirma and mutton jerky, and offal marketing to local communities and to the lower household income markets.

The following table illustrates the typical beef and mutton products that can be produced for consumers and their subsequent prices.

Table 22: Beef, Lamb and Mutton Products & Prices

BEEF PRODUCTS:	LAMB AND MUTTON PRODUCTS:
✓ Rump Steaks (R102.51/kg), ✓ Fillet Steaks (R195.08/kg), ✓ Stewing Packs (R57.51/kg), ✓ T-Bones (R87.17/kg), ✓ Lean Mince (R62.34/kg), ✓ Rib Portions (R80.53/ kg), ✓ Sirloin (R72.54/ kg), ✓ Brisket (R67.98/kg), ✓ Shin (R49.39/ kg), ✓ Silverside (R63.95/ kg), ✓ Stroganoff (R83.95/ kg),	✓ Lamb Knuckles (R96.78/kg), ✓ Lamb Rib Chops (R115.49/kg), ✓ Lamb Shoulder/Braai Chops (R103.25/kg), ✓ Leg of Lamb (101.43/kg), ✓ Bulk Pack (mix of Lion Chops, Diced Lamb, Bone-in Roast and Cutlets, etc.) (R86.26/kg), ✓ Lamb Tenderloins (R159.99/kg), ✓ Lamb Cutlets (R131.40/kg), ✓ Stewing Lamb (R 102.11/ kg),

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✓ Beef Chuck (R63.90/ kg), and ✓ Boerewors (R56.28/kg).	✓ Lamb Mince (R104.39/ kg), ✓ Lamb Rack (R134.91/ kg), ✓ Lamb Saddle (R129.04/ kg), ✓ Lamb Steak (R117.37/ kg), ✓ Lamb Stroganoff (R135.53/kg), ✓ Mutton Knuckles (R89.99/ kg), ✓ Mutton Chops (R93.53/kg), ✓ Mutton Shoulder Chops (R89.99/ kg), ✓ Stewing Mutton (R89.99/ kg), ✓ Mutton Mince (R119.99/kg) and, ✓ Mutton Bulk Pack (mix of Chops, Diced Mutton, Bone-in Roast and Cutlets, etc.) (R79.98/ kg).

8.3. MAIN SUPPLIERS AND COMPETITORS

The red meat market in South Africa is well established. The livestock agricultural sector is the largest agricultural sector in South Africa. South Africa has 38 500 intensive units and commercial farms, along with an estimated 2 million communal/small-scale farmers that are involved with livestock. There are 13 601 beef cattle farms in South Africa, excluding dairy farms, and 24 607 sheep farms (Meissner *et al.*, 2013).

Sparta is a leading group of beef suppliers, and is the largest employer in the Marquard district in the Free State Province. Established in the late 1960s, the *Sparta* group comprises of: an abattoir, a cattle feedlot, and a meat processing plant. *Sparta* contributes significantly to local communities; with 1 200 people employed, the group contributes more than R3 million to the economy per month. In South Africa, *Sparta* has one of the largest feedlot operations, and has a capacity to feed over 100 000 cattle within the feedlot and farm. *Sparta* has a beef plant located in Welkom, which has the capacity to produce 400 tons of beef daily; and on average, slaughters more than 200 000 cattle a year. "Of the total daily production at the *Sparta* abattoir, the South African public consumes approximately" (Sparta, 2015):

- 10 500 fillet steaks per day,
- 38 000 sirloin steaks per day and,
- 30 000 rump steaks per day.

The *Sparta* beef plant has a Food Safety System Certification (FSSC) 22 000, which is a requirement for "integrated processes that work together to control and minimise food safety hazards" (Food Safety System Certification 22 000, 2015). The FSSC 22 000 credential is also recognised by the Global Food Safety Initiative, and thus, provides worldwide acceptance and recognition. *Sparta* beef products are certified as halaal products. *Sparta* has a corporate social responsibility programme that involves, among others, assistance to more than 7 crèches within the township of Moemaneng, assists in

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providing meals at various schools' feeding schemes, and in a joint venture with the South African government; *Sparta* helped build 300 RDP houses (Sparta, 2015).

South Africa is home to many more sheep farmers than beef farmers. Many sheep breeds have been bred to withstand the drier climates of South Africa, and thus, make sheep farming popular. *Cavalier* (previously known as *Just Lamb*) was established in 1998. However, only in 2002 did *Cavalier* obtain an abattoir, which is situated just outside of Pretoria on the farm "Oog van Boekenhoutskloof". The sheep and lamb slaughtered at the abattoir are procured from farmers all over South Africa. One Thousand-Five Hundred Heads of sheep and lamb are slaughtered per day. The lamb and mutton products are then distributed to private butcheries and local supermarkets, mainly in the Gauteng area. Cavalier handles approximately 200 tons of lamb and mutton meat per week through the deboning and wholesale section. Beef products are also produced at the Cavalier abattoir. In Upington, *Cavalier* has a holding yard, which can keep up to 2 000 heads of cattle and 7 500 heads of sheep at a given time (Cavalier Group of Companies, 2015).

Cavalier farms, situated in the Northern Cape Province about 200 kilometres north of Upington, comprise of approximately 20 000 hectares of farmland. A combination of free range sheep farming and game ranching are practised on the *Cavalier* farms. *Cavalier* has an ISO 22 000[13] Food Safety Assessment credential along with an export certification. *Cavalier* supplies mutton and lamb products to *Woolworths* and *Pick 'n Pay*. Cavalier is certified as a halaal supplier (Cavalier Group of Companies, 2015).

The *Blaauwberg group* was established in 1979, and has since become a leader in the red meat industry, providing high quality meat, and is one of the few "farm-to-fork" providers. The *Blaauwberg group* provides services to more than 200 businesses, ranging from the hospitality to government sectors. *Blaauwberg* also supplies meat to other abattoirs. The *Blaauwberg group* has a meat wholesale facility, meat specialities producers, abattoirs, cold storage, and feedlots (Blaauwberg group, 2015).

There are many halaal-approved abattoirs in South Africa. The Free State has 5 halaal approved abattoirs:

- Mohammed's Halaal Abattoir,
- Straw Lamb (Pty) Ltd,
- EAC Abattoir Harrismith,
- Free State Wholesale Meat Abattoir, and
- Fourie's Drift Abattoir (National Independent Halaal Trust, 2015).

South Africa imports a large amount of meat products from Brazil and Argentina. However, there are many other suppliers of meat products world-wide. Brazil has one of

[13] *The ISO 22 000 credential is similar to the FSSC 22 000 credential, however the FSSC 22 000 credential is based on the ISO 22 000 and the PAS 220 (a manufacturers prerequisite programs' requirements).*

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the largest flocks of sheep in the world, totalling at 17.4 million heads. Sheep farming in Brazil has grown exceptionally, at a rate of 3.86% per year between 2007 and 2010 (Bungenstab & Almeida, 2014).

8.4. COMMODITY SPECIFIC STAKEHOLDERS

Table 23: Livestock Specific Stakeholders

Stakeholder	Potential Assistance
Red Meat Industry Forum (RMIF)	Agricultural Services: Represents the Red Meat Industry of South Africa including pork, mutton and beef meat industry stakeholders.
Red Meat Producers Association (RPO)	Agricultural Bargaining and Consulting Services: Represents the Commercial Red Meat Producers of South Africa.
National Emergent Red Meat Producers' Organisation (NERPO)	Agricultural Consulting Services: Involved in commercialisation and promotion of red meat enterprises in South Africa with a primary objective of assisting emerging farmers and Historically Disadvantaged South Africans and promoting development of the red meat industry in the Republic of South Africa.
South African Meat Industry Company (SAMIC)	Agricultural Quality Assurance Consulting Services: Legal person appointed and acting on behalf of the DAFF with regards to Agricultural Products Standardisation and Grading (classification and marking) of red meat and red meat products that is ready to be sold on the South African of market.
International Meat Quality Assurance Services (IMQAS)	Assistance with the value chain development and organisation of best practices and guidelines for the production of quality produce and products that can be exported and branded as a recognisable product both domestically and abroad.
Sheep Breeder Associations: ➢ **Dormer Sheep Breeders Society of South Africa** ➢ **Ile de France Sheep Breeders Society of South Africa**	Commodity specific associations that can provide assistance for emerging farmers' production and knowledge base.

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➢ South Africa Mutton Merino Breeders Society ➢ Suffolk Sheep Breeders Society of South Africa ➢ Meatmaster SA Breeders Society ➢ Damarra Sheep Breeders Society	
Meat Abattoir Association (RMAA)	Assistance throughout the value chain with regards to the supply and production of quality livestock for slaughtering as well as best practices needed in order to run a successful abattoir.
Livestock Registering Federation	Provision of assistance for emerging farmers in regards to the registration processors and monitoring processors needed for quality management of stock.
Cattle Breeder Organisations: ➢ Taurus Coop ➢ Afrikaner Cattle Breeders Society of South Africa ➢ Angus Society of South Africa ➢ Bonsmara Cattle Breeders Society of South Africa ➢ Boran Cattle Breeders Society of South Africa ➢ Brahman Cattle Breeders Society of South Africa ➢ Brangus Cattle Breeders Society of South Africa ➢ Charolais Cattle Breeders Society of South Africa ➢ Gelbvieh Cattle Breeders Society of South Africa ➢ Limousin Cattle Breeders Society of South Africa ➢ Nguni Cattle Breeders Society ➢ Romagnola Cattle Breeders Society of South Africa ➢ Santa Gertrudis Cattle South Africa	Commodity specific association that can provide assistance for emerging farmers production and knowledge base

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➢ Shorthorn Cattle Breeders Society of South Africa ➢ Simmentaler and Simbra Cattle Breeders Society of South Africa ➢ South Africa Hereford Breeders Society ➢ South Africa Holstein ➢ South Devon Cattle Breeders Society of South Africa ➢ Sussex Cattle Breeders Society of South Africa ➢ Tuli Cattle Breeders Society of South Africa	
Association of Meat Importers and Exporters (AMIE)	Bargaining representative body in the meat industry to promote development of agribusinesses to increase efficiency in meat production and assist in poultry enterprise development with main focus on exporters and importers markets, through communication and extension services.
Afgri Animal Feeds	Input supplier that will contribute to the provision of quality animal feeds for livestock within the XDM Agri-Park.
Eagle Farm Feeds	Input supplier that will contribute to the provision of quality animal feeds for livestock within the XDM Agri-Park.
Auctioneers: ➢ Hugo and Terblanche Auctioneers ➢ Brocor Auctioneers ➢ Ellenberger and Kahts Auctioneers ➢ Vleissentraal (PTY) Ltd ➢ Piet Van Der Merwe Auctioneers ➢ Tobie Myburgh Auctioneers	Main selling and distribution channel of game meat that will help in the provision of stock and diversifying the value chain to increase competitiveness.
Xhariep Abattoirs: ➢ Philippolis Abattoir ➢ Jacobsdal Abattoir ➢ Umfaba Abattoir	Existing abattoirs that will contribute and assist with the development of the value chain and the strengthening of a product range that is known. Linkages with these abattoirs can be formulated

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➢ **Lida Van Zyl Slaghuis** ➢ **Zastron Abattoir** ➢ **Abattoir Bloemfontein** ➢ **Maree Abattoir** ➢ **Heuwelkor Twee Abattoir** ➢ **Superb Meat Abattoir** ➢ **Jimmie Roos School and Abattoir** ➢ **Excelsior Abattoir** ➢ **Metaalkop Abattoir** ➢ **Midway Abattoir**	in order to establish FPSUs activities within these areas that can feed into the agricultural processing activities at the agri-hub.
Sparta Foods	Assistance along the value chain development through the forming of PPP and the provision as well as assistance of marketing and supply practices
Nutri Feeds	Input supplier that will contribute to the provision of quality animal feeds for livestock within the XDM Agri-Park.
Veterinaries: ➢ **Dr Vermeulen Veterinary Surgeon** ➢ **Fauresmith Veterinarian** ➢ **Hillside Veterinary** ➢ **State Veterinarian (Smithfield)** ➢ **Uitsig Animal Consulting Room** ➢ **Zastron Animal Hospital** ➢ **Mangaung** ➢ **Bayswater Animal Clinic** ➢ **Ladybrand Animal Clinic** ➢ **State Veterinarian (Bloemfontein)**	Veterinary associations and services that will help with the improvement of livestock quality on farms and at processing facilities. Institutional and knowledge support in order to breed and produce better stock on the emerging farmer's farms.
Triprod BK	Assistance along the value chain development through the forming of PPP and the provision as well as assistance of marketing and supply practices
Tanneries: ➢ **Kotoko Taxidermy and Tannery**	Downward linkages of value chain in order to create an offset area for products that will be produced at the abattoirs within the red meat value chain.

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➢ **Seton Tannery South Africa**	
Poppieland Trust	Assistance along the value chain development through the forming of PPP and the provision as well as assistance of marketing and supply practices
Farmix Veevoere	Input supplier that will contribute to the provision of quality animal feeds for livestock within the XDM Agri-Park.
SPARTA Foods LTD (Sparta Beef)	Sparta Beef established in Marquard is an agribusiness enterprise that is wholly family owned with various chains of microbusiness spread across the country. The business was established as a mixed-farming enterprise with the main focus on livestock (pigs, cattle, sheep and variety of crops such as maize and potatoes. Later the agri-business on its expansion acquired various value chain enterprises comprising of strategic asserts like abattoirs and entering into a venture with local businesses in processing projects that makes hides and skins.

8.5. TECHNOLOGY

Much like the new technologies in Venison, the technologies within the red meat market are based on safety and quality control. Most of the technologies have been focused on abattoirs and the processing that occurs there. The reason for this has been the fact that numerous studies have shown most of the contamination or irregularities often happen during hide/skin removal and evisceration processes. Some of these processes are briefly discussed below.

Deluge systems – this is where the carcass passes through a waterfall of the treatment solutions for disinfection. This process has been thought to prove more effective than regular spray systems.

Chlorophyll detection – Meats, absorb and emit electromagnetic radiation, much like plants, but in different wavelength bands. The chlorophyll detecting technology makes it possible to objectively detect a variety of contaminations which are not always visible to the naked eye.

Bacterial ATP detection – sophisticated ATP systems have been developed over the years in order to better identify bacterial invasions on red meat. In this process, carcasses undergo a chemical sponge treated with a chemical that allows the removal of the body cells, which ensures that the ATP detected is of bacterial origin only.

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8.6. SOCIO-ECONOMIC BENEFITS

This subsection focusses on the socio-benefits that could potentially be created by developing the commodity value chain of livestock. As such the benefits will be presented in the table below:

Table 24: Livestock Socio-Economic Benefits

Socio-Economic Benefit	Description
Job Creation	The livestock enterprise in the Agri-Park will create Sustainable employment opportunities being that there will be jobs from the initial stages planning (consultants) of the project, implementation (local labour, welders, painters and technicians) and continual operations (cleaners, drivers, butchers etc.). The accessibility of the Agri-Park and the meat products in the Free State could increase demand for meat products, and will force the value-chain to increase in supply of livestock units to close the demand gap, and thus increase the number people needed for logistics, quality assurance, international relations officer for export and imports, trade and merchandising.
Developing skills	Environmental, consumer, and animal health are the most important statutory requirements in food production, management, and standardisation. To continually produce healthy, sufficient food products and become profitable, one must comply with the rules of the game, therefore developing the skills of the workers, management, and stakeholders to adhere to the standards of the industry and of the Agri-Park as contemplated in the service charter will go a long way. Therefore, historically disadvantaged South Africans, women, the disabled, and the youth will have to be taught and trained in necessary skills (bookkeeping, call centre management, Safety and Health management, Hygiene). Managers will have to be trained in financial, marketing, production, and strategic agri-business management courses. Technicians will have to be trained in food quality and safety, equipment calibration techniques, and butchers and meat handlers will need to know how to classify carcasses, label, washing and cutting.
Spin-off. opportunities	The livestock enterprise has many potential spin-offs extending beyond the borders of the Agri-Park. These spin-off opportunities include, but are not limited to creating prospects amongst packaging companies, material manufacturers, the transport industry for efficient transport systems, arts and local crafts makers will also have better access to cheap inputs leather material. The existence of the

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	Agri-Park itself contributes the most to the communities around the areas, the transfer of communication and technologies, roads, water and sanitation infrastructure and related services.
Support to emerging farmers	The Agri-Park will need to ensure that sufficient and quality meat is supplied at all times. Therefore, it will require the department to improve and expand on their extension services to assist local farmers with information, priority needs, and guidance. This relates to issuing of climate change and variability cold temperature, drought signals, water management guidelines, and financial support to an extent.

8.7. CONTRIBUTION TO FOOD SECURITY

Livestock and livestock products are an important source of food to most rural and urban households. Meat as a food product is derived from the livestock such cattle, sheep, and pork from one or both of the livestock operators, namely agricultural households and the commercial agrarian producers. Recently, demand for livestock, cattle and meat specifically, is expected to increase due to urbanisation, population pressures, and increasing levels.

- **Cattle as a source of beef meat -** beef represents a share of mostly preferred and consumed meat products in Africa and around the world at a record of about 5 million tonnes, and is expected to increase in future. Even though demand for beef meat has increased, records show that the farming community, beef producers in particular, have not adjusted to increases in demand pressures. Firstly, the increase in agricultural livestock production, particularly meat-based products, increases supply and drives prices down for local consumers and increase access to a decent and protein based diet. Similarly, a shortage in supplies drives prices upward trending, and reduces the ability of consumers' access to meat. This was evidenced by the impact of the recent global economic crisis in 2008/2009 with increases in basic food and meat prices, which had negatively impacted on people's incomes and the affordability of value added and meat products.
- **Cattle as a source of milk -** In Africa, livestock production contributes significantly to the wellbeing and food needs of the majority of people. In farming communities livestock, such as cattle, contribute significantly as a source of important vitamins and nutrients through milk products. In the majority of the areas, milk derived from cattle is also consumed on the farm, which contributes to nutrition (Vitamin A); more especially it is known to be good for children's growth of strong teeth and bones.
- **Mutton as a reliable source of food –** Mutton, as meat source, is derived from sheep and contributes to world food security, through various means directly as a food source and indirectly by the creation of jobs in varying sectors such as textiles

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and clothing manufacturing. Sheep products include mutton cuts, chops and offal, which are used as meat and as a food source. Mutton is an important component of a nutritious and balanced diet; it provides consumers with protein and fats, which are important for human growth. Mutton ranks second after beef amongst the preferred and the most consumed meat products, with a 2.5 million tonnes of mutton being consumed per annum and this figure is expected to grow by 2050. The increased demand for meat and mutton-related products are in effect of increasing incomes and urbanisation as many people are, and can afford to buy meat products and other value-added products like mutton chops to supplement the nutrient and protein demand. Sheep can contribute to the income of farming communities, therefore adjusting their incomes and affordability of other food products sold outside their intermediate production systems.

- **Livestock as a sources of sustainable farming** - Livestock also plays an important role of consuming crop residues that cannot be used for human consumption. In subsistent communities and small-holder farming areas, livestock is used as a medium to generate indirect income and be used as a source for manure, which is used to fertilise crops; the sales thereof increase crop income. Livestock manure also improves soil structure and soil suitability for some crops; therefore, it is an important of instrument of sustainable farming.

8.8. REGULATORY REQUIREMENTS

The livestock meat industry is a well-established industry in South Africa, with a large South African market as well as a foreign market. Since the late 1990s, the red meat market has been deregulated; however, a number of regulatory requirements still apply to the meat industry.

The livestock activities within the larger Agri-Park will need to be identified and in accordance with these, the following credentials will apply; this will be before any meat products can be sold within South Africa or abroad.

- FSSC 22 000 certification will be required. FSSC 22 000 is supported by the American Groceries Manufacturing Association and the European Food and Drink Association. Thus, the certification will ensure that any abattoir's meat is up to international standards and will have the opportunity to be exported.
- If any feeding operation for cattle and sheep is planned, especially for abattoirs, the facility will require an ISO credential. The ISO system encompasses various management systems, such as the ISO 14001 (environmental), the ISO 9001 (quality), ISO 22000 (food safety), and OHSAS 18001 (non-ISO) operational health and safety standards.

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- For an abattoir's meat products to be certified as halaal, an application form will need to be filed to the National Independent Halaal Trust. Within the form, the name of the abattoir, description of products, and the commencement date, among other questions, will be stated. Once the form has been filed, an inspector will inspect the slaughtering method of the livestock, the abattoir itself, the packaging methods, etc. before the abattoir and its meat can be considered halaal. If the abattoir fails the inspection, a set of guidelines (towards halaal practices) will be given to the abattoir. If the abattoir is considered halaal, the South African National Halaal Authority (SANHA) will need to certify the meat before the abattoir can specify that the meat is halaal.
- The Meat Safety Act 40 of 2000, regulations need to be followed.
- HACCP regulations, with regard to the handling, processing and the storing of raw meat, need to be evaluated.
- Foodstuff, Cosmetic and Disinfectants Act 54 of 1972
- Regulation 962- Food Hygiene; Regulation 146 of 2010- Labelling
- Animal diseases Act 35 of 1984
- Animal Health Act 7 of 2002
- Air Quality Management Act 39 of 2004
- Product Standards Act 119 of 1990
- Stock Theft Act 57 of 1959
- Occupational Health and Safety Act 85 of 1993
- Stock Remedy Act 57 of 1959
- Water Act 54 of 1956
- National Environmental Management Act 107 of 1998
- Labour Relations Act 66 of 1995
- Consumer Protection Act 68 of 2008
- Health Act 61 of 2003

In order for livestock activities within the Agri-Park to become more competitive in the red meat industry, the abattoir should register for associate memberships with the following associations:

- **The Red Meat Abattoir Association (RMAA)**

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RMAA provides services and representation to member abattoirs. The RMAA ensures that meat safety and quality is of the highest standard. The RMAA also provides training to abattoir personnel in order to improve safety and hygiene.

- **International Meat Quality Assurance Services (IMQAS)**

Established in 2001, IMQAS serves the quality and hygiene needs of South Africa's meat industry on an independent basis.

- **South African National Halaal Authority (SANHA)**

Established in 1996, SANHA promotes professionalism in the certification of halaal products. SANHA is a non-profit organisation. The SANHA provides a support base for both the producers and consumers of halaal products.

Once the abattoirs within the Agri-Park, or more specific within either the FPSUs or Agri-Hub itself, have all the required certifications, meets all the requirements, and becomes an associated member of the aforementioned associations, the abattoirs will become active players in the red meat industry as well as the halaal industry.

- **Planning Legislation**

It is vital that the development application requirements for the Agri-Parks is explored and properly addressed as they are mandatory. In accordance with SPLUMA – which governs land use nationally - it is crucial that a development application to be submitted to the Local Municipality before any development can be considered. SDF alignment is of optimal importance while the IDP and Local Municipality Land Use Planning By-law should also guide implementation. Failure to comply with the specific planning and development policies and legislation may cause stunting delays to the process. As such, alignment with each of these documents is of optimal importance before any development of the Agri-Hubs or FPSUs commence. The following pertinent legislation is applicable to a development application:

- Spatial Planning and Land Use Management Act, 16 of 2013
- Mangaung Spatial Development Framework
- Mangaung Integrated Development Plan
- Subdivision of Agricultural Land (Act 70 of 70)
- Mangaung Metropolitan Municipality Land Use Planning By-laws

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8.9. SUBSTITUTE PRODUCTS

Beef and mutton are substitute products for each other as both are classified as red meat. However, as it is also a protein source and a source of meat, it will readily be able to be substituted by the various products form the following sources:

- Chicken;
- Fish;
- Soya;
- Tofu;
- Tempeh;
- Seitan; and
- Whole grain and legumes, etc.

The extent to which each of these different food sources will substitute both beef and mutton depends on a few of different factors. These factors will directly relate to the consumer's preferences and socio-economic stance within each of their different milieus. As such, these considerations are inter alia:

- Price of the different products in relation to their availability - if a product is readily available the price should be more competitive;
- Availability of the substitutes - closer to the coast fish might be more readily available and cheaper;
- Type of products - the type of products on offer will have an effect on the consumer's preferences;
- Environmental, religious, cultural or political considerations - it might be that droughts or other religious/cultural considerations has an impact on consumer preferences. In addition to this, political considerations such as trade sanctions etc. can have an impact on the availability of products.

8.10. NEW ENTRANTS: POTENTIAL ENTREPRENEURS

This subsection indicates the potential of emerging farmers who can benefit from the development of beef and sheep as a commodity. The names of these farmers are presented in the table below. Most of these farmer's farm with either Bonsmara or mixed breeds, with most of these farmers only having access to informal markets. Furthermore, these emerging farmers are well represented throughout the whole of the Xhariep District Municipality, with farming activities around most of the towns.

A full database with all the emerging farmers' details are available as provided by FSDARD. The following list provides a preliminary database, as there are still emerging farmers to be added to the DARD database. However, what the list clearly indicates is the viability of using cattle as commodity due to the number of emerging farmers that already farm in the

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area with cattle. It is further anticipated that as the value chain is further developed, more will benefit from the Agri-Park development.

Table 25: Potential Livestock Beneficiaries

PS Jan	S Phetlho	Z Jamaludeen	T. Monyane
S. Koloba	M.K. Khooa	T. Swartz	
Klaas M. P	Mokhoro K. B	M. Riet	A. Tseletsele
P Dashe	Mr J Mahlelehlele	Me N Leeto	Mr T Mokhosi
Mr. N. Thamaha	Mr. B Nthatu	Mr. J. Mokgwetsi	MR. P. Thamane
Mr. M. Diamond	Mr. MM Koloba	Mr. J. Mphakaole	K. Mohlobodi
Mr. L. Kgomojong	Me. L. March	M. Pinetine	Mr F Motsi
A. Romain	Mr K Makapa	Mr Jan Lebeoana	Bango N. J
P.E. Jacquire	Kabi T. V	Lima M. A	Smeers S. A
D.G. Lemmetjies	Mathubanyane T. J	Piet Olifant	Khaphe D. P
C.C. Temboer	Khaphe J. P	Ngxito M. P	Ngalo Z. S
Lavisa Speak	Bango M. P	Thuhlo T. E	Morgan N. J
Q. Barnes	Monyetsane T. Z	F.A Combrink	Khumalo T. E
H.J. Nieklaasen	Stoney Louw	Tom Papasha	Souls T. J
A.K. Barnes	Morwenyane	Mr. S. Mongo	Mr. Louw
MR. Saula	Mr. D. Nthatu	MR. Moreetsi	Mr. J. Mona
William Maribe	Petrus Leeuw	J. Rittles	William Mlaza
Mr. Micheals	Mr. Matosa	Mr. Tlhapuletsa	Mr. I. March

(Source: Provided by FSDARD)

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8.11. SWOT ANALYSIS

The SWOT analysis for the utilisation of cattle and sheep as a red meat commodity is presented in the table below:

Strengths	Weaknesses
• Well established red meat producing and processing industry not only in South Africa but also the Free State. • Highly consumed product domestically and internationally. • Already exporting both cattle and mutton. • High quality and quantity stock available. • Good livestock industry infrastructure that makes the ease of accessing appropriate markets easier, these are infrastructure such as roads, transport companies, abundance of regional/local auction facilities, number of regional abattoirs and good commercial farming practices that ensure fenced farms. • Well established supporting services and institutional capacity with a number of agricultural services and research conducted to improve the cattle and sheep production in South Africa.	• Needs proper focus on farm management and herd quality. • Needs an appropriate feeding plan to get stock 'market ready'. • Overgrazing and mismanagement are still problems in commonage areas and hinder production. • Lack of funds for emerging farmers to prevent disease and pest control, which affects quality and weight of livestock, which in turn lowers the price received per livestock head. • High transport costs to abattoirs and processing costs reduce profitability of selling animals to commercial abattoirs.
Opportunities	**Threats**
• Increased export opportunities due to the higher income generated. • Domestically, consumption exceeds production, thus opportunity for expansion of local production and processing • Easily available to emerging farmers, due to large quantities available in South African stock.	• Number of diseases that can severely hinder quality and production of livestock. • Environmental conditions play large role in production efficiency and market prices. • Cattle prices may prove too expensive for emerging farmers.

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• Skills development programs already exist in South Africa to support and assist livestock farmers and their farm workers. • Spin off opportunities within the industry exist for further processing such as the production of bone for bone meal, hides, blood for medicines, etc.; most of the livestock can be used for further processing.	• Sheep theft huge is a problem in South Africa and can hinder successful farming with stock. • Production of both cattle and sheep is dependent on the grazing capacity per regional vegetation and land cover profile.

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9. AGRI-PARK CONCEPT DEVELOPMENT

This section focusses on unpacking the AP development concept and how each of the commodities' value chain development will address the distribution and prevalence of the FPSUs, the AHs and the RUMC within context of the spatial realities of the Xhariep District Municipality.

9.1. INTRODUCTION THE AGRI-PARK CONCEPT

The Agri-Park concept aims to give an explanation towards the different elements and considerations that is needed to develop and structure the establishment of the Agri-Park and its different functions within both the spatial and agri-economic sphere. As such, the Agri-Park concept consists of four elements, namely: primary production (which consists of small-scale/emerging farmers and commercial farmers), Farmer Production Support Units (FPSUs), the Agri-Hub, and the Rural-Urban Marketing Centre.

Part of the establishment of the Agri-Hub depends on the different functions as set out by the DRDLR, and are stipulated under the second chapter of this document. The number of these different functions are as indicated by the DRDLR based on the area for consideration being a highly, or scarcely populated area. As such, an area that has more than 42 individuals per km^2 is considered to be a high density area, while an area that has less than 42 individuals per km^2 is considered to be a low density area. The Xhariep District Municipality falls within the parameters of a low density area (3.88 people p/km^2). By the DRDLR's prerogative, the following parameters were provided for each of these functions:

- FPSUs' catchment area: 30km
- Agri-Hubs' catchment area: 120km
- RUMCs' catchment area: 250km

The Xhariep District Municipality covers a total area of 37,674 km^2 and as per the required parameters, it can be estimated that the XDM will need a total of:

- 13 FPSUs;
- 1 Agri-Hub; and
- 1 RUMC.

Both red meat and venison will have 4 FPSUs each, and aquaculture will have 5 FPSUs as activities for this commodity need a more localised approach than that of the other two commodities due to its reliance on a consistent supply of water. As indicated there will only be one Agri-Hub and RUMC within the Xhariep District Municipality Agri-Park development concept. The following sections will provide a more in detailed analysis of each commodity, with a combined development concept for the whole of the XDM also provided.

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9.2. PROPOSED DEVELOPMENT CONCEPT OF VENISON

The following table explains the venison development concept with its different elements and functions:

Table 26: XDM AP Venison Development Concept

Production Flow	Smallholder farmers (SHF)	FPSU	AH	RUMC
Key Role & Function	The core role of the smallhoder farmers would be the primary production of venison for the export abattoir.	Provision of input supplies and extension support, mechanisation support, local logistics support, local hunting and related activiites, prelimenary slaughtering and processing of venison, some storage, and processing for local markets.	Training, logistics, abattoir, processing, storage and freezing facilities, packaging facilities; logistics specifically for the export of venison.	Market intelligence, assist farmers, and processors in managing a nexus of contracts.
Location	All SHFs that are operational within the XDM Agri-Park influence area.	The followign strategic areas have been identified as ideal for the establishment of FPSUs to assist the SHFs. The following FPSUs were identified: • Petrusburg; • Edenburg; • Luckoff; • Smithfield; • Thrompsburg. The SHFs will be supported by all the FPSU(s) that would be situated within the XDM. The locality of these FPSUs will enable access to the SHFs as the whole of the XDM Agri-Park influence area will be in FPSU range.	As proposed by the Province, the Agri-Hub is to be located in Springfontein in the Kopanong LM.	It is proposed that the RUMC be located in Bloemfontein. Since this is the main economic hub and administrative seat of both the Free State Province and Mangaung Metro Municipality. It is further envisaged that the shared colaboration with the MMM AP will increase synergies and help with creating strong linkages between the two Agri-Parks. Bloemfontein is also in close proximity to Springfontein (AH) (119.5km) and as such, will further help with distribution to a major regional market.
Human Resources	The core HR personnel that the SHFs would require from the FPSU are: • Extension officers • Game experts to assist with the	The FPSU will provide the following HR/HR facilities: • Agricultural extension officier (2) / support office; • Game experts (they will assist with the	In conjunction with the red meat abattoir established at the AH, most of the functions and activities will also be shared with the red meat development concept as it will be one abattoir with different lines for red meat and venison	The RUMC will provide the following HR services: • IT expert/personnel (1) • Administrative manager (1)

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	correct game farming techniques and best practices • Veteniarary services for inspection of game and ensuring quality and disease control etc. • Permanent staff for operations on the farms • Professional hunters for the harvesting of game on SHF farms	necessary techniques and game farming practices required on the SHF game farms) (2) • Profesional hunters/ storage facilities (these will either have to be trained locally or hunting teams form outside the area can be contracted to assist with the harvesting of animals on the farms) (teams of 5) • Meat inspectors and quality control officers (they will need to assist with the correct hunting and slaughtering procedures when venison is harvested on the farm) (3) • Mobile abattoir personel (these will be required for operations surrounding the mobile abattoir such as transport, set-up, cleaning etc. of the mobile abattoir within the field. It would also include block men and cutters) (5) • Voluntary/Established commercial farmers to mentor the small scale farmers (*as many* as possible). • Fire fighting personel (this will be needed to assist in fire prevention on farms within the area) (5)	to ensure quality. As such, the AH will provide the following HR: • Abattoir and red meat processing general manager (1) • Abattoir and red meat processing assistant managers (3) • Floor managers (6) • Meat inspectors (8) • Administrative manager (2) • Quality control personnel (4) • Veteniarians / Vetenerian offices (2) • Blockmen and cutters (12) • Deboners and packagers (12) • General workers responsible for cleaning, loading, etc. (15) • Training personnel (4) • Retail personel (3)	• Training personnel (2) • Marketing and sales agents (3) • International liasion agents and procedures officers (these will be needed in order to ensure that all the prcedures are adhered to and that new ones are introduced, they will also be responsible for the development of new international markets) • Value chain coordinator (will be responsible for communicaiton and logistical operations between the SHF, commercial farmers, the abattoir and the markets in order to ensure that the quality control and efficiency of the whole value chain is kept in tact and improved upon)
Training	Small holder farmers would require intensive training on best game farm practices as this will be a new venture for many of them. There would also be basic farming training such as the use of tools and equipments, training on how to	One of the key functions of the FPSU would be to provide training and extension support on various farm practices, to the SHF. Training will also be administered to the personel responsible for operating the mobile abattoir. This will include best practices,	Some training would definitely be required at the hub as it is envisaged that an operational abattoir and deboning facility is installed here to produce red meat as produced by the local SHF. As such, the following training will be required at the hub e.g.	Training of training personnels on how to disseminate information to the SHF, AH and the FPSU. Extensive training will need to be conducted to train meat inspectors for the FPSUs and to operate in the field. This will

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	interpret market information and ICTs. The extension offiicers and game experts will assist the SHF with the development of a sustainable supply for the abattoir. This will include the betterment of herd quality, grazing options, feeding practices and herd health. There is also the issue of producing herd quality that is complaiant with international regulations and requirements such as the EU. As such the extension officers in conjunction with the game experts will be responsible for ensuring that SHF are trained and comply with these procedures.	international standards that need to be adhered to when slaughering and cleaning is done. Furthermore, blockmen and cutters will need to be trained on how to slaughter and then slaughter in the field.	• Basic slaughtering techniques and use of equipment and facilities • Best slaughtering practices within abattoir slaughtering lines • Health and safety concerns and procedures • Basic abattoir procedures • Compliance with regulatory and health procedures • Training on efficient use of water and lessening of waste • Correct utilisation of waste in abattoir • Deboning and processing lines and procedures	have to go through an accredited agancy in roder to ensure that meat that is exported will be excepted by the relevant target market's countries. Further training will need to be administered to hunters in order for local skills development to take place. These hunters need to be accredited by PHASA in order to be able to be able to hunt. Practical training will form a large component of this training.
Key product/activities	The core activities of the small holder farmers are: • Game farm preparation (land clearing to prevent fires, provision of water trences, game fencing, etc.) • Production of game (this includes diversifying the species on offer, increase in number of game, etc.) • Disease and pest control	The core activities of the FPSU are: • Operational base for the moblie abattoir,. These mobile abattoirs will be used to process the game meat on the farms • Transportation of game meat from the SHF farm to the export abattoir • Training of personel to operate the mobile abattoir and related services such as the correct slaughtering and operating procedures	The core activities of the AH are: • Receiving and unloading of pre-preprocessed game meat for further processing (dry carcasses). • Receiving and unloading of stock for slaughtering (venison can also be brought directly to the abattoir, however this is not proposed due to the pH of venison meat as a result of stress levels). • Sorting and grading of stock. • Slaghtering of stock. • Deboning and further processing of game meat.	The core activities of the RUMC are: • Maketing and distribution of final products to different wholesalers and major retail outlets • Exporting of final products Improvement of value chain and efficient value chain development and management

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	(important component of the game farming practices as it will influence the ability to export meat) • Day to day farming activiites and maintanance	required for game meat • Storage area for the mobile abattoir and subsequent equipment as needed for the succesful operation of the slaughtering activities.	• Training of staff for abattoir and further processing activities at the hub. • Transportation of stock to relevant markets. • Intensive quality contol for export markets. • International standards and procedures check points. • Meat inspection services. • Veteniarary services. • Storage and freezing of products. • Some retail to local markets.	
Infrastructure/Equipment	The smallholder farmers would require the following infrastructure and equipment for the succesful operaiton of a game farm: • Tractor and related equipment for effective fire prevention control measures and grazing control • Game fencing and fencing that will assist in pest contol • Pens, loading and unloading docks, dip areas, feedlot areas, etc. • Water provision infratructure such as pumps, tanks, crib, feeders, etc. Basic farming equipment will also be needed such as those can be used to repair and maintain fences, etc.	The FPSU would require to put in place the following equipment and/or infrastructure: • Transport (e.g Bakkie or pick-up vehicles) • Mobile abattoir • Slaughtering and processing gear • Fire fighting equipment • Storage for hunting equipment • Storage for feed for game • Basic medicines and pest control equipment All equipments listed to be required by the small holder farmers.	The AH would require to put in place the following equipments and/or infrastructure in conjunction with the red meat abattoir as most of the activiites will be parallel: • Fully equipped abattoir capable of exporting game meat and adhering to international standards • Loading and off loading facilities and extended pen that can facilitate grading and sorting of animals • Potential auctioning facilities • Water, electricity and waste saving/efficient infrastructure • Fully equiped processing facility • Administrative facilities • Freezer, cooling and storage facilities • Quality control facilities • Retail facility • Training facilities Logistics and transport facility	The RUMC would require to put in place the following equipments and/or infrastructure: Administrative facilities/ information centre Training centre SHF support centre Offices for marketing and sales agents as well as value chain coordinator

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Logistics	SHFs, extension officers and game experts will work in conjunction to determine the correct time for harvesting of venison based on the quantity of game available, herd management, grazing capacity and need of the abattoir. It is however, envisaged that production will reach such a stage were a monthly supply will be available for the abattoir. Once a sufficient supply for harvesting has been identified, a team of professional hunters will be brought in to conduct the harvesting process. The FPSU will also be contacted to appropriate the mobile abattoir. The site for the mobile abattoir will then be appropriated base on the SHF and professional hunters knowledge of the area and best procedures. Harvesting will then commence, whereby the meat will be brough to the mobile abattoir site and slaughtered. The meat will constantly be checked by the meat inspectors for quality control purposes, but it will also be graded and sorted.	The key function of the FPSU in the instance of the venison value chain is the pre-processing process and administrating of the harvesting process. As such, the mobile abattoir will be stored, cleaned and maintained at the FPSU in order to easily reach the farmers siturated within range of the FPSU. This is also proposed as the XDM is a vast area to cover and as such providing a more centralised base for each of the FPSUs will make the logistical operations smoother. In addition, it also allows for multiple harvesting operations to take place at the same time, which will help the export abattoir to maintain a consistent supply of game meat for export. Game meat will be pre-processed by the mobile abattoirs and directly transported to the abattoirs where it will be processed even further. The FSPU will also act as a local storage and provision centre, providing the SHF with their basic game farming needs and equipment that can be hired in order to run a succesful farming operation. In addition fire equipment and crew will be available to assist with fire fighting within the area. The extension officers and game experts will also use the FPSU as a base from which to help SHF's with improving their herd quality and qauntity.	The 'dry' game meat will be directly delivered to the abattoir and processed further. The processeing will include the cutting, cleaning, deboning and packaging of meat for the export market. Strict quality control and international regulations will be adhered to in order ensure that the quality of meat is of export quality. Meat will be stored in a freezer room and when a sufficient supply has been produced and processed it will be transported to the appropriate markets or ports for international transport.	The RUMC will be responsible for administrative duties and negociating prices and contracts. In addition, the value chain coordinator will be responsible for improving the efficeincy and operations within the value chain. The new international regulations and requirements together with changes in the market and disease alerts etc. will also be handled by the RUMC.

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Technology/ICT	In order to boost their production efficiency, the SHF would require: • Solar pumps and technology would be used to reduce the reliance on bulk services to be provided by government • Appropriate fencing and infrastructure for game farms to make farming more efficient • Modern pest and desease control techniques and equipment • Tracking tools for large herds in order to assist with harvesting etc. Mobile devices for subscription to Apps. , to enble them receive information from the RUMC on weather forecast, disease control e.t.c.	Mobile abattoir that makes use of slaughtering measures that reduce waste, optimizes usage and can both store and transport meat to the abattoir. Better and more efficient hunting technologies and equipment that will make harvesting less wasteful and shorten the time needed for hunting and harvesting. Tracking devices on all vehicles to prevent hijack and also to monitor the movements and locations of the drivers. Also, the FPSU would require subscription to certain Apps from the RMUC to remain conversant with the current prices fetched on the global, national and local market, so as to be able to strategically coordinate harvesting activities.	• Water, electricity and waste efficient abbatoir to ensure less dependency upon the provision of bulk services increase output. • Ensure technological advanced abattoir and further processing and storage facililites. • Creating spinn off opportunities through the further processing of waste material	The RMUC will provide Information Data base that all the various basic units of the Agri-Park can subscribe to.

The above table illustrates the different roles of the SHFs, the FPSUs, the AH and the RUMC. As illustrated, the SHF will be responsible for providing the primary production capabilities and supply for the rest of the value chain; the FPSUs will provide support with both input supplies, services and strengthening the production element of the SHF as well as provide harvesting support. It will also be responsible for initial training and processing as what can be seen as the initial or pre-processing functions.

The large and main focus with regards to the processing of venison will however take place at the Agri-Hub at Springfontein. The game meat will be processed and packaged at the export abattoir with its deboning facilities. It will adhere to strict international regulations in order to provide a consistent supply of exportable goods abroad. The RUMC will be responsible for training, administrative and management support functions.

The locations of each of the FPSUs are also illustrated with Edenburg proposed as the FPSU that should be developed first as game meat can then be harvested in the northern

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parts of the XDM. The reason behind this is the proximity to the Springfontein AH for which it would provide support and the established infrastructure that is already in place for transportation between the FPSU and the AH. It also has a central locality within the XDM and as such, will be able to service most of the XDM area more effectively until all the FPSUs are operational.

9.3. PROPOSED DEVELOPMENT CONCEPT OF AQUACULTURE

The following table illustrates the different functions and elements of the XDM AP Aquaculture Development Concept:

Table 27: XDM AP Aquaculture Development Concept

Production Flow	Smallholder farmers (SHF)	FPSU	AH	RUMC
Key Role & Function	The core role of the beneficiaries would be the primary production of fresh aquaculture at the constructed aquaculture production facilities near suitable water resources. These aquaculture production facilities have already been in the development phases as done by the DARD with the main focus on emerging farmers /beneficiaries. As such, this commodity focusses solely on developing SHF's.	Input supplies (such as bredding fish, fish feed, etc.), training and extension support, mechanisation support, local logistics support, full production of the aquaculture (fish), processing and packaging, preliminary freezing and storage, and processing for local markets would be conducted here. The through-put processing of fish would be conducted at the production plants themselves as it would be more cost and production effective. The excess products that is not sold within the local markets would then be transported to Agri-hubs to either be further processed and stored for potential larger domestic markets. Transport of these produce will also be easier due to the proximity to major national routes.	Some logistics, further processing, but mostly retail, storage and transporting functions.	Market intelligence, assist farmers, and processors in managing a nexus of contracts. Provision of training and business development and assistance with sucessful business operations for the SMME enterprises.
Location	All the local beneficiaries will be involved and located primarily at the FPSUs where the initial aquaculture production facilities have been built by	It will be necessary that all FPSUs support the aquaculture production and processing within the value chain. However, it is foreseen that the Bethulie FPSU will play the biggest role in aquaculture	As proposed by the Province, the Agri-Hub is to be located in Springfontein in Kopanong LM.	It is proposed that the RUMC be located in Bloemfontein. Since this is the main economic hub and administrative seat of both the Free State Province and

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	the DARD. However, as the commodity sector further develops more beneficiaries will be included and operations and facilities either broadened or expanded.	production and processing due to its proximity to the AH (Springfontein) as well as the environmental conditions with relation to the availability of water that is most prominent here. This is based on current initiatives already in place and the availability of water for production that is a major consideration for the production process of this commodity. The 5 identified FPSUs for aquaculture are as follows: 1. **Bethulie;** 2. Petrusburg; 3. Koffiefontein; 4. Fauresmith; 5. Zastron; and 6. Springfontein. The number of FPSUs is warrented due to the fact that the produciton operations and establishment is highly dependent upon site locality as most production operations need to be centralised.		Mangaung Metro Municipality. It is further envisaged that the shared colaboration with the MMM AP will increase synergies and help with creating strong linkages between the two AP. Bloemfontein is also in close proximity to Springfontein (AH) (119.5km) and as such, will further help with distribution to a major regional market.
Human Resources	The core HR personnel that the SHF would require from the FPSUs would in large be the same personel that will be at the FPSU as the aquaculture production facilities will be situated here. These HR personel are as follows: • Extension officers • Operational Manager • Production staff	The FPSU will provide the following HR/HR facilities: • Agricultural extension officier (2) / support office; • Health and safety officers (2) / at the production and processing facilities; • Mentor (this should either be the aquaculture specialist or a separate commercial farmer who knows the required procedures for sucessfully operating such a production and processing facility) (1) • Operational Manager (1) • Floor Manager (1)	The AH will provide the following HR: • Administrative manager (1) • Quality control personnel (5) • Staffs to manage the warehousing, freezing and transport activities (5) • Retail and sales personel (2) • Aquaculture specialists (for checking and developing the appropriate production and processing procedures) (2)	The RUMC will provide the following HR services: • IT expert/personnel (1) • Administrative manager (1) • Training personnel (1) • Marketing and sales agents (to Facilate market linkages, facilitate contracts with wholesalers and major retail outlets and also to garther informatio on prices at fresh

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		• General production, cleaning, packaging etc. staff (15)		produce market that would be communicated to the AH and FPSU). (2)
Training	Small holder farmers would require training on: best production practices, use of tools and equipments, training on cutting, gutting, procesisng procedures, best freezing and storage conditions, as well as health and safety considerrations and procedures. The extension officiers in conjunction with the mentor, aquaculture specialists and training officers should be responsible for not only a detailed intorcutory training but also on the job training.	As the FPSU will also be the produciton and processing sites the training necessary for SHF is applicable here.	Some training would also be required at the hub, e.g.: • Training of storage and transportation staffs on how to handle and operate and appropriately manage the handling and transporting procedures as well as health and consumer's considerations. • Training on best practices, based on changing demand and supply. • Training on new innovations as they surface.	Training of personnels on how to disseminate information to the SHF, AH and the FPSU. Furthermore training will be required for the marketing and sales personel to further contracts and develop a solid domestic and larger network base of clients.
Key product/ activities	The core activities of the small holder farmers are: • Production of aquaculture • Managing effective production cycles • Implementation of best farming practices as informed by the extension officers, training received and the continual advice of the aquaculture specialists	The core activities of the FPSU are: • Production and processing of aquaculture • Prelimenary freezing and storing of produced aquaculture • Transportion of freezed aqauculture from the FPSU packhouses to the AH premises • Quality control • Cleaning, sorting and grading • Packaging of asorted aquaculture • Sales to local community markets	The core activities of the AH are: • Receiving, freezing and storage of FPSU received produce; • Further quality and procedure control; • Preperation of stored goods for either local sales or transportation to appropriate markets; • Local sales with some marketing done.	The core activities of the RUMC are: • Maketing and distribution of final products to different wholesalers and major retail outlets • Further research, training and improving of procedures and best practices • Development of the nexus of contracts needed to create consistent demand and

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				support the supply line
Infrastructure/Equipment	The smallholder farmer would require the following equipments, which should be provided within the FPSU as the aquaculture operations is locality specific: • Fully kitted production facilities with the necessary specs that would include the production tanks, appropriate pumps for water, etc. • Access to a consistent clean water source is paramount; and • Basic production equipment and clothing.	The FPSU would require to put in place the following equipments/infrastructure: • Transport (e.g., small transport bakkie or pick-up truck) • Processing warehousing, with freezing, storage and quality control facilities • Aquaculture cleaning, sorting, grading, etc. machines • Conveyer belts • Weighing and packaging machines • Local packhouse • Health and safety equipment • All equipments listed to be required by the small holder farmers. • Capability to facilitate on the job training as well as theoretical training	The AH would require to put in place the following equipments/infrastructure: • Administrative facilities • Logistics and transport facility, with loading docks • Storage facilities with freezers and coolers • Quality control facilities • Agricultural input distribution and sales centre • Retail facility	The RUMC would require to put in place the following equipments/infrastructure: • Administrative facilities/ information centre • Training and research centre • General offices for marketing and sales personel
Logistics	Smallholder farmers or beneficiaries should form part of the operational procedures at the production and processing facilities. However, it is suggested that both a operational manager and floor manager is reposnsible for the production and processing operations. This is due to the complicated, but important procedures that needs to be followed. Furhtermore, it is	The FPSU should organise Primary logistics collection centre in the form of packhouses where trucks (bakkie/pick up vehicles) would pick up the processed and packaged aqaculture from the processing plants and transport it to the AH. Local sales should also be facilitated at the processing and packaging facilities in order to support the local community. Continuous quality control needs to be in place during the whole value chain as well as best practices amongst staff.	The AH must be responsible for both small scale transporting operations to local markets and larger transport operations to larger markets such as Bloemfoantein,e tc. These transportation needs to be able to deliver efficient services to the nexus of clients as developed by the marketing and sales personel at the RUMC. Final quality control will also be handled at the AH. Retail will also be administrated at the AH with retail facilities present.	The marketing and sales of aqauculture products will be handled by the RUMC and as such the logistics of the RUMC. Distribution and bulk storage of goods will also be handled by the RUMC.

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	suggested that there is an acitve training programme that not only focusses on improving production and processing activities but is also focussed on the development of local beneficiaries to become or act as either operational or floor managers.			
Technology/ICT	In order to boost their production efficiency, the SHF would require: • Mordern tools, • Water effective infrastructure, equipment and practices; • Exess water can be used in vegetable produciton as these water have higher nitrional value and will assist in higher yields in irrigated vegetable production; • Mobile devices for subscription to Apps. , to enble them receive information from the RUMC on weather forecast, disease control, etc.	Tracking devices on all vehicles to prevent hijack and also to monitor the movements and locations of the drivers. Also, the FPSU would require subscription to certain Apps from the RMUC to remain conversant with the current prices fetched on the global, national and local market, so as to be able to strategically supply potatoes/ potato products to the markets.	Easy access and effective loading docks in order to make the handling of aquaculture easier and faster. Also energy saving and green initiaitives to be used at storing and freezing facilities in order to lower costs and improve environmetally friendly practices.	The RMUC will provide Information Data base that all the various basic units of the Agri-Park can subscribe to.

The table above illustrates the different functions that will occur during the value chain development. It shows that the SHF will be responsible for the production of a sufficient supply of aquaculture and to maintain the quality and quantity throughout the operation of the AP. Furthermore, it is seen that there are 5 FPSUs due to considerations with regard to water availability and the limited expansion or diversification of aquaculture activities. The main FPSU, and the first one to be developed, will be the one located within Bethulie. This is due to the presence of the Gariep Dam, its proximity to the AH in Springfontein, the

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established infrastructure that will assist in transportation of produced goods to the AH and current operations that is already ongoing within the area.

What is further important is the training of staff and beneficiaries due to the complicated procedures and operations of managing, operating and maintaining such inland aquaculture facilities. Recent endeavours with aquaculture within the region has proven difficult and a large amount of effort and resources should be spent on ensuring that the expensive equipment and input supplies are not wasted due to a lack of efficient and capable management of operations and resources. As such, a mentor and specialists within the aquaculture field should be brought in to guide and instruct the proceedings over the initial and interim phases of the AP to establish a consistent operating process.

The Agri-Hub's location is consequent with the other development concepts and as decided by the provincial DRDLR at Springfontein. The different infrastructure, training and human resources requirements are also indicated within the table.

9.4. PROPOSED DEVELOPMENT CONCEPT OF LIVESTOCK

The following table illustrates the development concept for livestock, which will include cattle and mutton value chains within the XDM AP. The different elements and roles of the FPSUs, AH and RUMC will be explained.

Table 28: XDM AP Livestock Development Concept

Production Flow	Smallholder farmers (SHF)	FPSU	AH	RUMC
Key Role & Function	The core role of the smallhoder farmers would be the primary production of both cattle and/or sheep for the slaughtering at the abattoir.	Input supplies (such as feed, medicines and basic livestock farming material and equipment, etc.), extension support, mechanisation support, local logistics support, and loading docks and pens for animals.	Main abattoir and further processing services will be rendered here such as deboning and packaging. Freezing and strorage for transport to the appropriate markets. Local retail facilities to sell processed goods to local communities. On site training facilities for the slaughtering, deboning and further processing of red meat.	Market intelligence, assist farmers, and processors in managing a nexus of contracts, veteniarary services will also be stationed here together with training facilities for emerging farmers.
Location	All smallholder farmers involved with livestock production of both cattle and sheep within the influence sphere of the XDM Agri-Park. Areas. Synergies between operations from the	Although the whole of the XDM is suited for grazing purposes of cattle and especially sheep to the south, there is certain strategic areas that would serve as ideal for the establishment of FPSUs to	As proposed by the province, the Agri-Hub is to be located in Springfontein in the Kopanong LM.	It is proposed that the RUMC be located in Bloemfontein. Since this is the main economic hub and administrative seat of both the Free State Province and Mangaung Metro Municipality. It is

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	Northern and Eastern Cape SHF's within the influence sphere can also be utilised or incoperated.	assist SHFs. The following FPSUs were identified: • Petrusburg; • Jacobsdal; • Fauresmith; • Smithfield; • Springfontein; • Reddersburg. The SHF will be supported by all the FPSU(s) that would be situated within the XDM. The locality of these FPSUs will enable access to the SHF's as the whole of the XDM Agri-Park influence area will be in FPSU range.		further envisaged that the shared colaboration with the MMM AP will increase synergies and help with creating strong linkages between the two AP. Bloemfontein is also in close proximity to Springfontein (AH) (119.5km) and as such will further help with distribution to a major regional market.
Human Resources	The core HR personnel that the SHF would require from the FPSU/AH are: • Extension officers • Agronomist • Vetenerian • Mentor • Permanent farming staff	The FPSU will provide the following HR/HR facilities: • Agricultural extension officier (2) / support office; • Agronomist (for appropriate farming practices such as correct cultivation, feeding schemes etc.) (2) • Voluntary/Established commercial farmers to mentor the small scale farmers (*as many* as possible). • General staff to assist with day to day operations (4)	The AH will provide the following HR: • Abattoir and red meat processing general manager (1) • Abattoir and red meat processing assistant managers (3) • Floor managers (6) • Meat inspectors (8) • Administrative manager (2) • Quality control personnel (4) • Veteniarians / Vetenerian offices (2) • Blockmen and cutters (12) • Deboners and packagers (12) • General workers responsible for cleaning, loading, etc. (15) • Training personnel (4) • Retail personel (3)	The RUMC will provide the following HR: • IT expert/personnel (1) • Administrative manager (1) • Training personnel (2) • Marketing and sales agents (3) • Value chain coordinator (will be responsible for communicaiton and logistical operations between the SHF, commercial farmers, the abattoir and the markets in order to ensure that the quality control and efficiency of the whole value chain is kept in tact and improved upon)
Training	SHF would have to be trained on basic farming technices and best practices that is required to	One of the key function of the FPSU would be to provide the necessary inputs for the production of cattle and sheep. These would	Some training would definitely be required at the hub as it is envisaged that an operational abattoir and deboning facility is installed	Training of meat inspectors and further training of floor personel. As well as training of marketing

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	produce a consistent supply of livestock for processing. Grazing techniques, stud quality control, better breeding practices, feed ratio's etc. will have to be taught in order to make these SHF competitive within the market and to produce not only a consistent supply of animals, but also one of quality for the market. It will also be required that these SHF are trained in basic business skills in order to help them with the financiial skills to adequatly manage a succesful farm. SHF will also need to identify areas were they think training is needed in order to bridge the gap between emerging and commercial farmers. .	include the need for feed and a place where feed is stored and readily avaialble together with the necessary medicine and tools to operate a succesful farm. The FPSU's would also need to provide extension support on various farm practices, to the SHF.	here to produce red meat as produced by the local SHF. As such the following training will be required at the hub, e.g.: • Basic slaughtering techniques and use of equipment and facilities • Best slaughtering practices within abattoir slaughtering lines • Health and safety concerns and procedures • Basic abattoir procedures • Compliance with regulatory and health procedures • Training on efficient use of water and lessening of waste • Correct utilisation of waste in abattoir • Deboning and processing lines and procedures	and sales agents on best practices and efficient coordination. Training also needs to be done on how to disseminate information to the SHF, AH and the FPSU.
Key product/ activities	The core activities of the small holder farmers are: • Efficient grazing practices and managing feed for livestock efficiently according to seasonal and herd demands • Disease and pest control and monitoring • Stud health inspections and organisation of appointments with veteniary services to	The core activities of the FPSU are: • Collection of livestock from farms and delivering these stock to the abattoir of auctioning facilities • Provision of basic agricultural equipment and services to the SHF • Provision of sufficeint feed supply for SHF • Agricultural extension services	The core activities of the AH are: • Receiving and unloading of stock for slaughtering • Sorting and grading of stock • Slaghtering of stock • Deboning and further processing of red meat • Training of staff for abattoir and further processing activities at the hub • Transportation of stock to relevant markets • Quality contol	The core activities of the RUMC are: • Maketing, sales and distribution corelation of final products to different wholesalers and major retail outlets • Training services • Improvement of value chain and efficient value chain development and management

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	ensure quality livestock production • Production of consistent and quality livestock for the market • Provision of both slaughtering and breeding stock for the AP value chain and its further development • Management of water resources • Management of staff on farm		• Meat inspection services • Veteniarary services • Storage and freezing of products • Some retail to local markets	
Infrastructure/Equipment	The following infrastructure and equipment will be needed in order to run a succesful farming operation for livestock by the SHF: • Pens, loading and unloading docks, dip areas, feedlot areas, etc. • Water provision infratructure such as pumps, tanks, crib, feeders, etc. • A tractor and trailer may also be needed in order to transport feed and for basic farming operations • Basic farming equipment will also be needed such as can be used to repair	The FPSU would require to put in place the following equipments/infrastructure: • Transport (e.g Truck and trailers for the transportation of livestock to and from farms) • Feeding storage facility • Bakkies for extension officers and agronomists to use when site visits will be required in order to improve SHF farming practices • All equipments listed to be required by the small holder farmers.	The AH would require to put in place the following equipments/infrastructure: • Fully equipped abattoir • Loading and off loading facilities and extended pen that can facilitate grading and sorting of animals • Potential auctioning facilities • Water, electricity and waste saving/efficient infrastructure • Fully equiped processing facility • Administrative facilities • Freezer, cooling and storage facilities • Quality control facilities • Retail facility • Training facilities • Logistics and transport facility	The RUMC would require to put in place the following equipments/infrastructure: • Administrative facilities/ information centre • Training centre • SHF support centre • Offices for marketing and sales agents as well as value chain coordinator

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	and maintain fences, etc.			
Logistics	SHF should be able to communicate with the value chain coordinator when livestock is ready to be transported to the AH, when feed is needed, etc. the value chain coordinator should be responsible for coordinating and tending to tne needs of the SHF. The SHF will be responsible for production of livestock for the market and to ensure the quality of stock. Once a sufficient number of stock is ready, transportation should be aranged and the stock loaded and taken to the abattoir for processing.	The FPSU would have transportation services that will be responsible for delivering feed and other required farming equipment/tools to the farms. Furthermore the FPSU will act as a storage area for these trucks and the feed.	Livestock will be transported directly to the abattoir from the farms with the transportation provided by the FPSUs. the stock will then be unloaded in the pens, graded and sorted. They will then be slaughtered and put through the whole processing lines. When packaging is done the meat will be stored in the coolers awaiting transportation to the appropraite markets.	The RUMC will act as an administrative function whereeby it will be responsible for finding markets and for selling the produced and processed products.
Technology/ICT	In order to boost their production efficiency, the SHF would require: • Solar pumps and technology would be used to reduce the reliance on bulk services to be provided by government • CI will also be used as a method to improve stud quality and reduce the dependancy on a large quantity	Dry storage for feed to ensure that rain and other environmental elements doesn't deteriorate the quality of the feed for SHF Collaboration of transporting activities to streamline transportation processes and decrease fuel costs. Tracking devices on all vehicles to prevent hijack and also to monitor the movements and locations of the drivers. Also, the FPSU would require subscription to certain Apps from the RMUC to remain conversant with the current prices fetched on	Water, electricity and waste efficient abbatoir to ensure less dependancy upon the provision of bulk services increase output Ensure technological advanced abattoir and further processing and storage facililites Creating spinn off opportunities through the further processing of waste material	The RMUC will provide Information Data base that all the various basic units of the Agri-Park can subscribe to.

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	of male animals within a herd • Appropriate fencing and infrastructure for farms to make farming more efficient • Modern pest and desease control techniques and equipment • Mordern tools, • Mobile devices for subscription to Apps. , to enble them receive information from the RUMC on weather forecast, disease control, etc.	the global, national and local market, so as to be able to strategically supply potatoes/ potato products to the markets.		

The table above indicates the appropriate functions for the SHF, the FPSUs, the AHs as well as the RUMC. It further indicates the localities of these components within the XDM Agri-Park and the different requirements in terms of human resources, infrastructure and equipment as well as the technological advances that it can introduce to be more competitive. The core activities and logistics of each of these are explained and interpreted based on preliminary interpretation of the DRDLR mandate within the XDM Agri-Parks; this will be adopted as the needs and requirements for each specific site and operation varies and changes to best suit the value chain needs. As previously mentioned in the explanation of the other development concepts, the Agri-Hub will be situated in Springfontein and the RUMC in Trompsburg.

Four FPSUs were identified for the XDM area in order to best serve the SHFs and the different functions of the AH. These were strategically selected based on strategic locality, available infrastructure and the state of said infrastructure and proximity to current commodity activities already taking place within each specific area. Petrusburg is identified as the main FPSU for the livestock within the XDM AP influence area. This is not only based on the prevalence of the commodity-related activities within the area but also taking cognisance of the other two commodity FPSUs situated in Edenburg and Bethulie. The N8 also bypasses Petrusburg, providing for an ideal infrastructural framework for transportation of livestock. The area furthermore, already has an agricultural office as provided by DARD and a Senwes that can further assist in the development of the areas SHF.

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9.5. COMBINED AGRI-PARK CONCEPT FOR THE DISTRICT

This sub-section focusses on the combined XDM Agri-Park model that will illustrate the different functions of each of the previous commodity development concepts that can be integrated to create a more efficient overall agro-processing system. These are illustrated in the table below:

Table 29: XDM AP Combined Development Concept

Production Flow	Smallholder farmers (SHF)	FPSU	AH	RUMC
Key Role & Function	The core role of the beneficiaries would be the primary production of the three main commodities of aquaculture, venison and livestock (cattle and mutton)	The FPSUs will be responsible for the provision of input supplies and the logistical support of SHF. Commercial farmers will as a rule not be supported by the FPSU as it the key role is support of the SHF.	The AH will have the following key roles/functions: • Training of staff • Storage and transport of processed goods to the markets • Agro-processing • Sorting and packaging • Some retail activities for the domestic market and by passers on the N1	Market intelligence, assist farmers, and processors in managing a nexus of contracts. Provision of training and business development and assistance with sucessful business operations for the SMME enterprises.
Location	XDM farmers within the confines of the AP influence network. In some cases, this might extent to areas of the Northern and Eastern Cape depending on availability and supply of other SHF.	As identified in the beginning of the section, there should eventually over the role-out period of 10 years be 13 FPSU's within the XDM area. However, there is some of these that will overlap and furthermore some of these will major in one or more commodities, but still provide basic assistance to SHF. For instance, the FPSU of Bethulie will serve as FPSU primarily for aquaculture but will also provide basic assistance for livestock farmers within its vicinity. The first three FPSUs that should be rolled-out in order to provide initial support during the first years of AP establishment is that of: 1. Petrusburg; 2. Edenburg; and 3. Bethulie	As proposed by the province, there will only be one Agri-Hub and will be located in Springfontein within Kopanong LM for the initial phases of the establishment. It is envisaged that as the AP develops that more will be formed throughout the XDM.	Based on the cathment area and the parameters provided there will only be one RUMC for both of the XDM as well as the MMM. This is due to the proximity of these two APs to each other and the prevalence of a ready market in Bloemfontein. It is proposed that the RUMC be located in Bloemfontein.

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Human Resources	SHF will primarily have farm workers concerned with the primary production of livestock or venison. In the case of aquaculture SHF will have specialised workers concerned with the production of healthy aquaculture at the production facilities.	The FPSU will provide the following HR personel for general SHF production functions as well as for each specific commodities need: • Agricultural extension officier • Health and safety officers • Agronomist • Meat inspectors • Administrative Managers • Professional hunters • Skilled workers for operating transportation and loading vechilesand equipment • Mentors • Operational Manager • Floor Manager • Game experts • Unskilled workers for general labour purposes • Blockmen and cuters, as well as workers to operate the mobile abattoirs • Aquaculture processing workers • Commercial farmers who are willing to partner with both SHF and FPSU to stimulate production The number of direct and indirect jobs is difficult to determine due to the technicalities involved for each of the FPSUs; however, preliminary estimations are made that if the three FPSUs is fully operational with all staff that approximately 20 – 30 direct job opportunities will be created.	The AH will primarily be concerned with the export abattoir that will be responsible for the slaughtering and processing of venison, cattle and mutton meat. This can be done at one abattoir and processing facility if build correctly from the get go. In addition to this supporting opportunities will also be facilitated by providing the necessary infrastructure for other agro-processing activities such as warehousing and storage facilities, but also the basic provision of infrastructure such as roads, water, electricity and water. As such the AH will provide the following HR services: • Abattoir and red meat processing general manager • Abattoir and red meat processing assistant managers • Floor managers • Meat inspectors • Administrative manager • Quality control personnel • Veteniarians / Vetenerian offices • Blockmen and cutters • Deboners and packagers • General workers responsible for cleaning, loading, etc. • Training personnel • Retail personel It is estimated that during the establishment and first year of successful operation of the export abattoir and related activities within the AH that there will be between 40 and 50 direct job opportunities created.	The RUMC will provide the following HR services: • IT expert/personnel • Administrative manager • Training personnel • Marketing and sales personel • Value chain coordinator The estimation for the creation of direct job opportunities by the RUMC is that there will be between 10 – 20 opportunities.
Training	Small holder farmers will be trained in the	Training will be done for both the venison and	Intensive training will need to be administered at the AH as it	The following training opportunities can be

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	following farming and production disciplines: • Best farm practices • Infrastructure establishment and equipment use • Livestock consideration • Grazing techniques and practices The extension officers, and game and aquaculture experts will assist in the training and assisting SHF to develop the necessary skills to produce a consistent quality supply of produce for the rest of the value chain system.	aquaculture personnel that will be for the pre-processing procedures and activities at the FPSUs. As such, skills for the slaughtering and processing of fish and venison will be developed. Best practices and practical training will be administered and adherence to the required regulatory as well as international standards will be taught. Another aspect of the training will be that of health and safety procedures.	is anticipated that the abattoir will be established here as such the following training will be required: • Basic slaughtering techniques and use of equipment and facilities • Best slaughtering practices within abattoir slaughtering lines • Health and safety concerns and procedures • Basic abattoir procedures • Compliance with regulatory and health procedures • Training on efficient use of water and lessening of waste • Correct utilisation of waste in abattoir • Training of storage and transportation staffs on how to handle and operate and appropriately manage the handling and transporting procedures as well as health and consumer's considerations.	made available at the RUMC: • Training of training personnels on how to disseminate information to the farmers, Agri-Hub, and the FPSU. • Market analysis skills. • Supply chain and logistics skills. • Trading (local and international). • Agriculture computer programme training.
Key product/ activities	The SHF would primarily be concerned with the production of agricultural produce of the three commodities discussed throughout this document. This will entail all relevant farming and business skills and actions required to perfom the crucial task of overseeing the provision of a constant quality supply of primary prodcus for further processing.	FPSU' core activiites entail support to the SHF in not only input supplies but also agricultural extension and advisory services. This is needed to bridge the gap between SHF and commercial farmers and to ensure that the SHF produce a constant primary produce supply. In addition with regards to aquaculture and venison there will be a preprocessing function required at the FPSUs due to the nature of the processing requirements of these commodities.	The core activities of the AH are concerend with the intensive processing of agricultural produce as provided by the SHF, supported by the FPSU's. as such processing until the products are ready for the market will be the core activity at the AH. However, supporting activities include the storage, tranportation, training and sdome retail activiites as well.	The core activities of the RUMC are concerned with marketing and distribution functions, further research on best practices and value chain development and improvement and the development of a nexus of contracts required in support of the value chain.

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Infrastructure/Equipment	The SHF would require infrastructure and equipment in order to produce the required quantity and quality agricultural products. This would vary between the different situations on the SHF farms as well as the commodities that will be produced, however there is some general requirements such as: • Water connectivity/availability • Fencing and basic faming infrastructure such as pens, loading docks etc. • Farming equipment such as a tractor, trailer, and machinery required for maintenance on the farm	FPSUs would require infrastructure and equipment concerend with assisting SHF and fulfilling this function, again the exact infrastructure would have to be detemined on an on-site analysis and based on the commodity. There is however a number of infrastructural requirements that would be needed such as: • Transport (e.g small transport bakkie or pick-up truck) • Extension offices and preliminarary training facilities • Aquaculture processing facilities at relevant FPSU's as well as related equipment as listed under the aquaculture development concpet • Venison preliminarary processing equipment such as the mobile abattoirs and related equipment • Storage facilities for feed storage and other input materials for SHF	The AH would be where most of the intensive processing will take place and as such will require a significant capital investment in order to reach full operational capcity. As such the following would be required for the AH: • High tech abattoir capable of handling at least four lines of different meat varieties and capable of adhering to both domestic as well as export requirments and regulations. • Deboning and packaging facility to further accommodate and assist the export abattoir • Highly resource efficient and waste reducing infrastructure at abattoir due to water shortages • Energy efficient freezing nad storage capabilities not only for the meat processed at the abattoir, but also for the aquaculture produced at the FPSU's • Administrative offices and training facilities • Logistics and transport facility, with loading docks • Quality control facilities • Retail facility	The RUMC would require to put in place the following equipments/infrastructure: • Administrative facilities/ information centre • Training and research centre • General offices for marketing and sales personel
Logistics	The logistical plan will be explained as one segment in order to better understand the steps from the farm to the table of produced goods. There are basically three logistical procedures when simplifying the process in terms of the transportation of goods throughout the AP: the first would be the transportation of goods from the farm to the agro-processing facilities and finally from the processing area/facilities to the relevant market for either further distribution of sale. As such, the following sequence of actions is anticipated to take place during the logistical process of the XDM AP: • Production of primary agricultural commodities by SHF - the SHF should be registered at the RUMC value chain coordinator (VCC); • The SHF or administrative manager at the pre-processing plants indicates to the VCC that his produce, livestock or pre-processed goods are ready for transportation to the abattoir or processing facilities, which are located at the AH; • Transportation is administered to collect and transport the said product from the SHF/pre-processing facilities to the AH. These transportation vehicles are situated at the FPSU's.			

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<table>
<tr><td></td><td colspan="4">

The VCC, in conjunction with the extension officers and administrative managers in each area, will collaborate efforts to ensure the maximum capacity that can be transported, and if full capacity isn't reached, they will devise a strategy in order to anticipate or promote other SHF also make use of the transportation opportunity.
The VCC, extension officers, and administrative officers should create an inventory to establish the commodities that will be produced, the anticipated output, and thus synchronise it with the timing and logistics for transportation of these goods.
Creating a spatial map and transportation locality plan will also assist with combining transportation efforts and reduce expenditure costs to the FPSUs.
Together with this the best routes for collection, potential problems with transportation should also be mapped and considered.
The AH agro-processing activities should also be taken into consideration in order to assess the need for supplies and potential storage capacity available at the AH.
When the produce is finally processed and packaged, then the VCC will once again liaise with the marketing and sales representatives to assess the transportation details to the relevant markets.
The export of goods needs to be carefully monitored and the transportation to the different markets carefully correlated with the capacity at the AH as well as the demand for the processed goods abroad.

A detailed logistics plan is imperative for the effective management of the AP logistical and transportation procedures. As such, it is highly recommended that a VCC is appointed to coordinate these activities and ensure the effective and smooth flow of activities.
</td></tr>
<tr><td>Technology/ICT</td><td>Technology and ICT for SHF would largely be concerned with assisting SHF to bridge the gap between small-holder farming and commercial farming. As such, there is a number of technological advances that can be introduced for farming practices in order to make it more compettiive. These technologies are mentioned for each of the commodities under their respective development concpets but include modern tools, equipment and techniques that will make farming more efficient.</td><td>Technological advances at FPSU level will include tools and equipment concerned with making operational and assistance towards the SHF more efficient. As such transpotation tracking and synchronisation of activities will be employed and quality storing operations at the FPSU's. In adition the knowledge of experts in each of the commodity fields will be employed in order to make the value chain upward and downward stream activitieis more efficient. Due to a number of pre-processing activities that will take place at the FPSUs, there will be a number of protocols and procedures that will be linked with technology to make it more effective and productive while adhering to both domestic and internaitonal standards.</td><td>Technology to assist with the AH is of high imporatnce due to the nature of activities such as the export abattoir and the need to actively monitor the whole value chain and processing lines. As such, technology will be employed to assist with better monitoring and managing systems.

In addition, technology concerned with environemntally-friendly approaches will also be introduced in the building and operation of the abattoir in order to minimise its dependance on bulk infrastructure and services.

Easy access and effective loading docks in order to make the handling of proccesed goods easier and faster.</td><td>The RMUC will provide Information Database that all the various basic units of the Agri-Park can subscribe to.</td></tr>
</table>

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9.6. HIGH-LEVEL COSTING (CAPEX)

The following table illustrates the estimated implementation or start-up costs for each of the different functions within the AP, namely the FPSUs, the AH and the RUMC. It is however, the "green field" construction costs and will therefore be subject to changes as construction commences and specific construction and site development plans are in place.

Table 30: High Level Costing: XDM AP CAPEX

Building Cost Rates		Unit	Inflation	6,5%
	Item		**2013**	**2016**
	Offices - Low Rise	m²	R6 450	**R7 791**
	Training Center	m²	R6 500	**R7 852**
	Retail - Regional	m²	R9 000	**R10 872**
	Steel frame, steel cladding and roof sheeting	m²	R3 500	**R4 228**
Warehousing	Steel frame, brickwork to ceiling, steel cladding above and roof sheeting	m²	R4 050	**R4 892**
	Administration offices, ablution and change room block	m²	R6 100	**R7 368**
Cold Storage	Cold storage facilities	m²	R12 150	**R14 677**
	Perimeter Fencing - ClearVu + Installation	m	R1 635	**R1 975**
	Electrical Installation	m²	R625	**R755**
	Roads/Paving	km		**R3 500 000**
Parking	Parking - integral grading	m²	R450	**R544**

(adapted from Rode, 2015 & ClearVu, 2016)

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Table 31: Escalation in Building costs - 2017 - 2019

2017	2018	2019
4.9	5.0	6.0

(Source: Rode, 2015)

The table above indicates the escalation of building costs of the next few years and should be taken into consideration with regards to the building costs provided per m^2.

Table 32: Capex of Commodity Equipment

Commodity	Items	Cost
Equipment Venison	Transport Vehicles	**R6 821 600**
	Implements	**R2 480 000**
	Processing Equipment	**R300 000**
	Mobile Abattoir	**R1 000 000**
Equipment Aquaculture		
	Transport Vehicles	**R3 410 800**
	Processing Equipment	**R882 294**
Equipment Livestock	Farm Vehicles	**R708 226**
	Transport Vehicles	**R6 410 800**
	Implements	**R480 000**
	Processing Equipment	**R3 037 000**

The table below, illustrates the cost of the equipment required by the Agri-Hub. The costs for the equipment stated in the table above and below were estimated based on the average market prices of various equipment items and brands. The actual price may differ depending on market fluctuations, economic fluctuations, and overall quantity requirements.

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Table 33: Estimated Cost of Equipment for the Agri-Hub

Equipment	Cost
Transport Vehicles	R5 000 000
Processing Equipment:	
Venison	R28 000 000
Aquaculture	R16 000 000
Livestock	R25 000 000

9.7. CONCLUSION

The conceptual role of each of the commodities and their subsequent activities is illustrated and interpreted to best recommend how the establishment of each of the value chains for these commodities should be regarded. The core activities, human resources, infrastructure and equipment, logistical arrangements, training, and technology are addressed for each of the commodities. These commodities are described by the best development concept based on preliminary findings and gives both a breakdown of each of the commodities development concepts, as well as the combined development concept. The combined development concept is important as it illustrates where synergies can be created between the different functions and logistical arrangements.

In addition to this, the capital outlay of the Agri-Park as a whole are indicated based on a "green field" assessment and estimated figures as is the different industries norm by time of writing. It is further anticipated that the three identified FPSUs together with the AH will be established first and then during the 10-year DRDLR custodian period, the rest of the FPSUs and related activities will be developed and established based on the need and value chain development during this time period.

Important to note is that the different activities between the value chains and each of the different functions are established as complimentarily, and are coordinated as such. This is important for the value chain development and its efficiency. Creating a smooth transition from production on farm level through the processing line and onto the market, will be dependent upon an effective systematic approach and management operation. Development of a strong singular commodity value chain will also enable sustainable spin-off opportunities within the wider XDM Agri-Park, which will ensure that new SMMEs can be developed and economic growth promoted and agro-processing expansion ensured.

During the establishment of the Agri-Parks it is estimated that the targeted hectares will be approximately 26 13, while the number of small-holder farmers influenced will

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potentially be 129 for the three main commodities alone. The estimated number of jobs is calculated to potentially be between a minimum of 9 080 and a maximum of 12 354 employment opportunities. This is for both direct and indirect jobs within the larger agricultural sector and not only agro-processing job creation.[14]

[14] *These employment multiplier figures should be used as a guide and a detailed breakdown and write-up would be required to indicate how these numbers were calculated using BFAP multipliers.*

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10. AGRI-PARKS ORGANISATIONAL STRUCTURE

The Mangaung Metropolitan Municipality Agri-Park organizational structure is analysed according to three separate structures. The first is the advisory structures, which provide support in the Agri-Parks processes facilitating feedback cycles as well as information sharing. The approval structures are the second structure which facilitates further feedback and information sharing, while focusing on approvals, monitoring and evaluation of land reform activities as well as the approval of Agri-Park projects. The final structure is the implementation and monitoring structure which ensures orderly flow, feedback and also information sharing. The following diagram is an illustration of the organisational structure of the MMM Agri-Park, each of these structures are then further analysed in the sections which follow.

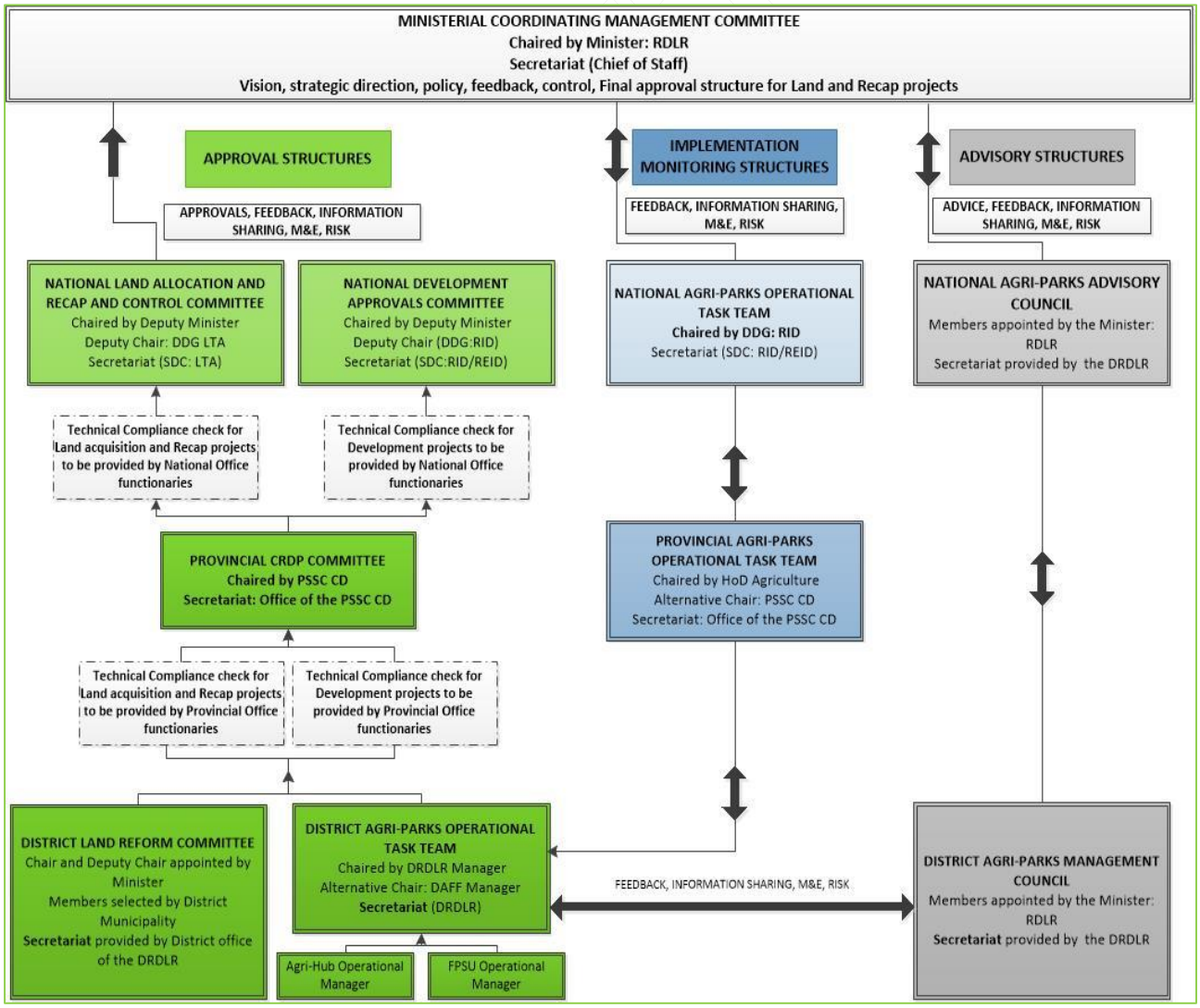

Figure 28: Agri-Park Organisational Structure

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10.1. ADVISORY STRUCTURES

The advisory structures provide advice to the approval structures, which makes them a vital component within the Agri-Parks organisational structure. The National Agri-Parks Advisory Council (NAAC) and District Agri-Parks Management Council (DAMC) are the two advisory structures which have currently been identified. Stakeholders as well as the interested party form the primary membership of the advisory structures at both national and district level.

10.1.1. The NAAC

The members within the National Agri-Park Advisory Council are a collective of representatives which have been elected from the various linked organisations and are expected to report to the minister directly. As stipulated within *Circular 9 of 2016, the main* functions of the National Agri-Park Advisory Council may include the following:

- *To solicit, co-ordinate and advise the Executive, regarding issues and concerns which relate to the implementation of the Agri-parks Programme;*
- *Ensuring that there is public awareness of the Agri-parks Programme and that people are educated about it;*
- *Analyse and review the applicable studies, plans and proposals identified by the Executive, DAMCs and the NAPOTT, in order to provide comments and advice thereon;*
- *Advising on which policies, legislation and programmes from the Department of Rural Development and Land Reform (DRDLR) will have an impact on the Agri-parks Programme;*
- *Providing advice regarding the Agri-parks Programme as well as the implementation of the business plans as referred to by the DAMCs;*
- *Facilitate open communication with the Executive, the Management of the DRDLR, the DAMCs and any other stakeholder involved in the Agri-parks Programme as required; and*
- *Mediating disputes arising from the DAMCs relating to its operation and/or advice provided to the Department or other bodies that are implementing the Agri-parks programme in a district.*

10.1.2. The DAMC

Referred to as the "voice" of the stakeholders and interested parties in Agri-Parks, the District Agri-Parks Management Council plays a vital role and is a very necessary structure. Much like the members of the NAAC, the members of DAMCs, are a collective of representatives from various organisations. The DAMCs is mandated to ensuring that they communicate advice to the NAAC as well as DAPOTT from the members of council. Additionally, the DAMC must do the following and more:

- *Working collaboratively on the identification of new business opportunities within an Agri-park;*

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- *Facilitating the process of the business plans implementation;*
- *Ensuring regulatory compliance with all the applicable policies and legislation by providing the necessary advice relating to it;*
- *Advising methods alternative and additional which can be used to promote alignment with the National Development Plan, Agricultural Policy Action Plan, Provincial Growth and Development Strategies and other development frameworks; and*
- *Assisting in identifying, evaluating and monitoring of risks which are related to the specific projects.*

10.2. APPROVAL STRUCTURES

Approvals and feedback, sharing the necessary information, monitoring and evaluating land reform activities as well as the final approvals of Agri-Park project are the main responsibilities of the approval structures. This means that there must be a solid understanding of the project approvals process in order to explain the functioning of the approval structure. In terms of the Agri-Parks organisation the project approval process is started on the district level.

The approval structures which form part of the Agri-Parks include DAPOTT, District Land Reform Committee, Provincial CRDP (Comprehensive Rural Development Programme) Committee, National Development Approvals Committee (NDAC) and the National Land Allocation and Recapitalisation Control Committee (NLARCC).

Note: It is understood that both the DLRCs and DAMCs can recommend projects/producers to be considered to be part of Agri-Parks.

10.2.1. FPSU Operational Manager

The main purpose of employing a FPSU Operational Manager is to ensure the successful implementation of the FPSU's within the MMM AP context. The FPSU Operational Manager should be appointed by the Metro and report to DAPOTT.

10.2.2. Agri-Hub Operational Manager

The AH Operational Manager will be responsible to facilitate and oversee the implementation of the Agri-hub with all the relevant operations successfully in place on site. The FPSU Operational Manager will report directly to the district operational task team and as such should also be appointed on the district level.

10.2.3. DAPOTT

As part of the Agri-Parks Approval Structure, the District Agri-Parks Operation Task Team is advised by the DAMC and receives information from PAPOTT and NAPOTT. It is crucial then that the DAPOTT is able to interpret all the information received from the various spheres in order to apply it in their approvals. DAPOTT acts as a monitoring agent, as it advises on projects and land reform beneficiaries which must be included in the Agri-Parks. The main functions of the DAPOTT include the but is not limited to the following:

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- *Technical support and guidance for implementation;*
- *Guidance in the implementation of the district Agri-parks business plan;*
- *Measuring expenditure against the district Agri-parks business plan;*
- *Identifying all district projects contributing to the district Agri-parks business plan*
- *Compiling a district project register (all DRDLR branches);*
- *Monitoring project implementation against the approved project plan and district Agri-parks business plan;*
- *Promoting collaboration in the identification and packaging of local development projects in support of the mandate of the DRDLR;*
- *Providing advice on proposals that should be submitted to the Provincial CRDP Committee; and*
- *Overseeing and monitoring the implementation of the Government's Rural Development Programmes.*

10.2.4. DLRC

Land reform and all activities connected to it is the primary concern of the District Land Reform Committees (DLRCs). The DLRCs does however have additional functions which they perform in line with Agri-Parks, these include:

- Identifying district projects which contribute to the Agri-Parks business plans; as well as
- Aligning these projects and the noted beneficiaries with the specific sites which have been identified for the Agri-Parks.

The abovementioned functions are however secondary to the following main functions:

- *Identifying farms suitable for acquisition by Government (the target is 20% of agricultural land per district);*
- *Identifying and interviewing potential candidates for farm allocation;*
- *Advising the Minister regarding the strategic support needs of the farms which have been identified and further supporting the needs of recommended candidates; as well as*
- *Providing advice to the Minister on how to resolve land rights conflicts, as might be referred to a DLRC by him/her.*

Note: Projects and or beneficiaries identified by the DLRCs and DAPOTT, are subjected to technical compliance checks before being passed onto the PCRDP

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10.2.5. PCRDP

The Provincial CRDP Committee (PCRDP), As the provincial approval structure, is responsible for passing onto the National Government structures, the projects and beneficiaries alike, which have been identified by the DLRCs and DAPOTTs. As part of the Agri-Parks organisational structure, the name of this structure may have changed to the PJSC (unknown) as suggested in the schematic below. Projects and beneficiaries identified by the PCRDP are compiled into a Provincial Project Register, this register then adds to the provincial spatial target plan. The functions of the PCRDP include:

- *Giving inputs which will assist in the compilation of the provincial spatial targeting plan, as provided by the districts;*
- *Recommending all development, land acquisition and tenure projects in line with a Delegation of Authority Framework to the NLARCC and NDAC through its technical committees; and*
- *Overseeing the work of the Provincial Technical Committees and District CRDP Committees, in order to promote cohesion and ensure alignment of projects and funding at a provincial level.*

Specialists can form part of the PCRDP members should specialist skills be required to inform decisions to be made regarding project selection.

Projects and or beneficiaries chosen by the PCRDP are subjected to technical compliance checks before being passed onto the NLARCC and the NDAC

10.2.6. The NLARCC

The National Land Allocation and Recap and Control Committee (NLARCC) must recommend land acquisition and recapitalisation projects to the MCM (Ministerial Coordinating Management committee). Over and above this main function, other functions of the NLARCC include but are not limited to the following:

- *The provision of inputs to assist in the compilation of the national spatial targeting plan as provided by the provinces;*
- *As per the operational plans the NLARCC must identify the national projects and compile a national project register*
- *Providing approval, in line with a delegation of authority framework, for land acquisition, tenure and recapitalisation and development projects; and*
- *In order to eliminate ensure alignment between projects and funding at national level, the* NLARCC must oversee *the functions in relation to the work of the National Technical Committee and Provincial Committees,*

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The NLARCC and PCRDP have very similar functions differing in the levels within the government, as revealed by the above functions.

10.2.7. The NDAC

Approve all the development projects which are proposed at the national level, lies at the centre of the National Development Approvals Committee. The NDAC must also oversee the PCRDP committees and the part of the land reform approval process under the National Technical Committee It can be noted that the functions which the NDAC performs are very similar to those which are performed by the NLARCC. The main difference is in that the NDAC does not play a role in the identification of the projects, approval of land acquisitions, tenure recapitalisation and the development projects.

10.3. IMPLEMENTATION AND MONITORING STRUCTURES

Two structures within the Agri-Parks organisational structure are currently focused on implementation and monitoring, the PAPOTT (Provincial Agri-Parks Operation Task Team) and NAPOTT (National Agri-Parks Operation Task Team). These structures are however not solely dedicated to Agri-Parks. PAPOTT and NAPOTT also play a role in the monitoring and implementation of other programmes. This however stays connected, as most of these programmes and projects can influence the Agri-Parks programme.

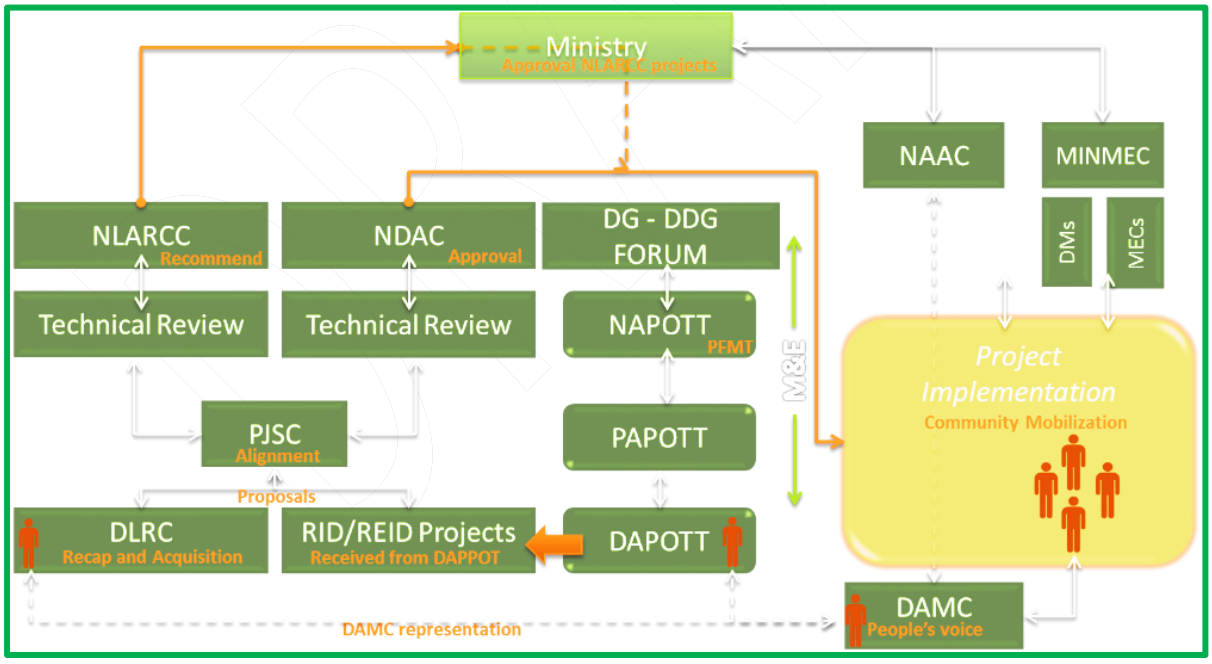

Figure 29: XDM Implementation and Monitoring Structure

10.3.1. NAPOTT

The NAPOTT carries out various functions which are specifically directed at improving Agri-Parks operations relating to the implementation and on-going operation of the Agri-Parks alike. The following form part of the functions referred:

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- *Developing the National Agri-Parks Plan;*
- *Contributing to the development guidelines of Agri-Parks;*
- *Monitoring provincial business plans against the abovementioned guidelines;*
- *Monitoring budget alignment as set out in the business plans;*
- *Giving inputs to assist in the compilations of provincial Agri-Park business plans; and*
- *Managing project roll out of Agri-Parks in line with approved project plans nationwide.*

10.3.2. PAPOTT

PAPOTT, as a provincial support base, is directed at ensuring that the integrated implementation of Agri-Parks is well coordinate and that they facilitate the process effectively. This aim is to be achieved by providing the necessary technical support for the planning and implementation. PAPOTT is able to enable the success of the Agri-Parks through giving inputs to the compilations of Agri-Parks Business plans and other elements PAPOTT is able to better enable the success of the Agri-Parks.

Note: PAPOTT will only remain operational until the Agri-Parks programme has reached a sustainable level, then PAPOTT will be integrated with the PCRDP.

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11. IMPLEMENTATION GUIDELINES

This section focusses on the implementation procedures and the approach going forward to implement the XDM Agri-Park Development concept as discussed during the previous section.

11.1. IMPLEMENTATION PROCESS

The following implementation process for the XDM Agri-Park is set out in the figure below; it involves the overall steps that were developed for the complete establishment of the Agri-Park with variations and additional activities that will be part of the process as the XDM Agri-Park is rolled out over a 10-year period.

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Figure 30: Agri-Park Implementation Process

11.2. ALIGNMENT TO CURRENT INCENTIVES

This sub-section focusses on the different incentives and how alignment with the XDM AP can be achieved. As such, the main role of each incentive is highlighted together with the alignment that will occur. These are tabled as follows:

Table 34: Incentive Alignment

Incentive	Alignment

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Department of Agriculture, Forestry and Fisheries (DAFF)	Agricultural Broad-Based Economic Empowerment (AgriBEE)	The FPSUs will continuously conduct workshops and trainings and it is thus, expected that close partnerships with commercial farmers and emerging/smallholders will have to be formed in the process. This is aligned with AgriBEE as it pursues to unlock potential for growth in the agriculture sector. Support smallholder farmers and agro-processing entrepreneurial potential, that exists in small industries, are vital components in this pursuit.
	Land Redistribution for Agricultural Development (LRAD)	As part of the Agri-Parks' intent to expand the sector, primary production farmers will need to expand the production land and this requires farm implements support from the FPSUs. It is thus, necessary that there is good collaboration between the LRAD programme and the Agri-Parks developments and objectives. After potential farmers participants in the Agri-Parks programme have been selected, the farmers are able to approach the department under this programme.
	Comprehensive Agriculture Support Programme (CASP)	Continuous training will have to be conducted at a farm level, as part of the implementation preparation at the FPSUs, the hubs and for professionals providing market intelligence at the RUMCs. The CASP is currently already facilitating the provision of training support to sector players, which means that the recommended training is assumed to be aligned with CASP goals.
	Integrated Food Security and Nutrition Programme (IFSNP)	One of the objectives of Agri-Parks is to address food insecurity, and the problems associated with it. It is envisioned that this will be achieved through the sale of the produce for the local markets. This will address food security shortfalls that maybe existing in

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		the district, thus working in line with the Integrated Food Security and Nutrition Programme.
	LandCare	In implementing the Agri-Parks projects, some of the technology that will be used will ensure that the farming activities optimise the productivity at a farm level. This will be aligning to the LandCare programme, which encourages communities to ensure land usage sustainability.
Department of Rural Development and Land Reforms	Comprehensive Rural Development Programme (CRDP)	The implementation process for the Agri-Parks programme should assist in the development of self-sustaining agricultural activities in the district. Agri-processing and the value adding processes linked to that, will promote enterprise development. In this way, there is a clear link to the CRDP, as it seeks to achieve this enterprise development. Job opportunities will thus be created for the skilled citizens and will meet the basic needs of many households residing in the rural villages within the district.
Development of Economic Affairs Department of Economic Development, Environment and Tourism (LEDET)	Economic Planning and coordination	At a provincial level, the Agri-Parks programmes align to the Province's economic development programme, which seeks to support economic activities that will stimulate industry development and exportation of the processed products in the Agri-Hub for various commodities.
Department of Trade and Industries (DTI) Incentives	Export Marketing and Investment Assistance (EMIA)	As part of the implementation process, farmers and agro-processors are required to apply for financial assistance. The financial support applications, as part of the Agri-Parts, align with the goals of supporting South Africa's export products, as set out by the DTI.

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	Sector-Specific Assistance Scheme (SSAS)	The agro-processing activities within the hub will also serve in providing better alignment of the Agri-Parks with DTI's SSAS. SSAS, as explained above, encompasses industrial sectors which plan to pursue export markets.
	Critical Infrastructure Programme (CIP)	Core infrastructure resources need to be put in place in order to sustainably develop and implement the Agri-Parks programme. This will enable the flow of goods up the value chain, from the farm level to the final markets. Investment growth stimulation is expected to be one of the results of the Agri-Parks infrastructure development.

11.3. SPECIFIC RECOMMENDATIONS

The following recommendations are provided and should be considered with regard to the establishment of the AP within the Xhariep District Municipality:

- Infrastructure:
  - Identification and upgrading of existing infrastructural short comings within the areas of the FPSUs, the AH and the RUMC. These upgrades will help to ensure that a sufficient infrastructural environment is established within each of the priority areas were the first 3 FPSUs and AH will be established. As such, engineers and the relevant role-players should be appointed to canvas these areas in relation to capacity and required upgrading needs and costs.
  - The building of a high-tech abattoir should be approached on the approach of 'buying cheap, is expensive later'. This is due to the costs that will be incurred if construction with the correct technology and systems is not in place. The exporting of slaughtered meat is a highly complicated process and subject to international procedural scrutiny; as such, it needs to be addressed during the construction phases already.
  - Collaboration with infrastructural projects and initiatives already ongoing within the region is also recommended in order to save on costs incurred during the establishment of the AP.
- Natural Resources:
  - Water is a scarce commodity, not only in South Africa, but especially within the XDM. As such, water saving measures and techniques should be employed from the get go. Constructing water efficient infrastructure that

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might have a higher capital outlay will be a good approach in order to save expenditure costs over the long haul.
    - The high tech abattoir should also be fitted with state of the art infrastructural and bulk service systems that will save electricity and reduce its waste and water usage.
- Agri-Park commodities:
    - All of the commodities in question, as proposed with the initial establishment of the AP, have intricate procedures and operational mandates. As such, special care should be taken to ensure that the whole processing line is handled with systematic accuracy in order to adhere to both domestic and international procedures and regulations.
    - Spin-off opportunities should also be investigated once these 3 commodities have been established as well as complimentarily and other commodities within the region that would contribute to the strong agro-processing sector within the XDM.
- Technology:
    - It is recommended that a significant effort is put forward in order to establish a good communication network and structure between the different role-players within the AP value chain.
    - Subsidies should be provided by government for the SHF to create an efficient communication network that will include the necessary infrastructure and training for the stakeholders.
    - It is also recommended that the RUMC should be the focal point of the communication network, and that all communication should be handled by the administrative manager and value chain coordinator.
    - Communication is further, also of importance for the marketing and sales personnel to create the required nexus of contracts for the products of the Agri-Park
- Training:
    - The demographic profile shows that there is a low skills level, education level, high unemployment combined with the migration to cities in search of better job opportunities that will negatively impact the establishment of basic agricultural activities and especially agro-processing opportunities within the XDM AP. As such, a strong emphasis as has been placed on high intensity skills development and programmes throughout this document.
    - The complexity and level at which production a processing needs to take place within the XDM AP necessitates the need for training programmes that will develop local communities to not only become a capable labour force, but also have the chance to benefit from the agri-businesses by also being beneficiaries.

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- It is imperative that staff of the abattoir is extensively trained in best practices, procedures, regulatory requirements and international standards for the whole processing line.
- Each of the different functions of the HR at the AP is important, and great care should be taken to develop each of the required skill sets to ensure that the whole agro-processing progression runs efficiently.
- Within this document, stakeholders have been identified that can become strategic partners within the training environment of the APs. These potential training partners are important for the development of the AP since without the successful training and implementation of the learned skills, the AP would simply not succeed.
- With regard to time constraints and the need to get the process on the way as fast as possible, on-the-job training should also be considered and the processing facilities should be built in such a way to accommodate easy, efficient and fast transition from the training facilities to the actual processing facilities. Such training can be availed by the relevant potential training partners.
- Mentoring of commercial farmers within the XDM, and for each of the commodities is also important as it would help to guide black emerging farmers to become more competitive, limit losses due to uncertainty or negligence and instil best farming practices. Commercial farmers should be given incentives through the processing ownership model in order to encourage them to become part of the AP process.

- Logistics:
  - Important with regard to logistics, is the need for a logistical plan that will determine the necessary transport and distribution activities needed throughout the XDM AP.
  - In collaboration with this, is the linkage that should be formed with the communication plan. This is needed in order to ensure the effective use of the logistical plan. Larger courier and transport companies could be approached to assist in this regard; however, it is recommended that this is developed locally to encourage entrepreneurship.
  - Where collaboration is needed, is with regards to the export of products and the penetration of markets. Again, a list of stakeholders has been identified that should be partnered with in order to address this.
  - Mentoring and specialists within each of the three commodity fields are of extreme importance with regard to the effective maintenance of the logistical system within the AP. These experts and specialists will need to be

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part of the whole value chain process to address any challenges during the establishment of the AP.

- Policy Environment:
  - During this document, all the relevant documentation was scrutinised in order to align the XDM AP initiative with both current projects, programmes and policies, but also with future planned projects. What is however, important is that future documentation being prepared such as the current review of the DM LED needs to align national policies on a local level.
  - Cross border initiatives are also encouraged with adjacent areas such as Joe Gqabi DM. Joe Gqabi DM is also an area that will be able to supply a number of mutton and cattle for the abattoir at Springfontein. Areas such as the southern parts of the Northern Cape should also be considered as catchment areas for the AH as a supply chain.
- Funding, investment and Incentives:
  - Local incentive programmes and initiatives should be developed in order to stimulate SMMEs and spin-off agro-processing opportunities.
  - Investment of both domestic and potentially foreign investment sources should be considered and pursued in order to find local solutions focused on development of local entrepreneurs and communities.
  - As such, a list of financial institutions and funding sources have been provided in order to assist the various role players within the AP value chain to ascertain the best course of financial action required.
  - Basic business skills should also be developed of entrepreneurs, SMMEs and SHFs in order to better create an efficient business place environment throughout the AP value chain.
- Markets:
  - Marketing programmes and local projects should align with the Agri-Park's proposed way forward over the next 10 years in order to establish and develop strong market linkages.
  - Linkages should be formed with existing players in the market in order to penetrate markets and have a very specific market segmentation. As such a list of potential partners have been listed that PPP or JV's can be formed with.
- Proposed Catalytic Projects:
  - Building of an export abattoir that will have four processing lines for venison, cattle, sheep and potentially ostrich. The abattoir will be responsible for large scale slaughtering, processing, deboning and packaging of different types of meat as while adhering to international export standards.

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- Aquaculture facilities will either be built or upgraded in order to produce, slaughter, process and package aquaculture for the relevant markets. Most of the facilities will require large quantities of water and therefore a number of processing facilities will be located closely to water.

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11.4. ACTION PLAN (ROLL-OUT PLAN)

The table below illustrates the implementation guidelines in Gantt chart form for each of the different steps that need to be taken for the establishment of the XDM AP.

Table 35: XDM AP Action Plan

Project / Action	Description / Plan	Time Frame (Years)									
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
STEP 1: Agri-Park Model	1. Development of policy framework for the Agri-Parks.										
	2. Approval of the policy framework required for the Agri-Parks.										
	3. Establishment of the national Agri-Park project support facility which will serve to support and coordinate district base operational teams.										
	4. Development of a detailed plan and design of a prototypical Agri-Park that is adaptable, and based on commodity types.										
	5. Selection of district municipalities and Status Quo analysis/report for the selected district municipalities.										
	6. Establishment of NAPOTT, PAPOTT, and DAPOTT.										
	7. Appointment of District Agri-Parks Advisory Councils (DAAC's) for each of the 44 Districts.										
STEP 2: Agri-Hub	1. Development of a site selection methodology and location criteria.										

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Location Selection	2. Initial site identification as well as the generation of site specific maps with district specific narratives and selection criteria.										
	3. Property selection process.										
	4. Sign-off of the final Agri-Park sites by each district municipalities.										
STEP 3: Master Agri-Park Business Plan	1. Appointment of service providers, of which will develop a Master Agri-Park Business Plan for each district municipality.										
	2. Stakeholder consultations.										
	3. Commodity identification.										
	4. Policy and strategy alignment of the Agri-Park.										
	5. Identification of major role-players.										
	6. Development of an industry report.										
	7. Feasibility assessment of three prioritised commodities for the District.										
	8. Concept development.										
	9. Development of an implementation plan.										
	10. Economic advisory services.										
STEP 4: Governance	1. Establishment of Agri-Park Working (Group/Implementation structure)										

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	2. Development of an ownership structure.										
	3. Development of an institutional structures.										
	4. Ongoing policies and procedures: establishe design and content of policy manuals and associated procedures that will ensure frequency of reporting and communication on the progress of the programme.										
	5. Monitoring and evaluation: defines scorecards, measures, and metrics to track performance.										
STEP 5: Funding Model	1. Development of a funding model for the establishment of Agri-Parks programme.										
	2. Identification and analysis of various Financial Development Institutions in South Africa.										
	3. Identification and analysis of incentives in South Africa.										
	4. Identification and analysis of commercial funding organisations in South Africa.										
	5. Run a financial model based on various project gearing scenarios.										
	6. Conduct a sensitivity analysis.										
STEP 6: Technical Planning	1. Design of Agri-Park specific incentive schemes.										
	3. Identification of potential Public Private Partnerships.										
	2. Secure private investors/technical partners.										

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	3. FPSU- Role should be expanded and spin-off opportunities should be expanded towards these areas in order to widen the scope and influence the agro-processing activities.										
	4. Agri-Hub-core activities, production cycles and distribution functions of the Agri-Hub should be evaluated.										
	5. RUMC - Investigate market intelligence.										
	6. Identification of land parcels related to farming areas (mapping of areas).										
	7. Consultations with technical specialists.										
	8. Development of the Agri-Park's monitoring and evaluation framework.										
STEP 7: Detailed Business Plans	1. Development of detailed business plans for each FPSU.										
	2. Development of a detail business plan for the Agri - hub.										
	3. Development of a detail business plan for the RUMC.										
	4. Development of a detail business plan for each smallholder farmer.										
	5. Development of a detail business plan for the Agri-Park logistics.										

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STEP 8: Financing	1. Selected targeted financial institutions to apply for financing.										
	2. Determine the minimum requirements of each financial institution.										
	3. Prepare application pack.										
	4. Apply for financing.										
	5. Project financial close.										
STEP 9: Construction	1. Finalise the project designs and drawings.										
	2. Conduct a bill of quantities.										
	3. Prepare tender documentation.										
	5. Tender evaluation and selection process.										
	7. Site preparation.										
	8. Construction facilities and upgrade of existing infrastructure.										
	9. Site handover.										
STEP 10: Primary Production	1. Identify emerging farmers and their capacity to supply to the different agri-businesses, assess the capacity of the farms in order to see what the capacity of the farms are in terms of production.										

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	2. Provide the emerging farmers with the necessary infrastructure, training, and livestock to be able to supply the adequate level of products.										
	3. Production of the identified commodities.										
	4. Training of personnel at the FPSU that will assist farmers with various activities such as, for example, seeding, fertiliser spreading, and harvesting.										
STEP 11: Training Programmes Roll-Out	1. Training, if required, of small-scale and emerging farmers at the FPSU.										
	2. Training of personnel at the Agri-Hub that will participate in the processing and value-adding of commodities.										
	3. Training of personnel at the RUMC, that will conduct market research and utilise various technologies.										
	4. Identify local skills capacity for each of the agri-businesses and sync training activities with the lack of skills or/ and capacitate local skills base.										
	5. Engage and develop partnerships with training institutions.										
	6. Expansion of emerging farmers' capacity to produce adequate supply for agri-businesses, this should be incorporated with committed local mentors and continuous training programmes to increase the farmers and co-operative management skills.										

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STEP 12: Agro-Processing	1. Define the product idea, features, availability, and benefits to the consumers.										
	2. Product development, which includes all aspects such as packaging, labelling, and branding.										
	3. Analyse processing volumes and capacity.										
	4. Investigate prospective buyers, possible distribution and marketing channels, and possible export destinations.										
	5. Design processing facilities/production lines, taking into consideration processes which can be used to prevent contamination, proper food handling hygiene, sanitation system, pest management system etc.										
	6. Identify product (s) regulations and food safety requirement.										
	7. Develop a comprehensive logistic plan of how products will be received for processing.										
	8. Develop a quality control system.										
	9. Purchase of: processing equipment, production materials, and the identification of suppliers' location,										
	10. Recruit and train employees.										
	11. Secondary processing of primary processed products, packaging, labelling, and storage.										

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STEP 13: Product Marketing (RUMC)	1. Conduct market analysis to determine: opportunities, available market for the product, distribution channels, what price to set for the product depending, competitors, prospective buyers/consumers, industry analysis, etc.										
	2. Assess the market to determine local, national, regional, and international trends, available market information, product market, market size, supply performance, market drivers and constraints, competitors, potential poverty reduction impacts, etc.										
	3. Set market price, depending on cost of production, competition, quality and the target market.										
	4. Engage off-take agreements based on future production in terms of quantity, quality, etc.										
	5. Determine various promotion and advertising channels that are best suitable to influencing consumers' decision to buy the products.										
	6. Distribute and market products.										
	7. Continuous engagement with potential/future clients.										
	8. Hosting of Road shows, Trade fair, industry summits, etc.										

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