MANGAUNG METRO MUNICIPALITY MASTER AGRI-PARK BUSINESS PLAN – FINAL REPORT

April 2016

rural development & land reform

Department:
Rural Development and Land Reform
REPUBLIC OF SOUTH AFRICA

MANGAUNG
AT THE HEART OF IT ALL

Celebrate **Development** Diversity.

DOCUMENT APPROVAL

The **Mangaung Metro 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)

Approved:_____ Date: / /2016

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

Approved:_____ Date: / /2016

(**Bongani Mathae**: General Manager of Strategic Support Department of Economic and Rural Development Mangaung Metro Municipality)

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 MMM 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 MMM 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 MMM and its features, which 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 MMM.
- Does not know the status of important locational features of the MMM.

Chapter 5: Main Role Players

Summary: A list of role-players that are important for the MMM Agri-Park Development are listed in this chapter, along with potential duties that they may take on.

Key words: government, private, associations, organisations, financial institutions, companies, service providers, roles

Must read if the reader:

- Is not familiar with the role-players that are expected be involved with the MMM Agri-Park.
- Is interested in the potential duties to be taken up by the role players

Chapter 6: Agricultural Industry Analysis

Summary: In this chapter, an analysis of MMM's agricultural features is provided, as well important factors that are influential to agricultural development. Additionally, the three 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 MMM.
- Is not familiar with the status of resources and climate features affecting agriculture in the MMM.

Chapter 7, 8 & 9: Commodity Analysis

Summary: The 3 commodities that have been selected to be produced in the initial phase of the Agri-Parks 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

Commodities: Red Meat (Beef and Pork), Sheep Wool, and vegetable

Chapter 10: Agri-Park Concept Development

Summary: The concepts for the MMM 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 MMM 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 11: Implementation Guidelines

Summary: This chapter provides implementation guidelines to guide the development of the MMM 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 MMM Agri-Park
- Seeks guidelines on the implementation of the concept.
- Needs to know how the existing government programmes are aligned to by the MMM Agri-Park.

EXECUTIVE SUMMARY

The concept, together with the introduction of an Agri-Park per each district municipality, is a relatively new development concept in South Africa. This document represents the Mangaung Metro Municipality (MMM) Master Business Plan.

Section 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.

Section 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.

Section 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 MMM Agri-Park.

Section 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 MMM. 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 MMM. 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 also to describe the economy of the MMM in relation to population and economic growth; job creation; and income and poverty

level, as viewed against the economic performance of the Free State Province. A sectoral analysis is also provided, setting out the structure of the MMM economy with respect to the different economic sectors and their output and employment contributions to the district's economy.

Section 5: Main Role-Players per District

Chapter 5 outlines the main role-players that could potentially be involved in the MMM Agri-Park at varying levels of the development process. The role-players are summarised into three categories, namely: the Government and Public Sector; Private Companies; and Associations and Organisations. The purpose of this chapter is to provide an insight into the possible partnership opportunities with regard to the recommended agricultural opportunities.

Section 6: 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 MMM's agricultural sector presents. Furthermore, this chapter identifies the three dominant commodities in the MMM, through a thorough prioritisation process.

Section 7: Red Meat (Beef and Pork) Analysis

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

Section 8: Sheep Wool Analysis

This chapter provide an analysis of the local, global, capital, and commodity markets for the sheep wool industry. Topics such as: agro-processing opportunities, technology requirements, value chain assessment, main inputs suppliers, competitors, stakeholders, regulatory requirements, societal and cultural trends, the demand and needs analysis, job creation opportunities,

contribution to food security, substitute products and services, barriers to entry, and a SWOT analysis are also explored within this chapter.

Section 9: Vegetables Analysis

This chapter provide an analysis of the local, global, capital, and commodity markets for the vegetables 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 requirements, the demand and needs analysis, job creation opportunities, contribution to food security, regulatory requirements, substitute products and services, barriers to entry, and societal and cultural trends.

Section 10: Agri-Park Concept Development

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

Section 11: 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.

Section 12: 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 in the below in the form of canvases.

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

Location

The FPSUs will be located in various locations within the MMM.

The proposed locations are:

- Botshebelo
- Felloane
- Sediba
- Woodbridge
- Bloemdustria
- Rooifontein
- Paradys
- Groothoek
- Rustfontein
- Bethesda
- Motlatla
- Rooibult

Infrastructure/Equipment

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

1. Transport facilities (e.g. Bakkie or pick-up vehicles),
2. Extension offices and preliminary training facilities;
3. Sheep shearing and processing facilities at relevant FPSU's as well as related equipment,
4. Small scale processing facilities for local markets,
5. Storage facility,
6. Farming/mechanisation equipment required for farming activities.

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).

FPSU

Human Resources

The FPSU will provide the following core HR/HR facilities:

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

Capital Expenditure

The capital expenditure covers the cost of infrastructure, building costs, and equipment.

The estimated capital expenditure for the MMM FPSU's are provided per R/m^2 in order to guide capital planning. This will be within context of the different functions as indicated within each of the FPSU's under Section 10: AP Concept Development

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 processing facilities for some commodities,
7. Limited sorting, packaging and 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,
12. Auctioning of produce where applicable (e.g. auctioning of live animals

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

Capital Expenditure

The capital expenditure covers the cost of infrastructure, building costs, and equipment.

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 Section 10: AP Concept Development

Location Criteria for Agri-Hubs:

1. **Existing Land Capability**
2. **Existing Agricultural infrastructure**
3. **Identification of enterprise areas (DAFF 1936)**
4. **Existing Road and Rail connectivity**
5. **Proximity to:**
   - Water sources
   - Retail markets
   - PIMD poorest wards
   - Social relief programmes
   - Potentially vacant state land parcels
   - Recapitalisation projects
   - EDD gateways, etc.

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,
6. Product distribution

Human Resources

The AH will provide the following HR:

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

AH

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. Intensive training for abattoir personnel and quality control
3. Training on new innovations as they surface,
4. Processing skills,
5. Health and safety training
6. Management skills.

Location of AH

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

Infrastructure/Equipment

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

1. Administrative facilities,
2. Rental facilities,
3. Upgrading of existing abbatoir facilities and provision for deboning facilities
4. Agro-Processing facilities,
5. Packaging facilities,
6. Quality control facilities,
7. Agricultural input distribution and sales centre,
8. Retail facilities,
9. Training centre,
10. Logistics and transport facilities.

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

Key Role

The RUMC will serve the following function:

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.**

Criteria used for the selection of the location:

- Good accessibility
- Infrastructure (electricity & water)
- Agglomeration
- ICT
- Urban environment

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.

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

RUMC

Human Resources

The RUMC will provide the following HR;

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

Capital Expenditure

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

Contents

DOCUMENT APPROVAL....3
EXECUTIVE SUMMARY....5
LIST OF ABBREVIATIONS:....15
LIST OF FIGURES....16
LIST OF MAPS....16
LIST OF TABLES....17
SECTION 1: INTRODUCTION....18
SECTION 2: AGRI-PARK MODEL....20
SECTION 3: POLICY REVIEW....26
NATIONAL POLICY OVERVIEW....26
National Growth Path....26
National Development Plan – 2030 (2010)....27
Industrial Policy Action Plan (IPAP)-2013/14 – 2015/16....29
Agricultural Policy Action Plan (APAP) (2015-2019)....31
Department of Agriculture, Forestry and Fisheries Agro-processing Strategy (2012)....33
Strategic Plan for the Department of Agriculture, Forestry and Fisheries (2013/14 – 2017/18)....34
National Policy Framework on the Development of Small and Medium Agro-Processing Enterprise in the Republic of South Africa....35
Strategy for the Development of Small and Medium Agro-Processing Enterprises in the Republic of South Africa (2014 – 2019)....36
Agriculture, Forestry and Fisheries: Integrated Growth and Development Plan 2012....37
LINKAGES TO NATIONALE GOVERNMENT PROGRAMMES....37
PROVINCIAL POLICY OVERVIEW....42
Free State Provincial Spatial Development Strategy....42
Free State Provincial Growth and Development Strategy....44
Free State Investment Strategy....45
Free State Export Strategy....46
Free State Agricultural Master Plan....46
Free State Commodity Business Plans, May 2015....47
METRO POLICY OVERVIEW....48
Municipal Structures Act....48

Municipal Systems Act 48
MMM Integrated Development Plan 49
MMM Spatial Development Plan 49
SECTION 4: LOCATION CONTEXT 51
4.1. Overview 51
4.2. Socio-Economic Overview 56
4.2.1. Demographic Analysis 57
4.2.2. Economic Profile 58
4.2.3. Employment Profile 60
4.2.4. Education 63
4.2.5. Household income 64
4.3. Agri-Hub Location 65
SECTION 5: MAIN ROLE PLAYERS AND BENEFICIARIES 67
5.1. Main Role Players 67
5.2. Potential Entrepreneurs and Agri-Park Beneficiaries 72
SECTION 6: AGRICULTURAL INDUSTRY ANALYSIS 74
6.1. MMM Environmental Considerations for Agricultural 74
6.2. Mangaung Agricultural Activities 76
6.3. Mangaung Project Profile 80
6.4. Commodity Selection Assessment 84
6.4.1. Commodity Selection Criteria (APAP) 84
6.4.2. Commodity Identification 85
6.4.3. Commodity Prioritisation 86
6.4.4. MMM Commodity Societal and Cultural Trends 89
6.4.5. MMM Selected Commodities 91
SECTION 7: COMMODITY ANALYSIS: Red Meat 92
7.1. Market Assessment 93
7.1.1. Local Markets 93
7.1.2. Global Markets 98
7.2. Value chain Assessment and Agro Processing opportunities (products) 103
7.2.1. Cattle 103
7.2.2. Pork 105
7.3. Commodity Specific Stakeholders 107
7.4. Technology 111
7.5. Socio-Economic Benefits 112

7.6. Contribution to food security 113
7.7. Regulatory Requirements 114
7.8. Substitute Products/Services 118
7.9. Main Input Suppliers and Competitors 119
7.10. SWOT Analysis 122
SECTION 8: COMMODITY ANALYSIS: SHEEP WOOL 124
8.1. Market Assessment 124
8.1.1. Local Markets 124
8.1.2. Global Markets 127
8.2. Value chain Assessment and Agro Processing opportunities (products) 131
8.3. Commodity Specific Stakeholders 133
8.4. Technology 135
8.5. Socio-Economic Benefits 137
8.6. Regulatory Requirements 137
8.7. Substitute Products 140
8.8. Main Input Suppliers and Competitors 143
8.9. SWOT Analysis 144
SECTION 9: COMMODITY ANALYSIS: VEGETABLES 145
9.1. Market Assessment 145
9.1.1. Potatoes 145
9.1.2. Cabbage 149
9.1.3. Onions 151
9.2. Value chain Assessment and Agro Processing opportunities (products) 153
9.3. Commodity Specific Stakeholders 154
9.4. Technology 156
9.5. Socio-Economic Benefits 158
9.6. Contribution to food security 159
9.7. Regulatory Requirements 160
9.8. Substitute Products 160
9.9. Main Input Suppliers and Competitors 162
9.10. SWOT Analysis 163
SECTION 10: AGRI-PARK CONCEPT DEVELOPMENT 165
10.1. Proposed development concept of Red Meat 166
10.2. Proposed development concept of Sheep Wool 170
10.3. Proposed development concept of Vegetables 175

10.4. Combined Agri-Park concept for the Metro 179
10.5. High-level costing (CAPEX) 185
10.6. Conclusion 187
SECTION 11: AGRI-PARKS ORGANISATIONAL STRUCTURE 188
11.1. Advisory Structures: 189
11.1.1 The NAAC 189
11.1.2 The DAMC 189
11.2. Approval structures: 190
11.2.1 FPSU Operational Manager 190
11.2.2 Agri-Hub Operational Manager 190
11.2.3 DAPOTT 191
11.2.2 DLRC 191
11.2.3 PCRDP 192
11.2.4 The NLARCC 193
11.2.5 The NDAC 193
11.3. Implementation and Monitoring Structures 193
11.3.1 NAPOTT 194
11.3.2 PAPOTT 194
SECTION 12: IMPLEMENTATION GUIDELINES 195
1.1. Implementation Process 195
1.2. Alignment to current incentives (SEZ's) 197
1.2.1. Department of Agriculture, Forestry and Fisheries (DAFF) 197
1.2.2. Department of Rural Development and Land Reforms 199
1.2.3. Development of Economic Affairs Department of Economic Development, Environment and Tourism (LEDET) 200
1.2.4. Department of Trade and Industries (DTI) Incentives 200
1.3. Specific recommendations 202
1.4. Action plan (roll-out plan) 205
SECTION 13: REFERENCES 213

LIST OF ABBREVIATIONS:

Abbreviation	Description
AP	Agri-Park
APAP	Agricultural Policy Action Plan
ABR	Agricultural Business Resources
ARC	Agricultural Resource Council
DARD	Department of Agriculture and Land Reform
DRDLR	Department of Rural Development and Land Reform
DM	District Municipality
DTI	Department Trade and Industry
FDC	Free State Development Corporation
FNB	First National Bank
FSPSDF	Free State Provincial Spatial Development Framework
FPSU	Farmer Production Support Unit
FS	Free State Province
GVA	Gross Value Added
ha	hectare
LARD	Land Redistribution for Agricultural Development
LM	Local Municipality
LSU	Large Livestock Unit
MM	Metro Municipality
MMM	Mangaung Metro Municipality
NAFU	National African Farmers Union
NDP	National Development Plan
PLAS	Proactive Land Acquisition Strategy
RETM	Rural Economy Transformation Model
RIDFF	Rural Investment and Development Financing Facility
SEDA	Small Enterprise Development Agency

LIST OF FIGURES

Figure 1: Agri-Hub Development Hub 21
Figure 2: Agri-Park Model 22
Figure 3: Value Chain Process 24
Figure 4 - Mangaung SDF macro framework 50
Figure 5 - MMM GVA Growth 58
Figure 6 - Free State GVA Growth 59
Figure 7 - GVA per Sector 60
Figure 8 - Sectoral Employment, 2013 61
Figure 9: NDP Commodity Winners 84
Figure 10: MMM Commodity Identification Criteria 85
Figure 11 - South African Red Meat Production 93
Figures 12 - South African Pork, Beef and Veal Consumption 95
Figure 13 - Provincial Cattle Distribution 97
Figure 14 – Provincial Beef Production 98
Figure 15 - Global Beef Production, 2013 99
Figure 16 - Pork exports and Imports 101
Figure 17 - Beef Export and Imports 102
Figure 18: Beef Value Chain 103
Figure 19: Pork Value Chain 105
Figure 20 - Provincial Wool Production 125
Figure 21 - Wool gross value of production in South Africa 126
Figure 22 - Average producer prices of wool in South Africa 127
Figure 23 - Export destinations for South African Wool in 2013 128
Figure 24: Sheep Wool Value Chain 131
Figure 25: Distribution of Potato Crop Production, 2013 146
Figure 26: Production vs. Consumption of Potatoes 147
Figure 27: Production vs. Consumption of Cabbages 150
Figure 28: Vegetable Value Chain 153
Figure 29: Agri-Park Organisational Structure 188
Figure 30: Agri-Park Implementation Process 195

LIST OF MAPS

Map 1: MMM Agri-Park Delineation and Influence Network 51
Map 2: MMM Agri-Park Related Activities 52
Map 3: MMM Urban Character 53
Map 4: MMM Economic Infrastructure 55
Map 5: MMM Agri-Hub Location, Thaba Nchu 65
Map 6: MMM Agri-Hub site location and proposed land utilisation 66
Map 7: Water usage and Catchment Potential 74
Map 8: MMM Land Cover 75
Map 9: MMM Land Capability 76
Map 10: MMM Crop Production Capacity 77
Map 11: MMM Grazing Land Use Capacity 79
Map 12: MMM Land Reform Farms 80
Map 13: MMM Land Reform Farms Linkage to AH and FPSU's 81
Map 14: Proposed linkages between planned projects and the MMM Agri-Hub 83

LIST OF TABLES

Table 1: GVA and Employment Contribution by Economic Sector, 2013 54
Table 2 - Population size, 2011 & 2015 57
Table 3 - Household Trends 57
Table 4 - Labour force statistics, 2013 62
Table 5 - Education Level, 2013 63
Table 6 - Household Income per income group, 2015 64
Table 7: Potential Agri-Park Beneficiaries 73
Table 8: MMM Crop Production (p/ha) 78
Table 9: MMM Livestock Numbers 80
Table 10: MMM Project Framework 82
Table 11: MMM Prioritisation Table p/Identification Criteria 86
Table 12: MMM Commodity Prioritisation Notes 87
Table 13 - South African carcass classification system 96
Table 14 - African Beef and Pork Production, 2013 100
Table 15: MMM Livestock Specific Stakeholders 107
Table 16: Livestock Technological Advantages 111
Table 17: Beef Main Input Suppliers and Competitors 119
Table 18: Pork Main Input Suppliers and Competitors 121
Table 19: Value of wool Exports by Province 129
Table 20 - Export volumes of wool (not carded or combed) to various regions 130
Table 21: MMM Sheep Wool Specific Stakeholders 133
Table 22: Sheep Wool Technological Advantages 135
Table 23: Sheep Wool Potential Substitutes 141
Table 24: Sheep Main Input Suppliers and Competitors 143
Table 25: Onions Production Figures 152
Table 26: MMM Vegetable Specific Stakeholders 154
Table 27: Vegetable Technological advantages 156
Table 28: Vegetable Main Input Suppliers and Competitors 162
Table 29: MMM AP Red Meat Development Concept 166
Table 30: MMM AP Sheep Wool Development Concept 170
Table 31: MMM AP Vegetables Development Concept 175
Table 32: MMM AP Combined Development Concept 179
Table 33: High Level Costing: MMM AP CAPEX 185
Table 34: Escalation in Building costs - 2017 - 2019 186
Table 35: Capex of Commodity Equipment 186
Table 36: Estimated Cost of Equipment for the Agri-Hub 187
Table 37: MMM AP Recommendations 202
Table 38: MMM AP Action Plan 205

SECTION 1: INTRODUCTION

The Agri-Park initiative is aimed at the development of the agro-processing sector throughout South Africa by mobilising district municipalities' resource capacity and unlocking latent agricultural potential. This is a directive from His Excellency, President Jacob Zuma to fast track the development of emerging farmers throughout the 44 District economies and to transform the rural economies for sustainable job creation and socio-economic enhancement. As such, the Department of Rural Development and Land Reform requested proposals from service providers for the formulation of Master Agri-Park Business Plans for each of the 44 District Municipalities as a development model for these Agri-Parks.

Urban-Econ Development Economists were appointed to conduct 20 of these business plans within the Limpopo, Gauteng, Mpumalanga, Eastern Cape, Kwazulu-Natal, North West, and Free State Provinces. To that effect, the three Master Agri-Business Plans that will be compiled within the Free State by Urban-Econ is that of the Xhariep DM, Thabo Mofutsanyana DM, and the Mangaung Metro Municipality. Introductory stakeholder consultations have already taken place and the role of the service provider has been discussed in depth at the NAPOTT and PAPOTT workshops held at the end of October 2014. Documentation from sector departments has been procured and will be used as additional resources for the compilation of this Business Plan. This Master Business Plan will assess the appropriateness of utilising three core commodities as applicable within the Mangaung agricultural framework.

Ten principles have been set out by the DRDLR that will act to guide the formulation and establishment process for the Agri-Parks. These principles will be embedded within this report as foundation for the formulation of the Mangaung Metro Municipality Master Agri-Park Business Plan. The 10 principles are set out as follows:

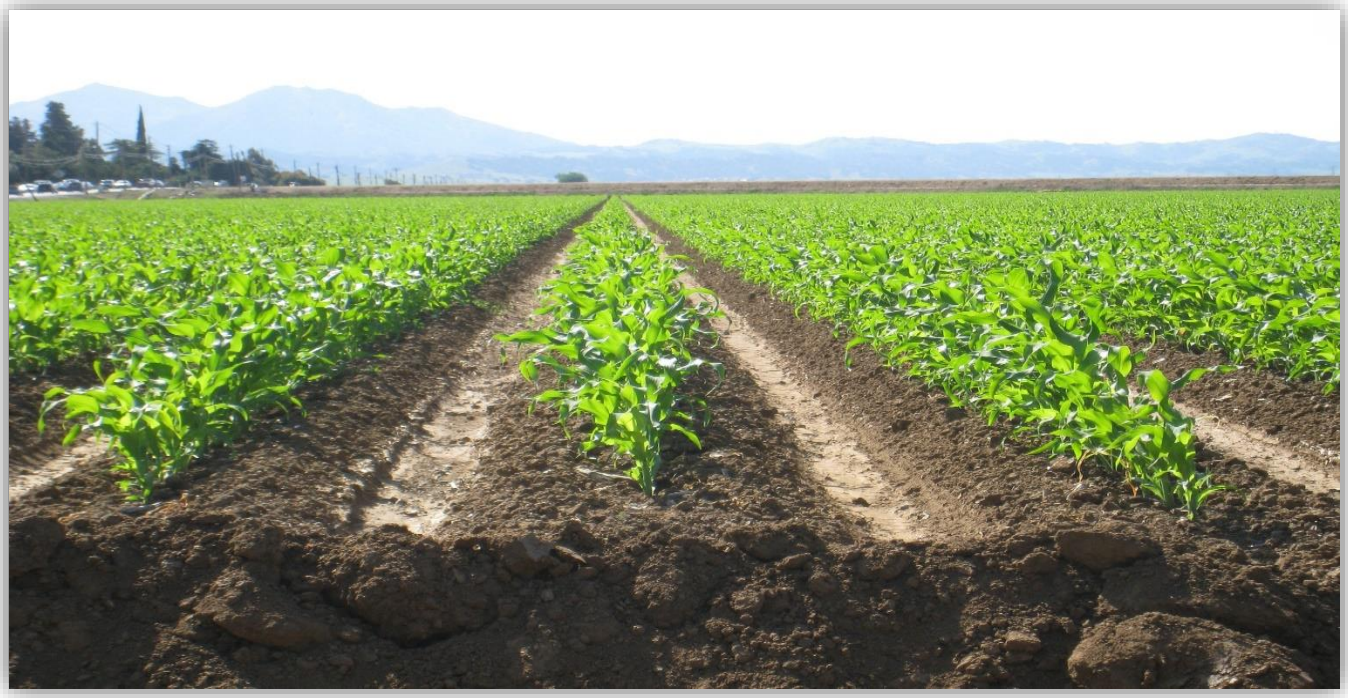
1. One Agri-Park per District (44) with focus on the 27 priority districts.
2. Agri-Parks must be farmer controlled.
3. Agri-Parks must be the catalyst around which rural industrialisation will take place.
4. Agri-Parks must be supported by the government for a period of 10 years in order to ensure economic sustainability.
5. Strengthen partnership between government and private sector stakeholders to ensure increased access to services (water, energy, transport) and production on the one hand, while developing existing and creating new markets to strengthen and expand value-chains on the other.
6. Maximise benefits of existing state land with agricultural potential in the provinces, where possible.

7. Maximise access to markets for all farmers, with a bias to emerging farmers and rural communities.
8. Maximise the use of high value agricultural land (high production capability).
9. Maximise the use of existing agro-processing, and bulk and logistics infrastructure; including having availability of water, energy, and roads.
10. Support growing-towns and revitalisation of rural towns, in terms of high economic growth, high population growth over the past 10 years, and promote rural urban linkages.

The following study goal have been identified in accordance with the ToR as set out by DRDLR:

Develop a Master Agri-Park Business Plan, aligning the Agri-Park model developed by the Department of Rural Development and Land Reform and the dominant Commodity Value Chain(s) in the specified District Municipality.

The next section will deal with the different Agri-Park concepts, definitions and understanding of the theoretical process associated with the establishment and subsequent development of the Agri-Parks throughout the country.



SECTION 2: AGRI-PARK MODEL

This Section focusses on the core concepts and related definitions that are important in understanding the Agri-Park Model. Those concepts that are relevant will be explained at the hand of diagrams and figures. It is important to grasp these concepts and definitions as they will be referred to frequently, and they form in accordance with the Agri-Park objectives; the core elements around which the development will occur.

The Agri-Park initiative is relatively new to South Africa, but it draws from global initiatives aimed at rejuvenating rural economies and agricultural activities by introducing agro-processing and related endeavours. These ideas are based on the 'clustering' together of agro-processing activities with one purpose or vision to draw from synergies created by establishing activities together.

While the main focus is on the agro-processing activities, other supporting agri-businesses also functions within the cluster. However, these provide services such research and development, warehouses, etc., that which will contribute to the success of the agri-processing facilities. Emerging farmers will be provided with support to enable them to supply the agro-processing businesses within the cluster or hub. The Agri-Park model has been designed as a long term initiative to assist the agro-processing sector and mobilise the latent manufacturing opportunities that exist within these economies.

These are aligned with government's focus on developing South Africa's rural economies through a strong focus on social mobilisation and cooperation. This is in large due to the role that emerging farmers has to play in the agricultural sector for the future of development within South Africa. All government sector departments have been informed to form strategic partnerships in order to create a unified effort between the public and private sector to develop the agro-processing sector within both the rural communities as well as the whole agro-processing sector.

Commercial success of the Agri-Park projects brings 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, Agri-Parks promote value adding within the rural localities. As such, the following elements should be the key components of any Agri-Park:

- based on the relative economic advantage of the District, compared to other Districts;
- have all the elements of the dominant products' value-chain in the District - from production to warehousing/storage, packaging, processing, retailing, transportation;

- subsidised by the Government, at least for the first ten years, on a diminishing scale: land acquisition, development, inputs, products pricing - for affordability and competitiveness;
- part of the government's Exit Strategy for Recap, Rural Women Crafters, and the Narysec Programmes;
- laying the basis for the Rural Development Agency and a Rural Investment and Development Financing Facility (RIDFF); and,
- cementing the foundations for rural industrialisation, as set out in the National Development Plan, over the next two decades.

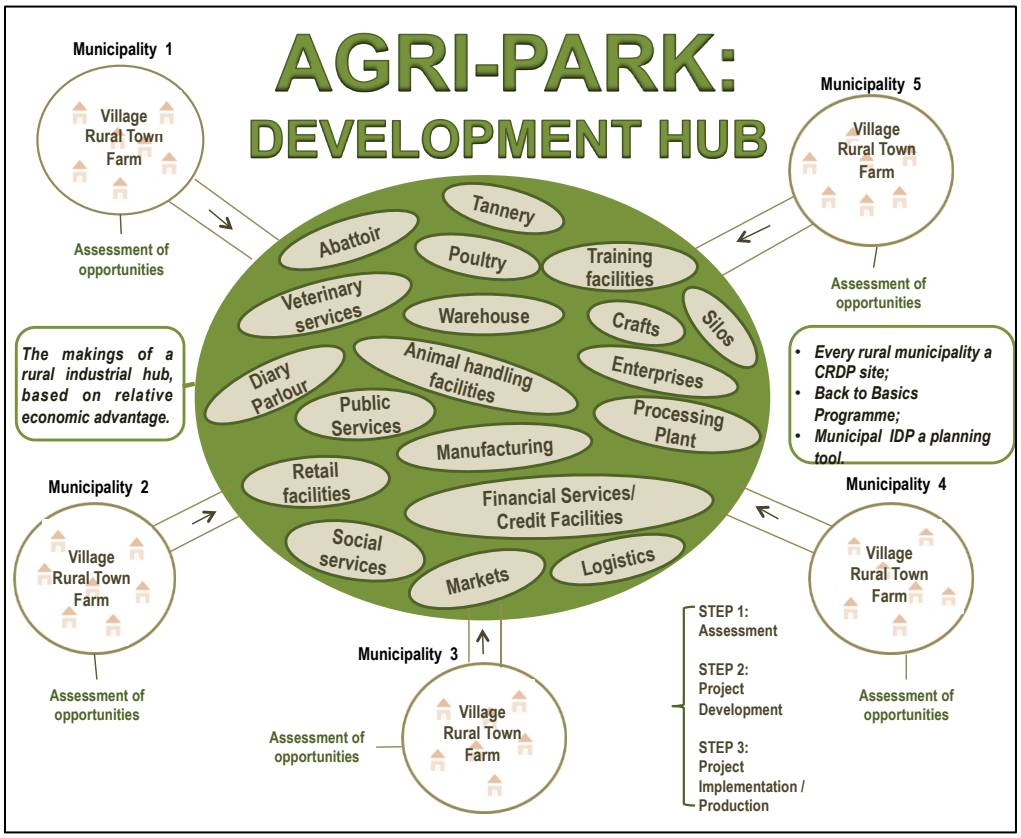


FIGURE 1: AGRI-HUB DEVELOPMENT HUB

(Source: DRDLR, 2015)

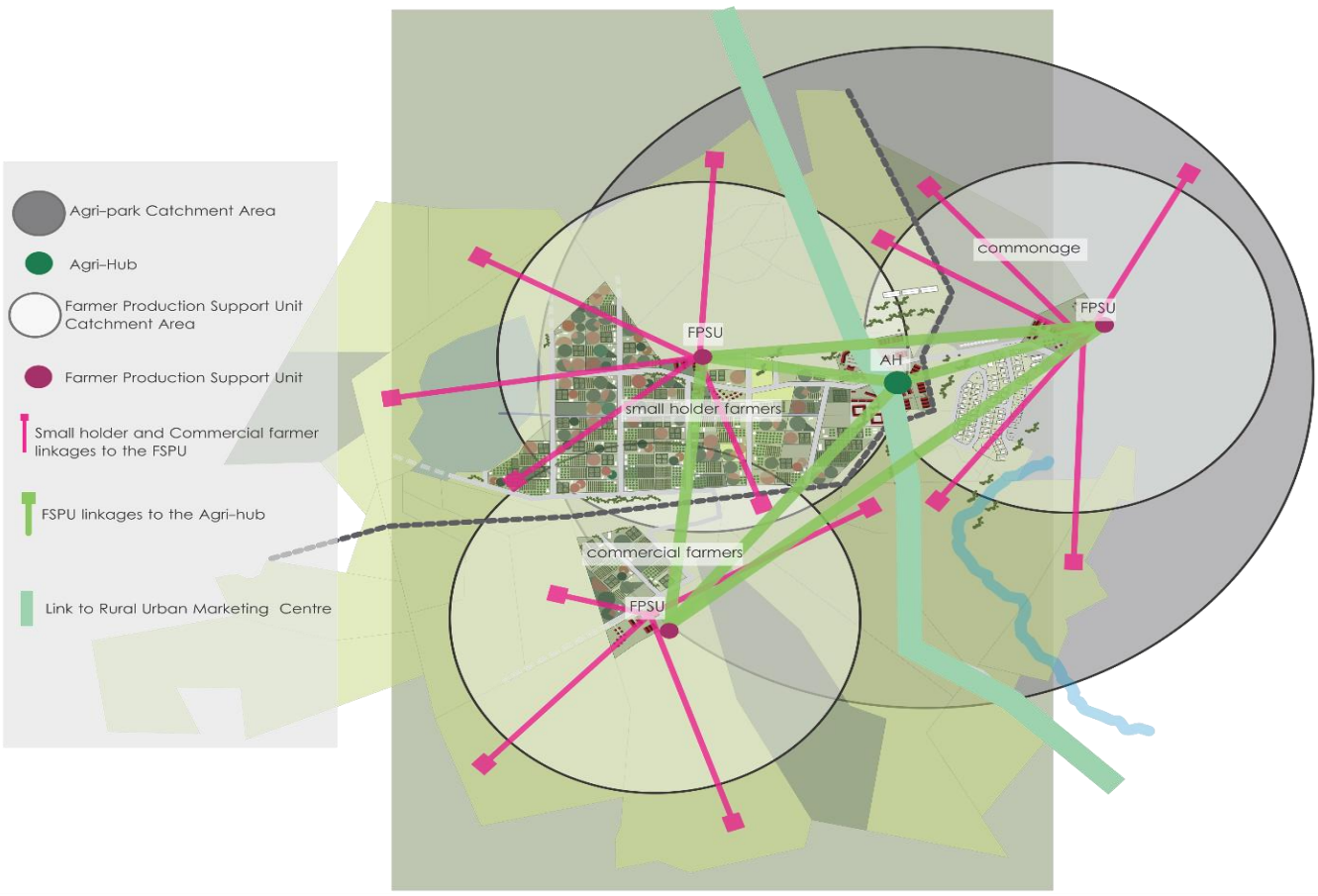


FIGURE 2: AGRI-PARK MODEL

The figure above shows the Agri-Park model and how the different components should spatially and strategically interact. In order to clearly define and create an optimal agro-processing model as illustrated, there are three key components to the Agri-Park; these are:

The Farmer Production Support Unit (FPSU): the FPSUs have a supporting role to the main Agri-Hub, where most of the agro-processing activities will take place. At the FPSUs, the preliminary activities within the value chain take place; these include but are not limited to:

- 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 the 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)

Agri-Hub Unit (AH): refers to the main cluster of agro-processing and related activities that will take place within the Agri-Park. This will be the main focus of where the agricultural produce will go to and be further processed. However, it is envisaged that the anchor agri-businesses will create spin-off opportunities that will develop the whole area and act as a catalyst to empower the local communities by creating job opportunities and skills development. The AH will have a footprint or influence radius of 120km in areas that have a low density, and 60km in areas where there are higher densities. Each of these AHs will have various zones whereby the different functions within the AH will be identified. These are:

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

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.

The role played by the value chain in ensuring the development of any agro-processing activity is further undeniable; as such, this role will also be explained. A value chain is the succession of activities and operations carried out on initially raw material, which add value to the materials through each step in order to deliver a more valuable final product or service to the market. The sum of all the value, which has been built up throughout the steps of the value chain thus equate to the total value of the products being delivered. It is important to note that certain commodities have a wider or longer value chain than others, especially considering the agricultural commodity value chain. Sheep for instance, which get shaved for wool, then slaughtered and the meat extracted, and finally the skin can be sent through tannery to produce leather; while the process for a pig is much shorter as the pig is slaughtered for its meat only and that is the end of the process.

In the context of the Agri-Parks, it is within the Agri-Hubs that all the increases in the value chain takes place, rather than through external companies that are not locally based. A variety of inputs and outputs of the value chain allow the influence network to grow and incorporate more of the rural villages and later, more communities, as illustrated in **Figure 3,** which incorporates various Municipalities into one hub, as will be the case in Thaba Nchu.

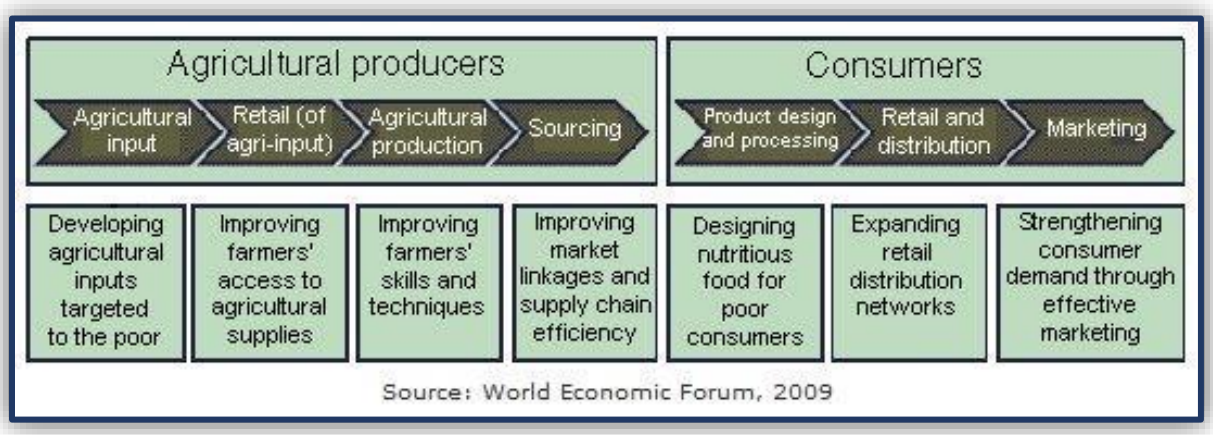


FIGURE 3: VALUE CHAIN PROCESS

The viability of the Agri-Park, together with its capacity for potential backward and forward linkages, is important in the clustering of the Agri-Parks. It is thus important to differentiate between forward, backward, and horizontal linkages.

Backward linkages refer to the connections between the processor by which information, material and money flow, and the suppliers. These linkages promote a network of interdependence that results in both income and employment increase. The growth of the agro-processing hub will thus, potentially lead to the growth of the suppliers. Growth breeds more growth; a growth in an abattoir's processing will lead to an increased demand for more animals from the farmers who supply the abattoir, thus producing a win-win situation.

Forward linkages pertain to the stimulation of the final market demand through distribution chains that connect the producer or supplier to the final customers. In essence then, increased production in the Agri-Hub will result in an increase in the demand for these products that are supplied to other companies. Using the example of the abattoir again, this means that the abattoir now extends itself to not only the slaughtering of the animals, but the processing and packaging of the meat to increase the value of the product that is delivered. This means that the role of the external packaging companies is minimised within the channel process, and more money is generated within the local Agri-Hub.

Horizontal linkages are the relationships shared between producers, who sell similar products within the same sector of the economy. These linkages can be in the form of farmer's associations, production cooperatives or various types of smallholder business consortia that are affiliated with each other. Horizontal linkages are often longer-term cooperative agreements between firms and they increase interdependence, trust, and resource pooling in order to jointly accomplish common goals. An example in this case would be if the abattoir were to consolidate transport resources with another abattoir in order to decrease the costs for both companies and increase their economic viability.

The Agri-Parks initiative will include the training and selection of emerging farmers per province to mobilise the youth of South Africa. Incubation, training, placement of unemployed undergraduates and other agricultural entrepreneurs will also be facilitated through the Agri-Park initiative. The Agri-Park will be farmer-controlled in order to mobilise emerging farmers to achieve better production and farming performance to support the drive for economic growth and agrarian transformation in South Africa.

In addition to the focus on employment and development opportunities to undergraduates and agro-entrepreneurs the Agri-Parks will have a strong focus on the mobilisation of communities towards social cohesion and unlocking latent economic opportunities. This is seen as critical, as the most important component of the Agri-Parks is the people that need to be empowered by the initiative and make it their own to carry forward. As such, state land will be used for both production and processing activities. In essence the whole value chain is aimed at being developed to ensure that progress doesn't halt at one of the value chain linkages.

SECTION 3: POLICY REVIEW

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.

NATIONAL POLICY OVERVIEW

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

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:

- 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.*
- *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.*

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

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.

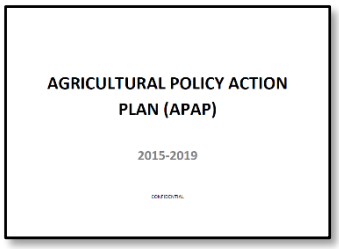
The key-programmes identified for agro-processing within the IPAP are the following:

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.

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, 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

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.

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
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.

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.
- 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.

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.

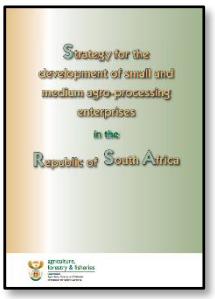
However, the specific challenge that this policy aims to address is the limited active participation of rural-based SMEs agro-processors in the agro-processing mainstream value chain. The strategic objective is to create a profitable, competitive and thriving small and medium agro-processing industry.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

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

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.

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.

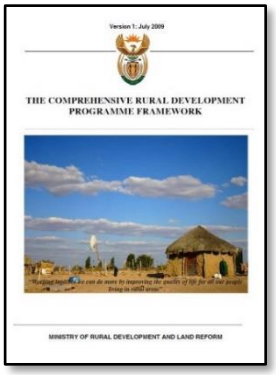
LINKAGES TO NATIONALE GOVERNMENT PROGRAMMES

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.

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.



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

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.

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)
3. Recapitalisation
4. State Land Administration

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.

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.
- Free State Agricultural Master Plan

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:

- 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.

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
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

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.

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.

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. 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.

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.

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.

METRO POLICY OVERVIEW

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 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.

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.

MMM Integrated Development Plan

An IDP is a five-year plan which all municipalities are mandated to develop, indicating the developmental plans of the local municipality, encompassing all the its spheres. Focussed on addressing prominent issues which are determined as requiring attention within the set five-year period. The MMM IDP acknowledges that there has been a decrease in the agricultural sector of the municipality. It has thus been prioritised to work in partnership with the Department of Agriculture in order to provide commonages which will accommodate farming activity and the grazing of animals.

The IDP set a target to promote rural development and have 150 new agricultural and economic enterprises established within the municipal boundaries, within the next 5 years (since 2014). This target is to be met through a series of targets in the following periods: 2014/15, 2015/16 and 2016/17. It is intended that 50 new agricultural and economic enterprises be established within each period. Through the IDP, the MMM has further identified various areas which they deem to have the potential for small scale agricultural activities. They have identified water as a very limited resource in the MMM area, for agricultural use. As a means to mending this constraint for agricultural development in the area MMM IDP the following considerations, with regards to water provision and services the:

- Ensuring sustainable water services and supply.
- Reduction of the amount of water backlog in order to ensure alignment with the constitutional obligation to provide basic services to all citizens.
- The eradication of water backlogs is listed as one of the key objectives within the MMM IDP's KPA list.
- A number of water & sanitation projects are listed in the IDP, together with the reduction of the backlog numbers in the Metro.

MMM Spatial Development Plan

An SDF is a framework which municipalities can use as a tool for guiding development and the directions in which it flows. The Spatial Development Framework is not developed to infringe upon existing land rights, it should rather be used to guide future land uses.

The FDC Industrial Park is currently one of the most important nodes for economic development within the MMM and has been the focus point for a long period of time now. Consisting of 138 warehouses with a total floor area of 200 000m² the FDC has an approximate rand value of R500 million. Food processing forms part of the FDC, along with factories which manufacture textile, electrical enclosures, paraffin stoves as well as minor engineering services. Currently is set to employ 6000 people making the occupancy rate for the node 89, 54 %. As illustrated in the figure below, numerous areas have not been demarcated for change within the municipality.

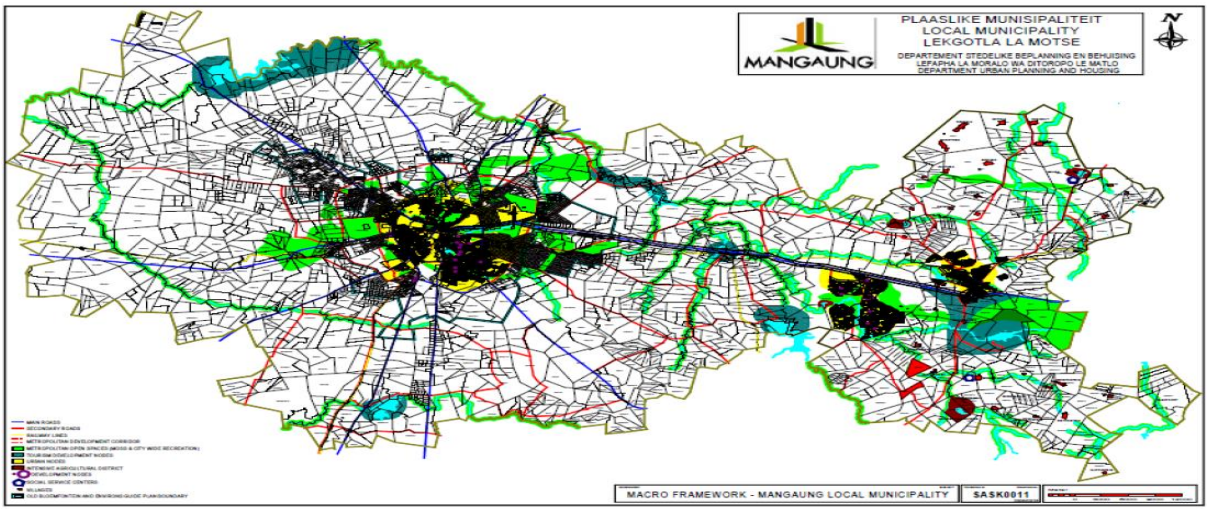


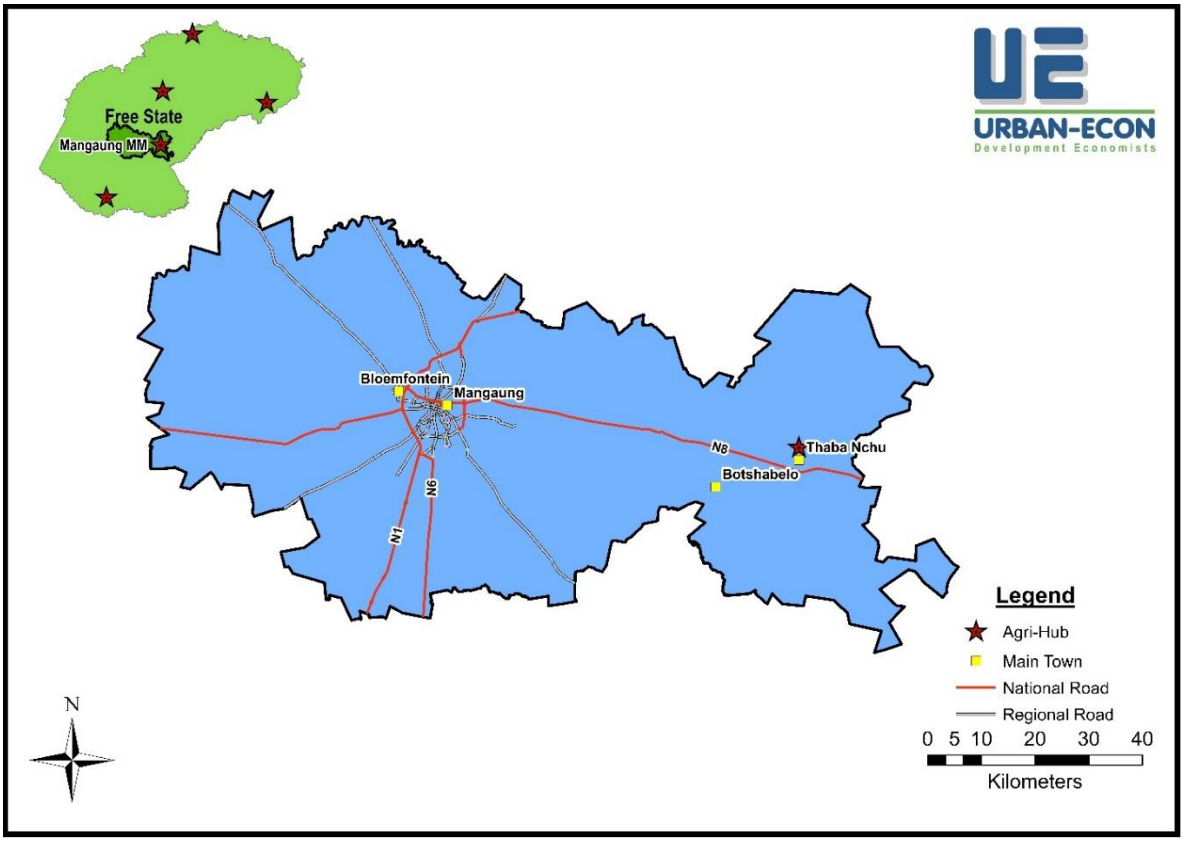
Figure 4 - Mangaung SDF macro framework

SECTION 4: LOCATION CONTEXT

This Section focusses on the locational context of the Agri-Park, together with the considerations of the locality in terms of agricultural potential, major towns, demographics and key economic activities that may be of relevance to the development.

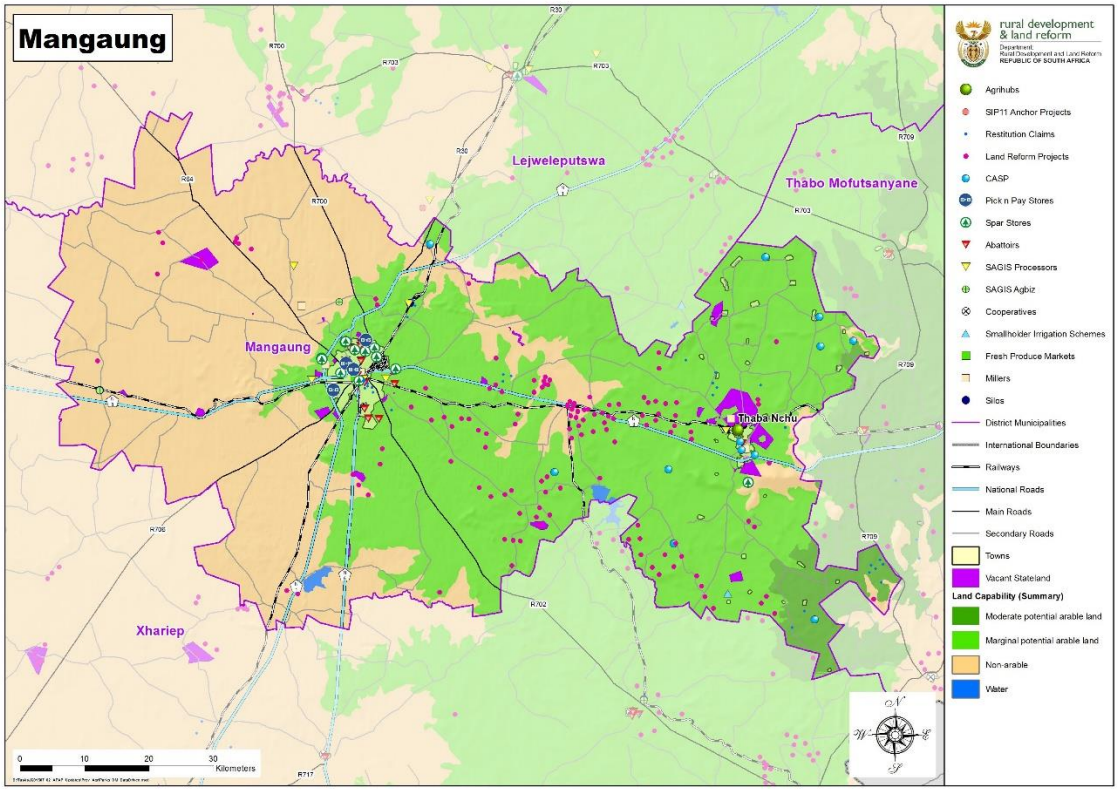
4.1. Overview

The Mangaung Metro Municipality Agri-Park encapsulates the whole of the MMM; however, the Agri-Park footprint with its different development elements such as the FPSUs and Agri-Hub may extend even further than the MMM's administrative boundary. This is illustrated in **Map 1,** where the influence network or footprint of the AH and FPSUs extend well into Thabo Mofutsanyana and Xhariep District Municipalities, illustrating the potential impact that these initiatives can have well beyond administrative boundaries.



MAP 1: MMM AGRI-PARK DELINEATION AND INFLUENCE NETWORK

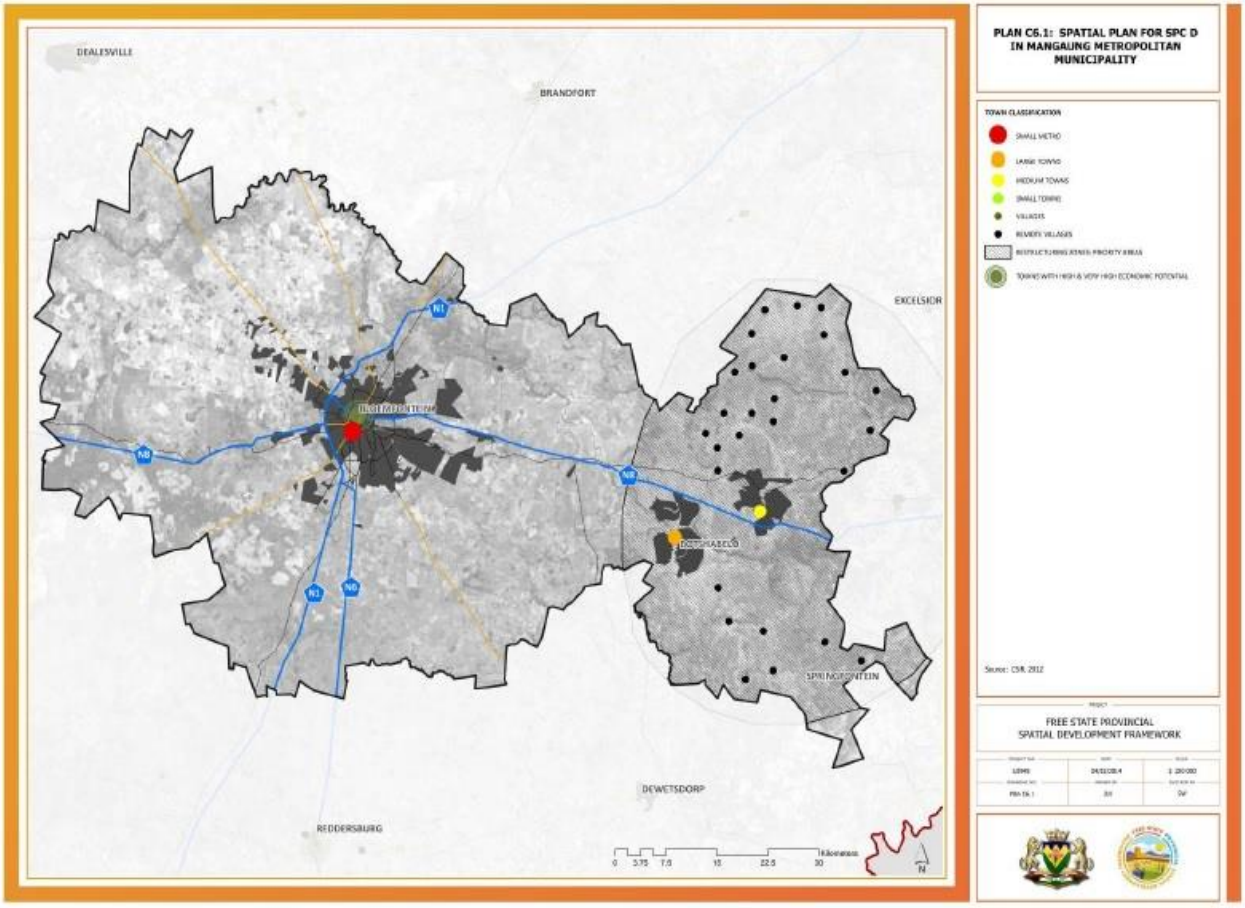
(Source: DRDLR, 2015)



MAP 2: MMM AGRI-PARK RELATED ACTIVITIES

(Source: DRDLR, 2015)

The major urban area within the Metro Municipality is that of Bloemfontein as core node for the Metro. The other two main areas for human settlements are that of Botshabelo and Thaba Nchu to the east of the Metro Municipality en-route to Lesotho. The area is categorised by largely tribal land and villages to the east (**Map 3**). The area to the west of Bloemfontein is categorised by mostly commercialised farming. However, most of the land within the MMM is either tribal or state-owned land. The main transport route within the MMM is that of the N8, which links Bloemfontein with Maseru and with Kimberley, providing a direct link between the two provincial seats and the Capital of Lesotho. It also runs adjacent to both Botshabelo and Thaba Nchu, and it is used as the main transportation route for people residing in these two areas and working in Bloemfontein. The N8 provides an important connector with potential markets and as such, the linkage is of importance for the Agri-Hub within the Agri-Park.



MAP 3: MMM URBAN CHARACTER

(Source: FSPSDF, 2014)

The Mangaung Metro Municipality has had an increase in the population from 857 178 in 2011 to 892 987 people in 2015. Bloemfontein has a total population of 570 410, with Botshabelo and Thaba Nchu having a combined population of 322 577. Migration trends have seen an increase of movement from smaller communities within the Free State that move to Bloemfontein in the search of working opportunities, increasing the pressure on job creation initiatives of the Metro Municipality. The areas of Thaba Nchu and Botshabelo are categorised by high poverty and inequality due to the lack of local economic opportunities in the immediate area as well as the segregation from the larger economic node of Bloemfontein, which is approximately 60km away. As such, the area has also been identified within the FSPSDF as a Restructuring Zone: Priority Area. As such, the MMM and sector departments like the DRDLR, DARD, and the Free State Department of Public Works, etc., has had numerous initiatives within this restructuring zone in order to better the overall socio-economic situation and increase economic and employment opportunities.

The main economic activities, together with the employment profile per economic sector for the MMM, are illustrated in the Table below:

TABLE 1: GVA AND EMPLOYMENT CONTRIBUTION BY ECONOMIC SECTOR, 2013

Economic Sector	GVA Contribution		Employment Profile	
	R millions	Contribution (%)	Total Workers	Contribution (%)
Primary sector	776	2,5%	15470	5,7%
Agriculture	590	1,9%	14983	5,6%
Mining	185	0,6%	487	0,2%
Secondary sector	5,163	16,3%	41909	15,5%
Manufacturing	3,408	10,8%	18324	6,8%
Electricity	1,059	3,3%	1458	0,5%
Construction	696	2,20%	22127	8,2%
Tertiary sector	25,739	81,3%	212232	78,7%
Trade	3,454	10,9%	57909	21,5%
Transport	3,941	12,4%	14413	5,3%
Finance	7,365	23,2%	32806	12,2%
Community	4,505	14,2%	51741	19,2%
Government	6,475	20,4%	55362	20,5%
Total	31,678	100%	269 611	100%

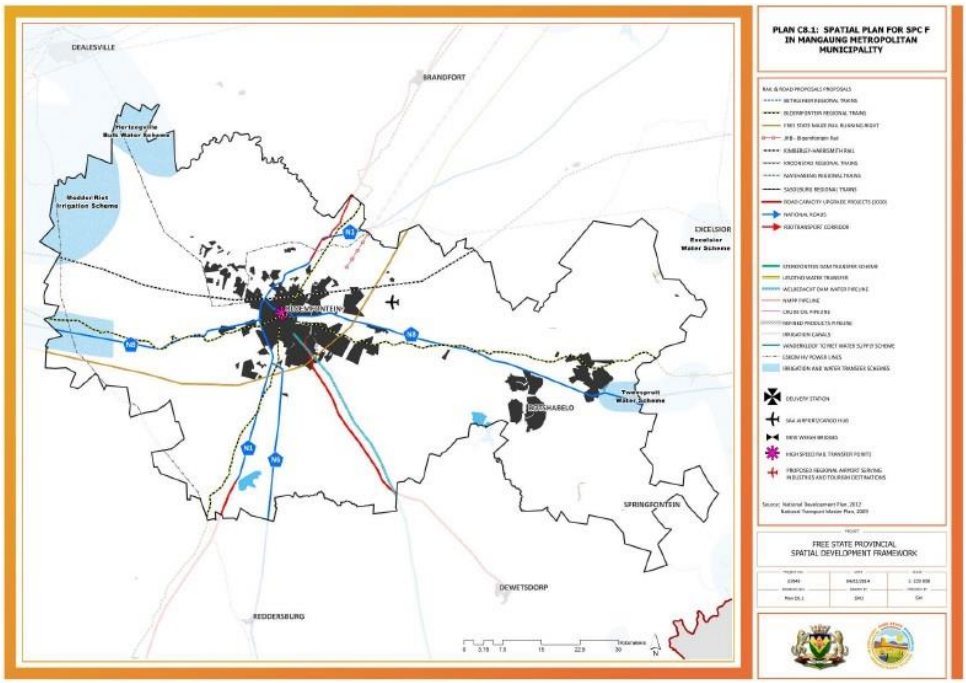
(Source: Quantec Research, 2015)

As seen in **Table 1,** the main economic sectors within MMM are predominantly found within the tertiary sector, which contributes 81.3% of the total GVA to the Metro's economy. This can be attributed to the number of financial, institutional, and educational functions of Bloemfontein, together with the town being the seat of the Free State, which is the most populous and the largest economic node in relation to distance from other nodes. The agricultural sector contributes 1.9% to the total GVA of the MMM; in addition, if manufacturing is considered, it contributes a further 10.8% to the Metro's economy. In correlation with the GVA contribution, the tertiary sector is then also the main employer within the Metro. Interestingly, is that while agriculture only contributes 1.9% of the Metro's GVA, it employs 5.9% of the total workforce, indicative of the labour intensive nature of this economic sector. The total unemployment rate within the MMM is 23.06%, which has

shown a recovery from the 16 000 people that lost their jobs during the 2008 – 2010 global financial crisis.

Beyond just an ample number of potential employees, another important factor for economic growth is that of the availability of a higher skill level under employees. As such, the area in which the Agri-Park will be situated has a highly unskilled workforce with Thaba Nchu that has 66% and Botshabelo 67% of workers that is either unskilled or semi-skilled. This is an area that needs to be addressed, as the skills required while economic sectors move from primary to secondary to tertiary increase significantly; as such, the agro-processing activities that fall within the secondary sector under manufacturing will require the 'up-skilling' of the workforce. Another factor in the improvement of the local workforce is access and quality of education within a region. In this regard, a number of institutions within the larger Bloemfontein area provides this service, especially with regard to training in the agricultural sector. The level of education also helps in providing a capable and proficient workforce; in this regard 93% of people living within the primary AH footprint area has had some form of education, with 70% having completed secondary school, with a further 3% that completed a tertiary education.

In terms of economic infrastructure and social amenities, the Mangaung Metro is with regard to availability, not taking into consideration the effectiveness of these amenities being adequately serviced. There are police stations, hospitals, clinics, and educational facilities available, and if not available within the rural communities, Bloemfontein is near enough to service specialised or higher order needs.



MAP 4: MMM ECONOMIC INFRASTRUCTURE

(Source: FSPSDF, 2015)

When **Map 4** is considered, it is clear to see that Bloemfontein plays an important part in the connectivity of the area, with numerous national routes converging on the city. These national routes (N1, N6 and N8) connect Bloemfontein with larger economic nodes and are important in regard to connecting the Agri-Hub to larger economic markets where the agricultural produce can be sent to. The upgrading of these national routes with a massive increase in infrastructural capacity provides the MMM with an ideal platform to increase the transportation of goods to the appropriate markets. There is also the railway route connecting Gauteng with the Western Cape. This route runs through Bloemfontein and also connects Kimberley with the planned Agri-Hub, expanding the off-set areas for produce. This railway is however, at present underutilised, and the upgrading of this railway should be considered in the future.

One of the major constraints for the MMM is the lack of an abundance of water for industrialised activities due to water shortages. Even before the drought of 2015, water concerns were raised within the Metro with considerations towards providing water from the Gariep Dam considered by means of a bulk water pipeline. Currently there are water restrictions within the Metro, and further restrictions are expected for 2016. Therefore, the competition between drinking water and water for irrigation and manufacturing will become an increasingly contested issue. As such, it is not an aspect of 'if', but rather 'when' this will become a major issue, and it will have serious consequences for the future of manufacturing within the MMM.

With regard to building infrastructure, Bloemfontein, Botshabelo and Thaba Nchu have areas earmarked for industrial usage. Buildings within the Botshabelo and Thaba Nchu industrial zones are currently under the stewardship of the FDC and are extremely damaged and underutilised. However, the refurbishment of these buildings and their structural importance cannot be neglected and should be further developed as it will decrease the costs needed to build structural infrastructure in addition to the lessened statutory requirements that will be needed. Another aspect of the area that counts in its favour is that of the decentralisation of some of the sector departments to Thaba Nchu and Botshabelo, with DARD that has offices within the area for some time now. This provides the area with much needed institutional infrastructure to support and expand operations at the Agri-Hub and surrounding areas.

4.2. Socio-Economic Overview

The Mangaung Metropolitan Municipality, located within the Free State Province, is the most economically prominent, as it is classified as the only metro in the Province. The municipality basically governs Bloemfontein along with the towns surrounding the city. Bloemfontein is the capital city of the Free State and is also is the sixth largest city in nationally.

4.2.1. Demographic Analysis

The way in which the set-up and characteristics of a population lay the foundation for the development process within the geographical space. Population dynamics also influence economic growth through the availability of different skilled workers as well as production output. Though evaluating the population dynamics of the Mangaung Metropolitan Municipality, it is easier to understand the effect of the development of the Agri-Parks on local communities.

Table 2 - Population size, 2011 & 2015

Study Area	Census 2011	Population 2015	
RSA	50 586 757	53 056 633	↑
Free State	2 759 644	2 780 837	↑
MMM	737 663	751 783	↑

(Source: Adapted from StatsSA, 2011)

Table 2 illustrates the population dynamics between 2011 and 2015. The national, provincial and municipal figures have been provided in order to attain better perspective. As illustrated, by 2015, South Africa reached 53 million people, with a growth rate of 1.1% during the period between 2011 and 2015. Provincial (0.2%) and municipal (0.6%) population growth rates were almost stagnant during the period, although there was a constant increase throughout. The fact that MMM had a higher growth rate than the Province, emphasising its prominence as an economic hub as people from rural areas migrate to Bloemfontein and surrounding areas, in the hopes of finding better employment.

Household structures and sizes give a better perspective of what the local community's socio-economic behaviour is. Household structures further determine the amount of disposable income available in a region; thus an increase in the number of households will mean an increase in available disposable income. Disposable income has a direct impact on consumption, in which in turn, stimulates the local economy.

Table 3 - Household Trends

Study Area	HH Numbers - 2011	HH Numbers - 2015	Average Household Size (2011)	Average Household Size (2015)
RSA	14 450 163	15 294 448	3.6	3.5
Free State	823 317	830 273	3.3	3.3
MMM	231 922	235 586	3.2	3.2

(Source: Adapted from StatsSA, 2011)

In 2011, South Africa had 14.45 million households, which coupled into an average of 3.6 people per household. The national number of households saw a large increase in 2015, as this number increased to over 15 million in 2015. The interesting dynamic found here however, is that during this period, the average number of persons within each of these households decreased slightly by 0.5%. During the same period, the Free State experienced an increase of 6 956, from the 823 317 households that were found in 2011. *Table 3* further illustrates that the Free State Province consistently had smaller households, maintaining an average of 3.3 people per household through both years. Mangaung had 235 586 households in 2015, which was 3 664 more than 2011. The households in MMM had a smaller average per household size than the overall Provincial household size during 2011 and 2015, all of which remained the same in 2015.

4.2.2. Economic Profile

4.2.2.1. GVA Growth

The economic profile for MMM as depicted in *Figure 5*, reveals that the municipality has experienced growth throughout the past 10 years, although the rate at which this growth is occurring is slowing down profusely! There was large stagnation in the growth rate between 2008 and 2009 as it decreased from a 30,02% growth rate to only 9,11%. *Figure 6* reveals that the Free State Province experience the same decreased in 2009, but it was able to recover during 2010. A comparison of the two figures reveals that both the Province and the municipality have been growing at a positive pace.

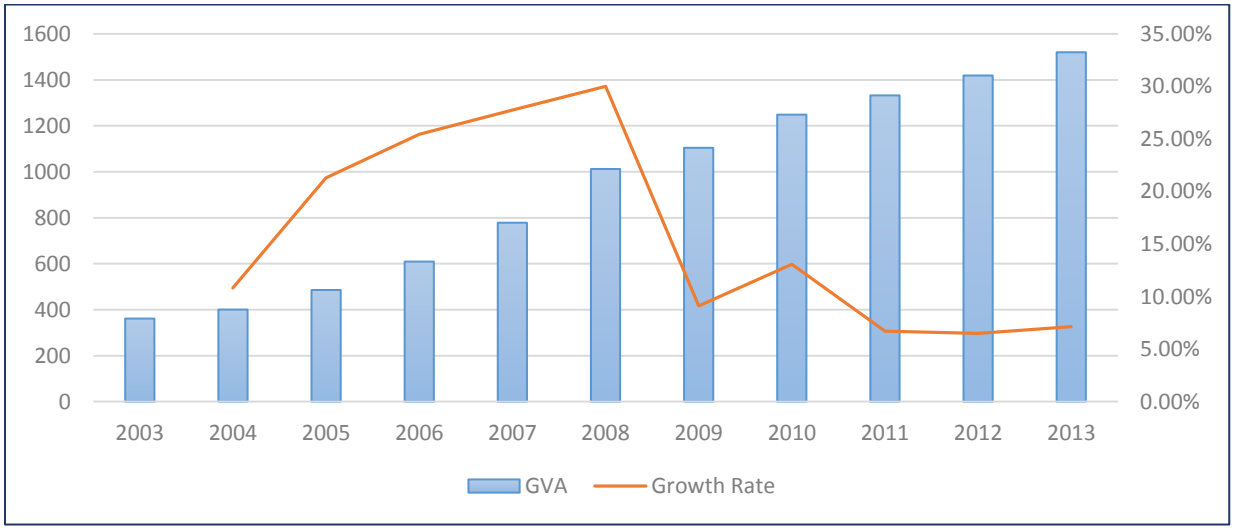


Figure 5 - MMM GVA Growth

(Source: Adapted from StatsSA, 2011)

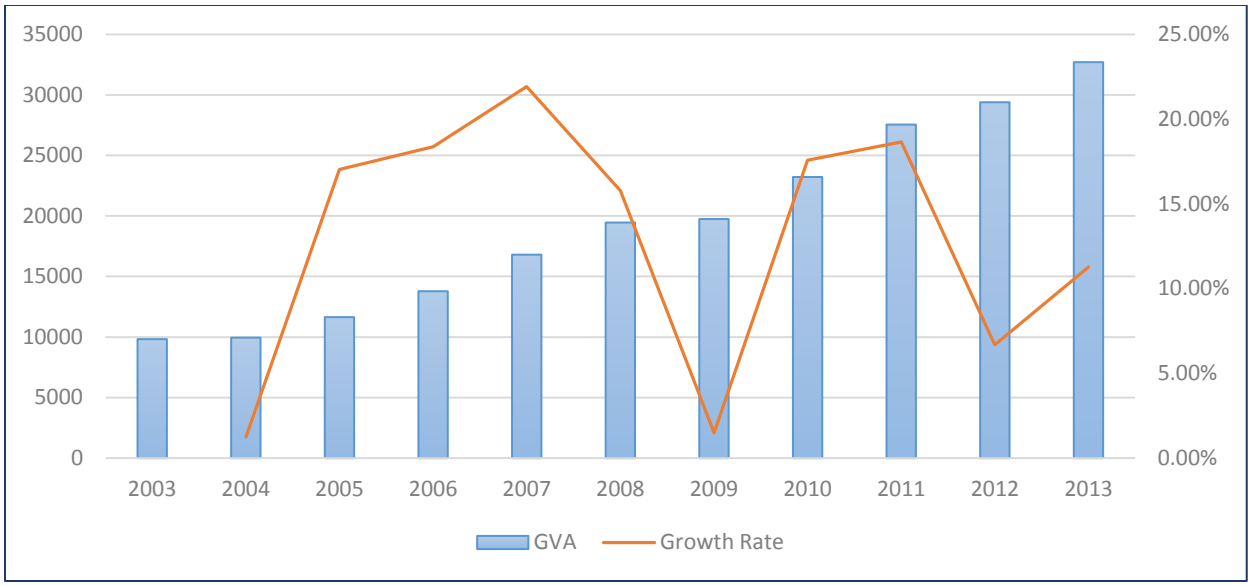


Figure 6 - Free State GVA Growth

(Source: Adapted from StatsSA, 2011)

The greatest distinction between the municipality and the Province is found in the rate I which growth has been growing. The Free State has been growing at a much faster rate than the Mangaung Metropolitan Municipality since 2009.

4.2.2.2. GVA Sectorial Distribution

General Government, as illustrated in *Figure 7*, is the greatest contributor to the economy of the MMM, with a contribution of 23.71%. The Finance, Insurance, Real Estate and Business Services sector contributes 20.79%, making it the second highest contributor to the economy of the municipality.

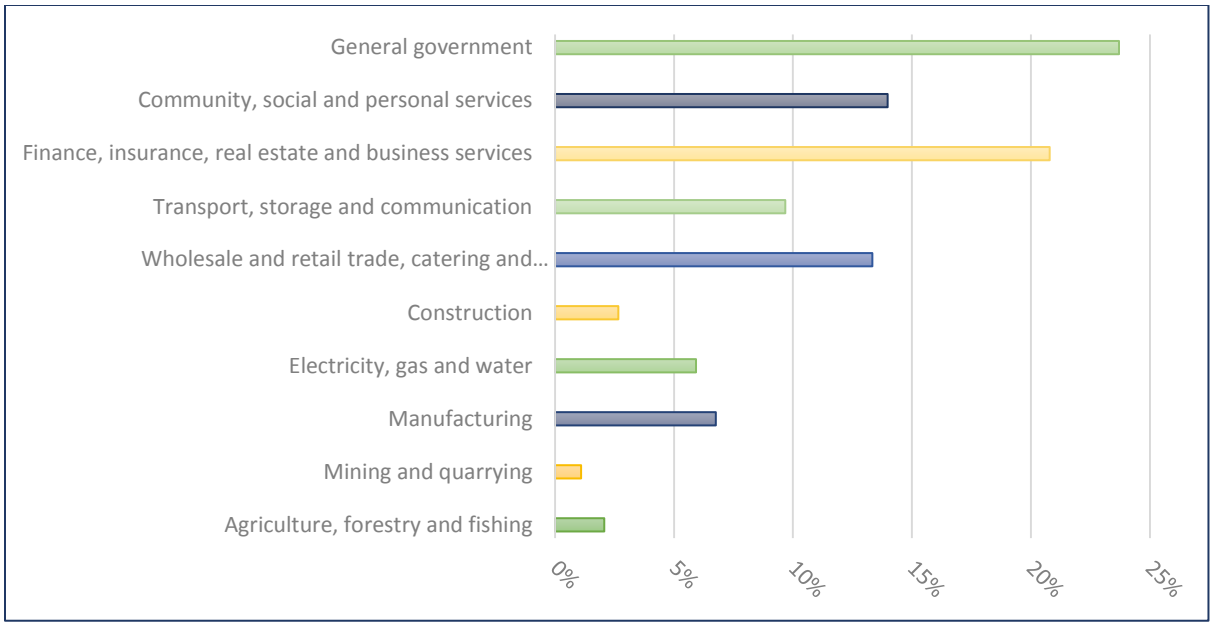


Figure 7 - GVA per Sector

(Source: Adapted from StatsSA, 2011)

Agriculture, Forestry, and Fishing sector is the second lowest contributor to the GVA of the MMM, with a total contribution of 2.07% during 2015, which is just above the 1.09% contribution of the Mining and Quarrying sector. Despite the minimal contribution to the total GVA of the Municipality, the primary sector has had a consistent contribution throughout the past ten years, with Agriculture, Forestry, and fishing maintaining a 16,64% average contribution since 2003. The consistent growth in the GVA of the MMM, shows that it is a stable economy, which is a very positive indicator for the proposed Agri-Parks.

4.2.3. Employment Profile

The local labour force of the Mangaung Metropolitan Municipality is examined within this subsection in order to realise the influence of indicators such as Employment and unemployment, which are key in determining the socio-economic wellbeing of the municipality. These factors are also vital in depicting the local community's capacity to earn an income that will enable them to provide for their own basic needs. Unemployment rates, as well as sectoral employment patterns at a National, provincial and Local level.

4.2.3.1. Employment

The distribution of employment trough the various sectors of the economy can be linked closely to the economy as the structure in employment correlates with the structure of the economy. The employment structure of South Africa, the Free State, as well as Mangaung have thus been illustrated and compared in *Figure 8*.

Assessing the national employment distribution per sector, it is clear that 73.8% of South Africans work in the tertiary sector; particularly in the Wholesale and Retail Trade, Catering and Accommodation sector, which is the biggest contributor to the South African economy by employing 24.8% nationally. Agriculture, Forestry and Fishing is not a very influential contributor on a national level, only accounting for 5.8% of national employment.

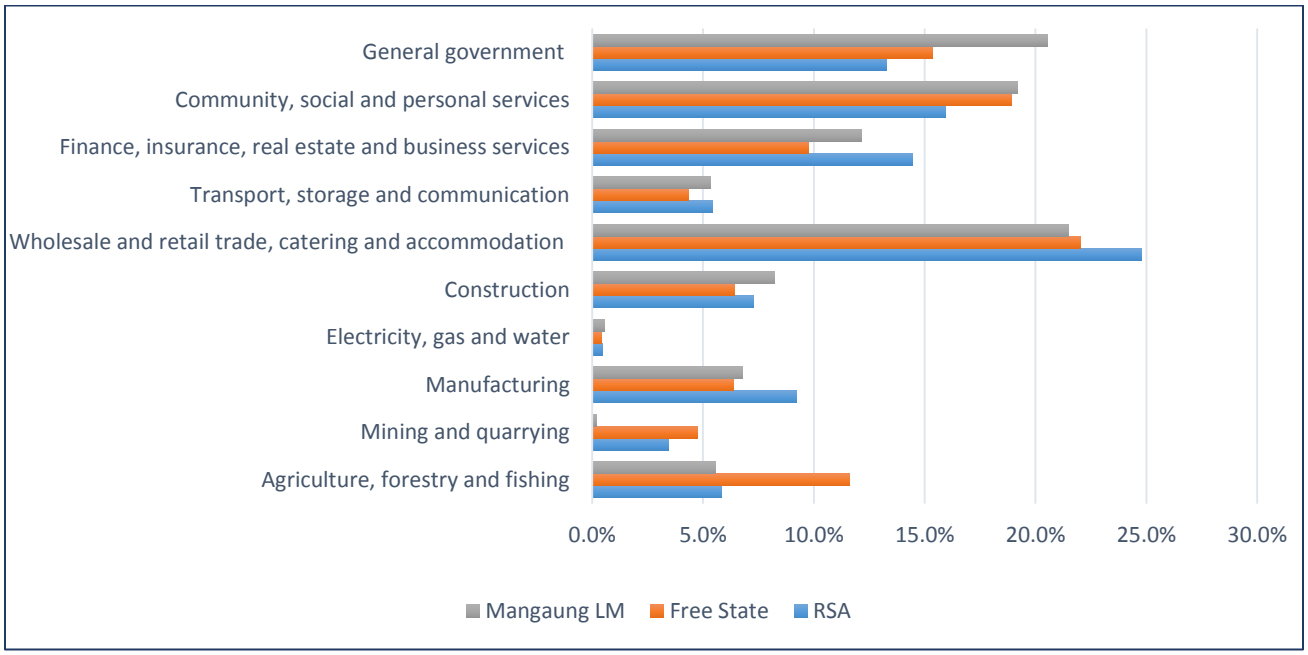


Figure 8 - Sectoral Employment, 2013

(Source: Adapted from StatsSA, 2011)

The sectoral distribution of employment within the Free State Province reveals that the agricultural sector has proportionally greater influence than at national level. *Figure 8* illustrates that Agriculture, Forestry and Fishing constitutes 11.8% of the provincial employment, high is double the 5.8% national contribution. This is an indication of the high level of reliance that the Province has on work opportunities within the agricultural sector. The increased prominence of the agricultural sector in the Free State does not deter from the strength of the tertiary sector. *Figure 8* also reveals that the Wholesale and Retail Trade, Catering and Accommodation sector is the strongest sector in the Province, with the Community, Social and Personal Services sector also proving strong in the Province.

The Mangaung Local Municipality clearly shows that it has a strong administrative centre, with the tertiary sector claiming 78.7% of all employment found in the municipality. The prominence of administration in Mangaung can be attributed to the concentration of provincial, district, and local municipal functions within the Mangaung Metro. As an administrative base, Mangaung has very little agricultural activities and the sector contributed only 5.6% to the 2013 total employment figures. Employment within the sector

has grown from 224 in 2003 to a total of 987 in 2013. This means the sector grew at an average rate of 16.64% per annum in this time period. Continuing at this rate, it is expected to reach a total of 1 343 people end 2015.

4.2.3.2. Unemployment

The working age population for South Africa during 2013 was 35 million people; this is in accordance with the latest available data. In the year, the labour force was made up of 19.7 million of the 35 million people, while 13.6 million of these people were not economically active. The labour participation rate (LF) for 2013 was thus calculated to be at 59.3%. South Africa had 14.8 million people were employed during 2013; this is a 1.06% increase from the 14 million people who were employed nationally in 2011. Employment in this context include people who work under both formal and informal employment, these are the figures illustrated under employed workers in Table 4. The unemployed people in South Africa were 4.8 million, which is much lower than those that are employed, this meant that the national unemployment rate was set at 24.7%.

Table 4 - Labour force statistics, 2013

Indicators	South Africa	Free State	MMM
Working age population	**35 024 655**	**1 815 133**	**512 308**
Non-Economically Active Population	13 579 117	720 842	182 605
Labour Force	19 750 374	1211 137	350 419
Employed	14 864 338	836 202	269 610
Unemployed	*4 886 047*	*374 932*	80 807
Unemployment rate	24.7%	31%	23.1%
LF participation rate	59.3%	62.7	65.7%

(Source: Adapted from StatsSA, 2011)

As can be deducted from the figures illustrated in *Table 4*, the Free State Province accounted for only 0.05% of South Africa's working population. The province had a total of 1.8 million people, who were considered as a part of the working age population, while 720 000 of those people were not economically active. In 2013 the Free State labour force was totalled at 1.2 million people, which equate 66.72% of the total provincial population. This dynamic meant that the labour force participation rate was calculated to an average of 62.7% provincially. Employment has decreased by almost 1% from 858 360 people during 2011 to 836 202 in 2013. With 374 932 people being unemployed, the Free State unemployment rate thus stands at 31%.

With an unemployment rate of 23.1%, it is clear that unemployment within Mangaung is lower than that which is displayed at national and provincial levels. The number of people who were unemployed within the municipality were 80 807, while 269 610 people had work. It is important to note however, that employment has declined by 0.95% since 2011, whereby 282 363 people within the municipality were employed. As illustrated in *Table 4*, the 2013 Mangaung figures reveal that the Province had a working age population of 512 308, while 182 605 of those people were not economically active. This meant that the labour force participation rate for Mangaung was higher than both the provincial and national rates, indicating Mangaung is an important labour market for the Province.

4.2.4. Education

The highest levels of education which were attended by most of the population are a good indicator of the expected capacity of local communities to influence economies. *Table 5* below gives a comparative analysis of the levels of education nationally, provincially and locally. Education often has a large influence on the cumulative skills base of a municipality or region, and it is thus vital to analyse it in the context of the Agri-Parks.

Table 5 - Education Level, 2013

	RSA	Free State	Mangaung
No Schooling	9.6%	8.6%	6.8%
Attended School	72.3%	73.5%	71.5%
Higher Education	5.7%	4.4%	8.5%
Other/Unspecified	12.6%	13.4%	12.8%

(Source: Adapted from StatsSA, 2011)

The prominence of Mangaung is demonstrated within *Table 5*, and it also reveals why the municipality was deemed a metropolitan municipality. With only 6.8% of people not having had any education at all, Mangaung is 1.8% less than the province and 2.8% less than the national figures. A large portion of individuals within Mangaung have attended some sort of higher education, attaining a certificate, diploma or degree, not excluding postgraduate studies. With 8.5% of people having attended higher education institutions, the municipality boasts more than double the amount of higher education learners than the Free State Province, which had 4.4%.

4.2.5. Household income

The total household income per income group is illustrated in *Table* 6, in such a way that it is easy to compare the national, provincial and local figures. As highlighted by the red dotted block, most households at all three levels fall within the income brackets of R944 – R3 775. Focusing on the number of households that receive no income at all, Mangaung is yet again in a better state than the overall Free State (11.9) and South Africa at large (14.9), as only 11.3% of the Mangaung population have no household income.

Looking at the overall figures, there is a much larger proportion of households within Mangaung that earn more than R3 775 per month, than at national and provincial levels. According to UNISA's Bureau of Market Research (BMR), the poverty line, which stands at R1 945 a month, 39.8% of the Mangaung community households, are living below the poverty line. Almost half of the entire population of the Free State are living below this poverty line, with a total percentage of 46.6% of the Province earning less than R1 945 per month. Although better than the provincial statistics, South Africa has more household's living below the poverty line than Mangaung, with 43.9% of household earning less than R1 945 per month, nationally.

Table 6 - Household Income per income group, 2015

Income category (per month)	RSA	Free State	MMM
No Income	14.9%	11.9%	11.3%
R 1 - R 471	4.5%	5.6%	4.6%
R 472 - R 943	7.4%	8.6%	7.0%
R 944 - R 1 887	17.1%	20.5%	16.9%
R 1 888 - R 3 775	19.0%	21.4%	20.3%
R 3 776- R 7 551	13.1%	13.0%	14.1%
R 7 551 - R 15 101	9.3%	8.4%	10.4%
R 15 102 - R 30 203	7.2%	5.9%	8.0%
R 30 204 - R 60 406	4.7%	3.2%	5.0%
R 60 407 - R 120 813	1.9%	0.9%	1.6%
R 120 814 - R 241 626	0.9%	0.3%	0.4%
Weighted av. (2015 prices)	**R 9 743**	**R 6 810**	**R 9 210**

(Source: Adapted from StatsSA, 2011)

The weighed monthly average income depicted in *Table 6* reveal an interesting phenomenon. Mangaung clearly has a weighted average income per household of R9 210; this is much higher than the Free State Province average, which is R 6 810. *Table 6* further reveals that South Africa has the highest weighted average income per household; this is as a result of an increased number of the 'elite' on a national level. Mangaung does not lag too far behind the national figures, as it falls short by R533, from the South African R9 743, this yet again emphasises Mangaung's importance as an economic node.

4.3. Agri-Hub Location

The site for the Agri-Hub within the Thaba Nchu industrial zone is seen on **Map 5**. The site location was influenced to a large extent by the existing infrastructure that is already within Thaba Nchu with relation to the FDC warehouses that are situated within the industrial area of Thaba Nchu.

MAP 5: MMM AGRI-HUB LOCATION, THABA NCHU

(Source: Google Earth, 2015)

As mentioned, these warehouses are severely degraded and underused; however, it is envisaged that upgrading these facilities will ignite the reuse of the industrial sector within Thaba Nchu, while also reducing building costs for the agri-businesses envisaged for the Agri-Hub. The site was chosen due to its proximity to the N8, which improves access to markets and suppliers as well as the ease of doing business. The area is also close to a high volume of rural communities that will ultimately need to benefit from the Agri-Parks initiative. There is also a number of agricultural initiatives that have been either initiated,

or is either planned or in the process to be initiated by the Department of Agriculture and Rural Development. The site location, together with a representation of the proposed layout and potential operations at the Mangaung Metro Municipality Agri-Hub, is shown in the following map.

MAP 6: MMM AGRI-HUB SITE LOCATION AND PROPOSED LAND UTILISATION

(Source: DRDLR, 2015)

In terms of the above, the following immediate interventions have been identified by DRDLR:

- Fencing of the existing abattoir
- Upgrading of the road
- Extension of the existing abattoir
- Upgrading of the existing feedlot
- Auction facility

SECTION 5: MAIN ROLE PLAYERS AND BENEFICIARIES

This section focuses on the main role players and potential beneficiaries that will contribute to the overall development of the Mangaung Metro Municipality Agri-Park. The list contains both public, private, and extension service bodies.

5.1. Main Role Players

The following table indicates the main role players per influence sphere and the role they can potentially play in the successful Agri-Park development:

Stakeholder	Role
Government	
DRDLR	✓ Monitoring and Evaluation ✓ Provision of institutional support ✓ Provision of funding ✓ Project facilitation
Department of Agriculture (Bloemfontein) **Department of Agriculture (Thaba Nchu)**	✓ 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
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
Mangaung Metro 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
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
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.
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
Associations and Organisations	
State Veterinarian (Glen)	✓ 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
National Wool Growers Organisation of South Africa	✓ Emerging sheep farmer support towards wool production ✓ Training of wool workers and farm workers
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

5.2. Potential Entrepreneurs and Agri-Park Beneficiaries

The following people from the local communities have been identified as potential stakeholders; the list will be broadened as the Agri-Park value chain is developed further. These are emerging famers and trusts that are operational within the MMM.

TABLE 7: POTENTIAL AGRI-PARK BENEFICIARIES

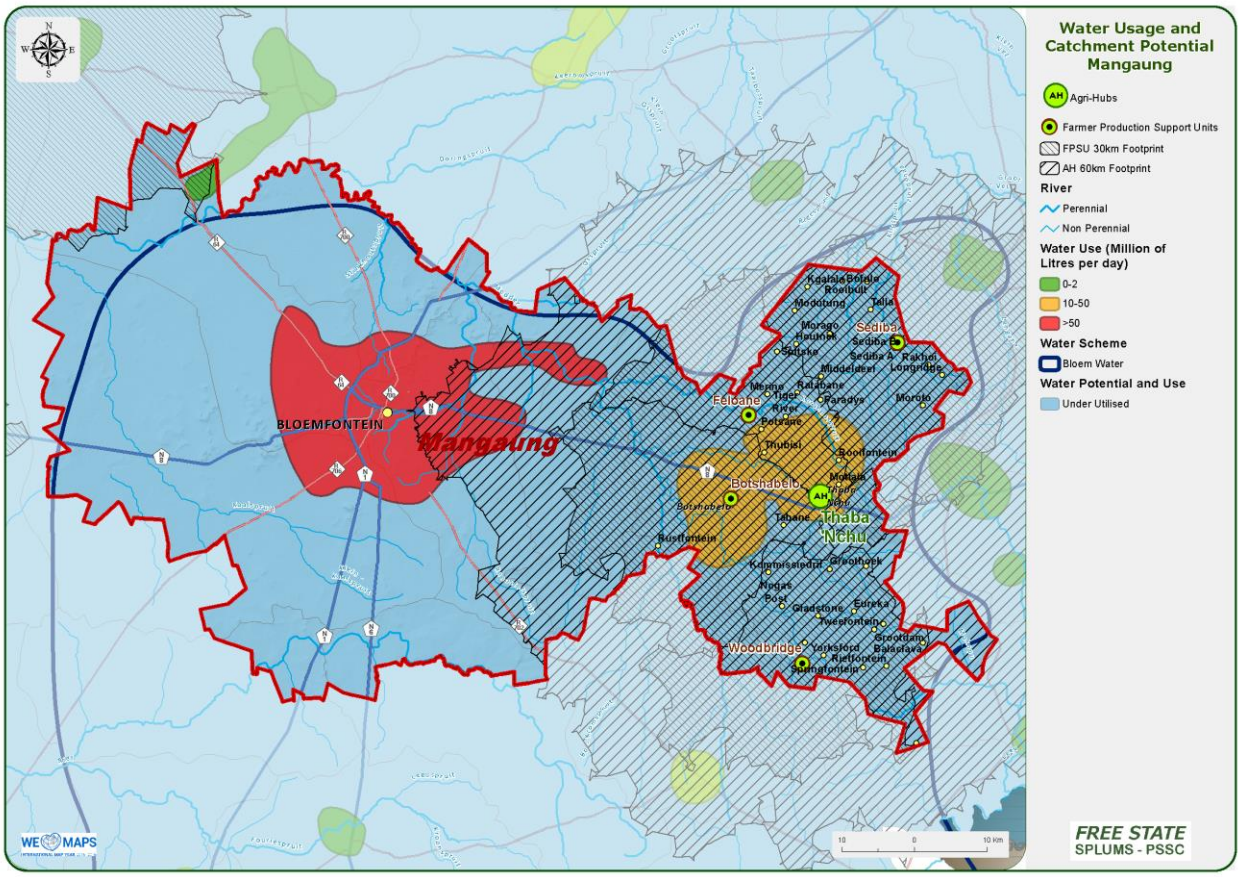
Farm/Trust/Cooperative	Stewards	Farm size	Coordinates
Ipswitch (Tooi)	LRAD	395 ha	26 47 32 E 29 26 13 S
Westridge (Ketsise)	LRAD	556 ha	26 47 7 E 29 25 12 S
Malvern (Silo)	LRAD	446 ha	26 47 3 E 29 26 59 S
Sibton1 (Mohono)	Private	350.8 ha	26 49 18 E 29 25 59 S
Vlakplaats (Maele)	LRAD	191.4406 ha	26 52 12 E 29 25 18 S
Sibton 2 (Khara)	Communal	175.4 ha	26 49 18 E 29 25 59 S
The Ridge Farm (Moroko)	Private	545 ha	26 55 38 E 29 5 40 S
Rakhoi Farm (Tsimatsima)	Private	856 ha	26 59 29 E 29 2 58 S
Chubani Farm (Monokwane)	Private	496 ha	26 53 48 E 29 2 46 S
Malintja Tyobeka Farm	Private	476 ha	26 55 2 E 29 2 40 S
Milton Farm (Kodisang)	LRAD	311 ha	26 56 56 E 29 2 58 S
Woodbridge Fattening Unit	Communal	4 ha	26 48 54 E 29 25 39 S
Riverside (Nyapotse)	LRAD	278 ha	27 4 2 E 29 25 0 S
Mogotsi Family Trust	LRAD	223 ha	26 41 21 E 29 6 10 S
Maile	PRO-ACTIVE	582 ha	26 25 21 E 29 13 12 S
Ntho Trust	PRO-ACTIVE	298.6 ha	26 25 29 E 29 11 57 S
Morapedi Trust	PRO-ACTIVE	770 ha	26 28 26 E 29 10 21 S
Meloding (Faba)	SLAG	395 ha	26 40 5 E 29 19 26 S
Thabang Basotho (Qathatsi)	SLAG	590 ha	26 41 5 E 29 19 38 S
Eenzam (Zweni)	LRAD	310 ha	26 40 29 E 29 20 44 S
Lower Malika (Ntulini)	PRO-ACTIVE	1288 ha	
Mooifontein (Hlatswayo)	SLAG	507 ha	26 43 48 E 29 26 22 S
Ramaditse	SLAG	747 ha	26 37 50 E 29 12 29 S
Motebontloana	Commonage		
Koppieskraal (Salamane)	SLAG	511 ha	26 46 25 E 29 24 31 S
Sringside (Manyingisa)	SLAG	531 ha	26 44 25 E 29 22 2 S
Total		**11 798 ha**	

(Source: FSDARD, 2015)

SECTION 6: AGRICULTURAL INDUSTRY ANALYSIS

6.1. MMM Environmental Considerations for Agricultural

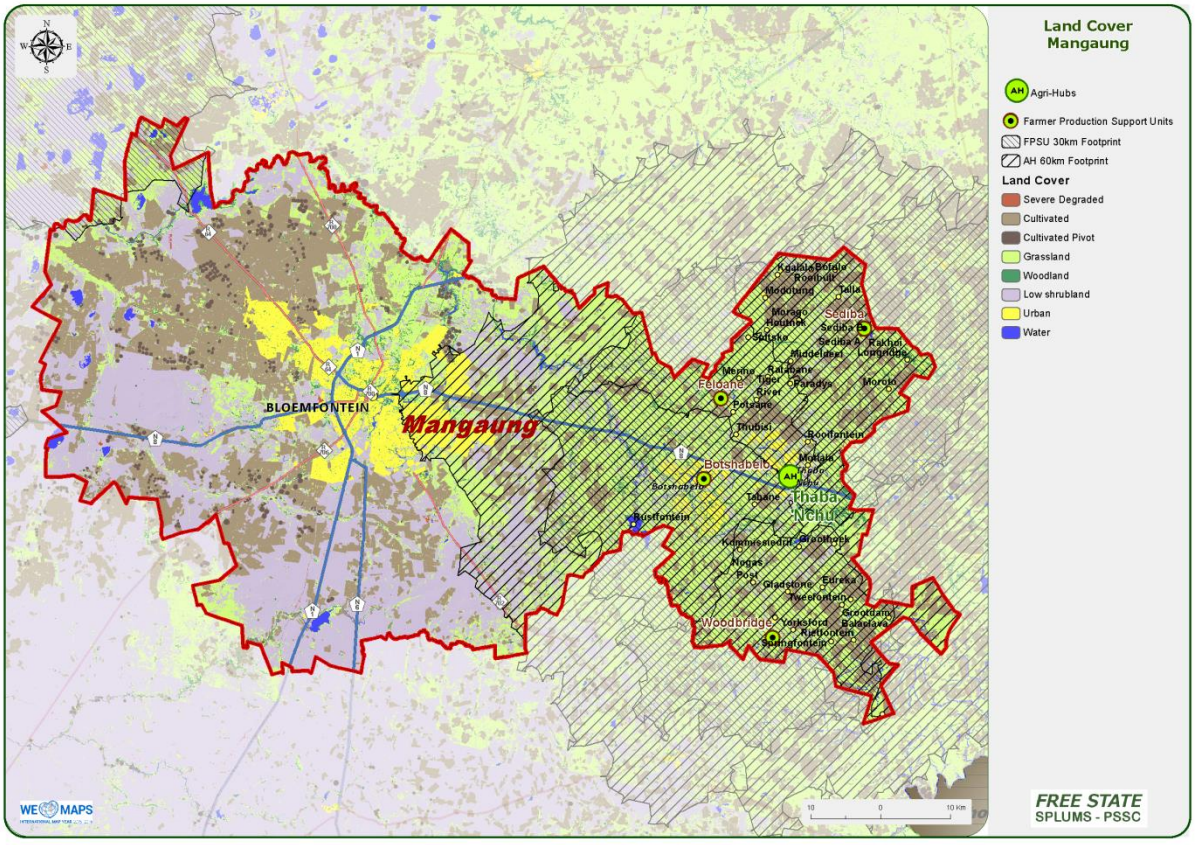
Environmental considerations for the production of agricultural produce is of extreme importance as it dictates the success of any agricultural enterprise. It is important to evaluate the environmental conditions for the MMM area in order to determine the extent of potential agricultural activities and production. Most of the production within the MMM are reliant on rain-fed crop production, with some irrigation taking place and the dependence on the limited water resources in the area is of critical importance. The catmint potential character and water usage of the area is shown in **Map 7**, and shows the large water requirements of the urban areas. An annual rainfall of between only 400 -600mm and no large sustainable water bodies for large irrigation schemes makes farming in the area even harder.



MAP 7: WATER USAGE AND CATCHMENT POTENTIAL

(Source: DRDLR, 2015)

The soil character for the MMM area indicates that there is limited soil potential for rain-fed production and that areas with red and yellow-brown apedal soils are suited for irrigation. Moreover, soils are more suitable for vegetation than suited for livestock agriculture. The average climate within the area is hot to the western part (32°C in the summer) of the area and the vegetation changes closer to the Northern Cape to a lower vegetation yield per hectare. To the east, the vegetation capacity increases and the summer temperatures are approximately 30°C. The land-cover character of the MMM can be seen form **Map 8,** and it is evident that the rest is covered with scrubland and to the east with grassland. The blue specks indicate waterbodies; however, it should be taken into consideration that these waterbodies are periodic and dependent on the annual rainfall patterns within the area to sustain them. To the east, there is a higher carrying capacity for livestock; however, the area's topography is uneven as it nears the Lesotho border where the Maluti Mountains are situated.

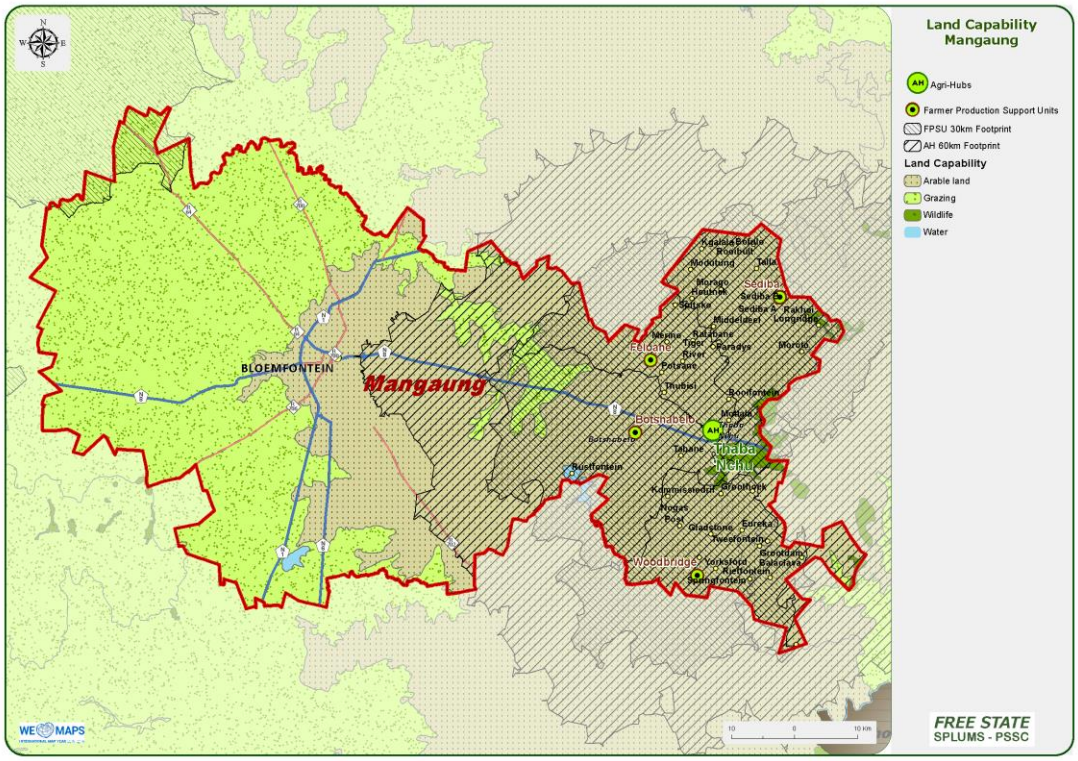


MAP 8: MMM LAND COVER

(Source: DRDLR, 2015)

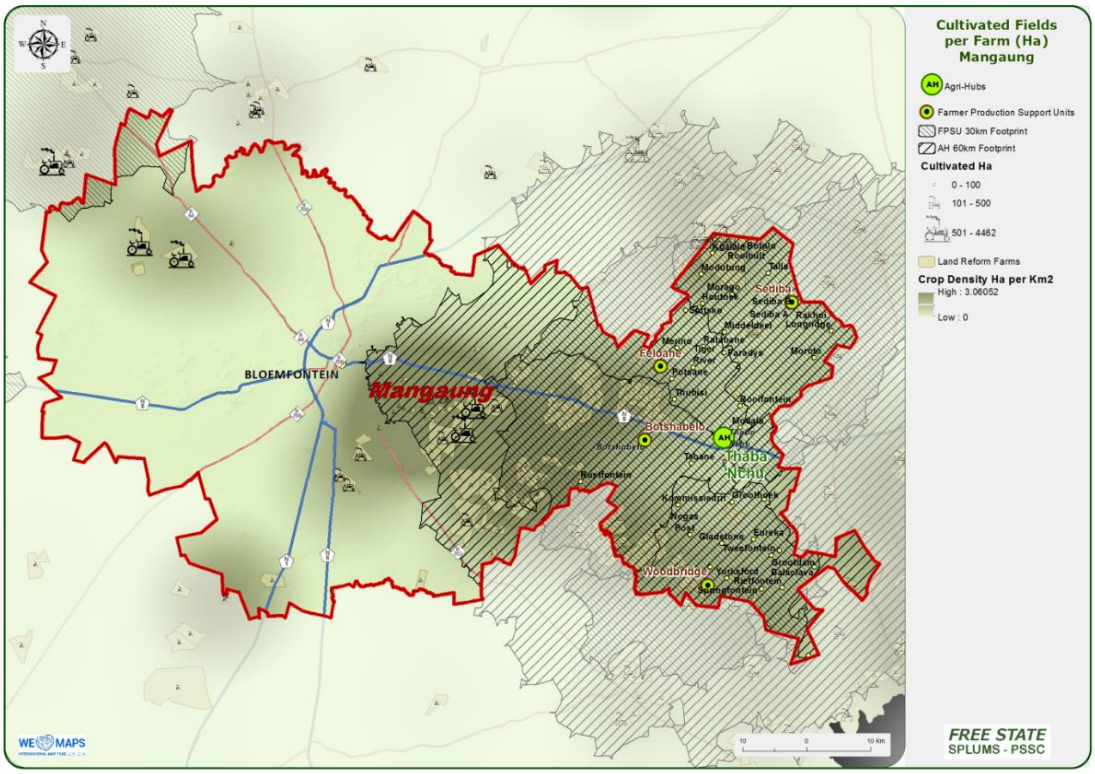
6.2. Mangaung Agricultural Activities

The Mangaung Metro Municipality comprises the smallest hectare-coverage available for agriculture within the Free State Province due to it being a Metro with a total of 126 455 ha currently utilised for rain-fed production and an additional 8 008 ha used for irrigation. However, its significance in the agricultural sector cannot be understated with most of the agricultural value adding industries found within the Metro. The agricultural sector, as well as the manufacturing sector within the MMM, has not been the main contributors to the Mangaung economy, with business and related services the main contributor. Due to the rural character of Botshabelo and Thaba Nchu, most of the farming found within these is subsistence farming. The area has an arable land capability and further restrictions due to limited water availability for irrigation of crops, as well as the uneven topography found closer to Lesotho that hinders intensive irrigation of crops. **Map 9** indicates the land capability for the MMM and shows that the area is suited for grazing and crop production, although crop production considerations will be discussed consequently.



MAP 9: MMM LAND CAPABILITY

(Source: DRDLR, 2015)



MAP 10: MMM CROP PRODUCTION CAPACITY

(Source: DRDLR, 2015)

Map 10 indicates the crop production capacity within the Metro; it is evident that the area has a moderate capacity for crop production. The moderate potential for crop production is due to the large available crop production land that must be produced under rain-fed circumstances, the temperature limiting rotation crop production, and the topography that elevates when moving to the east of the Metro. Furthermore, the lack of an abundance of large sustainable water bodies hinders the expansion and sustaining of crop production under irrigation as evident by the ha's available for this type of production.

The high risk involved with crop production under rain-fed circumstances also limits the financial viability of such activities. If crop production is considered as a means of increasing job opportunities, spurring economic growth and increasing the competitive advantage of the MMM Agri-Park initiative, then the production of high value crops should be considered rather than the crops traditionally produced within the region such as maize and wheat. The main crops produced both under irrigation and via rain-fed watering, are presented in the table below in relation to ha planted for production:

TABLE 8: MMM CROP PRODUCTION (P/HA)

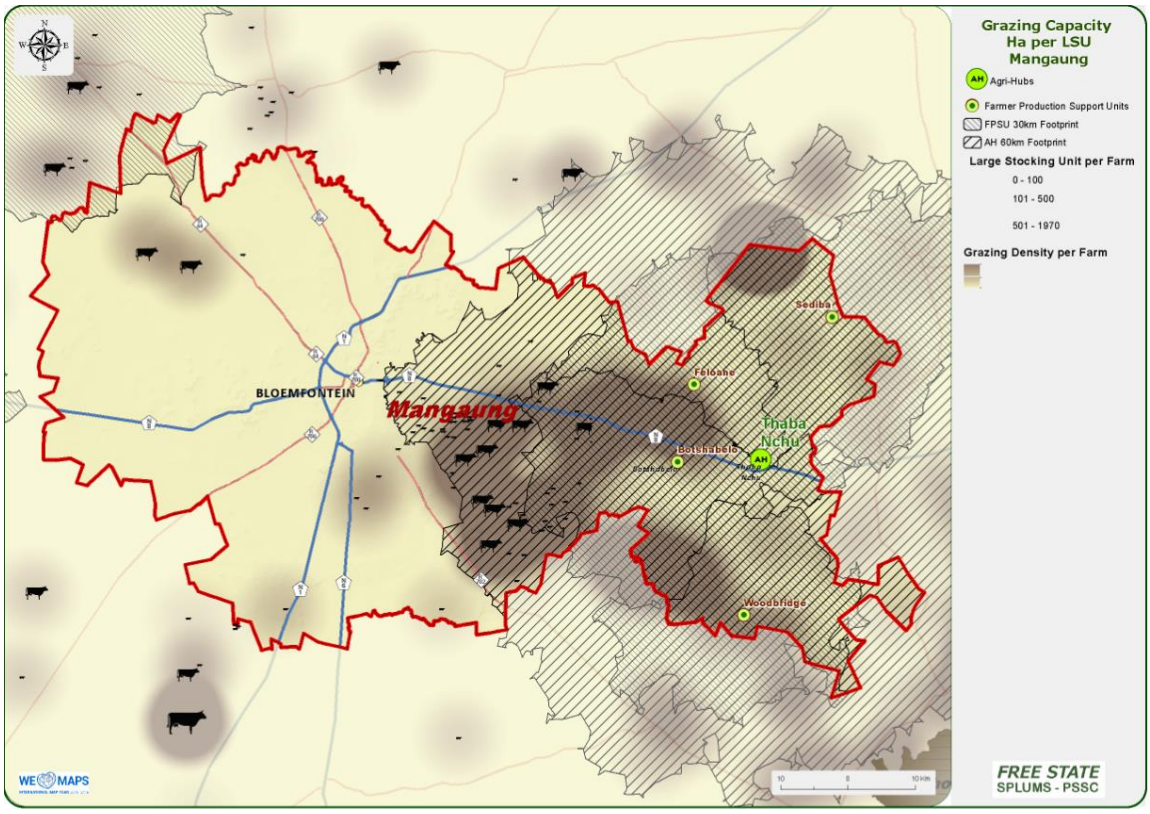
Crop Planted	Irrigation (ha)	Rain-fed (ha)
Maize	3 386	31 214
Wheat	1 191	16 542
Sunflower	337	28 724
Potatoes	175	
Vegetables	114	
Lucerne	222	
Fallow		33 014
Pasture		113 374
Sorghum		1 035
Oats		2 918
Groundnut		90

(Source: FS-AMP, 2015)

Clearly evident from **Table 8,** are the number of hectares utilised for the production of crops for livestock feed. Figures compared for the same commodities for the period 2006 – 2007 show that there has since been more than a doubling in the provision of pastures for livestock (2007- 51 798), an increase in maize and sorghum production, and perhaps most telling of all the increases, is the production of sunflowers. This could most probably be attributed to the Vergezogt Oil initiative that needs a specialised sunflower cultivar to produce the required oil. In addition to these increases, there has been a significant decrease in the wheat production, with production falling around 61.1%.

Another case in point towards the need to produce high value crops within the MMM is the production of groundnuts; although the hectares planted are relatively low in comparison to the other crops, it was not produced previously and shows the shift in agricultural mind-sets within the MMM. Unfortunately, these figures are only available for the commercial farmers within the area, but it does show the main agricultural activities with relation to crop production within the metro and the potential and agricultural patterns within the MMM. The following high value crops could be considered for the future:

Cotton	Dry beans	Soya beans	Pomegranate
Antephora pubescens	Garlic	Squash and pumpkin	Panicum



MAP 11: MMM GRAZING LAND USE CAPACITY

(Source: DRDLR, 2015)

Alternatively, livestock in contrast to crop farming within the MMM has enjoyed significant agricultural focus due to the topography, ample suitable vegetation, large tribal population and quantity of state-owned available for grazing. However, there have been constraints with regard to the accessibility of sufficient grazing land due to urbanisation and agricultural production. The grazing capacity for livestock as calculated per veld carrying capacity is 12 ha per large livestock unit within the Metro. The importance of livestock within the MMM is clearly evident from the established abattoir within the Agri-Hub that has been in operation for some time under the stewardship of the DARD. The number of livestock within the area, as calculated with the last agricultural census (2007), is illustrated in the table below:

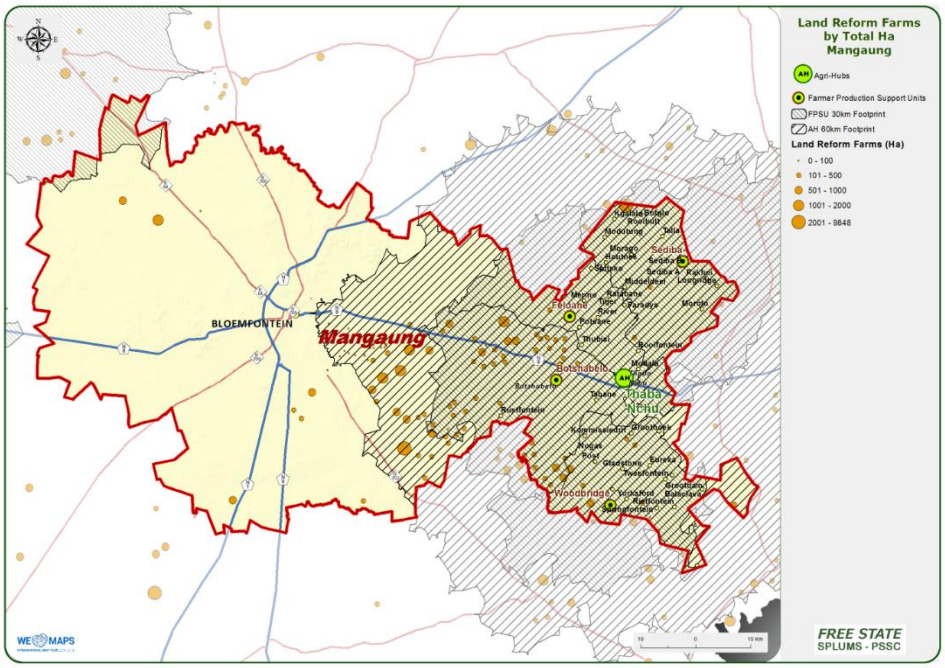
TABLE 9: MMM LIVESTOCK NUMBERS

Livestock Type	Total for Metro
Cattle	38 515
Sheep	35 652
Pigs	28 457
Game	280
Chickens	7 036 200

(Source: Stats SA, 2007)

6.3. Mangaung Project Profile

This subsection focusses on current and planned projects within the Mangaung Metro Municipality; these projects are mainly from the DRDLR, DARD, and MMM as they are responsible for most of the agricultural, land reform and rural development projects within the Metro. **Map 12** shows the locality and the number of Land Reform Farms within the Metro Municipality. Clearly evident is the conglomeration of Land Reform farms within the AH and FPSU footprint areas.



MAP 12: MMM LAND REFORM FARMS

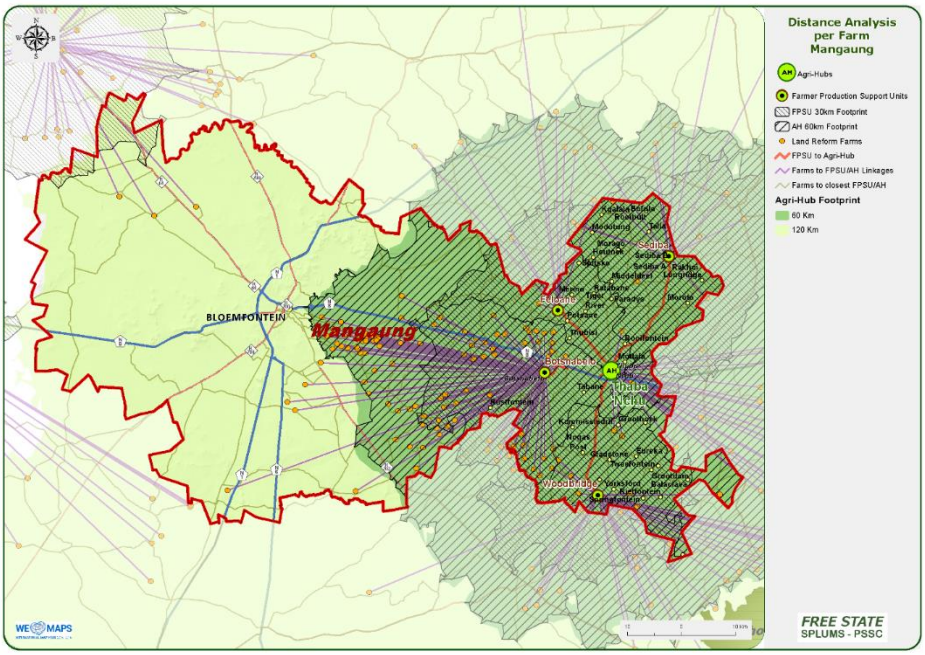
(Source: DRDLR, 2015)

According to the DRDLR, recent commonage and small-scale framing developments proved to be underperforming and generally failing to produce agricultural products on a large scale. This is a worrying trend for the development of the MMM Agri-Park as the emerging farmers will play a critical part in the supply-chain. Nonetheless, the following hectares of land reform farms are within the catchment of the Agri-Hubs and Farmer Production Support Units:

- Botshabelo – 21629 ha
- Feloane – 479 ha
- Sediba – 12532 ha
- Woodbridge – 3986 ha
- Thaba Nchu – 74593 ha

This amounts to a total capacity of emerging farmers, when hectares are considered, of 112 859ha that should be utilised in support of the agro-processing businesses within the MMM Agri-Park. A large part of these Land Reform Farms are used for mixed farming practices, which refers to the use of both livestock and crop production. In addition to this, there are 41 Pro-active Land Acquisition Strategy (PLAS) farms under the DARD's tutelage, which relate to 36 374.99 ha that can be utilised for the supply towards the AH. Part land include 17 541 ha that can carry 2 924 LSUs.

Map 13 indicates the linkages to the AHs and FPSUs by way of distance from the farms to these functions.



MAP 13: MMM LAND REFORM FARMS LINKAGE TO AH AND FPSU'S

(Source: DRDLR, 2015)

TABLE 10: MMM PROJECT FRAMEWORK

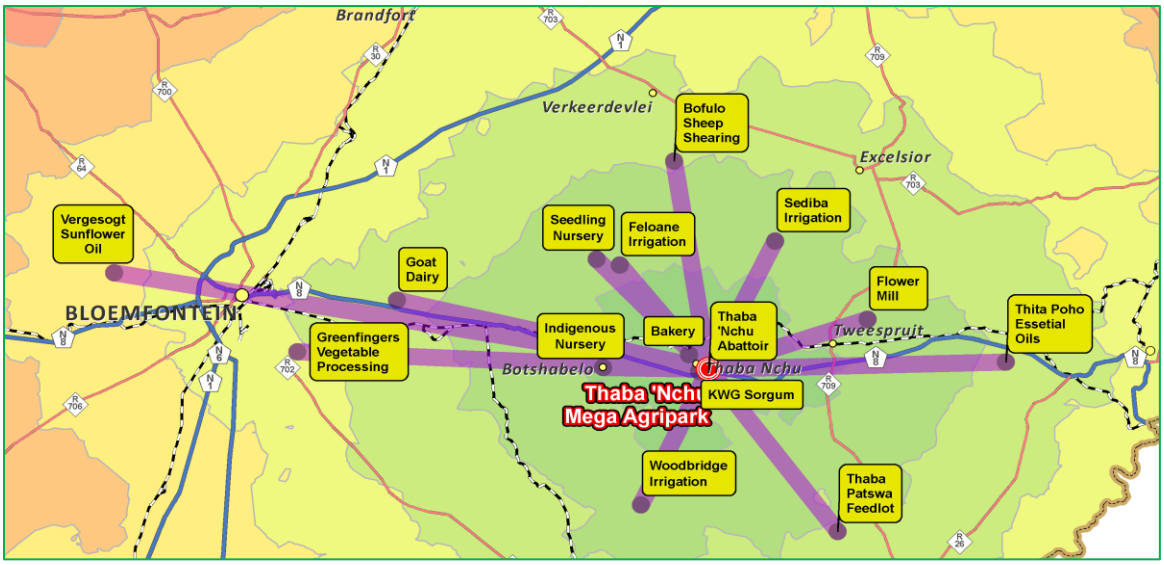
#	Project Name	Location	Responsibility	Status
1	Thaba Nchu Abattoir	Thaba Nchu	DARD/DRDLR	Current
2	Narysec College	Thaba Nchu	DRDLR	Current
3	FET College	Thaba Nchu	DRDLR	Current
4	Transport Logistics	n/a	PLAS/LRAD	Planned
5	Feedlot Expansion	Thaba Patswa	PLAS/LRAD	Planned
6	Agricultural trade with inventory	n/a	PLAS/LRAD	Planned
7	Meat Processing Plant	Thaba Nchu	PLAS/LRAD	Planned
8	Vergezocht Oils	Bainsvlei	PLAS/LRAD	Planned
9	Mechanization Coop	n/a	PLAS/LRAD	Planned
10	Production Inputs	n/a	PLAS/LRAD	Planned
11	Skills Development and Training	Thaba Nchu	PLAS/LRAD	Planned
12	Auction Facility		PLAS/LRAD	Planned
13	Business Development	Thaba Nchu	PLAS/LRAD	Planned
14	Seedling Nursery	Feloane	DRDLR	Planned
15	Indigenous Nursery	Botshabelo	DRDLR	Planned
16	Irrigation scheme	Feloane	DARD/DRDLR	Planned
17	Irrigation scheme	Sediba	DARD/DRDLR	Planned
18	Irrigation scheme	Woodbridge	DARD/DRDLR	Planned
19	Flower Mill	Twee Spruit	DRDLR	Planned
20	Bakery	Thaba Nchu	DRDLR	Planned
21	Bufulo Sheep Sheering	Bofulo	DRDLR	Planned

22	Poultry Broilers	n/a	MMM	
23	Piggeries	n/a	MMM	
24	Hydroponics	n/a	MMM	
25	Agricultural Skills Training	n/a	MMM	

(Source: DRDLR, DARD, MMM, 2015)

As can be seen from the table above, there is a number of planned projects within the MMM. There is however, only a few operational projects and these should be the focus points in order to create quick wins and draw form establsihed enterprises. Further synergies and opportunities should be explored in order to further the establishment of the MMM Agri-Park and the streamlining of projects and initiatives that might otherwisee have been duplicated by different sector departments. The DAAC will play a critical part in relation to this function as it would draw from all sector deparmtents and relevant stakeholders to establish where the competitive advantages of the region can be best addressed.

Map 14 indicates some of the planned projects and other operations within context of their potential linkages to the MMM Agri-Hub located within Thaba Nchu. An abattoir that is operational is already located within the MMM Agri-Hub, and the expansion of operations by means of upgrading current activiites, additional staff training, and the building of a deboning plant is seen as one of the main projects for the Agri-Park and hub.



MAP 14: PROPOSED LINKAGES BETWEEN PLANNED PROJECTS AND THE MMM AGRI-HUB

(Source: DRDLR, 2015)

6.4. Commodity Selection Assessment

This subsection focuses on the commodity selection process that was followed to derive at the main commodities that need to be researched in further detail. As such, this part of the report will focus on the commodity selection criteria, the identification and prioritisation of the top commodities, and then the top three commodities that will be further examined.

6.4.1. Commodity Selection Criteria (APAP)

The Agricultural Policy Action Plan (APAP) is a strategy developed by the Department of Agriculture, Forestry and Fisheries to align the development of the agricultural sector with the goals as set out in the National Development Plan (NDP). It was approved by the Cabinet as of July 2013. It is estimated that the agricultural sector could potentially create 1 million jobs by 2030. Such a strategy is of critical importance not only for the declining agricultural sector, but also the decrease in manufacturing encountered within the national economy. In accordance with this, the selection criteria for the prioritisation model used for the MMM commodities will take cognisance and include the APAP criteria. As such, the APAP has structured the following figure to illustrate commodities that can be classified as NDP winners.

FIGURE 9: NDP COMMODITY WINNERS

(Source: APAP, 2014)

In accordance with APAP, the criteria for commodity selection should focus on its contribution to food security, job creation opportunities, growth potential, and potential contribution to trade balance that includes import substitution.

6.4.2. Commodity Identification

This commodity identification was done on the basis of a systematic evaluation process that focussed on all critical parameters, which play different roles in the successful production and processing of all commodities found within the MMM. As such, environmental conditions, economic and market considerations, and small-holder constraints and preferences were anticipated within this systematic approach. The specific commodity identification criteria are illustrated in the following figure:

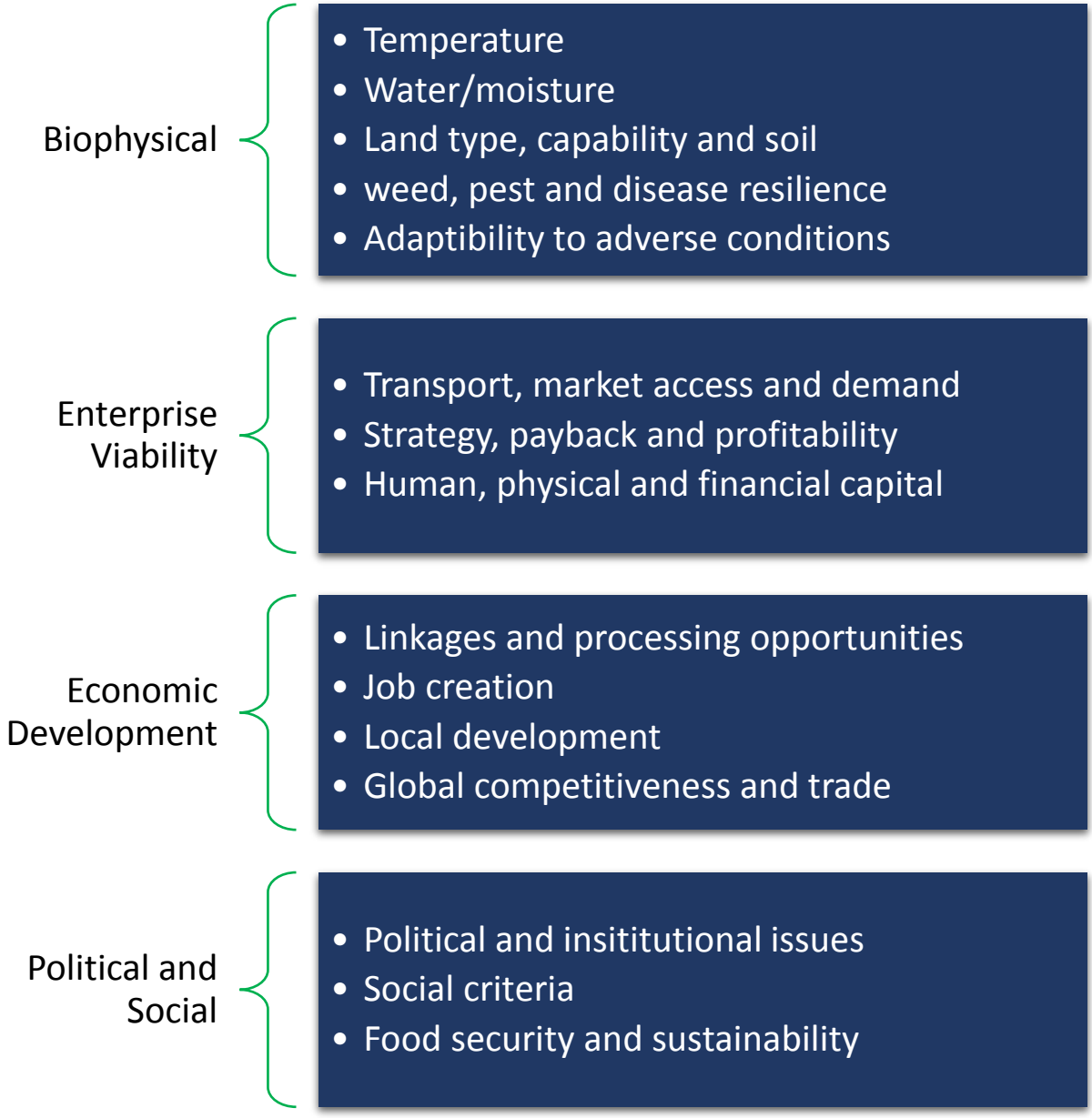


FIGURE 10: MMM COMMODITY IDENTIFICATION CRITERIA

Each of the commodities were scored in respect to the above criteria, and then these scores were weighed in order to derive at a priority framework for each of the commodities; the following scoring was used:

3 = Within **optimal** range, most favourable or ideal condition;

2 = Within **near-optimal** range, sufficiently favourable but not ideal condition;

1 = Within **marginal** range (technically possible but probably not profitable or competitive);

0 = Impossible to grow or almost certainly not profitable or competitive, or highly **unfavourable** condition that are unlikely to be managed successfully. A score of zero may **disqualify** the enterprise, although mitigation might be possible in some cases.

The weights are referenced as follows:

3 = High importance

2 = Medium importance

1 = Low importance

6.4.3. Commodity Prioritisation

The different commodities and their scores in accordance with the selection criteria are illustrated in the table below:

TABLE 11: MMM PRIORITISATION TABLE P/IDENTIFICATION CRITERIA

Commodity	Scoring per Prioritisation Criteria					
	Biophysical	Enterprise Viability	Economic Development	Political and Social	Total Out of 210	%
Red meat	28	65	49	54	**196**	**93.3**
Dairy	28	43	46	33	**150**	**71.4**
Wool sheep	29	48	46	48	**171**	**81.4**
Potatoes	27	54	38	49	**168**	**80**
Cabbage	26	51	33	47	**157**	**74.5**
Onions	23	54	41	45	**163**	**77.6**
Beetroot	27	59	39	46	**171**	**81.4**

Commodity	Scoring per Prioritisation Criteria					
	Biophysical	Enterprise Viability	Economic Development	Political and Social	Total Out of 210	%
Wheat	26	54	50	36	**166**	**79**
Maize	26	52	50	40	**168**	**81**
Soya Beans	20	53	51	46	**170**	**80.9**
Groundnut	26	57	52	45	**180**	**85.7**
Mung Bean	29	44	48	45	**166**	**79**
Sunflower	26	53	44	47	**170**	**81**
Canola	23	53	42	36	**154**	**73.3**

(Manstrat - Extension Suite Online)

Error! Reference source not found. illustrates that a number of commodities' scores are lose to each other owing to the similar conditions and economic implications of these commodities. The highest scores are indicated in bright green (most favourable) and as the score lowers, it is indicated in bright red (least favourite). The higher the score, the more favourable the commodity is for selection based on the indicated criteria, the highest score that could be achieved is that of 210. These commodities have scores near 170 and include the following; Wool sheep, potatoes, beetroot, maize, soya beans and sunflowers. The commodities with the lowest scores are that of dairy and canola, with the reasons owing to these low scores discussed below. The commodities with the highest scores are those of red meat and groundnuts. A brief description of the findings is given in **Table 12**.

TABLE 12: MMM COMMODITY PRIORITISATION NOTES

Commodity	Commodity Prioritisation Notes
Red meat	High potential for extensive (good grazing) and intensive (relative proximity to grain and other feedstock sources) beef and mutton sheep production. Most suitable cattle breeds include Angus, Bonsmara, and Taurus.
Dairy	Proximity to feedstock and fairly favourable climate for dairy production makes the district competitive at local and possibly regional level, but not national level for large- scale dairy

	production. It is important to note that competition at the local level dairy market is already strong.
Wool sheep	High production potential for wool sheep.
Potatoes	High to very high suitability from an agronomic and food security perspective.
Cabbage	High to very high suitability from an agronomic perspective.
Onions	High suitability from an agronomic perspective.
Beetroot	High to very high suitability from an agronomic and food security perspective.
Wheat	Parts of the district are very suitable for winter wheat production under irrigation (note that water for irrigation is very limited, with further limitation to the availability of water to areas best suited for wheat production), which will reduce risk of crop failure significantly and increase yields to profitable levels. Wheat quality from the district are amongst the best in the world; therefore, it presents opportunities for processing into speciality or luxury baked goods.
Maize	Good potential for rain-fed maize production, especially towards the east where very high yields can be attained.
Soya Beans	Medium yield potential under dryland conditions.
Groundnut	Medium yield potential under dryland conditions.
Mung bean (Green gram)	Medium yield potential under dryland conditions. It is a niche market; however, a market can be developed for this excellent food security crop.
Sunflower	Moderate to moderately high rain-fed production potential. Slightly more suitable than canola for farms in the district with a warmer microclimate. Note that the major buyers in the area demand a specific sunflower cultivar.
Canola (rapeseed)	Not yet well established in the area, however, moderate to moderately high rain-fed production potential may be possible for farms with a cooler microclimate.

(Manstrat - Extension Suite Online)

6.4.4. MMM Commodity Societal and Cultural Trends

Culture is defined as a harmonic and systematic way of living practices in different contexts by people and societies; that is according to freedictionary.com and it is defined in different contexts such as agriculture, sociology, breeding, and microbiology by norms and a set of principles used as a framework to direct behaviours of particular society, communities, and people and it is transferable from one generation to another. However, divergent views have been raised arguing that culture has limitations to development and progress, particularly on class materialism where by in the past 3 decades' culture was associated with concepts that shift behaviour, not so much with what dictates the behaviour, like genetic, economic, and historical factors (Gittelsohn & Vastine , 2003).

There is a common understanding and a general acceptance amongst cultures and social systems about cultural issues affecting food consumption and selection. That is to say, there is a level or degree of food biasness by a particular culture, and this could manifest in one or two of main known food biasness techniques used in household and societal dynamics. One, refers to prohibition, which intends to discourage member(s) of a group from selection and consumption of a particular food type, red meat, cereals, vegetables and fish, whereas there is a common understanding to what category of food should be consumed. This goes as far as to determine what animal should be raised, which crop should be planted, and which meat should be avoided at all times and the most affected people are the marginalised women, the sick, and children groups that are subject prohibition which can be both transitory and permanent. Permanent is if the food is not allowed to be taken at all, due to medical reasons or otherwise, transitory would normally include issues of maternity, age, and gender related issues. Other reasons to practice this social and cultural food biasness techniques is the status of the individual, whereby some foods have some significant value propositions, as such red meat will be associated will high status, cereals, vegetables and fruits would then normally be regarded as low value status foods.

In the Mangaug Metro Municipality, which includes Botshabelo, Thaba Nchu and Bloemfontein, there are various population groups of different cultures (traditional and modern). The main languages are used and spoken in these areas include Setswana, English and Afrikaans. The social status of the Metro's inhabitants includes the poor, who constitutes about 20% of people without water and 10% without electricity; thee middle working class, which is about 67%; and dominant ethnic groupings such as Afrikaners about 10%, African more than 85% and Coloured at 5% and the rest is the others constituting bulk of the remaining population (StatsSA, 2011). The various groupings dictate in their own jurisdictions the food categorisations systems they employ such that red meat would normally be used during traditional and social gatherings like weddings, initiation and other celebrations in areas such as Botshabelo and Thaba Nchu which constitutes about 10% of people where there is a prevalence of traditional authorities

and farm lifestyle practices. They would prefer red meat over vegetables, the social classifications system normally would be bias to lower-end food products because of the attached or perceived social status to food, for example red meat has some social status than white meat, and white meat compared to fish or cereal products have their own value and status (StatsSA, 2011).

Other groupings about 65% of the urban population contribute to a different food consumption patterns. The 65% depends on the market systems for their food and are particularly vulnerable to food price shocks (red meat and dairy) there is less prevalence of cultural practices in the urban settings due to strengths of educational status of the population, access to institutions of justice, and distance from close relative and family members (OECD, 2012). Alternative policy measures argue that urban food systems notably through urban agriculture has significant impact on addressing multiple global challenges notably poverty, unemployment and inequality. Precisely based on South African realities urban agriculture has resulted in some form of employment and income through multiple activities in various sectors and industries. The paper asserted that about 40% of urban dwellers are engaged in agricultural activities, including urban food systems management, food trade and in some way or the other, which was comparable to studies conducted in Latin America that concluded that about 50% of the urban dwellers are engaged in some urban agricultural activities. The paper stresses the importance of these initiative, through that it urges that the urban population is increasingly in an alarming rate and massive constituents of the urban population reflects poor communities contrary to well-off majority of the population, and has a deeper negative effects on the poverty. Furthermore, the paper indicates the impacts of food price increase recently experienced, it stressed that these condition affects more urban-dwellers, who are notably the net food buyers and are dependent on food markets for majority if not all of their supplies. It shows that more than 800 million of African urban dwellers and about 60% of MMM population depend on the food markets for their food supply. This causes a social concern relative to food access concern and creates an opportunity to understand poverty at multiple levels, precisely urban majority which is increasingly urbanisation at a staggering rate (Ross, 2014).

Furthermore, on the economic news, it has become apparent that transport costs have a marked impact on food prices. In a report published by the Potato South Africa (PSA) and Max Braun Consultants, transport costs were projected to increase due to legislative reforms on Transport and Road rules in the year 2012, indicating number of significant changes in the fuel levy, freight weight parities, and other transport and road transactions to name a few. Precisely because relative prices of transport costs are marginally allocated to consumers, as economic studies would suggest that marginal cost and risk can or is transferred to consumers, through appropriation of tax and other variable costs. Thus, urban-dwellers are affected by food price surges that are interlinked to fuel and business costs of supplying urban food demand. This shows that at the urban level cultural

practices are no so much of the concern however socio-economic issues are a concern regarding trends in accessing adequate and nutritious diet.

6.4.5. MMM Selected Commodities

Stakeholder engagements were held with a number of stakeholders within the MMM to further investigate the viability and suitability of the selected commodities. This was done to gather information relating to the top-3 commodities that will be further investigated within this report. It has to be stated once again, that this is the first step towards the establishment of the MMM Agri-Park and the subsequent Agri-Hub in Thaba Nchu. Furthermore, other commodities can be pursued over the next 10 years as the Agri-Park develops. With more opportunities created, there is also the chance of exploiting spin-off opportunities within the Agri-Park that are not just commodity-related, but also with relation to extension and supporting services.

With relation to the top-3 commodities, a meeting between the service provider, the DRDLR and the MMM was held to discuss the best commodities for the MMM Master Agri-Park Business Plan. After this meeting, a letter of consensus was received stating that the top-3 commodities that the MMM wishes to be investigated should be the following:

1. Red Meat;
2. Wool Sheep; and
3. Vegetables.

The intention with the Master Agri-Park Business Plan and the selection of the three commodities is that these would be the first commodities evaluated in order to get the Agri-Park development underway. It is not the intention that these three commodities would be the only ones developed, as there is a number of viable, high scoring commodities on the commodity score sheet as seen in the previous sub-section. As such, it is foreseen and anticipated that cross cutting functions and synergies will begin to form and develop between the different commodities and related functions and that these will then establish an integrated and strong agro-processing sector within the area where the Agri-Park acted and continue to grow as catalyst for the agricultural sector.

SECTION 7: COMMODITY ANALYSIS: Red Meat

The red meat commodity analysis for the Mangaung Metro Municipality includes the analysis of both beef and pork. A brief description of what each of these commodities entail has been provided before a more in depth analysis is presented.

Beef

It is a red meat derived from cattle; the name describes the use of the animal's meat 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 species including heifers, bulls and steers. Bovine is a widely accepted ancestry scientific sub-family name for animals' species namely Buffalos, Cattle, Antelope and, Bison of which the consumption as a source of food varies across the global landscape and traditions. Popular 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, growth hormone-free cattle) and feeder cattle, where cattle are raised and fed in a lot.

Beef is one of the world's most consumed meat 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 South African Beef Taxonomy System, 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 age of the animal that is used to define tenderness of the meat, the grades that defines fatness and the leanness and classes of cuts includes; Flank, Loin, Rib, Shoulder, Shin, Chump and Leg. Some of the cuts can furthermore, be 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, kidneys, etc., can be used as food), head and legs can be used as meat, while the skin and hides can be processed and used to make leather and leather products.

Pork

It is derived name that describes the use of the animal meat as food; hence pig meat would normally be referred to as pork. Pork is harvested mostly from large domesticated animal categories of according to maturity rates these includes boars, sows and piglets. Pork meat is grown and harvested under various conditions warm and cool temperature, and it feeds on different foods products such as grains like maize and oats, grain by-products, and fishmeal to name a few, which is about 65% to 80% of its net costs of production and has a high feed conversion rates, a high dressing percentage and can consume up to about 10 litres a day for mature and grown animal (NWGA, 2014).

Pork is one of the worlds most consumed meaty food products; that is, about 38% of the world's meat consumption is pork, which followed by poultry and beef which accounts for 30% and 28%, respectively. According to the South African Red Meat Taxonomy System, a pork 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 age of the animal that is used to define tenderness of the meat, the grades that defines fatness and the leanness and classes of cuts includes; Flank, Loin, Rib, Shoulder, Shin, Chump and Leg. Some of the cuts can furthermore, be processed into secondary and tertiary products, including well-used secondary cuts like steaks, ribs and brisket and tertiary processed meat like corned beef and sausages (NWGA, 2014). Furthermore, the animal skin, internal body parts and accessories (heart, livers, stomach and kidneys etc. can be used as food), head and legs can be used as meat, while the skin is eaten as part of the meat.

7.1. Market Assessment

7.1.1. Local Markets

Livestock farming is one of the most established agricultural sub-sectors in South Africa. The main reason for this is that it is not highly dependent on specific local environmental and topographic conditions. During the period of 2013-2014, pork production in South Africa was at its peak with an annual production of 236 300 tons of pork. In the same period, the red meat market had a contribution of approximately 14.0% to South African agricultural production. The red meat market, as discussed above, encompasses, Pork, Beef and Veal, which have been combined. As illustrated in Figure 11 below, Beef and Veal are the largest contributors to the red meat market, consistently contributing more than double that of pork.

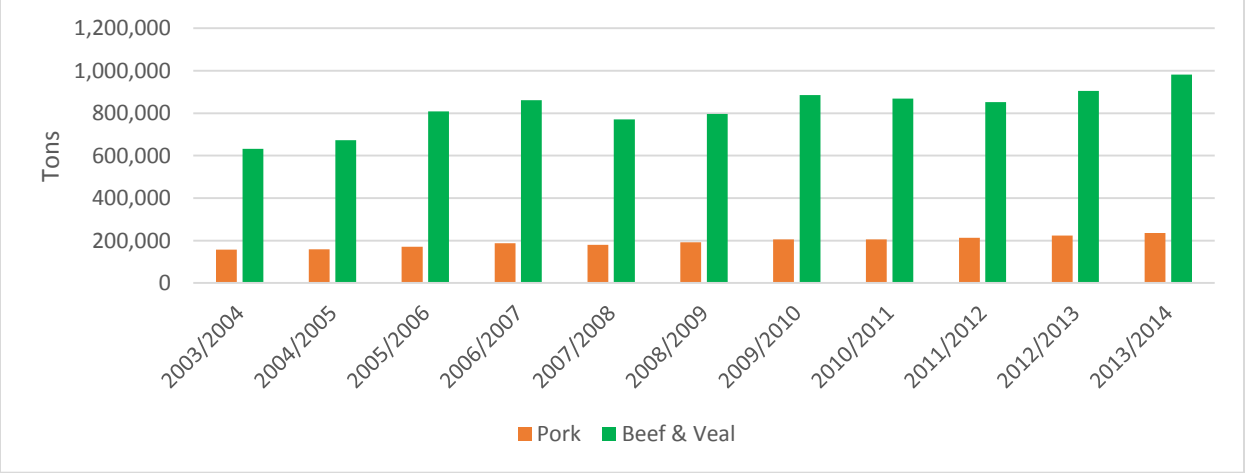


Figure 11 - South African Red Meat Production

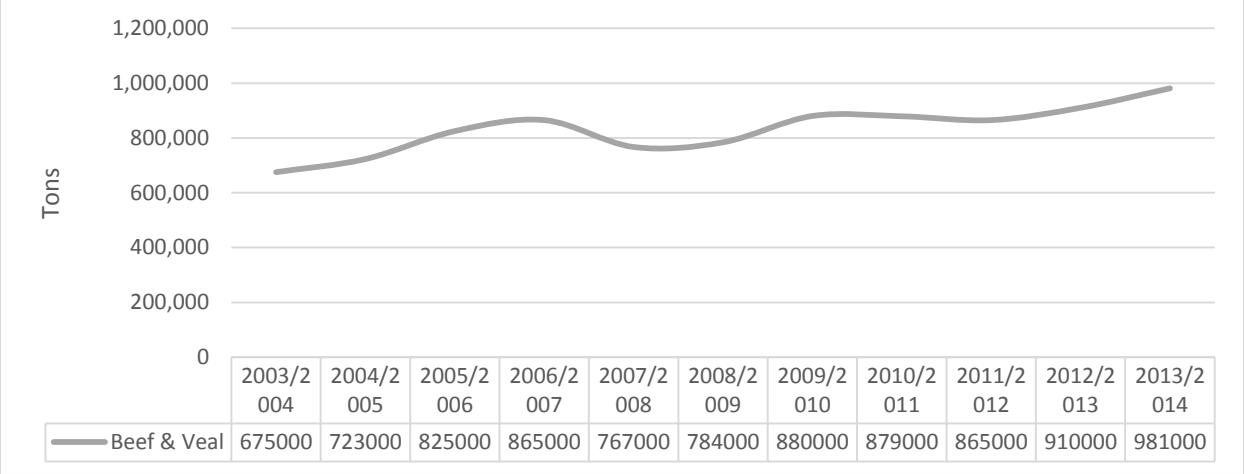
(Source: DAFF, 2015)

Figure 11 further illustrates the red meat market profile, which reveals a steady growth in the production of pork, beef and veal since 2012. The period between 2013 and 2014

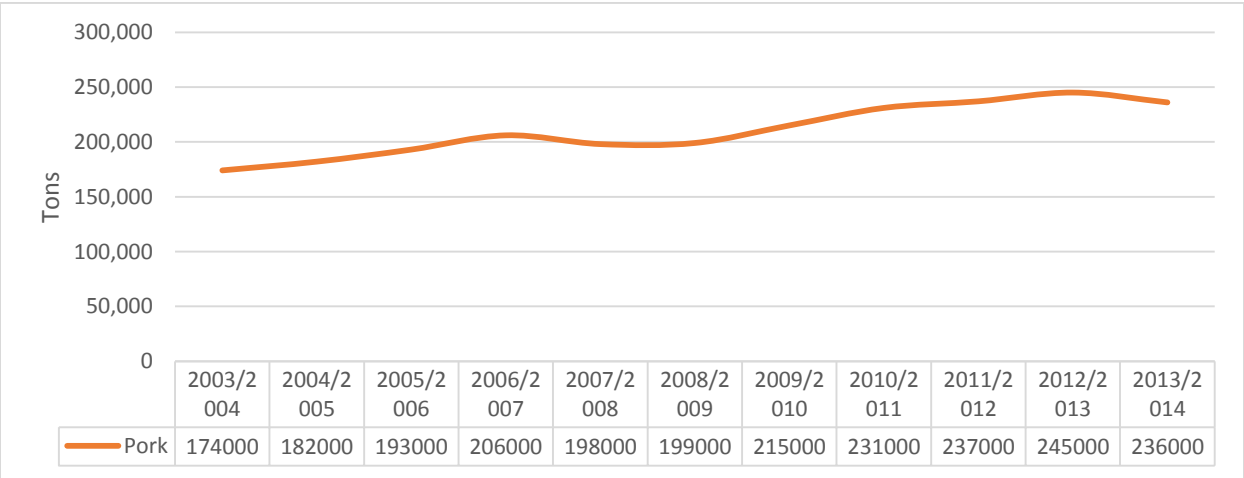
saw a 7.9% increase in the amount of beef and veal produced nationally. Within the same period, pork production in South Africa rose by 5.1% to a tonnage of 236 300. This increase is reciprocated by the simultaneous increase in the consumption of beef and veal during this period, which increased by 7.2%, as illustrated in Figures 12.

The consumption profile of beef and veal reveals a fairly consistent growth in the consumption. The state of the national economy has a great impact on the stability of the market. This is supported by the dip in both production and consumption between 2008 and 2009. This is as a result of the economic downfall in this period. Various factors also have an influence in the stability and growth of the local market, either promoting rapid growth of decline.

The consumption profile for pork, as illustrated in Figures 12, is largely different to that of beef consumption; not just in the tonnage, but also in the yearly growth. The first noticeable aspect is the fact that the pork industry was seemingly less affected by the economic downturn as opposed to Beef and Veal, but it experienced boost as the economy rose again. Another point of interest is the recent decrease in the consumption of Pork in South Africa, which can be linked to regulatory and policy reviews.



	2003/2004	2004/2005	2005/2006	2006/2007	2007/2008	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014
Beef & Veal	675000	723000	825000	865000	767000	784000	880000	879000	865000	910000	981000



	2003/2004	2004/2005	2005/2006	2006/2007	2007/2008	2008/2009	2009/2010	2010/2011	2011/2012	2012/2013	2013/2014
Pork	174000	182000	193000	206000	198000	199000	215000	231000	237000	245000	236000

Figures 12 - South African Pork, Beef and Veal Consumption

(Source: DAFF, 2015)

The local evolution of the red meat market has brought about a great increase in the productivity of the market. Shifting from being highly regulated and controlled to the current market, which is decentralised and totally deregulated, meant that smaller farmers where enabled to partake in local markets. The free-flow market gained popularity in the early 1990s; however, it was only formalised in 1997 through the deregulation of the agricultural marketing dispensation. Prices in the red meat industry have thus, consequently fluctuated; being controlled more by demand and supply as opposed to standardisation.

Guided by the previous marketing regime, wholesalers in the past would mostly purchase carcasses through the auction system. This has changed however, as many wholesalers now source live animals directly from farmers or feedlots before they have been slaughtered. This system, often based on a bid and offer, ensures that the wholesalers take ownership of the live animals before they have been slaughtered. The animals are then slaughtered at an abattoir, which the wholesaler – as the owner of the animal – chooses. After the slaughtering, the carcasses are distributed through the wholesales to various retailers. There is a gap in the current market structure, whereas the public is able to directly purchase carcasses from their desired wholesalers.

Further changes that have resulted due to the relaxation of market control include the increasingly developed and business integrated beef supply chain. This integration is mainly driven by changes within the feedlot industry as:

- Numerous feedlots currently have some business interests in certain abattoirs.
- Most large feedlots not only have business interests, but now own their own abattoirs.
- Some feedlots have integrated further down the value chain and sell directly to consumers through their own retail outlets.
- Other abattoirs have begun to integrate vertically on the wholesale level.

The abattoir industry, which also influences the local red meat market, has also evolved over the past few years, with a tremendous expansion in numbers and in capacity. The industry can be divided into three different types of abattoirs:

- Abattoirs that are linked to the feedlot sector and the wholesale sector,
- Abattoirs that are owned by municipalities, as well as
- Those that are mainly owned by farmers and SMME's.

The ownership and organisational structure of the abattoirs influence their grading; whereas the former abattoirs are usually classified as class A and B abattoirs, the latter

are mainly class C, D and E. With the growth and promotion of SMME's through Local Economic Development (LED), there is a growing number of class C, D, and E abattoirs.

The types of meat that is produced in each abattoir is also classified according to various elements that determine the grade of meat.

Table 13 - South African carcass classification system

Trait	Category						
Age	A		AB		B		C
# Permanent Incisors	0		1-2		3-6		>6
Roller Mark	AAA		ABAB		BBB		CCC
Colour	Purple		Green		Brown		Red
Tenderness	Most Tender		Tender		Less Tender		Least Tender
Fat Grade	0	1	2	3	4	5	6
Beef (Fat thickness	0	<1	>1<3	>3<5	>5<7	>7<10	>10

The meat products are then priced according to the meat cuts, as well as the quality of the meat – as determined by the South African Carcass Classification System illustrated in Table 13. A-grade meat products are the highest quality eats and thus, typically sell for a higher price than C-grade products. The prices of the lower grade products can be increased however, by going through a value adding process through which the profit margins are increased. Examples of this would be whereby lower grade meats are marinated, spiced, pre-cooked, or minced to produce burger patties and meat balls. The local pork market is split at almost 50:50 between the fresh meat market and the processed meat market. The pricing for the pork and beef markets are noted below.

There has been a significant increase that has occurred within the local Pork and beef markets in the periods from 2003/04 to 2012/13. The main reasons for this increase have been the increase in consumption. As previously established, markets are currently controlled by demand, i.e. consumption. Numerous factors can be pinpointed as the cause of the increase in consumption; these include but are not limited to, the rise in living standards and the low domestic production.

The beef market is highly susceptible to change and increase. As illustrated in the table below, there was an increase of R15.54/kg in 2012/13 compared to 2003/04. As with all other national markets, the South African economy, policy reviews, and alteration in regulations will continue to influence the stability of the market on both national and provincial levels.

Looking at the provincial level of cattle production, the provincial regulations have an influence on how many herds of cattle specific-sized farms may occupy. This is generally dependent on health and safety measures; thus most provinces have a similar average.

Land availability also has an influence however, and this is what brings forth provincial differences. Furthermore, herd sizes vary, depending on the type of cattle that is being produced as some cattle move in larger herds than others. Beef cattle's herd sizes vary from smaller herds – which have less than 20 heads of cattle, to larger farms and feedlot environments that occupy well over 100 head of cattle in one vicinity.

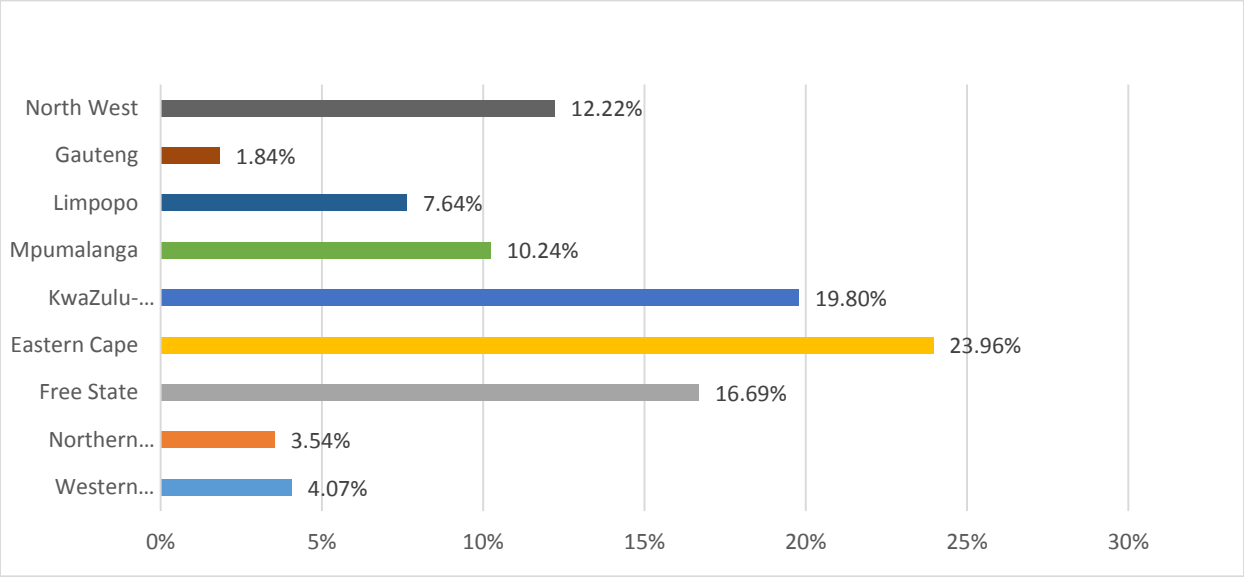


Figure 13 - Provincial Cattle Distribution

(Source: DAFF, 2015)

The components mentioned previously, accompanied by the green field availability within each province, have a great influence on the provincial cattle distribution profile revealed in Figure 13. On a provincial level, it is clear that there is a distribution of cattle population found throughout the country. They are however, mainly found within four provinces namely, the Eastern Cape (24.0%), KwaZulu-Natal (19.8%), the Free State (16.7%) and North West (12.2%). Carrying more than 16% of cattle found in South Africa, the beef market within the Free State is rather prominent financially and in terms of agricultural influence.

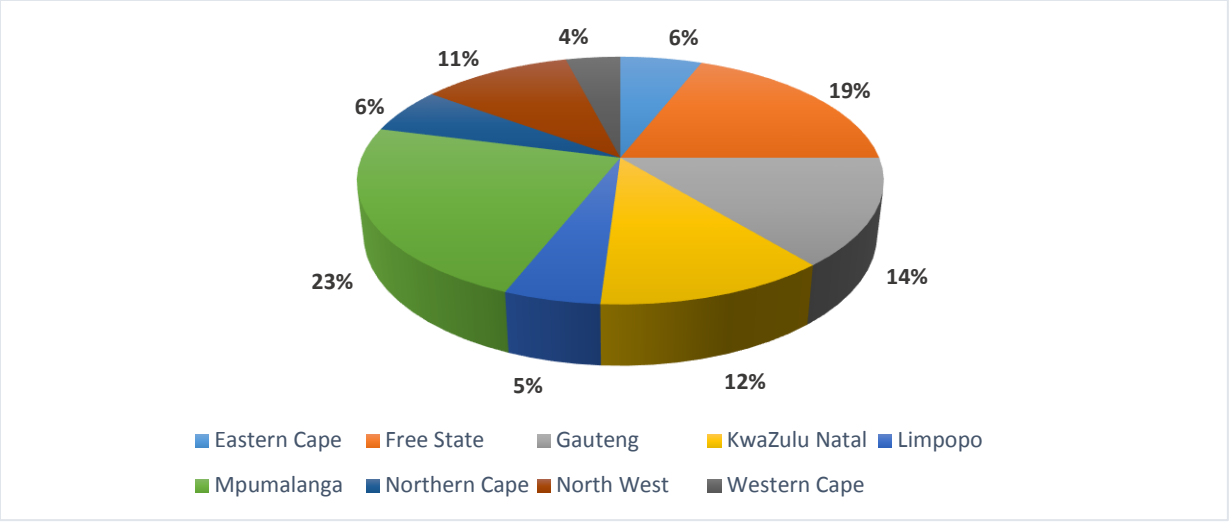


Figure 14 – Provincial Beef Production

(Source: DAFF, 2015)

The representation of all nine of South Africa's provinces in Figure 14 reveals that beef is being produced throughout the country. Figure 14 also reveals the obvious variation in the amount of beef being produced in each province, this variation is the result of the existence of the necessary infrastructure in each province. The main infrastructure that is required includes land, feedlots and abattoirs; production is thus not only influenced by the number of cattle available in the respective provinces. South Africa has a highly developed transport infrastructure, and this infrastructure allows easier movement of cattle and calves from one province to another. It is further vital to note that the transportation of these cattle and calves is not limited by national boundaries, with some even coming from other countries such as Namibia. This will be discussed further in the section to follow, which analyses global markets. Mpumalanga claims the greatest share of beef production in South Africa, producing 23% of the national beef produced, regardless of the mere 10.25% cattle occupation. The Free State is the second highest producer of beef within South Africa, accounting for 19% of all national beef production; the Province is followed by Limpopo and KwaZulu-Natal with the third and fourth largest production numbers.

7.1.2. Global Markets

Global beef production, as illustrated in Figure 15 below, is largely dominated by South America and Asia, which collectively contributes almost half of all global production – 46.90%. Africa and Central America are responsible for the least beef production globally, which a contribution of only 4.50% and 3.90%, respectively. The production of beef, is highly influenced by the prominence and focus on the agricultural sector within each region. The regional economy also plays a large role in how much can be produced within the region while still remaining viable.

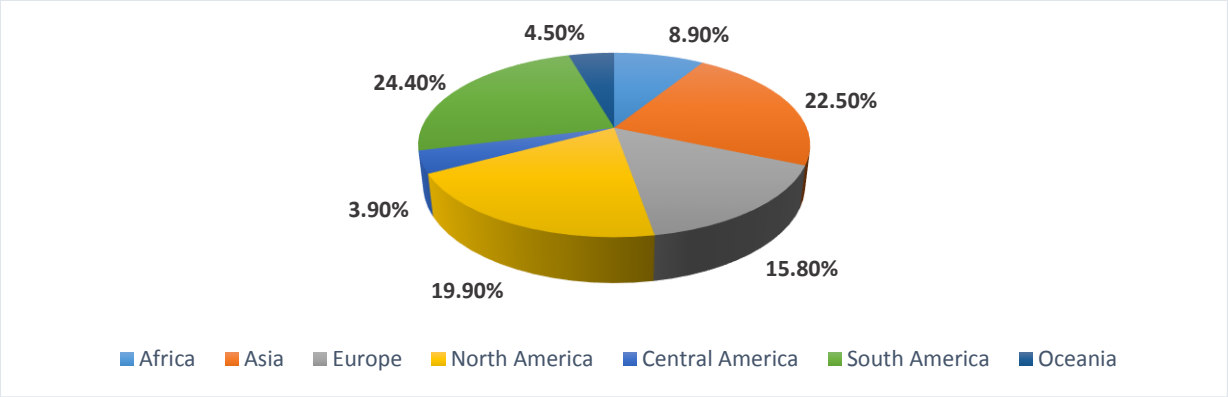


Figure 15 - Global Beef Production, 2013

(Source: DAFF, 2015)

Much like the phenomenon that is found at a local level, the production of beef is not exactly equated to the existence of cattle livestock in each region. Numerous regions import and export their cattle, which is then produced in other continents. A comparative analysis of Figure 15 supports this notion. Asia for instance, is clearly exporting a substantial amount of cattle as the continent accounts for 33.70% of the global livestock population, but only produces 22.5% of the global beef production. South America produces most of its livestock with a visible balance between exports and imports, this is revealed in the marginal gap between the livestock population and the production.

7.1.1. Africa

On a continental level, focusing on Africa, South Africa has the greatest number of cattle livestock, as illustrated in Table 14. The country also produces the most beef in Africa, as illustrated in Table 14. Producing 851 000 tons of beef and accommodating 14 000 000 cattle, South Africa also has a large export base, as will be discussed in sections to follow. Zambia is the second highest producer of beef within Africa, but it lags far behind with an 11.4% gap from the production in South Africa. Zimbabwe produces the third highest amount of beef on the continent, contributing 1.8% of total production – producing a total of 103 750 tons of beef.

As has been established, South Africa is a major red meat producer within the entire SADC region, producing more beef than all the other countries, along with a total production that far exceeds the other countries. In terms of the production of pork, South Africa remains the highest producer in the country, but with significantly lower tonnage. South Africa produces a total of 216 000 tons of pork, which equates to16.6% of total pork production. Mozambique produces an exceptionally large amount of pork, accounting for 9.9% of the African total. The eight countries represented in Table 14, located in the southern end of Africa, collectively contribute to 32.40% of the total pork production on the continent. As can be expected, the amount of produce output for each country is influenced by the level of infrastructure as well as the agricultural influence within the country.

Table 14 - African Beef and Pork Production, 2013

Country	Beef		Pork	
	(Tons)	% of Total	(Tons)	% of Total
South Africa	851 000	**14,9%**	216 000	**16,6%**
Botswana	47 000	0,8%	500	0,0%
Lesotho	13 500	0,2%	3 700	0,3%
Mozambique	25 500	0,4%	129 600	9,9%
Namibia	35 800	0,6%	4 675	0,4%
Swaziland	17 100	0,3%	1 310	0,1%
Zambia	197 827	3,5%	35 244	2,7%
Zimbabwe	103 750	1,8%	31 900	2,4%
Total	**1 291 477**		**422 929**	
Total Africa	**5 694 271**	**22,50%**	**1 304 128**	**32,40%**

(Source: DAFF, 2015)

South Africa produces 1.2 million tons of red meat annually (including pork, mutton, beef and veal) and this places the country at number one in the continent, with a share in red meat production that equates to 14.9% (Beef) and 16.6% (Pork) of Africa's total. It must be noted however, that there are other notable producers of red meat across the continent; this includes: Ethiopia (5.0%), Egypt (6.0%), and Nigeria (11.3%), with these three countries contributing 31.5% of Africa's total population. In the table above, the production of red meat in South Africa is compared to neighbouring trading partners in the SADC, namely Botswana, Lesotho, Mozambique, Namibia, Swaziland, Zambia, and Zimbabwe.

As previously established, the amount of livestock a country produces is not exactly equivalent to the amount of beef it produces. Various elements influence this disintegration; these are agricultural contribution, imports and exports and economic development.

7.1.2. Pork Imports and Exports

The relationship between imports and exports within a market is a good indicator of the strength of the market; this is also dependent on the value of commodities. South Africa is a net importer of pork, as the imports far outweigh the exports. The highest frequently imported pork is in the form of products that have been processed, of which pork ribs are at the number one spot. The SADC countries are the main areas to which South African pork is exported to. The slight increase in pork exports in 2008 were mainly as a result of an increase in the amount of pork that is exported to Mauritius.

The pork export market has remained consistently low since 2005, which reveals that the market has experienced minimal growth. In 2005, there was a sudden boom in pork

exports – as illustrated in Figure 16 - but this growth was not sustained as was evident from the consequent drop in exports in 2006. The pork export market has increased slightly since 2011 as a result of the strengthening of the economy. Approximately 31.8 million kilograms of pork have been exported from South Africa since 2004 up until 2013. These exports produced a total export value of R270 million over this same period; this shows how exports can build into the economy.

Figure 16 - Pork exports and Imports

(Source: Adapted from StatsSA, 2011)

South African pork imports are much higher than the amount of pork that the country exports to other countries; these imports represent 0.21% of world imports for pork, placing the country at 45th for world imports. Pork is mainly imported in one of three forms: fresh, chilled or frozen, each of which have variant prices. During 2013, South Africa imported 27 650 tons of pork at an average value of US$2 297/unit, which adds up to much more than what was exported. The major regions from which the pork was imported by South Africa in 2012 were Germany, Canada, and Spain. The greatest shares of South African pork – fresh, chilled, or frozen – imports were from Germany, which equated 40%; followed by Canada (24.7%) and Spain (10%). Collectively, Germany, Canada, and Spain accounted for 76.2% of pork imported to South African during 2013.

7.1.3. Beef Imports and Exports

The same phenomenon is found within the beef market as in the pork market, where the relationship between imports and exports is a good indicator of the strength of the market. These import and export trends also gives an indication towards the degree of commodities value to foreign and domestic markets or consumers. South Africa is a net importer of beef; as the imports collectively outweigh the exports, although they are at times almost level. The main reason for the higher imports is due to the demand that is higher than supply. An interesting phenomenon in beef imports and exports is that the exports are much stronger in the South African market.

South Africa exported more beef in 2013 for the first time in all the years being reviewed; thus becoming the net exporter of beef in 2013. The amount of exports in 2013 almost doubled that of 2012, and there was also a significant increase of 86% in export quantity. The last couple of years has seen a large decrease of 36% in the amount of beef being imported. The lifting of the ban of South African bovine animals and its products, was one of the major causes for the increase in exports from the country.

In 2013, 8 million kilograms of beef were exported from South Africa; this equated to an export value of R396 million. There was an 86% increase in the amount of beef that was exported during 2013 as compared to 2012

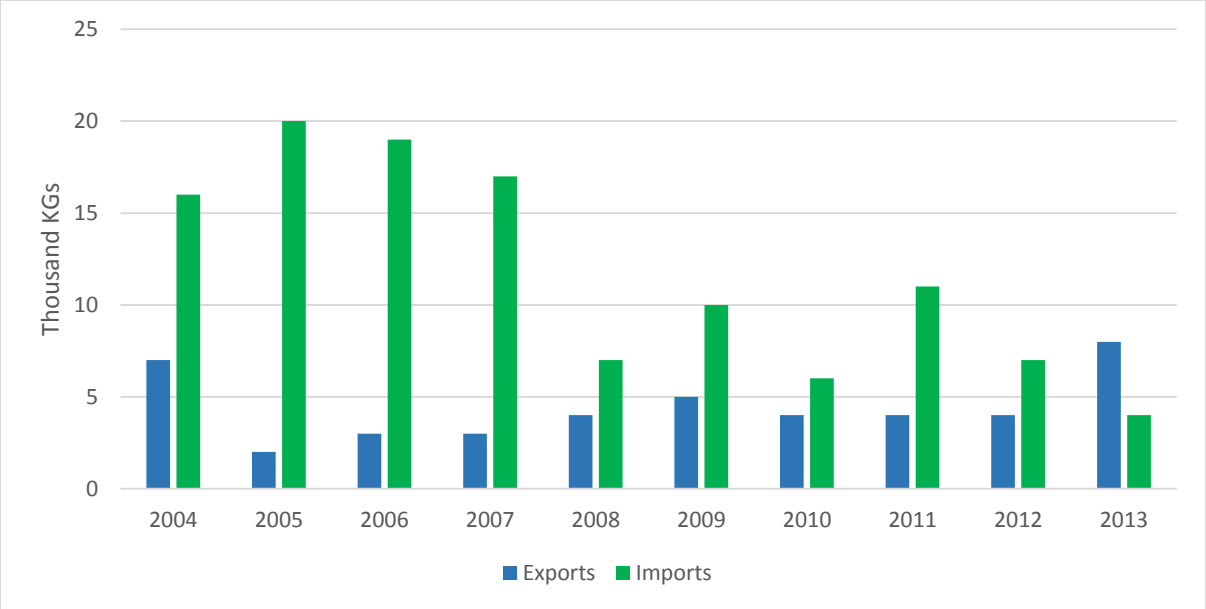


Figure 17 - Beef Export and Imports

(Source: DAFF, 2015)

In terms of imports, there is clearly a steady decrease in the amount of beef that South Africa imports from other countries. Through an analytical comparison of imports in 2012 and 2013, it is revealed that approximately 4.4 million kilograms of beef was imported by South Africa in 2013; this would have accumulated to a value of R97 million. The 36% decrease in the amount of imports, in 2013 from 2012, was mostly driven by the outbreak

of Foot-and-Mouth Disease (FMD), which forced South Africa in a position of self-sufficiency in beef production. The global economic downturn in the period further steered consumers to move away from beef as a large source of protein, and go for alternatives such as chicken meat, which is a lower priced protein meat. The year 2013 saw a 73% decrease in the amount of beef quantities that were imported since 2004. The value of beef also decreased by 27% during this period.

7.2. Value chain Assessment and Agro Processing opportunities (products)

7.2.1. Cattle

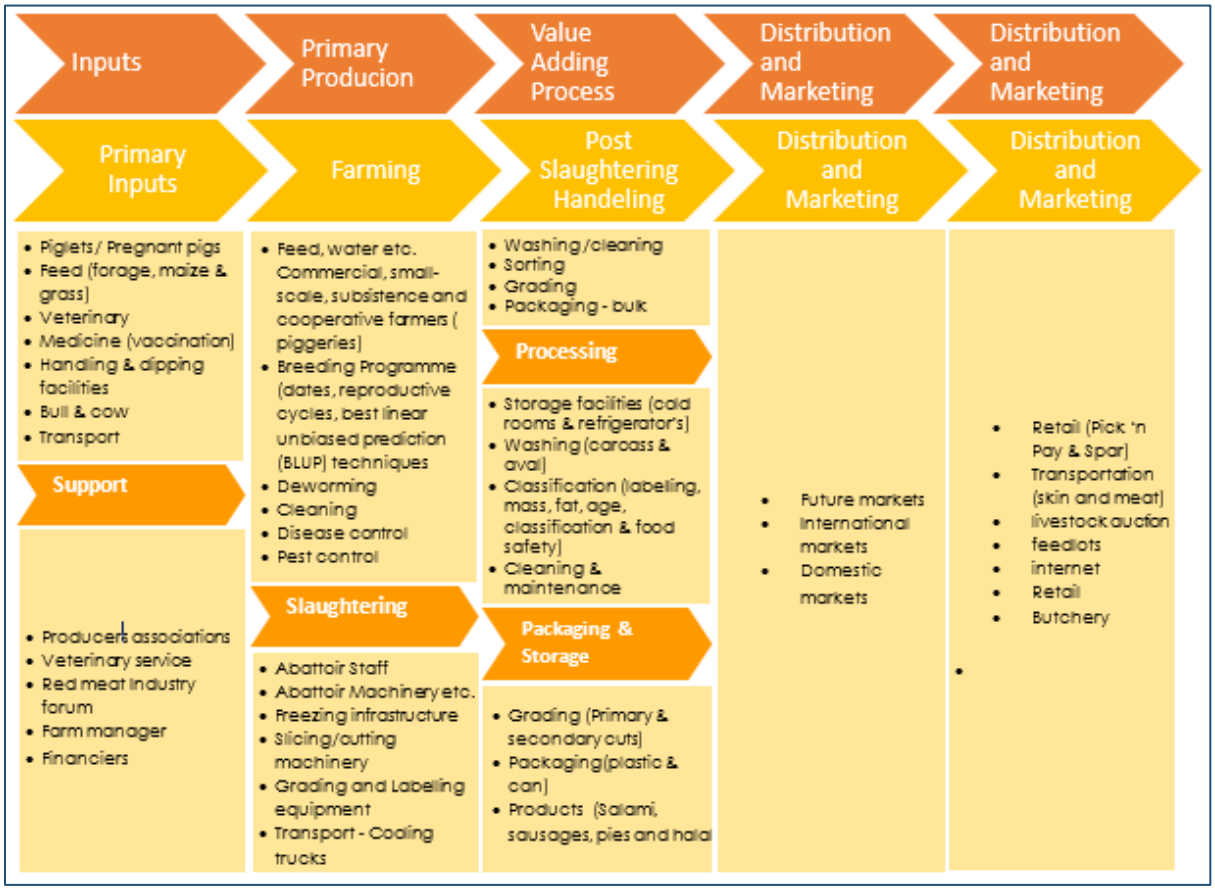


FIGURE 18: BEEF VALUE CHAIN

Backward linkages for cattle consist of the production of cattle on farms and within feedlots; within the Free State, Sparta is one of the biggest cattle producers and processors. Inputs are needed in order to produce cattle, and these upstream activities relate to the provision of grazing or cattle feed, veterinary services and the infrastructure that is required for successful production of cattle. These upstream activities are supported by both Agricultural cooperatives and related supporting businesses. These

businesses provide critical inputs in a number of ways to ensure that farmers within the area are adequately equipped to produce sufficient cattle as well as improve quality cattle stock. The following are examples of businesses that provide support for farmers within the MMM area:

- SENWES;
- FS Agriculture;
- Taurus;
- Landbank;
- Unigrow;
- Afgri Veevoere;
- Etc.

When processing of red meat within the MMM area is considered the number of abattoirs that have bearing on the value chain are presented in the list below. These abattoirs are all operation and although Sparta is not within the MMM boundaries, it has significant reach and impact on the value chain within the whole Free State. It also creates downstream linkages by exporting meat processed at its facilities. The following abattoirs are therefore, operational within the vicinity of the MMM Agripark:

- Sparta;
- Bloem Abattoir;
- Glen Abattoir;
- Global;
- Grootvlei Abattoir;
- Heuwelkor Twee;
- Maree Abattoir;
- Midway Abattoir; and
- Thaba N'chu Abattoir.

When forward linkages are considered, marketing opportunities are important to note, with regard to the best market streams to target is that of the large retail chains as it is the main marketing channel for cattle processing firms. These large retail chains act as the distributors of red meat throughout the domestic market and play an important role in the downstream linkages. Another market stream that should be targeted is that of local butcheries as they have direct access to meat consumers and linking directly with butchers via contracts will ensure a designated market for meat produce. Abattoirs and meat processors are also well established throughout the MMM and play an important role in not only providing a service for the slaughtering of meat, but also for preparing the meat in accordance with statutory requirements. One of the market opportunities that can act as a spin-off opportunity is that of leather tanneries, especially with the additional revenue (primarily meat and then leather) that can be accumulated from this product.

Potential products and processing opportunities that have a high potential for the value chain is that of the primary slaughtering of cattle as it is a necessity within the beef value chain. The challenge here would be adhering to the strict legislation that controls the

operation and establishment of these abattoirs require. Packaging and branding is also a sought after endeavour, especially when delivering to large retailers or completing general sales to consumers. Knowing what clients' requirements are will assist in providing a quality service when branding is concerned, agreements can be made with retailers to brand and package their products in such a way that it will fasten the sale of products. Other products that have potential for development is that of drying cattle meat, which includes biltong and jerky for the commercial market. These can also be frozen to prolong their shelf life. In addition to these, cooked, smoked, dry and semi dry sausages can be made as products with high market potential if processed appropriately.

7.2.2. Pork

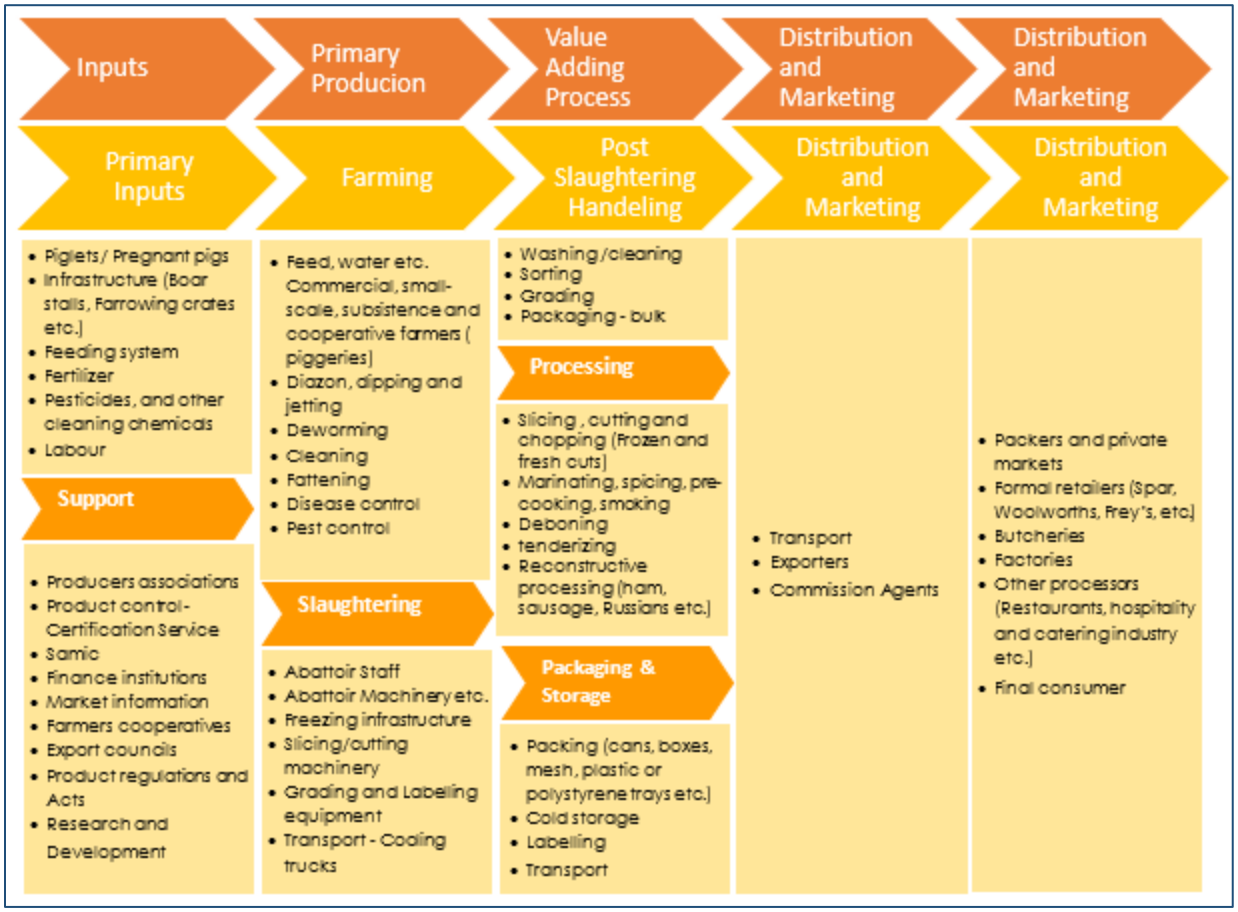


FIGURE 19: PORK VALUE CHAIN

Pork is one of the most versatile red meats since it is has numerous cuts and uses, while it is also often used as the bases for a lot of processed meat products. The highest frequently produced and sold pork is in the form of products which have been processed, such as Russians, sausages and ham. Pork ribs are one of the most common products of pork in South Africa, which are produced and imported from other regions. Backward linkages relate to the production of pigs on farms or within piggeries to get them 'market ready', which in essence, means these pigs are at a condition where they will produce

enough meat to be slaughtered. Further backward linkages are that of inputs needed for pig production such as veterinary services, pig feed, labour, etc. The following pig meat producers and abattoirs are located within the Free State and have an effect on the pork value chain:

- Kroonstad Piggery Farmers;
- Kroonstad Piggery Farmers;
- Sediba Kolobe Piggery;
- Itekeng Piggery Project;
- Ntsu Piggery Project;
- Theunissen Piggery Project;
- Tirisano Piggery Project;
- Steenwyk Piggery;
- Milos piggery;
- Harmony Piggeries; and
- Vleissentraal Bpk.

Forward linkages start when the slaughtering of pigs are done at the abattoirs. This meat is then leased, graded and separated, and then sold and distributed to butcheries and processing factories such as escort, in bulk boxes. The best areas for the marketing of pig products is that of:

- Restaurants;
- Hospitality businesses;
- Public schools;
- Prisons;
- Abattoirs; and
- Meat processors.

Downstream activities for pork processing opportunities relate to activities that include the following:

- Slaughtering
- Bacon
- Ham
- Dried pork products including rousong and candied bacon
- Fresh sausages
- Cooked and smoked sausages
- Dry and semi-dry sausages
- Speciality and other diverse sausages

Pork products that can be produced during the value chain is sliced into variety of cuts such as

- Back & spare rib
- Blade Steak
- Belly

- Chops
- Lion (roasts)
- Leg & shoulder
- Tenderloins
- Shanks
- Sausage

7.3. Commodity Specific Stakeholders

The following commodity specific stakeholders have been identified that can assist with the development of the red meat value chain within the MMM Agri-Park:

TABLE 15: MMM LIVESTOCK SPECIFIC STAKEHOLDERS

Stakeholder	Potential Assistance
Red Meat Industry Forum (RMIF)	✓ Institutional support ✓ Knowledge database ✓ Quality improvement
Red Meat Producers Association (RPO)	✓ Institutional support ✓ Monitoring and evaluation
National Emergent Red Meat Producers' Organisation (NERPO)	✓ Organisational support ✓ Value chain development assistance
South African Meat Industry Company (SAMIC)	✓ Quality improvement and assistance ✓ Institutional support
International Meat Quality Assurance Services (IMQAS)	✓ International quality management assistance and guidance
Meat Abattoir Association (RMAA)	✓ Assistance with meat processing and handling ✓ Value chain development
Livestock Registering Federation	✓ Registration facilitation and assistance ✓ Product quality improvement and development
Cattle Breeder Organisations: ➢ **Taurus Coop** ➢ **Afrikaner Cattle Breeders Society of South Africa** ➢ **Angus Society of South Africa**	✓ Institutional support ✓ Best practise assistance per specific livestock type/species ✓ Knowledge base development amongst emerging farmers and processors

➢ **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** ➢ **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**	✓ Assistance with unlocking commercial markets ✓ Quality improvement guidance and best practices ✓ Organisational and management support
Association of Meat Importers and Exporters (AMIE)	✓ Institutional support ✓ Facilitation and support for value chain ✓ Export and import support ✓ Value chain development

Afgri Animal Feeds	✓ Provision of feed to farmers
Eagle Farm Feeds	✓ Provision of animal feed
Auctioneers: ✓ **Brocor Auctioneers** ✓ **Ellenberger and Kahts Auctioneers** ✓ **Vleissentraal (PTY) Ltd** ✓ **Piet Van Der Merwe Auctioneers** ✓ **Tobie Myburgh Auctioneers**	✓ Facilitation of buying and selling of stock ✓ Improvement of livestock quality ✓ Institutional support
Mangaung Abattoirs: ✓ **Mangaung** ✓ **Abattoir Bloemfontein** ✓ **Maree Abattoir** ✓ **Heuwelkor Twee Abattoir** ✓ **Superb Meat Abattoir** ✓ **Jimmie Roos School and Abattoir** ✓ **Excelsior Abattoir** ✓ **Metaalkop Abattoir** ✓ **Midway Abattoir**	✓ Value chain processing support and development ✓ Processing of produced meat supply ✓ Potential linkages to strengthen value chain ✓ Training of employees and local community members
Sparta Foods	✓ Assistance with food distribution and sales of red meat products
Nutri Feeds	✓ Provision of feeds to farmers
Veterinaries: ✓ **Dr Vermeulen Veterinary Surgeon** ✓ **Hillside Veterinary** ✓ **Uitsig Animal Consulting Room**	✓ Livestock quality control ✓ Disease and pest control ✓ Stock quality improvement ✓ Quality certification and verification ✓ Best practise development for better and healthier livestock on farms

✓ **Mangaung Bayswater Animal Clinic** ✓ **Ladybrand Animal Clinic** ✓ **State Veterinarian (Bloemfontein)**	
Triprod BK	✓ Provision of feeds
Tanneries: ✓ **Kotoko Taxidermy and Tannery** ✓ **Seton Tannery South Africa**	✓ Product development ✓ Value chain development through downstream activities ✓ Offset production line for abattoir
Farmix Veevoere	✓ Provision of feeds
South African Pork Producers' Organisation (SAPPO);	✓ Institutional support ✓ Knowledge database ✓ Quality improvement
Free State Pork Producers Organisation (FSPPO)	✓ Institutional support
SA Pork Baynesfield Training Academy	✓ Training and value chain development support
Pig Breeders Society (PBS)	✓ Improvement of stock quality ✓ Organisational support ✓ Value chain development
Pig Veterinary Society (PVS)	✓ Disease control ✓ Livestock improvement ✓ General veterinary services
Beef Feedlots: ➢ **SPARTA Foods LTD (Sparta Beef)** ➢ **Boerefort Feedlot** ➢ **Fortress Bonsmaras** ➢ **Gysberthoek (EAC Group)** ➢ **Poppieland Trust** ➢ **Sparta Beef (Marquard)**	✓ Value chain supply support ✓ Best practise support ✓ Regional marketing support

7.4. Technology

TABLE 16: LIVESTOCK TECHNOLOGICAL ADVANTAGES

Technology (Equipment; ICT and Logistics)	Advantages
Improved quality and production management through precision farming techniques	• Optimising production through increased monitoring and organisational capabilities; • Increased production is achieved through digital and electronic monitoring and evaluation, helping farmer to make informed farming decisions; • The livestock optimal quality and reproduction capacity is achieved; • Effective use of inputs and reduces wastage of resources.
ICT Management software and programs	• Increased research and effective management capabilities; and • Integration of different farm management duties and abilities.
Artificial insemination (AI) of female livestock stock	• Improvement of stock quality and reproduction percentages; • Reduces cost that would otherwise have been necessary to buy different bulls; and • Desired livestock characteristics can be bred through AI.
Hiring system/ mobilisation centre for emerging farmers	• Lessens the dependability on buying expensive equipment that needed on farms, but not used every day; • A mobilisation centre at one of the FPSU or more than one area can assist in mobilising emerging farmers through the provision of equipment that can be hired at a very cheap rate; and • Would provide competitive advantage in that money that would be used for capital outlay of equipment can be used for herd improvement.

Technology (Equipment; ICT and Logistics)	Advantages
Phosphorus supplements for grazing cattle and pork	• Growth, general health and reproductive success may be significantly improved.
Solar technology used for water pumps	• The use of solar pumps in remote areas increases the availability of water for livestock; • Removes the dependability the provision of expensive electrical and hydro infrastructure that needs to be laid out from substations, etc.; • Solar is also a renewable form of energy that can be used continually.
Specific cattle breed selection and breeding	• Specialising with a specific cattle breed helps to focus herd improvements; and • Increased support from farm breeding organisations and support.
SMS notification system	• System that can be used by emerging farmer that relates to a mobilisation centre, whereby transport for agricultural produced goods is notified; and • Goods is then transported from the emerging farm to the FPSU for further processing, thereby reducing the cost a farmer would pay for getting his produce to the market.

7.5. Socio-Economic Benefits

- **Sustainable Employment promotion**

  The project has the potential to promote job creation and is a positive step towards the improvement of livelihoods, creating public value, and decent living standards of the residents who are in the immediate and close proximity to the site. Secondly, the red meat industry could employ masses of labour from the area by providing employment opportunities for meat safety inspectors, food scientists, manufactures, carcass handlers, and promote efficiency of local businesses. The sector has the potential to create jobs in other downstream industries like transporting, butcheries for deboning, and retail.

- **Skill development of workers**

  The training provided for employees to fulfil the necessary functions throughout the whole value chain will provide both direct and indirect impacts that help with the development of skills within the local communities. A higher local skills base encompasses the building blocks for increased production, and more advanced manufacturing and processing activities. The provision of training facilities and training programs will drive this skills development initiative. Skills training of youths and women within communities will further help in developing a more diverse workforce and the alleviation of youth unemployment. The creation of a skilled workforce will also help with the industrialisation within the Agri-Park footprint and to fast track production due to a workforce that can start producing faster than unskilled labourers that will need to be trained first. As the number of jobs increase, unemployment will decrease. As unemployment decreases, poverty will also decrease. As the level of poverty among the Free State population decreases, the living standard of the population will increase.

- **Promote gender equality and empower women**

  Historically women have been marginalised within the agricultural sector as they earned lower wages, could own nor access land and as such, the establishment of the MMM Agri-Park will aim to promote gender equality. This pillar is an important pillar in the growth and sustainability of the sector. Most agricultural, development sector plans, such as the NDP and IPAP2, argue that gender should be more integrated in business practises. As such, capacitating women in relation to men, redefining of the roles in the industry, and providing equal access to institutions of justice (funders and markets) will have positive long-run effects. Furthermore, it is argued that traditional female roles in agriculture, where women are important pillars to balance on farm diet and other family responsibilities, show the potential of women to contribute to the growth and development of the industry, the potential of women to earn competitive incomes, and access to education like their male counterparts and justified by their ability to redistribute wealth more equally compared to men.

7.6. Contribution to food security

Local livestock producers are presented with challenges to meet these demands, and are tasked to produce efficiently. Food insecurity presents a challenge both as a supply and demand issue; on the demand side, the increasing urbanisation and population needs consistent supply of livestock to address the outstanding meat and dairy demand, thus in order to address the market shortage concerns with relation to the number of meat available for consumption, there will have to be an increase of livestock production.

- **(Cattle as a source of beef meat)**, agriculture and development is argued to be the strategic instrument to address food insecurity. In the context of developing countries where the majority of the people are urbanised, diversity in diets, and

demand for meat products is gaining popularity and poses challenges to the potential of agriculture to develop strategies in order to address these consumer demands. Hence, the increase in production might present positive spin-offs, in reducing high food prices attached to the high demand for the beef meat and low levels of supply.

- **(Contribution of pork to food security and livelihoods)** pork ranks fourth after mutton as a preferred food source in Africa and other countries around the world, and other commentators point out that this might the attributed to cultural positions of different people. However, pork plays a critical role in addressing and closing the gap for meat demand; hence, pork has high food conversion rates and accounts for the larger 4 million tonnes of remainder of the production gap on the livestock sector and indeed the sector has grown significantly over the years to also include poultry husbandry as a practise to rapidly address food security and low production level concerns. In addition, pork and products derived from pigs like bacon and chops are a source of nutrients. It has good qualities in relating to methods of preparation and storing. Just as with the other animals, pork and pig product sales generate income that can be used to improve the lives of the farming communities; proceeds from pig sales can thus be used to pay for medical and academic obligations, and can be used as an investment to support other enterprises or to purchase farming asserts, hence improving livelihoods and reducing the surge of poverty, income inequality, and food insecurity in a long run.
- **(livestock as a source of income**) The income derived from cattle and milk improves the farmers' disposable income and therefore, the ability to purchase. Its meat products are bought by consumers of any income group in some type of outlets such as retail, butchery, or abattoir as value-added products (stew pieces, steak, minced), which have a marginally higher return. Income generating ability of livestock improves the livelihoods of many farming communities and stakeholders as it provides employment for many through herding, for example, as well as other downstream activities like slaughtering. Furthermore, income is, and can be generated through the sale of other livestock products like offal cuts, skin, and hides.

7.7. Regulatory Requirements

The following regulatory requirements will need to be adhered to within the different stages of the value chain process. However, most of these relate to the slaughtering of livestock and abattoir-related requirements. As such these policies and strategies have been identified and are indicated below:

- **National Water Act** relevant to **(irrigation and non-irrigation farmers, producers, processors, manufacturers, packagers, handlers, wholesalers and retailer)**

Aims of the Act are to promote access to and equal distribution of national water resources to all the components of the natural ecosphere including the plants, animals

and humans and advocates for the discounted and sustainable use of water resources for equal access to future generations. Further to widely promote access to natural water resources for means of economic growth and development, particularly to member of previously disadvantaged groups notably the differently abled people, poor, women in relation to men, and the children.

- **Water Resource Management Strategy**

The strategy used and mechanisms there to set plan of action for the institutions involved in water resource management activities. The guidelines and policy actions as dictated by the National Water Act and actively promoted the developed water institutions to efficiently develop, to increase control of use, and discount water use for the future at lower government levels such as catchment and regional spheres (DWF, 2015).

World Trade Organization Sanitary and Phytosanitary (WTO SPS) relevant to (producer, breeder and farmers)

The agreement advocates for the harmonisation of phytosanitary and sanitary procedures in order to protect domestic animals and plants from outbreak, the spread of disease, pest outbreaks and disease carrying animals through establishing strict control measures in animal and plant exchange transactions with members and trade partners. To effectively reduce the risk associated with the contaminated products, toxins and diseases contained in food products and plants and animals, and to ultimately save lives through reducing danger from world trade organizations toxic products from member states and trade partners (WTO, 2015).

- **Bio safety** relevant to **farmers, producers, & breeders**

The character of the agro-processing systems operating in South Africa includes trade with international trading partners and domestic consumers through exportation and importation of agri-based commodities and products. The role of bio-safety is to ensure that the **farm food production systems** are wary of the biological environment, land use and soil, plant health, and animal health. Therefore, it advocates for best practices with regards to plant and animal production, particularly the genetically modified foods and organisms. This compliance agreement establishes the basis for protection of animal, plant and human welfare (DAFF, 2015).

- **Food and Veterinary Services** relevant to **Vet- Farm Health Extension Services (Food Science services -Farm and slaughter house, feedlot, and processing plants)**

The traditional roles of the veterinary and food services are, to administer by the field professional trained to deal with various animal infections, diseases, administer medication and to insert microchips, notably on domesticated animals. However, due to the role of urbanisation and globalisation, population pressures and the need to secure enough food, the role of the veterinarian has evolved to further include functions that are related to food security, production management, economic growth and

development, creation of jobs and reducing poverty (FAO, 2012). The global agricultural landscape acknowledges the role of veterinarians especially on the farm level as the important pillar in creating sustainable food systems. It acknowledges the increasing climate change impacts that affect livestock production, and the consequent disease outbreaks that are caused by uncontrollable and complex climatic patterns, drought and floods (Fitzpatrick, 2013). Therefore, the role of veterinarian services in advising producers is increasing in importance these includes advising farmers and breeders on best production practices in terms of health, to promote efficient and quality livestock production based on area specific basis, breeding programmes, nutrition management and to increase productivity to meet increasing industry demands (FAO, 2012).

- **The Foodstuffs, Cosmetics, and Disinfectants Act, 1972 (Act 54 of 1972)** relevant to **producer, handling, processors, manufacturers, retail**

The act promotes the exercise of control by the authoritative legal person to facilitate business exchanges particularly relating to manufacturing of products stated above, the sale and export thereof and to provide guidelines on issues that occurs as a result of such business exchanges.

- **The Health Act, 1977 (Act 63 of 1977)** relevant to **the entire value-chain from the producer to the consumer**

The act works to provide a systematic guide and a work structure to facilitate the progression of establishing a singular harmonised health system, to promote principles and objectives as set out by the Constitution of the Republic of South Africa, other envisaged enabling policies and strategies related to health applicable to one or the three levers of government local, provincial, national and any other matter of relevance to the act.

- **The Agricultural Products Standards Act, 1990 (Act 119 of 1990)** relevant to **wholesale, retail, export and import commodity and product markets**

To provide guiding principles with regard to agricultural market products, particularly on issues of sales and exports, to gain certain authoritative control over sale of imports and other related agricultural products and other industry related matters.

- **The Standards Act, 1993 (Act 29 of 1993)** applies to **the entire value chain from producer to retailer**

The act advocates for the continued existence of the standardisation and quality assurance programmes, including institutions like the South African Bureau of Standards (SABS) and South African Meat Industry Council (SAMIC) whose mandate it is to provide guidance and set industry standards under the leadership and guidance of the council, namely on issues concerning classification of commodities, standards and quality of the services rendered to South Africans.

- **The Meat Safety Act (Act 40 of 2000)** relevant to **producers, processors, farmers, breeders, food handlers and sellers**

The purpose of the act is to promote and set a foundation for safety in the meat industry and to set guidelines for sound industry principles with regard to the safety of meat and meat products. Precisely by advocating improvement and contemplating competitive national and international industry standards relative to the South African meat industry counterparts. To facilitate export and import meat market activities, to establish eat safety aid and to represent in any matter relative as stipulated in sections (7) to (13) of the Meat Safety Act (Act 40 of 2000)

- **Abattoir Hygiene Act (Act 121 of 1992)** relevant to **manufacturers, processors, food handlers, packagers**

The act advocates for the improvement and maintenance of quality health and environmental standards of meat slaughtering and handling facilities in order to ensure safe and quality meat for both human and animal consumption. To promote the use of industry best practices with regards to meat slaughtering, cutting, and storing by promoting adherence to safety and quality of the meat. Furthermore, to discourage the use of non-compliant and non-slaughtering facilities for animal slaughtering, carcass handling and meat preparation processes practices that could lead to meat and meat products that are harmful for human consumption; furthermore, this could be read in context with section (3) to (13) of the regulations governing general hygiene requirements for food premises and the transport of food as stipulated in THE HEALTH ACT, 1977 (ACT NO. 63 OF 1977).

Other relevant policies and acts that also need to be taken into consideration with regard to the handling, slaughtering, marketing and selling of meat relates to the following:

- 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[1]
- Labour Relations Act 66 of 1995

[1] *The newest environmental laws, regulations and acts should be adhered to in accordance with the different activities that is proposed on a specific site. It is advised that for all the proposed projects within the MMM AP an environmental practitioner is consulted in order to facilitate this process.*

- Consumer Protection Act 68 of 2008

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

7.8. Substitute Products/Services

Red meat, as a mat category on its own, is broad and the various types of red meats are in fact the first competition for the other. Beef and pork, as the two commodities analysed here, are very often used interchangeably: pork can be used instead of beef, but beef can also be used as an alternative to pork. This is not a competition for the Agri-Park however, as both commodities are to be processed within the municipal area.

Perhaps one of the most recent competitors for beef particularly, is Ostridge meat. Ostridge is a dryer type of meat that can be used in virtually any kind of well cooked meal, such as a stew. As a result of its texture, Ostridge can also be used as a snack meat in sosaties and ground to make delicious burger patties and meat balls. The greatest advantage that Ostridge has over the other red meats is the fact that it is widely known for being a healthier red meat type.

Lamb and Mutton are also two types of red meat that can be used to replace beef and pork as substitute products. These two meats are as diverse and protein-filled as beef and pork; thus making them the largest direct competing products. Chicken is a great substitute product, as it produces all the taste and all the protein but for half the price. The pricing, is 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 and act as meat. These replacements were initially widespread for vegetarians but has now spread to a variety of people for dietary, religious and personal choices. The following are some of these options according to PETA, an animal rights organisation.

Tofu: is a bean curd, which is developed by coagulating soy milk and then forming soft white blocks from the curds. Tofu soaks up flavours and is best when marinated and served like sosaties.

Soya: textured soy protein (TSP), soy meat, or soya chunks, are defatted soy flour products, which are the most popular meat replacements. Used in curries, stews, bakes, and even 'meat loaf' or 'meat balls', soy is a very versatile meat replacement. It is also relatively affordable, which makes it ideal for the less fortunate.

Tempeh: is a traditional Indonesian food and it is produced through the fermentation of soybeans and other grains. Tempeh is best used – when ground – as a replacement for mince/ground beef.

Seitan: is a great source of protein, which is derived from wheat. It is sometimes referred to as wheat gluten and can be curried or roasted. PETA suggests that seitan is best as a chicken substitute when grilled.

Whole Grains and Legumes: Other whole grains and legumes such as kidney beans, lentils, garbanzo beans, peanuts, pinto beans, split peas and navy beans are also suggested as meat substitutes. With the increased development in the food industry, other plant roots and fruits are now also being used in dishes where one would traditionally use meat or at least a meat alternative. Evolving diets have meant that people have a greater variety of foods to choose from and endless methods of preparation.

7.9. Main Input Suppliers and Competitors

This sub-section focusses on the main input suppliers for the specific commodity as well as the main competitors as illustrated in the table below:

TABLE 17: BEEF MAIN INPUT SUPPLIERS AND COMPETITORS

	Industry Suppliers	Competitors
Farming	OVK	Barnard, P.A
	Senwes	Bellavista Boerdery Bk
	DIY Superstore	Benedetto Stoet
	Afrivet	Bodeel Boerdery
	Pro Freeze	Sparta Farm
	TWK Agri	

Abattoirs	Mitchell Group Equipment	Triomf Abattoir
	Albrecht Machinery	Bultfontein Abattoir
	Pro Freeze	Jacobsdal Abattoir
		BVI Abattoir
Processing	Mitchell Group Equipment	BFN Deboning
	Albrecht Machinery	Sparta Foods
Butcheries	Mitchell Group Equipment	Sparta Foods
	Albrecht Machinery	Beef Master
	Fastline Plastic & Packaging	Van Zyl's Biltong Deli
	Ciba Pack	Rudolf Greyling
	CFT Labels	Ama Biltong
	Pro Freeze	AAA Meat
	Truck and Trailer	AAA Vleis Noord
	Variety Packaging	Bainsvlei Slaghuis
	Label Matrix	Barons Meat Co.
		Grinter Butchery
		Gys Die Slaghuis
		Meditas Butchery
		Sechaba Butchery
		Willows Butchery
		Rodenbeck Slagpale
		Superb Meat Suppliers

TABLE 18: PORK MAIN INPUT SUPPLIERS AND COMPETITORS

	Industry Suppliers	Competitors
Farming	OVK	Kroonstad Piggery Farmers
	Senwes	Kroonstad Piggery Farmers
	DIY Superstore	Sediba Kolobe Piggery
	Afrivet	Itekeng Piggery Project
	Pro Freeze	Ntsu Piggery Project
	TWK Agri	Theunissen Piggery Project
		Tirisano Piggery Project
		STEENWYK PIGGERY
		Milos piggery
		HARMONY PIGGERIES
		Vleissentraal Bpk
		Malupork
Abattoirs	Mitchell Group Equipment	Rodenbeck Slagpale
	Albrecht Machinery	Superb Meat Suppliers
	Pro Freeze	Triomf Abattoir
		Bultfontein Abattoir
		Jacobsdal Abattoir
		BVI Abattoir
		Malupork
Processing	Mitchell Group Equipment	Ideal Processed Meat
	Albrecht Machinery	Barons Meat Co.
		AAA Meat

		Enterprise
		Escort
Butcheries	Mitchell Group Equipment	A & S FOOD DISTRIBUTOR
	Albrecht Machinery	AAA VLEISMARK
	Fastline Plastic & Packaging	AAA Vleis Noord
	Ciba Pack	Bainsvlei Slaghuis
	CFT Labels	Grinter Butchery
	Pro Freeze	Gys Die Slaghuis
	Truck and Trailer	Meditas Butchery
	Variety Packaging	Sechaba Butchery
	Label Matrix	Willows Butchery
	Crown National Branches	Gourmet Butcher

7.10. SWOT Analysis

This subsection focusses on the Strengths, Weaknesses, Opportunities and Threats to properly assess the relevance of utilising this commodity within the Agri-Park. As such, the SWOT analysis is presented as follows:

Strengths:

- Stable and growing markets both in South Africa and Globally.
- Consumption will only grow as populations globally increase.
- Integral dietary consumable and thus, will not easily be replaced by other products.
- Diversified and good quality stock available within domestic cattle and pig stocks to supplement higher quality breeding and production value chains.
- Well-established forums and institutions that can assist with training and market facilitation within the South African market place.

Weaknesses:

- Lack of appropriate hard and soft infrastructure for emerging farmers to access markets.
- Emerging farmers have to compete with the high intakes of abattoirs when the number of livestock available from these emerging farmers is not sufficient for uptake.
- Lack of farming and business skills, especially in rural areas.
- Commonage competitiveness in terms of grazing land available where stock has to compete with each other to reach market ready quality.

Opportunities:

- Export markets are key in earning an extra income for businesses and emerging farmers.
- Better farming practices, training, and techniques will assist in not only the quality of livestock on emerging farms, but also the carcass yields and the quantity of livestock available.
- Large spin off opportunities within the domestic value chain that have yet to be realised within the South African value chain.
- Government support can help bridge the infrastructural and market access gap that is needed for the development of both the cattle and pig value chain within Mangaung Metro Municipality.
- Ready local markets that can be exploited with large populations within Bloemfontein, Thaba Nchu and Botshabelo. This can even be expanded to Maseru in Lesotho.

Threats:

- Diseases, draughts, overgrazing, theft, and other environmental and unforeseen circumstances that will severely affect not only quality of livestock, but the number of market-ready animals.
- Prices dependent upon fluctuating international as well as domestic market prices.
- The export market may collapse or close due to uncontrolled disease or high export tariffs.
- Competitiveness in global production and the export market due to the high production output of other countries, this can have severe profit margin influences on emerging farmers and their ability to make profits

SECTION 8: COMMODITY ANALYSIS: SHEEP WOOL

Wool is a by-product of sheep, and is harvested from the skin and hide of the sheep animal such as merino and other wool sheep bred for wool production purposes. The wool industry has realised many concerns from the consumer and market perspective with themes like environmentally friendly, socially responsible and animal welfare, hence serious attempts to improve wool production standards (NWGA, 2014) .

Wool as a raw material is classified into different standards and characteristics that are universally acceptable to the processors; such includes the length, vegetable mater content and the fibrous diameter. Wool maintenance and management is very labour-intensive, where serious care must be taken to reduce contaminants and discolorations on the wool package. Different wool species found in South Africa includes merino sheep, which normally produce white wool that is free from kemp and has a fibrous diameter of about 27 microns. The Sheep wool can be classed and graded according to the body parts that it has been harvested from; this includes broken fleeces, bellies and pieces, locks and on the back of the sheep (NWGA, 2014) .

8.1. Market Assessment

8.1.1. Local Markets

When properly conducted and with favourable conditions, wool is a non-perishable-market which can be used to generate income is based on human resources and that feeds back into communities. Over the years, South African wool has become reputable within the market for numerous quality features such as: uniformity and softness to the touch. The South African wool industry provides a product that is high in quality, environmentally sound, and meets the needs of the textile industry. Wool produced in Namibia and Lesotho was historically considered part of the South African production and was thus sold in South Africa. The sheep wool industry in South Africa is rather stable and has a large market share. The South African market comprises over 8 000 commercial producers of wool, 846 communal shearing communities, as well as more than 19 000 communal wool producers, which are located predominantly within the Eastern Cape.

In terms of national production, apparel wool is currently the main produce that is produced within South Africa. Merino and Karakul clip is South Africa's most predominant wool clip, but there is also production of coarse and coloured types, which are however, marketed on a limited scale. Merino sheep remains the dominant wool clip however, accounting for approximately 74% of the total wool sheep within South Africa. The

generic production season of wool in South Africa, fluctuating practically throughout the year, start in the month of August through to June of the following year. During this production season, it is expected that each sheep will be shown at least twice.

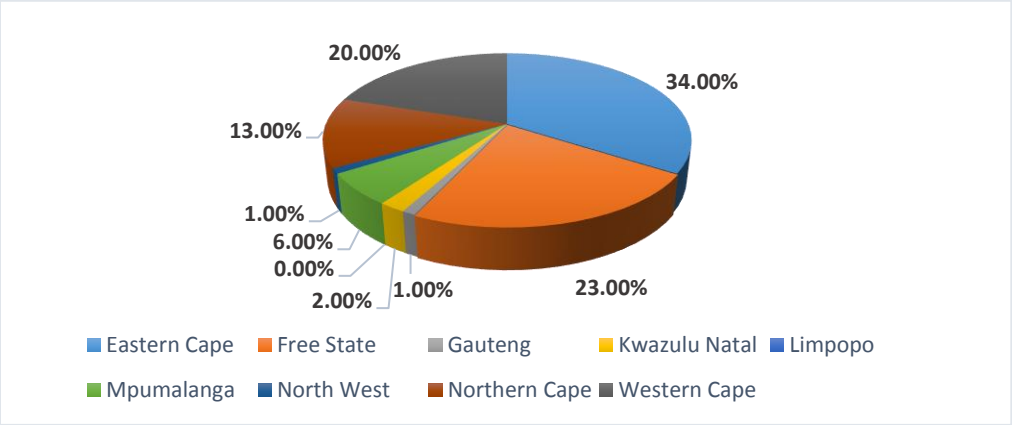


Figure 20 - Provincial Wool Production

(Source: DAFF, 2015)

The provincial wool distribution, as illustrated in Figure 20, reveals that wool is produced in most parts of South Africa under either extensive, semi-extensive, or intensive conditions. The Eastern Cape produces 34% of the national wool clip and when combined with that of the Free State, the two provinces produce more than 50% of South Africa's' wool clip. The Western Cape and Northern Cape provinces produced 20% and 13% of the national wool clip, respectively, during the 2013/14 production season.

Provincial trends reveal that the Eastern Cape and the Free State have consistently produced the largest portion of South Africa's' wool over the past decade. Furthermore, the largest proportion of the South African wool clip is produced within harsh, low-rainfall areas – such as the Karoo for instance – as opposed to areas with higher rainfall of the coastal belt and the Highveld. Figure 20 further reveals that four provinces, namely the Eastern Cape, Free State, Western Cape, and Northern Cape produced approximately 90% of all the national clip. By the end of the 2013/14 season, the total production of wool nationally in was estimated to have accumulated to 50.5 million kilograms.

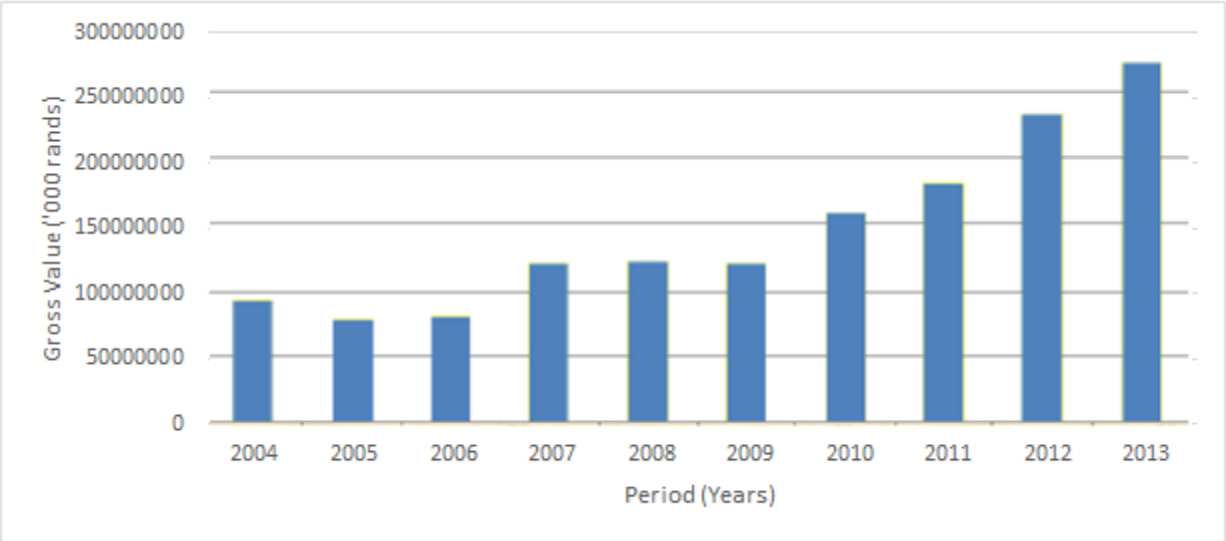


Figure 21 - Wool gross value of production in South Africa

(Source: DAFF, 2015)

The gross value of production for wool in South Africa – as depicted in Figure 21 – depends largely on the quantities that are produced, as well as the prices that are received by producers. It can thus be resolved that the trend in the gross value, follows the pattern of prices since the industry is characterised by volatile prices. Figure 21 further illustrates that the gross value of wool production experienced a slow paced, steady increasing at during 2003 and 2008 until a small peak was attained in 2010, which increased the pace of growth. It is clear that the increase in the gross value of South African wool production in 2013 represents a 16.2% increase as compared to 2012 marketing season.

Within the South African local market, wool is traded in one of two ways:

1. Auctioning

Which accounts for the largest percentage of the national clip sales.

Various wool auctions are held around the country, some of which are not well coordinated or documented. Centrally auctioned wool producers in South Africa can send their wool to one of three major ports; either Port Elizabeth, Durban or Cape Town, depending on their choice and distance. The greater trend however, is that wool brokers facilitate these sales of wool within each of the auctions. The main wool brokers in the South African market are Cape Mohair and Wool (CMW) alongside BKB Pty Ltd. Wool auctions, coordinated by the South African Wool Exchange, and are generally centralised in the Eastern Cape (Port Elizabeth). They occur on a weekly basis during the wool-selling season, which – as mentioned – runs from August of one year to June the next year.

2. Private treaty,

Constitutes a minimal amount of South African wool trading.

It usually acts as an alternative to the wool auction system, rather than a self-standing system on its own. In a private treaty, wool producers can sell their own wool to small wool buyers directly, who either organise smaller wool auctions for these sales or they export wool directly. These smaller wool traders such as Van Lill Wool Buyers, Saunders, and Lanata also sell wool on a separate organised auction. The separate auctions are however, generally held on in the same location and on the same day as the main auction organised by Cape Wools. This further adds to their secondary status, as opposed to formal wool auctions.

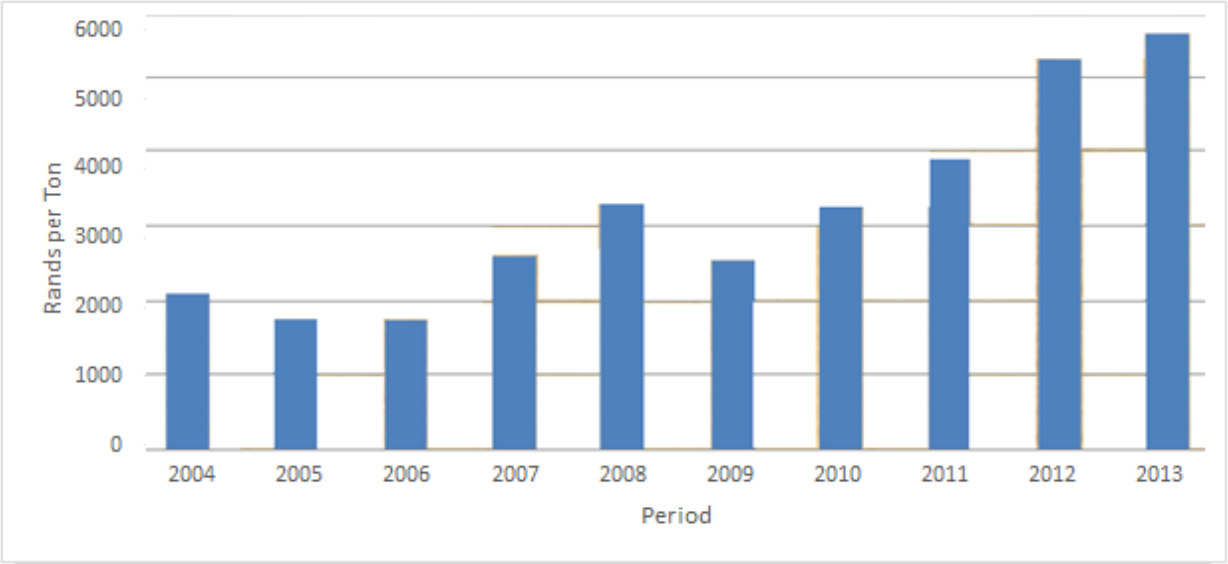


Figure 22 - Average producer prices of wool in South Africa

(Source: DAFF, 2015)

The prices paid for wool are generally determined by free market demand; this is determined by the relationship between supply and demand. They are also closely linked to the international prices for apparel wool – as the major South African output – these are determined mainly by the Australian market. Greasy or semi-processed Cape wools are mostly exported across the world – through shipment – with the majority of clients being based in Europe and in the Far East.

8.1.2. Global Markets

South Africa is a net exporter of sheep wool, as the number of exports far outweigh the number of imports, which is almost non-existent. South African wool clip is largely marketed to the overseas market. This is made possible through the assistance of the members of the South African Wool and Mohair Buyers Association (SAWAMBA). In this system, only registered members of SAWAMBA have access to bid at auctions controlled by the South African Wool Exchange. South Africa mainly exports semi-processed or greasy wool and not much of it, which has been completely processed and coloured. Approximately 60-70% of the wool that is processed annually in South Africa is semi-processed in the country before it is exported. This moves it a step up in the value chain,

allowing for better export prices. While the remaining 30-40% of wool is then exported as greasy wool to the various international destinations.

South Africa exported approximately 45 548 tons of wool – which had not gone through carding or combing processes – to different regions of the world through the course of the 2013 marketing season. This was a very high increase, as compared to 2012 in which 40 804.86 tons had been exported. As depicted in Figure 23, which depicts the export destinations for South African wool, the largest export market for the country's wool during 2013, was China, which accounted for 65% of the international market share. The Czech Republic also had a larger portion of the South African export market share, at 16%, followed by other regions such as India (8%), Italy (6%), Egypt (3%), Germany (2%) and the United States of America, which only had a 0.2% share. Wool exported to both China and the Czech Republic is mainly greasy wool – which is low on the value chain- while Italy imports wool tops. As illustrated in Figure 23, Germany, the United States of America, and Egypt had the smallest market share of the South African wool exports during the specific period being analysed.

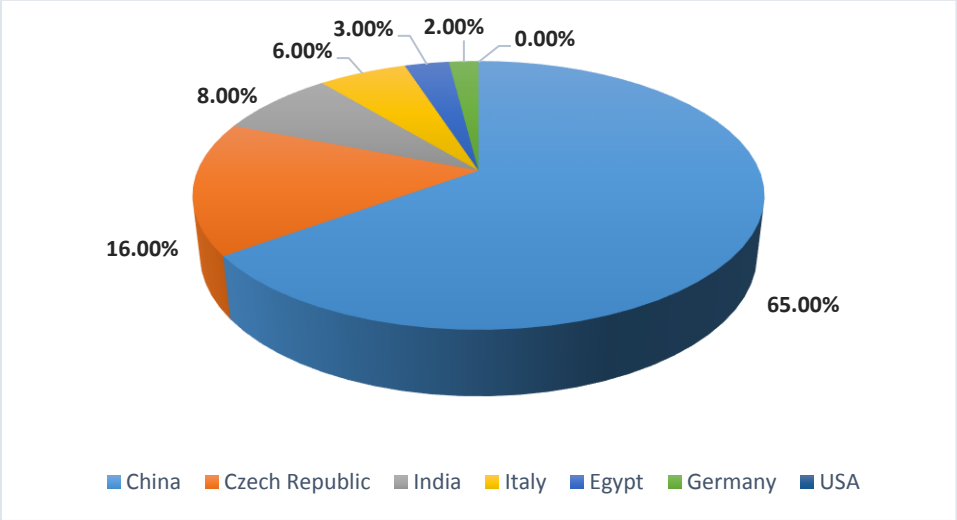


Figure 23 - Export destinations for South African Wool in 2013

(Source: Adapted from DAFF, 2015)

The large prominence of wool exportation in the country means that the wool industry plays a vital economic role in South Africa as an earner of foreign exchange. As an export product, more than 90% of the total production is exported either as greasy wool or in semi-processed form as scoured and wool top.

TABLE 19: VALUE OF WOOL EXPORTS BY PROVINCE

	Western Cape	Eastern Cape	Kwazulu-Natal	Gauteng	Mpumalanga
2004	117375	560836582	20198367	379953	0
2005	995078	555583850	24308316	200381	0
2006	0	733079245	23985508	102708	0
2007	37003	1110932928	22422194	87209	0
2008	2775	1230956677	15025474	72722	0
2009	2154	1300785339	0	133585	0
2010	0	1329923476	31432	875024	0
2011	22706	2166554346	9082	189477	0
2012	0	2396118338	23	2673348	6500
2013	63068	2942095242	6692	1081103	300

(Sources: Adapted from DAFF, 2015)

As supported by the financial contributions illustrated in the table above, the biggest supplier of wool internationally, during the period under analysis, from South Africa was the Eastern Cape Province. This goes in line with its dominance of the Eastern Cape Province within the local market, as it has no real competition from the other eight provinces in exports. The figure also shows that from 2011, there was an increase in the number of exports of wool from the Eastern Cape of approximately R2.1 billion.

A consistent increase was observed in 2012 until a peak was attained in 2013 at approximately R2.9 billion. The figure also shows that there was a 26.1% increase in exports value of wool from the Eastern Cape Province to the world in 2013, as compared to 2012 marketing season. As depicted in the table, over the past ten years, KwaZulu-Natal, Gauteng, and Western Cape provinces have exported very low levels of wool from South Africa to the world.

Table 20 - Export volumes of wool (not carded or combed) to various regions

	Africa	Americas	Asia	Europe	Oceania
2004	0.00	272.81	478.26	20698.78	0.00
2005	0.00	270.89	3424.62	17971.73	0.00
2006	0.00	164.52	10894.80	15818.33	0.00
2007	0.01	190.61	15124.05	14999.52	0.00
2008	0.00	296.32	21175.72	11551.11	0.00
2009	0.02	64.91	35305.12	5203.94	0.00
2010	0.00	54.38	22621.92	12081.69	14.80
2011	228.63	120.96	28302.45	11116.86	0.00
2012	786.41	80.61	31199.88	8718.25	19.71
2013	1222.37	0.00	33726.55	8832.12	43.15

(Source: DAFF, 2015)

Table 20 reveals that Asia was the biggest export market for South African wool, with the volume of wool that increased since 2004 (478t) to approximately 33726 tons in 2013. The table further indicates that there was a consistent increase of wool exports from South Africa to Asia from 2005 until a peak was attained in 2009, at an export volume of about 35 305 tons. Wool export volumes from South Africa to Europe attained a peak in 2004 at an export volume of about 20 698 tons. Between 2005 and 2013, South Africa exported very low levels of wool, not carded or combed, to Europe. Although there was a slight decline in 2010, exports of wool from South Africa to Asia again experienced an increase in 2011 with a consistent increase in 2012 and a peak in 2013 at approximately 33 726 tons. Exports of wool from South Africa to Africa, the Americas, and the Oceania were very intermittent between the 2004 and 2013 marketing seasons. The graph also indicates that there was an 8.1% increase in exports of wool from South Africa to Asia in 2013 as compared to 2012 marketing season.

8.2. Value chain Assessment and Agro Processing opportunities (products)

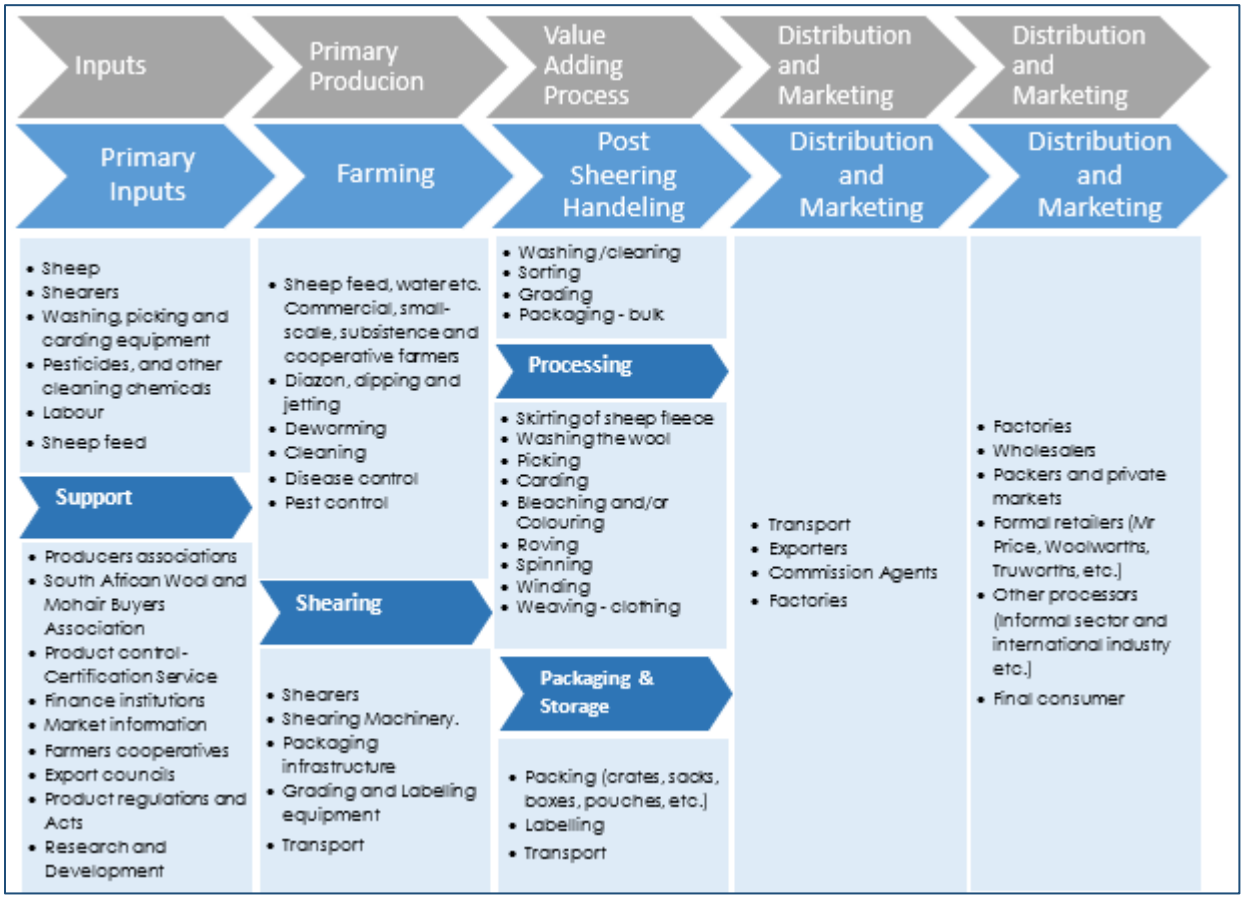


FIGURE 24: SHEEP WOOL VALUE CHAIN

Sheep wool is harvested from sheep while still alive, there is no need for the sheep to be slaughtered, meaning that individual sheep can produce tons of wool in their lifetime. Wool sheep are often shorn numerous times before they are slaughtered and produced as mutton. Sheep are shorn to produce the fleece: which consists of wool natural oils and other matter. The fleece is thus further processed to remove this matter, sometimes as much as 50% of the weight of the fleece is not wool. Backward linkages here include the provision of farming equipment, sheep feed, veterinary services, and infrastructure such as fencing and shelter for the sheep. The establishment of shear facilities for local communities will be a backward linkage that should be established in order to create a single area where the value chain can be strengthened within local communities. These shearing facilities can be built at the FPSUs and training can be provided for the local youths and farm workers in order to develop the local skill base that will stimulate the further development of the sheep wool value chain. Forward linkages can then be created for the local commonage farmers by arranging that the wool is sold in bulk; thereby ensuring that the local farmers have access to the markets and are encouraged

to expand their operations, as well as develop better quality wool for the market. Training of basic and more advanced farming practices can be provided in order to help emerging farmers to better their stock, feeding practices as well as business skills.

Forward linkages then include the processing of the wool, which is then washed and picked before it is carded to produce better quality wool; this is an essential component of the value adding process. At this stage a lot of the wool is exported to various international destinations such as China, for further processing. Wool that is not exported after being carded, if then separated and various batches are bleached and/or coloured into a variety of colours. Further processing of wool includes Roving, in this processes which is the final step in the carding, the web is divided into small strings of wool, which are referred to as pencil roving's. Rovings' are then spun and wound and from there, most of the bundles are sold to wholesalers or to other factories to turn them into clothing. During the last process, in which the wool is transformed into apparel, the weaving process is carried out.

The best known sheep wool processors within the domestic market are the following companies:

- BKB Ltd
- Cape Mohair and Wool (CMW)
- Van Lill Woolbuyers Trust (CC)

The following wool buyers are relevant to the sheep wool value chain within the South African market place:

- SA Wool Exporters (Pty) Ltd
- Cape of Good Hope Wool Combers
- Gubb & Inggs Ltd
- A Dewavrin Freres (Pty) Ltd
- Chargeurs Wools (SA) (Pty) Ltd
- Fibres International (Pty) Ltd
- Modiano SA (Pty) Ltd
- New England Wool (SA)
- Segard Masurel (Pty) Ltd
- Stucken & Co (Pty) Ltd

When forward linkages are further considered, the best sheep wool value addition opportunities lie within the shearing, scouring that includes all relevant techniques available, as well as the production of clothing and other wool products. However, with the current global demand for sheep wool, the main marketing avenues would be to shear sheep and make sure that the quality of the wool is good and well preserved after shearing and then to sell it, rather than focus on further value addition. This is due to the lucrative export market and the lack of competitiveness that the area has in terms of the well-established domestic market. Once this situation changes in the long run, the value addition opportunities can be reconsidered.

8.3. Commodity Specific Stakeholders

The following are the main commodity specific stakeholders for sheep wool:

TABLE 21: MMM SHEEP WOOL SPECIFIC STAKEHOLDERS

Stakeholder	Potential Assistance
Cape Wools SA	✓ Institutional support ✓ Knowledge database ✓ Value chain development support ✓ Emerging farmer assistance
South African Wool & Mohair Buyers' Association (SAWAMBA)	✓ Institutional support ✓ Value chain development
Wool Testing Bureau of South Africa (Pty) Ltd	✓ Quality development support ✓ Authentication of produce
Wool Textile Council	✓ Institutional support
National Wool Growers Association SA (NWGA)	✓ Provision of intellectual database ✓ Quality control and improvement ✓ Training and development ✓ Sheep wool guidelines and support
SA Wool Exporters (Pty) Ltd	✓ Export assistance ✓ Quality improvement ✓ Market development ✓ Key intervention identification
Private Wool Companies: ✓ **Cape of Good Hope Wool Combers** ✓ **Van Lill Woolbuyers Trust (CC)** ✓ **Gubb & Inggs Ltd** ✓ **Gubb & Inggs Ltd** ✓ **A Dewavrin Freres (Pty) Ltd** ✓ **Chargeurs Wools (SA) (Pty) Ltd** ✓ **Fibres International (Pty) Ltd** ✓ **Modiano SA (Pty) Ltd** ✓ **New England Wool (SA)** ✓ **Segard Masurel (Pty) Ltd**	✓ Potential PPP and development ✓ Institutional support ✓ Farming best practices assistance ✓ Breeder organisations and stock development ✓ Value chain improvement ✓ Sheep wool processing assistance ✓ Marketing and sales support ✓ Market development ✓ Business best practise assistance ✓ Farming practise improvements

✓ **Stucken & Co (Pty) Ltd**	
Livestock Auctioneers: ✓ **Mangaung Brocor Auctioneers** ✓ **Ellenberger and Kahts Auctioneers** ✓ **Vleissentraal (PTY) Ltd** ✓ **Piet Van Der Merwe Auctioneers** ✓ **Tobie Myburgh Auctioneers**	✓ Provision of suitable sheep wool stock ✓ Buying and selling of emerging farmer stock ✓ Value chain development ✓ Stock improvement assistance ✓ PPP
Feed Manufacturers: ➢ **Afgri Animal Feeds** ➢ **BKB (Brandfort)** ➢ **Eagle Farm Feeds** ➢ **OTK (Afgri) Ltd** ➢ **OVK (Verkeerdevlei)** ➢ **Van Dijkhorst Leon** ➢ **Farmix Veevoere** ➢ **Nutri Feeds** ➢ **Triprod BK**	✓ Provision of feed to emerging farmers ✓ PPP
Veterinarians: ➢ **Bayswater Animal Clinic** ➢ **Ladybrand Animal Clinic** ➢ **State Veterinarian (Bloemfontein)**	✓ Stock quality improvement ✓ Disease control

8.4. Technology

TABLE 22: SHEEP WOOL TECHNOLOGICAL ADVANTAGES

Technology (Equipment; ICT and Logistics)	Advantages
Improved quality and production management through precision farming techniques	• Optimising production through increased monitoring and organisational capabilities, • Increased production is achieved through digital and electronic monitoring and evaluation, helping farmer to make informed farming decisions; • The livestock optimal quality and reproduction capacity is achieved; and • Effective use of inputs and reduces wastage of resources.
NWGA knowledge database	• Utilisation of information provided by the NWGA on their online database. • Information provided relates to effective farm management practices and best quality guidelines.
Provision of communal shearing facilities, equipment and barns	• Providing rural communities with combined sheep shearing facilities that is managed by a champion or private organisation/local entrepreneur. • Each rural farmer pays small levy for the use of the shearing facilities and equipment. • Or an arrangement can be made that professional shearers is hired by the local community to shear all the rural farmers' sheep. • This way expensive infrastructure is made available without the rural community that has to build/fund it themselves.
Training of farmers	• Farmers can be trained to shear their own sheep; • In this way farmers can shear their own sheep when they are ready and capable and only

Technology (Equipment; ICT and Logistics)	Advantages
	bring the sheared fleece to the pressing bales that is situated within the shear barns; and • These bales will then be assessed and graded by a local evaluate that is employed though the levy's paid.
Artificial insemination (AI) of female livestock stock	• Improvement of stock quality and reproduction percentages. • Reduces cost that would otherwise have been necessary to buy different bulls. • Desired livestock characteristics can be bred through AI.
Mentoring programs by sheep wool farmers	• Increased management and stock improvement. • Mentors can assist with the development of quality stock.
Hiring system/ mobilisation centre for emerging farmers	• Lessens the dependability on buying expensive equipment that needed on farms, but not used every day; • A mobilisation centre at one of the FPSU or more than one area can assist in mobilising emerging farmers through the provision of equipment that can be hired at a very cheap rate; and • Would provide competitive advantage in that money that would be used for capital outlay of equipment can be used for herd improvement.
Solar technology used for water pumps	• The use of solar pumps in remote areas increases the availability of water for livestock. • Removes the dependability the provision of expensive electrical and hydro infrastructure that needs to be laid out from substations etc.

8.5. Socio-Economic Benefits

The following socio-economic benefits have been identified for the use of sheep wool as a commodity for the Mangaung Metro Municipality:

- **Employment promotion** the wool industry could employ masses of labour needed for all the functions that need to be performed including shearing, baling, washing and drying; hence the area has a strong supply of labour. Job creation will also be influenced throughout the value chain as well as with indirect job creation. These job opportunities will be created by the need for additional transport, storage, marketing, supplies, packaging, etc.
- **Human Capacity Development**

  The Wool Farming Industry in South African is benchmarked by the domestic and Australian wool industry standards; this shows the competitive level of the industry on issues of production and marketing. South African wool farmers and industry participants are encouraged and committed to lead the market globally, hence massive investments by the wool farming community of South Africa toward research and development, related skills development and training, and re-strategising some of the best practise standards. Therefore, skills and human capacity development is necessary as it directly and indirectly benefits the country, the people, and the industry since skills levels are changing in the face of changing business landscape, technology, communication, and agribusiness applications.
- **Economy of Mangaung**

  Income generated from wool and sheep farming practises could, in the long-run, have positive economic impacts on the Metro Municipality. Firstly, Industry growth encourages capital investments and trade. Secondly, the Free State wool farming industry is the second biggest in the country after the Cape wool industry and is amongst the best productive regions in the country; and therefore, it is a reputable agri-business entity generating as much income as the other leading provinces. The wool industry is expected to keep growing over the next years due to the increased demand by the textile and clothing manufacturers worldwide. This will be expected in particular for countries such as China, the UK and Italy, which is a positive indicator for the export potential of wool produced within the MMM Agri-Park, which in turn has a positive effect on the MMM economy.

8.6. Regulatory Requirements

Sheep wool regulatory requirements are not as extensive as that of the other commodities, as sheep wool quality is the main concern within the value chain. However, there are still regulations that have bearing on the value chain, and these are presented below:

- Wool Testing Bureau of South Africa (WTB) test and certificate

- International Wool Textile Organisation (IWTO) procedures
- The code of practise for Clip Preparation (Classing Standards)
- 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[2]
- Labour Relations Act 66 of 1995
- Consumer Protection Act 68 of 2008
- Health Act 61 0f 2003

Other considerations that are either in line with the above-mentioned policies and guidelines, or that provide additional support as discussed on the sheep wool value chain are those of:

Sheep wool shearers:

Although there is no formal regulation with regard to the use of qualified sheep shearers, there is specific courses that is on offer from the NWGA and related organisations that provide training for sheep shearers. It is also common practise amongst sheep wool farmers to make use of these sheep shearers for the shearing of animals on their farms.

Wool handling:

There is also a number of handling guidelines that should be followed in order to increase and ensure the quality of the wool. Although not a regulatory requirement, these guidelines will assist any farmer to achieve a higher quality wool that will fetch a better

[2] *The newest environmental laws, regulations and acts should be adhered to in accordance with the different activities that is proposed on a specific site. It is advised that for all the proposed projects within the MMM AP an environmental practitioner is consulted in order to facilitate this process.*

price on the market. As such, it would be in the farmer's best interest to give heed to these guidelines. These guidelines include but are not limited to:

- Prevention of contamination and pollution around handling facilities, such as;
  - Keeping wool dry;
  - Prevention of diseases such as "sponssiekte";
  - Correct handling of sheep when sheared, etc.
- Correct handling of fleece;
- Skirting of fleece and removal of 'bad' wool; and
- Sorting and pressing of wool into bales.

Wool quality:

Although the quality of the wool sheared doesn't have regulatory requirements as previously mentioned, it has bearing on the price received for wool. As such, the following wool can be obtained together with their respective qualities:

1. Locks;
2. Stomach wool and pieces
3. Fleece pieces
4. Back wool
5. Fleece wool

Each of these wool types need to be packaged differently and separately, and marked accordingly on the bales. As such, the wool types and quality need to be assessed by wool assessors either on the farm level or on where it is sold on the market. Most of the guidelines are provided by the relevant sheep wool organisations, and training for wool assessors is also provided.

Wool is classified based on the following characteristics of each of the different type of wools:

1. Tensile strength;
2. Length;
3. Fineness;
4. Quality;
5. Condition; and
6. Appearance.

Each of these have even more classification guidelines in order to present the market with a detailed description of each of the bales that is delivered. South Africa is known for its high quality wool and as a result, provide most of its produce to some of the most strictly monitored markets such as the EU and USA.

For the Mangaung Metro sheep wool value chain, it would be wise to both provide training (as provided by either the NWGA or other institutions) for the local communities

in order to strengthen the local development initiatives of the Agri-Park initiative and to help with the rural sheep wool value chain.

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

8.7. Substitute Products

Sheep wool is primarily used for various clothing and related products that extents the traditional use for only clothing. These include but are not limited to;

- Clothing and knitwear;
- Suits;
- Costumes;
- Furniture covers and upholstery;
- Carpets;
- Matrasses filling;
- Tennis ball covers;
- Pool table blaze;
- Basket liners;
- Oil spillage pads (help with large oil spillages); and
- Insulation products, etc.

Most alternatives to sheep wool revolve around the use of materials that is not derived from live animals as animal cruelty and vegan groups promote the use of these materials to preserve sheep. However more over it is an issue of people being allergic to sheep wool and these materials provide an alternative. Furthermore, most of the substitutes revolve around the clothing industry as this is where most of the sheep wool is used. As such, there is a number of alternatives that can be used more or in a lesser extent to substitute sheep wool, however this will depend on the different product characteristics and design. Most of the materials relate to fibres that are needed for textile production

and is then also derived from either plants or other means and are presented in the table below:

TABLE 23: SHEEP WOOL POTENTIAL SUBSTITUTES

Type	Name of Fibre
Plants/Vegetables	Cotton
	Linen
	Jute
	Hemp
	Sisal
	Kapok
	Ramie
	Coir
	Pina
Animal	Silk
	Hair
Mieral	Asbestos
Cellulosic	Rayon
	Acetate
	Triacetate
Noncellosic Polymers	Nylon
	Aramid
	Polyester
	Acryclic

	Modacrylic
	Spandex
	Olefin
	Vinyon
	Saran
	Novoloid
	Polycarbonate
	Polybenzimidazole
	Alginate
	Alginate
	Graft
	Matrix
	Anidex
	Lastrile
	Nytril
	Vinal
Protein	Azlon

(Source: Adopted from Textile Apex; 2015)

Although the table above illustrates the different alternatives that can be used within the textile industry, the price, availability and extent towards which these are used vary greatly and as such, the two most clearly considered substitutes or alternatives that have bearing on sheep wool are as follows:

- *Cotton:*

  Cotton is a white fibrous substance that is derived from the seeds of cotton plants. It is planted worldwide with China, India and the United States being the world leaders in cotton production. It is furthermore, a popular commodity due to its

importance to the textile industry. Cotton and wool are the most used natural fibres in textile production and as such cotton is the main raw material that is used by most of textile producers worldwide. As such, cotton is the main raw material used by most textile retailers in the fashion sector. Cotton can replace a number of wool clothing and related product options, and is widely used for a diverse range of products ranging from fish nets to coffee filters.

- Polyester Fleece:

  Polyester is a synthetic fibre derived from coal, air, water, and petroleum as developed in laboratories for the primary use in textile related products. In essence, it is a product derived from a chemical reaction between acid and alcohol where two or more molecules form a succession of larger molecules that can be made into a fibre for use. Typical products that can be made is that of clothing, home furnishings, industrial fabrics, computer and recording tapes, and electrical insulation.

8.8. Main Input Suppliers and Competitors

This sub-section focusses on the main input suppliers for the specific commodity as well as the main competitors, as illustrated in the table below:

TABLE 24: SHEEP MAIN INPUT SUPPLIERS AND COMPETITORS

	Industry Suppliers	Competitors
Farming and Processing	OVK	CMW Bethulie
	Senwes	CMW Bloemfontein
	DIY Superstore	CMW Hertzogville
	Afrivet	CMW Ladybrand
	TWK Agri	Nationale Woolwerkers
	Truck and Trailer	
	Label Matrix	

8.9. SWOT Analysis

This subsection focusses on the Strengths, Weaknesses, Opportunities, and Threats to review the relevance of utilising this commodity within the Agri-Park.

Strengths:

- Area is ideal for sheep production, with communities and farmers already accustomed to sheep farming.
- Strong domestic sheep wool industry as well as established institutional and research bodies that can assist with value chain development.
- Characteristics of wool as it is immune to bacteria, mould, and mildew, and it is also not artificial like other synthetic material, which some people have allergic reactions to.

Weaknesses:

- Lack of shearing and related infrastructure within the Thaba Nchu region.
- Limited number of emerging farmers within the MMM vicinity that already farms with sheep wool herds.
- Lack of access to markets for emerging farmers coupled with skill shortages, both on production and processing level.

Opportunities:

- Upskilling of local communities through shearing training and the processing of sheep wool.
- Further development of the value chain can help with job creation multipliers and the establishment of a strong local wool producing sector within the region.
- Broad Based Black Economic Empowerment will form an integral part of the development of the sheep value chain.

Threats:

- Diseases, theft, poor nourishment, lack of ample grazing land due to competition and competitiveness of herds, draught, miscarriages and other environmental or unforeseen circumstances that might affect sheep wool production.
- Fluctuating export markets that will have a bearing on the price received for wool and in turn, on the profitability of enterprises for local emerging farmers.

SECTION 9: COMMODITY ANALYSIS: VEGETABLES

During this section, vegetables as a cluster of potatoes, cabbage and onions will be evaluated. These three were identified under the commodity selection and prioritisation section as the three main vegetables within the MMM. Considerations that will be evaluated are market orientation, value chain assessment, agro-processing opportunities and potential new entrants.

The agricultural sector in the Free State comprises of animal production, dairy farming, game farming, fruit production, agro-processing, aquaculture, horticulture, and crop production. The Free State accounts for approximately 14.5% of South Africa's commercial farming. Moreover, the Free State also accounts for:

- 90% of South Africa's cherry production,
- 15% of South Africa's gross agriculture income,
- 26% of South Africa's field crops (hay, cotton, etc.),
- 33% of South Africa's potato production,
- 53% of South Africa's sorghum production, and
- 45% of South Africa's sunflower production.

(Free State Development Corporation, 2015)

The Free State produces 40 000 tons of fruit and 100 000 tons of vegetables per year. The Province also has the highest number of farming units (approximately 7 515) in South Africa. Over 90% of the Free State's land is agricultural land, with 60% suitable for pasture and 32% considered arable (Free State Development Corporation, 2015). According to Statistics South Africa (2015), 9.5% of the country's vegetable farming takes place in the Free State. Thus, the Free State is the 4th largest producer of vegetables in South Africa.

9.1. Market Assessment

9.1.1. Potatoes

As an edible field crop root or a plant is referred to as a tuber, originating from the Anders regions and thereafter introduced to the widely across the world as a cultivated crop that contains mostly starch and is a prominent member of staple human food and the fourth most preferred staple and starchy food source after maize, rice and wheat. A starchy tuber, namely a potato is characterised by the tube-like roots which form part of the edible vegetable component and the green shoots and herbaceous leaves which are exposed to the sun for photosynthesis, are also known to be toxic and not preferable part of consumable tuber, which normally dies off after the plant has grown and passed some growth stages including that when the plant is flowering, the tube has been formed and the plant has gone through maturity (Smith, 2006).

It grows up to about 60 cm in height, and they are suited to grow during shorter day lengths or sunshine days. The average cool temperature for optimal growth is about 15°C to 20°C and planting dates differ from area to area. In South Africa regions suited for potatoes production include the Marquard, Bethlehem, and Ficksburg regions in the Free State; Ermelo in Mpumalanga; KwaZulu-Natal and Gauteng. The length of the growth period for potatoes depends on various factors, including the market demand and prices for the commodity, variety and whether the seed is being produced. Potato cultivars include the BP1 cultivar, which is a medium spring cultivar, Buffelspoort, up-to-date and Hoevelder and can be harvested after greenly leafs has died off and stored in dry cool place. Potato yields vary from methods to methods, under cultivation yields are normally around 50 to a 100 tons/ha, while dryland production is normally around 30 tons per/ha. Potatoes are used as food and are prepared using different methods including boiling, baking, fried chips, salads and crisps depending on cultivars. The plants have valuable nutritional status through that it is known to contain starch as form of carbohydrate, vitamins and mineral (Potato South Africa, 2015).

9.1.1.1. Local Markets

The most important vegetable crop within South Africa is the potato. Approximately 54.2% of the total gross value of vegetable production in 2013 was contributed by the potato industry. Potatoes are produced throughout South Africa. Potatoes are produced year round, in both dry land and under irrigation. The main producing regions however, are the Eastern Cape, Limpopo, Mpumalanga, the Western Cape, KwaZulu-Natal, and the Free State Province (DAFF, 2014). According to Potatoes SA, the distribution of the 2013 total potato crop reflects the following: 36% sold via the formal markets; 28% sold via the informal markets; 20% were allocated for processing; 8% were exported; and 8% was used for seed. A graphic reflection of such is as follows:

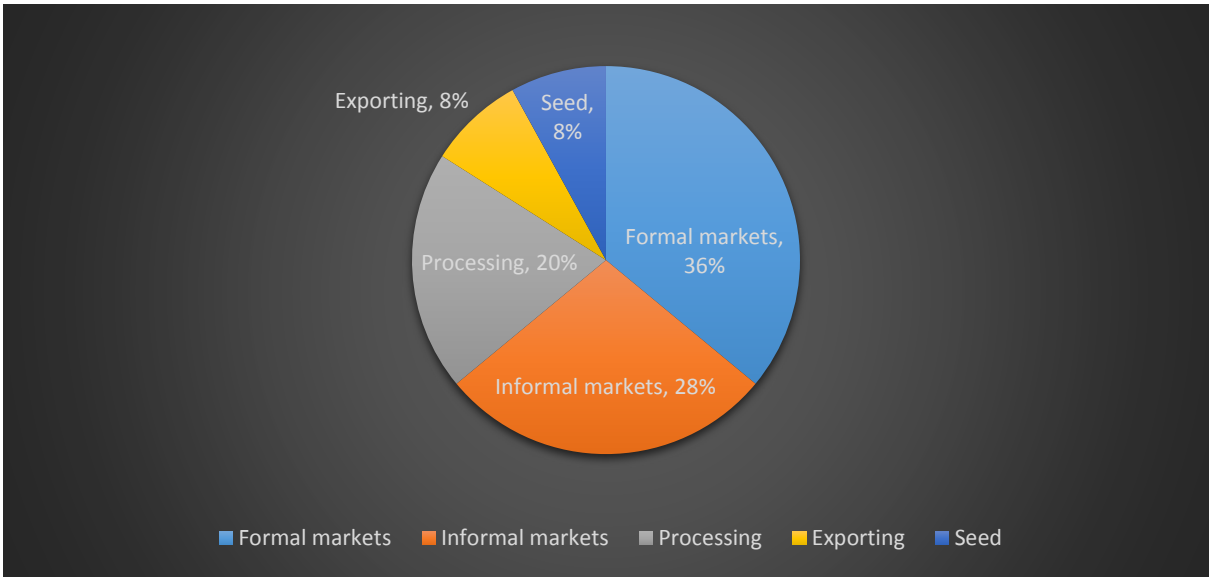


FIGURE 25: DISTRIBUTION OF POTATO CROP PRODUCTION, 2013

(Source: Profile of Potatoes Market Value Chain, 2014)

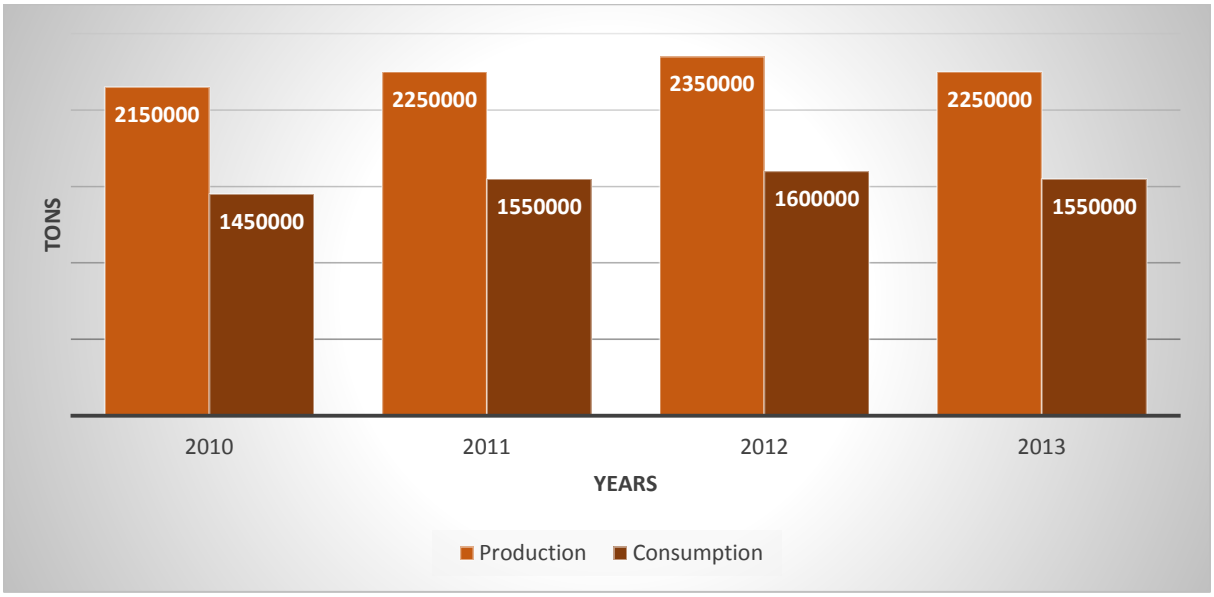


Figure 26: Production vs. Consumption of Potatoes

(Adapted from DAFF, 2014)

The Leading producer of potatoes in 2013 was the eastern Free State, which produced 20% of the total national production. On average in 2013, approximately 1 382 145 tons of potatoes were consumed per annum in South Africa. **Figure 26** above, illustrates the local production and consumption of potatoes from 2010 to 2013. The production of potatoes in South Africa is much higher than that of the consumption in South Africa. Therefore, South Africa is a net exporter of potatoes, and South Africa is also self-sufficient in the production of potatoes. The consumption of potatoes decreased by approximately 3.1% from 2012 to 2013, while production also decreased by approximately 4.3% during the same period. The decrease in production, and subsequently consumption, is due to a decrease in potato farmers as well as unfavourable climatic conditions. Further analysis shows that according to the National Fresh Produce Markets (NFPMs), the following tonnages were sold with the respective prices for markets within the Free State as compared to other major markets:

Potatoes	Tonnage Received at Fresh Produce Markets			Rand per Tonnage		
	2013	2014	Growth (%)	2013	2014	Growth (%)
Johannesburg	370175.94	384024.38	3.74	3427.32	3444.90	0.51
Tshwane	189968.44	195420.74	2.87	3419.75	3482.23	1.83

Cape town	105892.26	99860.85	-5.70	3201.81	3361.34	4.98
Durban	94154.19	99044.33	5.19	3292.60	3351.98	1.80
Bloemfontein	23962.06	24050.05	0.37	3597.45	3655.20	1.61
Welkom	17338.27	16906.34	-2.49	3559.17	3634.16	2.11
Kimberley	5417.05	5626.41	3.86	3643.48	3588.99	-1.50

(Manstrat - Extension Suite Online)

Local consumption fluctuates in accordance with the prise of potatoes (which in turn is influenced by the crop size), but it can be said that the demand for potatoes locally has grown. Whilst the South African per capita consumption of potatoes has remained reasonably stable at around 35 kg per person per year (fresh and processed), the overall growth in demand implies that more people now eat potatoes, which could point to a move away from traditional staple foods such as maize – especially in the urban areas *(BFAP Baseline Agricultural Outlook, 2015)*

9.1.1.2. Global Markets

In 2013, approximately 8% of the total crop was exported. Potatoes are probably the most suitable of the major vegetable types for the export market (easy to grade and pack; and under correct conditions, the shelf life is much longer than most other vegetables). Unfortunately, the bulkiness of potatoes and the need for refrigerated transport (especially where the distance is very long), make the export of potatoes expensive and for this reason, South Africa's primary export markets are located within the SADC region (with 95% of exports going to Mozambique, Angola, Zimbabwe and Zambia). For the reasons outlined above, South Africa is not considered to be a major exporter worldwide with its exports contributing only 0.49% of total potato exports, and thus, it is ranked number 27 in the world potato exports. Whilst there is scope to increase the export market share (both into Africa and the Middle East), it should be noted that other African countries (such as Malawi, Egypt and Algeria) all produce twice as much potatoes as South Africa and will probably be more competitive than South Africa given the prohibitively high costs of transporting potatoes over long distances.

The potato industry is one the few fresh produce industries currently in South Africa that has a full quality assurance service at all the fresh produce markets in the country. The potato industry acknowledges the importance of this service and recognises the added benefit that results from this, such as traceability of the product. The quality assurance is provided to the potato industry by PROKON (Product Control for Agriculture), an article 21 company. PROKON is charged with establishing and maintaining product quality for the benefit of all - from farmers to the potato consumer.

9.1.2. Cabbage

Cabbage is a vegetable that is well adapted to frosty conditions. Cabbages are moist suited to grow in regions where there is adequate moisture and cool climatic conditions. The average temperature suitable for cabbage are between 15 C to 20 C, and can survive in temperatures of below 0 C depending of the type of cabbage cultivar used. The soil conditions that are suitable for cabbage production are mostly deep, fertile and well drained soils, where there is adequate soil moisture content to support plant water needs. The vegetable roots can grow deep into the soil, up to 600 mm, and the average suitable soil pH is about 5.5.

Cabbage has different cultivars such as the Green Star and Hercules. These cultivars are moist and tolerant to heat. Two more popular cultivars are the Conquistador and green Coronet, which are suited to survive under cold weather conditions. The vegetable's planting date varies and can be planted during December to February, or can be planted between September and October in cold areas, similarly on warmer areas the vegetable can be planted in January to march or alternatively can be planted in July to August in hot weather conditions. The optimum period for the vegetable to grow is about 90 to 130 days after being moved from the original planting area. Cabbage yields vary depending on production methods employed meaning under conservative situations yields would normally be around 30 tons/ha, while average yields are around 55 tons/ha, good season would normally yield about 80 tons/ha (Smith, 2006).

9.1.2.1. Local Markets

Cabbage grows best under cool conditions. Cabbages are produced in all nine provinces of South Africa, but the production is concentrated in the Western Cape, Gauteng, Mpumalanga, the Free State and the North West provinces. Globally, China, India, Russia, South Korea, Japan, and Poland are top countries in cabbage production. The top five African countries producing cabbage are Kenya, Egypt, Ethiopia, Niger, and South Africa.

In **Figure 27** below, local production and consumption of cabbages are compared from 2010 to 2013. On average, South Africa's population consumes approximately 144 061 tons of cabbage per year. The decrease in production and subsequently consumption, from 2011 to 2012 can be attributed to unfavourable climatic conditions and high production input costs. Cabbage consumption increased by approximately 2.19% from 2012 to 2013, while cabbage production increased by approximately 2.16% during the same period. The Xhariep district and the Lejweleputswa District Municipality of the Free State, began exporting cabbages to Lesotho in 2012.

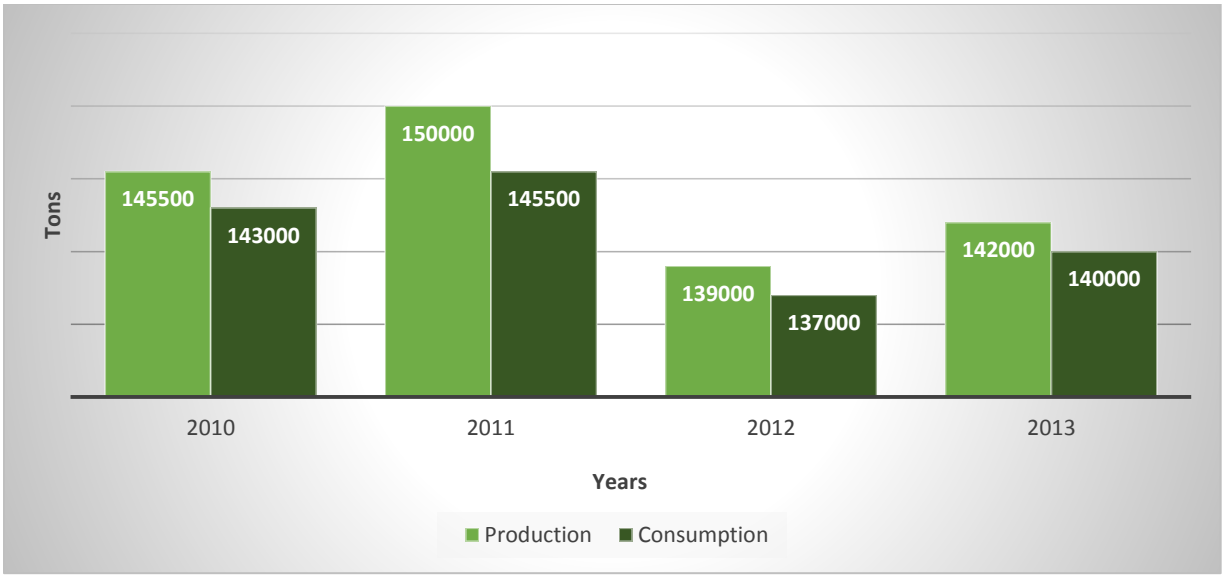


Figure 27: Production vs. Consumption of Cabbages

(Adapted from DAFF, 2014)

Given the indicated role of the NFPMs (as the largest and preferred marketing and sales channel of cabbages in South Africa), the NFPM prices are subsequently used as the benchmark for all national cabbage sales. The table below outlines the volumes traded and the value of such trade for each NFPM.

Cabbage	Tonnage Received at Fresh Produce Markets			Rand per Ton		
	2013	2014	Growth (%)	2013	2014	Growth (%)
Johannesburg	31793.02	33360.43	4.93	2499.60	2924.34	16.99
Tshwane	20513.36	21924.43	6.88	1867.51	2135.81	14.37
Cape town	6554.35	5591.86	-14.68	2083.30	2287.10	9.78
Durban	6275.67	6458.69	2.92	1749.38	1843.47	5.38
Bloemfontein	5693.61	5735.63	0.74	1798.43	1918.94	6.70
Welkom	3515.61	3331.01	-5.25	2066.92	2287.98	10.70
Kimberley	2150.38	2654.19	23.43	1808.51	1665.72	-7.90

(Manstrat - Extension Suite Online)

9.1.2.2. Global Markets

The large domestic market within South Africa accounts for 70% of the consumption for all locally produced cabbage. As such, South Africa only accounted for 0.26% of global cabbage exports, with the main exports going to Lesotho, Botswana, Swaziland, Namibia, Angola, and Mozambique. The main areas within South Africa from which cabbage produce is exported are: the Western Cape, Gauteng and Mpumalanga as evaluated over the last decade. The main reason for the exports form these regions can be attributed to the ease of access from production farms to export avenues as well as the registered exporters that are situated within these provinces. Total exports for 2013 were 900 tons; the highest export amount exported was in 2008 and amounted to 1 000 tons worth R6 million. In addition to the low export of cabbage, there is also a very low volume of imports to South Africa due to the largely domestic consumption and the shelf-life of cabbage. The year-on-year statistics with regard to imports also show a consistent year-on-year decrease for cabbage imports.

9.1.3. Onions

Onions are the oldest known cultivated vegetables in the history of staple food, that's about 5 000 years ago. It is believed to have originated from East Asia from where it was made globally available, while other food historians suspect the vegetable to have originated from Iran and Pakistan. However, since there has not been a single consensus about its origins, Asia is considered the most reliable area of origin.

An onion is, as a food source, characterised as a leafy vegetable with circles of rings that form the core and the outer layers known as the bulb that grows over time (days). It has a hollow bunch of leaves that form the stem; it is said that the base of an onion grows and expands overtime in many favourable soil conditions mostly in sandy and clay depending on the moisture content, the cool soil-atmosphere temperature of about 10°C to 25°C and the average pH of about 5.5 and it is normally found in various forms like bulb onion or common onion which is cultivated for food and also used for cultural purposes in regions such as Egypt and Pakistan, while other types refers to wild onion. Globally, other known onion varieties refer to the Japanese Bunching, the Canadian onion, and the Egyptian onion depending on country of specie origin (Smith, 2006).

The best known onion cultivars found in South Africa and around the world include De Wildt, Pyramid, Radium and Hojem. While the yields of the commodity are usually around 15tons/hectare for conservative yield rates, the average is about 30 tons/hectare while a good harvest is above 40 tons/hectare.

9.1.3.1. Local Markets

The onion industry operates in a deregulated environment where prices are determined by the forces of demand and supply and there are no restrictions in the marketing of onions. The industry uses fresh produce markets, informal markets, processors, and direct selling to wholesalers and retailers as marketing channels. Onions are also exported to

other countries through export agents and marketing companies. South Africa also imports onions from other countries.

Interestingly, the number of Onions exported has increased by 40% over the last 3 years; however, the processing of onions within the South African onion value chain has halved. Given the dominance of the NFPMs in distributing onions within the local market, the table below outlines the volumes traded and value of such trade for each NFPM.

TABLE 25: ONIONS PRODUCTION FIGURES

Onions	Tonnage Received at Fresh Produce Markets			Rand per Ton		
	2013	2014	Growth (%)	2013	2014	Growth (%)
Johannesburg	142217.38	170098.52	19.60	3237.04	3248.72	0.36
Tshwane	58826.90	62547.56	6.32	3470.51	3313.78	-4.52
Cape town	26176.23	26108.98	-0.26	3649.67	3484.45	-4.53
Durban	37256.33	40916.74	9.82	3758.17	3738.48	-0.52
Bloemfontein	5429.62	5173.23	-4.72	3523.07	3586.71	1.81
Welkom	3353.30	3132.40	-6.59	3625.73	3795.99	4.70
Kimberley	1495.20	1460.18	-2.34	3669.72	3706.42	1.00

(Manstrat - Extension Suite Online)

9.1.3.2. Global Markets

Exports from South Africa are mainly governed by tariffs applied by importing countries and as such, can hinder onion exports. This is largely due to the attempts form these countries to protect their own markets and to decrease the reliance on imported goods. However, countries such as Namibia, Malawi, and Zambia apply 0% tariffs; while Mozambique, Botswana, Swaziland and Lesotho have very low to 0% tariffs. Countries such as Zimbabwe, Congo and lately, Angola have very high tariffs that can be as high as 40% and upwards to as high as 50%. The main countries for the exported produce from South Africa is within Africa, with Angola and Mozambique the two biggest importers of South African produce. Onion imports have never been dominant within the South African market due to the large consumer rate of locally produced onions. Although there was an increase of 180% of imports for the period 2010 to 2013, the volumes of imports still remain low. Main countries that onions were imported form is that of the

Netherlands, Namibia, Kenya, Spain, New Zealand, Botswana and Egypt, showing the importance of the African vegetable market place.

9.2. Value chain Assessment and Agro Processing opportunities (products)

This section focusses on the ideal marketing channels as well as the products that have the best opportunities to succeed. This is presented in the table below and the probability for success is also evaluated and presented together with the reason for the choice.

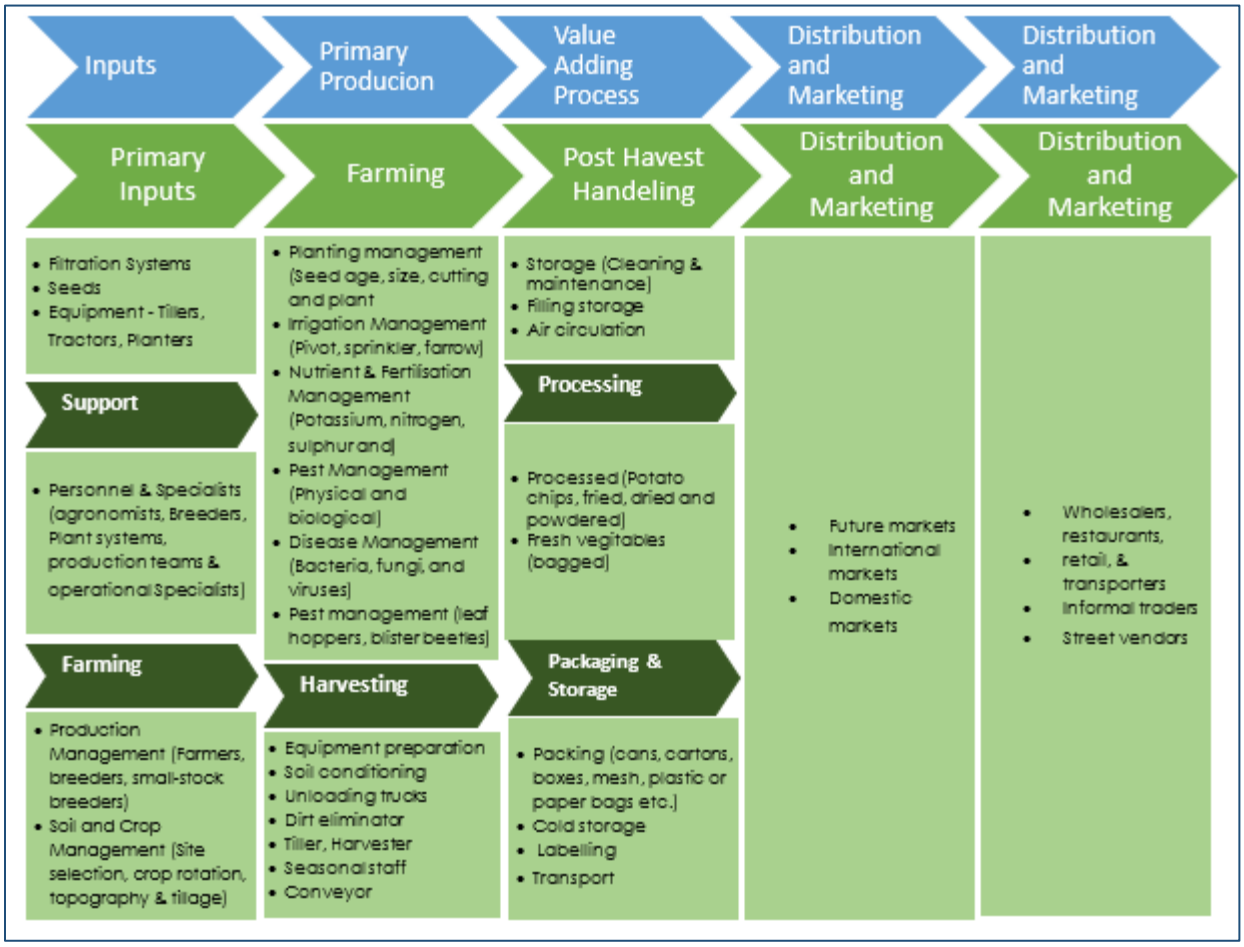


FIGURE 28: VEGETABLE VALUE CHAIN

Backward linkages within the vegetable value chain relate to the producers of vegetables, the input materials needed for production, and the production itself. As such, the vegetable production within South Africa has seen growth, with most of the vegetables consumed domestically. This is in part due to the short shelf-life of vegetables. Numerous efforts and initiatives have been launched within the MMM region to develop communities through vegetable production schemes.

Forward linkages relate to that of the processing and the sale of vegetables. As such, the influence of the different sale agents should be considered. Over 30 different vegetables

are handled by hawkers; ranging from vegetables such as beans, sweet pepper, and carrots to okra and garlic. The agricultural products offered by hawkers are of the same quantity and nutritional quality as that of any retail store, but at a lower price. South African Supermarkets have grown and expanded throughout Africa. Supermarkets have existed in South Africa for over 60 years in various forms. "On a continent where the majority of people depend on agriculture for their food, changes occurring in the agri-food systems could have large implications for the rural poor" (Emongor & Kirsten, 2009). Supermarkets form important markets for large vegetable farmers and processors.

Forward linkages that should be considered for the marketing of vegetables are therefore, street hawkers within the rural context as well as the larger urban area of Bloemfontein, the larger retail outlets within Bloemfontein such as Fruit and Veg, private institutions that are responsible for food schemes such as schools and prisons, national fresh produce markets and vegetable packers. The fresh produce market should be targeted first as this will be the easiest of the markets to penetrate. The products that should be considered during the forward linkages are that of sorting, fresh packing and branding, as well as fresh fries for restaurants, etc. These should be considered due to the shelf-life of vegetables and the growing fast food industry.

9.3. Commodity Specific Stakeholders

The following stakeholders are relevant when considering vegetables within the MMM as a commodity:

TABLE 26: MMM VEGETABLE SPECIFIC STAKEHOLDERS

Stakeholder	Potential Assistance
Potato SA	✓ Institutional support ✓ Intellectual and knowledge database ✓ Development support ✓ Value chain development
South African Fruit and Vegetable Canners Association (SAFVCA)	✓ Provision of processing best practices and guidelines ✓ Institutional support
Potato Certification Service	✓ Quality and authentication procedures and guidelines ✓ Certification services
Seed Companies: ➢ **SIS Farming Group (Pty) Ltd** ➢ **Seeds for Africa** ➢ **Premier Seeds**	➢ Provision of seed ➢ Main input suppliers ➢ PPP

➢ **Starke Ayres**	
Perishable Products Export Control Board (PPECB)	✓ Quality control and development ✓ Provision of quality and best practise procedures and guidelines
Onion Producers' Organisation	✓ Institutional support and development ✓ Value chain development support
National Fresh Produce Markets (NFPM)	✓ Facilitation of best practices when approaching markets ✓ Identification of appropriate markets ✓ Value chain development through key intervention areas identification
Mangaung Fresh Produce Market	✓ Offset area for locally produced vegetable products
Welkom Fresh Produce Market	✓ Offset area for locally produced vegetable products
Onion producers: ✓ **Wildeklawer Boerdery** ✓ **Du Toit** ✓ **ZZ2** ✓ **Donkerbos onions** ✓ **De Rust boerdery** ✓ **Waterkuil onions** ✓ **Villiersdorp onion** ✓ **Rietfontein boerdery** ✓ **CRK onions**	✓ PPP ✓ Provision of best farming practices and guidelines ✓ Provision of seeds ✓ Value chain development and support ✓ Contribution towards sufficient supply for markets
ARC Information Hub	✓ Provision of research support and development ✓ Increasing best practise awareness for emerging farmers
Vegetable and fruit distributors: ✓ **Caterace Food Wholesalers and Distributors** ✓ **Fruit and Veg City (Bloemfontein)** ✓ **Metro Fruit and Vegetables (Botshabelo)** ✓ **Patricks Fruit and Veg Market**	✓ Facilitation of vegetable sales to their respective markets ✓ Assistance with distribution of produced vegetable goods ✓ Increased product development and support ✓ Development of both upstream and downstream activities

9.4. Technology

TABLE 27: VEGETABLE TECHNOLOGICAL ADVANTAGES

Technology (Equipment; ICT and Logistics)	Advantages
Improved quality and production management through precision farming techniques	• Optimising production through increased monitoring and organisational capabilities; • Increased production is achieved through digital and electronic monitoring and evaluation, helping farmer to make informed farming decisions; • The livestock optimal quality and reproduction capacity is achieved; and • Effective use of inputs and reduces wastage of resources.
Use of hydroponic systems	• Effective use of the system can create higher yields year round. • Not dependent on environmental factors for production success. • Reuse of water. • Can produce any vegetable type, no matter the season.
Soil management schemes	• Improved soil management through the mapping of ideal areas for planting and growing of vegetable crops. • Increased awareness of where more/less fertilizer/seed is needed to be planted as well as what type of minerals is needed for the optimal production of vegetables.
Hiring system/ mobilisation centre for emerging farmers	• Lessens the dependability on buying expensive equipment that needed on farms, but not used every day; • A mobilisation centre at one of the FPSU or more than one area can assist in mobilising emerging farmers through the provision of equipment that can be hired at a very cheap rate; and

Technology (Equipment; ICT and Logistics)	Advantages
	• Would provide competitive advantage in that money that would be used for capital outlay of equipment can be used for herd improvement.
Crop rotation and organic farming techniques	• Using crop rotation techniques yields of certain crops can be improved and a higher yield can be achieved. • This can even be further increased by using organic matter that is found within tribal communities and near abattoirs.
Water regulatory pipes	• The world economic forum has released the use of water saving pipes that helps with saving of water; • In the Free State, water shortages are a big concern, using a pipe that can regulate and monitor the amount of water used will help with operational cost effectiveness; and • If coupled with hydroponics, it can even further make the use of this system effective.
Solar technology used for water pumps	• The use of solar pumps to provide water for irrigation schemes on farms. • Removes the dependability the provision of expensive electrical and hydro infrastructure that needs to be laid out from substations etc.

9.5. Socio-Economic Benefits

- **Sustainable Employment promotion**

The project has the potential to promote job creation and is a positive step towards the improvement of livelihoods, creating public value, and decent living standards of the residents who are in close proximity to the site. The vegetable enterprise could employ people in value-adding activities ranging from handling, processing, storage, grading, packaging, and transport, etc. Therefore, ultimately contributing to the government's efforts in the fight against poverty, social exclusion, inequality and unemployment.

- **Maximising opportunities and optimal use of historical infrastructure**

The project is located at an old industrial site of the MMM in the Thaba Nchu Township; the development of a vegetable enterprise in that area will encourage the optimal use of the existing capital resources and business infrastructure, the land, social facilities, etc. The accessibility and usage of the business infrastructure is important to local communities, more especially the close Thaba Nchu Township and rural dwellers as it has other spill-over effects such as improvement of roads and social infrastructure, water services, technology and communications, see N8 airport interchange. Furthermore, the use of the old infrastructure for the vegetable processing, handling, and other Agri-Park project initiatives has an ability to promote local access to markets, trade, and generate growing incomes. The usage of roads on and between the site and Bloemfontein also encourages small and informal business activities, access to reliable transport to and from work and hawkers. Indeed, those values should be carefully studied and integrated into the formal economy since their contribution and impact is significant, especially in their efforts of promoting access to products to local consumers.

- **Human Capacity Development**

The Vegetable and Food Processing Industry in South African is benchmarked by domestic and international industry standards; this shows the competitive level of the industry on issues such as food safety, quality, handling and marketing. Investment by different role players within the South African agriculture and rural development sphere are motivated by the drive to lead the market globally by increasing productive capacity and competitive standards. As such, initiatives by national and regional planning South Africa and Africa (SADC and OAU) towards research and development, agriculture and food science, skills development and re-strategising of the African economy, trade relation, and partnerships is promoted in order to improve the South African infrastructure standards. Again, the Free State has unique institutional support features that will reinforce this success, and they include reputable academic institutions offering agricultural training (University of the Free State, Glen Agricultural College), the Agriseta, the Free State Wool Association, the Agricultural Research Council, experimental farms, and Free State Agriculture to name a few. This will positively impact on the educational and knowledge standards of the food and beverage, agriculture, and manufacturing industry labourers, owners, managers, and women in particular, as the standards introduce some of the key farming and agri-business elements like

developing sustainable food systems, creating regional food webs, Safety, Health, and Environmental Quality (SHEQ), and Manufacturing Enterprise Management Techniques (MEMT) that are essential instruments towards strong food market and industry positioning and education on personal health and wellbeing.

- **Commonages and Private Public Partnerships encouragement**

The Agri-Parks offer unique opportunities towards partnerships in the sector by encouraging the sharing of productive resources such as machinery, land, and infrastructure, which is known to be amongst some of the very expensive and needed factors of production. The commonages perspective offers opportunities for small, emerging experienced and well-established farmers and businesses to learn from one another, to share responsibilities, and to build strong relationships through networking and working together towards a common cause. Furthermore, vegetables as a commodity will encourage partnerships between the department, the SMMEs, retailers and farmers, which is one of the key national development focuses to encourage Public Private Partnerships in order to facilitate and embolden dialog, participation, and discussions towards development and promotion of SMMEs, agribusinesses, and sustainable societies by all South African stakeholders like the Department of Agriculture and Rural Development, the MMM, and the food and beverage industry.

9.6. Contribution to food security

Vegetables are the most common food sources in the world in terms of accessibility and affordability as compared to meat and dairy products. The majority of vegetables are staple and an important component of the everyday food basket for most of the South African families. Increases in production of vegetables will definitely increase the supply of fresh, affordable, and accessible food. The increase of vegetable production by farmers, and the consistent vegetable supply to the Agri-Park, will have positive impacts on the local communities and intermediate families. An increase in production of most vegetables will reduce the price of food, which is often expensive at retail and food outlets at an urban and peri-urban level because of the lack of sufficient food suppliers and associated distance from production markets.

Redefining rural-urban food systems, the vegetables have the potential to create job opportunities and create local food supplier-demand systems. Therefore, the creation of micro-economies, higher income enterprises, and agro-business to support the local food-parks could enable local communities to have better access to more, higher quality and more affordable food sources. Vegetables at the Agri-Park will have long-term impacts, notably on food security. Precisely collecting and storing of vegetable food creates an opportunity for farmers to produce more and this serves as a risk mitigating strategy as food will be available for longer periods even if disasters like droughts or a market price collapse would occur. Lastly, the processing of vegetables creates value-added products that are locally produced, cheaper, and address urban-middle income and growing consumer class food demands and preferences, which are socio-culturally inclined to change due to effects of urbanisation.

9.7. Regulatory Requirements

The vegetable industry has a number of active participants, ranging from supermarkets to hawkers. Statutory requirements do not apply to all participants such as hawkers, for example; however, vegetable farmers do have statutory requirements with regard to seed quality and plant health. Vegetable processors, such as those who will be found during the different stages of the Agri-Parks value chain, will need to comply with the following requirements in order to ensure the consumers that products produced is producing safe food items.

The food safety requirements are:

- Regulations Governing General Hygiene Requirements for Food Premises and the Transport of Food[3],
- Hazard Analysis & Critical Control Points (HACCP), and
- The Food Safety Management System FSSC 22 000 certification.

Once the facilities within the Agri-Park value chain comply with the regulations, the processing facilities will be active suppliers of vegetable products within the region. Thus, not only benefiting the economy, but also providing cheap and nutritional food to the Free State's population.

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

9.8. Substitute Products

Most vegetables have a natural vegetable substitute within the same category as itself, String peas can substitute string beans, for instance, although they are not precisely the same vegetable. Over and above, the natural substitutes for these types of vegetables,

[3] *Health Act, 1977 (Act No. 63).*

technological advancement, has meant that various chemically generated products can be used in foods to substitute the natural alternatives. These, and various other substitute products, are discussed below for Potatoes, Cabbage and Onions.

Naturally a very versatile vegetable, potatoes can be used to make an endless variety of dishes and food stuffs. The first type of replacement for potatoes is sweet potatoes. Sweet potato, is a larger sweeter type of potato, which has become increasingly popular as a substitute for potatoes, more especially amongst health conscious groups. Sweet potato can make virtually any dish regular potatoes can: they can be placed in curries, soups, stews and one can even make sweet potato chips and wedges. With the added sweetness and slightly varying taste, sweet potatoes bring a twist to food that regular potatoes cannot. The one thing that truly prevents sweet potatoes from overthrowing regular potatoes – as are proposed for the Agri-Park – is the fact that they are pricy. Sweet potatoes are seasonal and would generally not be found year round; so when they are, they generally cost twice the amount of regular potatoes.

The various other uses of potatoes means that it can be replaced by a variety of product, which will be discussed individually from here on. Potatoes can be cubed and added to curries, stews and casseroles. In these types of dishes, virtually and other root vegetable can replace them such as carrots. Other vegetables can also be added to these dishes such as butternuts, to bring a similar texture. Usually with vegetable soups and stews, any vegetable is used, so if one has no potatoes, they easily use other vegies.

Potatoes are very often mashed, and served as a stable, side or addition; they can also be added on top of various dishes such as Shepard's pie or cottage pies. In this form, a chemically modified substitute was created several years ago to replace the use of fresh potatoes. This potato 'powder' is usually mixed with a liquid to produce what seems very much like mashed potatoes. Smash, as it is usually referred to, has a very long shelf life, and this is the advantage it has over regular fresh potatoes. Although it is a potato based product, minimal amounts of potato go into these mashed potato mixes some of which are less than 50% potato. A health conscious movement along with what is referred to as Banting, has meant that mash potatoes are now often replaced with Cauliflower in some recipes. Cauliflower, when mashed and drained, can be used as a carb-conscious mash as it carries a similar texture to mashed potatoes.

Potatoes are very regularly used to make potato chips such as Lays and Simba chips. These types of chips are developed in a way that keeps them fresh for sustained periods of time, allowing them to be great anytime snacks. Other chips that are just as popular, are maize chips, such as Doritos or Big Corn Bites. In the same category, these chips often replace potatoes completely. While other baked snacks such as Pingles use some potato, but are not entirely based on potatoes.

9.9. Main Input Suppliers and Competitors

This sub-section focusses on the main input suppliers for the specific commodity as well as the main competitors as illustrated in the table below:

TABLE 28: VEGETABLE MAIN INPUT SUPPLIERS AND COMPETITORS

	Industry Suppliers	Competitors
Farming	OVK	Local Commercial Farmers
	Senwes	
	DIY Superstore	
	Afrivet	
	John Deer	
	TWK Agri	
	Advance Grain CC	
	Goldkeys Prepacks	
	S & K Packaging	
	African Grain	
	NWK	
	Plant Forum	
	Obaro	
	Omnia	
	Bulk Fertilizer	
	AGRICO	
	Kynoch Fertilizer	
Processing	Mitchell Group Equipment	McCain
	Albrecht Machinery	Just Veggies

	Fastline Plastic & Packaging	Natures Source
	Ciba Pack	Tender Harvest
	CFT Labels	Just Veggies
	Pro Freeze	Carbocraft
	Truck and Trailer	Local Produce Markets
	Variety Packaging	Retailers house brands
	Label Matrix	
	Triomf South Africa	

9.10. SWOT Analysis

This subsection focusses on the Strengths, Weaknesses, Opportunities and review the relevance of utilising this commodity within the Agri-Park. As such, the SWOT analysis is presented as follows:

Strengths:

- A great variety of vegetables can be harvested; the potential increases dramatically when hydroponics is considered.
- Health benefits of vegetables and fruit for comprehensive dietary requirements and their nutritional value.
- Strong production sector is present within the South African market structure.
- Equipped export market capabilities, with established export agencies and ports that can assist in export endeavours.

Weaknesses:

- Subject to constant price fluctuations amongst different vegetable varieties.
- Short shelf-life has influence on production, processing, transport, and selling considerations amongst whole of the value chain.
- In order to achieve a high production yield of vegetables on farms, irrigation is needed; this is an increasingly problematic consideration as the competition between water for human consumption is measured against irrigation requirements.

Opportunities:

- For much of the vegetables, the domestic market is still untapped and the influence of local markets within communities cannot be overlooked.

- The short shelf-life of vegetable commodities also increases local selling opportunities for emerging farmers.
- Export markets to especially Lesotho may be exploited due to the distance of the Lesotho border to that of Thaba Nchu.
- Growing market opportunities within the health industry and especially the organically produced vegetable markets.

Threats:

- Short shelf-life limits export opportunities and limits the access to markets.
- Climate changes, pests, diseases, poor soil nutrition conditions, lack of access to water, and other poor farm management and environmental conditions can severely influence both the quantity and quality of produce.
- Lack of infrastructure to emerging farmers, both hard and soft, in order to reach a higher production level.

SECTION 10: AGRI-PARK CONCEPT DEVELOPMENT

Within this section, the Agri-Park development concept will be unpacked for each of the three commodities for the MMM. After which the combined development concept for the whole of the MMM AP will also be illustrated. The Agri-Park Development Concept consists out of four elements, namely: primary production (which consists of small-scale/emerging farmers), Farmer Production Support Units (FPSUs), the Agri-Hub, and the Rural-Urban Marketing Centre. The DRDLR has set out the different functions of each of these components of the AP as well as certain parameters by which the quantity of each should be determined. The definitions for each of the said components have been highlighted within the second section of this report.

One of the key parameters for determining the quantity of each of these components is how densely or scarcely an area is populated. 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 Mangaung Metro Municipality falls within the parameters of a high density area (120 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 Mangaung Metro Municipality has a total area of 6 284 km^2 and as per the required parameters, it can be estimated that the MMM will need a total of:

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

It is however, proposed that a maximum of five FPSUs are developed over the 10 years; thus 5 for each commodity. This is to ensure that logistics are synchronised and resources is used effectively. The locality with relation to transportation and access points is also well structured and as such, doesn't necessitate such extensive FPSUs. As stated, each of the commodities will have five FPSUs, taking into consideration that many of these will overlap and each one will have a primary FPSU that will be developed during the first stages of implementation of the AP and then over the course of the 10-year commitment of the DRDLR, the other 12 will also be developed or revised as the AP system requires. Important to note is the prevalence and proximity of the large urban centre of Bloemfontein to the rural areas of MMM.

10.1. Proposed development concept of Red Meat

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

TABLE 29: MMM AP RED MEAT DEVELOPMENT CONCEPT

Production Flow	Smallholder farmers (SHF)	FPSU	AH	RUMC
Key Role & Function	The key role of the SHF would be the primary production of red meat (cattle or pork) for slaughtering at the AH.	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. Piotential auction facilities to facilitate the SHF's acqusitional support of livestock.	The slaughtering and processing of red meat at the abattoir and deboning facility. It is envisaged that current operations at the Thaba Nchu abattoir will be improved through upgrading of the current abattoir and the construction of additional deboning and processing facilities.	Market intelligence to assist farmers as well as a distribution centre for goods produced and processed at the AH.
Location	All SHF involved in cattle and pork production within the entire MMM as well as areas that extend in accordance with the AH influence sphere to the southern parts of the TMDM and northern parts of the XDM.	Although the whole of the MMM is suited for grazing purposes of cattle and pigs, there are major concenrs such as the limited space for extensive livestock farming practices such as urban areas and the uneven topographic areas. It is further envisaged that most of the FPSUs would serve as collection points rather than fully equipped facilities due to the proximity of functional areas within the MMM. As such, the following FPSUs were identified: • **Botshebelo**;	As proposed by the Province, the Agri-Hub is to be located in Thaba Nchu.	It is proposed that the RUMC is located near Bloemfontein. This is due to the prevalence of training institutions and its proximity to market places that would ease distribution. It is therefore proposed that a site such as Bloemdastria, is developed and combined with an FPSU to save on construction costs and assist with synchronisation activities.

		• Felloane; • Sediba; • Woodbridge; and • Bloemdastria. The SHF will be supported by all the FPSU(s) situated within the MMM.		
Human Resources	The core HR personnel that the SHF would require from the FPSU are: • Extension officers • Agronomist • Vetenerian • Mentor • Permanent farming staff	The FPSU will provide the following HR/HR facilities; • Agricultural extension officier / support office; • Agronomist (for appropriate farming practices such as correct cultivation, feeding schemes etc.) • Voluntary/Established commercial farmers to mentor the small scale farmers (*as many* as possible). • General staff to assist with day to day operations	The AH will provide the following HR; • 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	The RUMC will provide the following HR; • IT expert/personnel • Administrative manager • Training personnel • Marketing and sales agents • Distribution agent • General staff • 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 in the following: • Best farm practices • Feeding schemes • Basic business skills • Quality control • Pest and disease control	Staff at the FPSUs would need training in: • Handling and management of cattle and pork • Quality management • Basic farming skills to assist farmers	The following training would be required at the AH: • 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 • Deboning and processing lines and procedures	The RUMC training will entail: • Training of meat inspectors • Marketing and sales skills development • Market analysis • Supply chain logistics • Distribution and logistics traning
Key product/ activities	The core activities of the small holder farmers will be: • Cattle and livestock for the abatoir situated in Thaba Nchgu • Efficient grazing practices and managing feed for livestock efficiently according to seasonal and herd demands • Disease and pest control and monitoring	The core activities of the FPSUs are: • Collection of livestock from farms and delivering these stock to the abattoir or 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, grading and sorting of stock for slaughtering • Slaghtering of stock, deboning and packaging • Training of staff for abattoir and further processing activities • Transportation to RUMc for further distribution • Quality contol • Meat inspection services • Veteniarary services • Storage and cooling of processed products	The core activities of the RUMC are: • Maketing, sales • Market intelligance • Transportation and distribution • Training services • Improvement of value chain and efficient value chain development and management

Infrastructure/Equipment	The SHF would require the following infrastructure/equipment: • Cattle and pork handling areas (pens, feedlots, etc.) • Water provision infratructure • Depending on site to site analysis: fencing etc. • Basic farming equipment will also be needed such as can be used to repair and maintain fences, etc.	The FPSUs would require the following infrastructure: • Transportation vechiles • Loading docks and pens • Auction facilities (at main FPSU or at AH depending on practicality) • Feed and general storage facilities • All equipments listed to be required by the small holder farmers.	The AH would require the following infrastructure and equipment: • Upgrading of excisting abattoir to increase capacity • Provision of equipment that will coincide with upgdaring of abattoir • Loading docks and pens for grading and sorting • Potential auctioning facilities (depending on practicallity and prevelance of one at the main FPSU) • Fully equiped deboning and processing facility • Administrative facilities • Freezer, cooling, storage and logistics/transport facilities	The RUMC would require the following infrastructure and equipment: • Administrative facilities/ information centre • Training centre • Storage and distribution facilities • Equipment to assist with distribution and storage functions
Logistics	SHF logistical arrangements subject to a logistical plan: • Production of stock • SHF informs administrative manager that collection can occur • Transport is dispatched from FPSU, loaded and transported to action facility/abattoir	FPSUs logistical arrangements as subject to an in depth logistical management plan: • Primary collection or distribution centre • Stock can either be brought directly to FPSU's or • Transportation will be dispatched to SHF for pick up and transportation to either auction facility or abattoir	AH logistical arrangements as subject to logistical plan: • FPSU transport will be used to transport stock to the AH's abattoir • When produce is finished and a sufficient supply has been stored, transportation will take products either to the RUMC for further storage or directly to the market	RUMC Logistical arrangements: • Collection of processed goods from abattoir and processing facilities • Large scale storage of goods • Distribution centre to appropriate markets

Technology/ICT	Technology to assit in bridging the production gap includes, but are not limited to: • Solar pumps • CI will also be used as a method to improve stud quality • 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 e.t.c.	FPSU technology to improve efficiency: • Dry storage for feed • Collaboration of transporting activities • Tracking devices on all vehicles to prevent • 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.	AH technological improvements: • High tech upgrading of abattoir to include state of the art equipment • Water, electricity and waste efficient abbatoir • Using waste to create additional spinn off opportunities	RUMC technology: • The RMUC will provide Information Data base that all the various basic units of the Agri-Park can subscribe to. • Energy efficient storage and freezing to ensure less electricity consumption

10.2. Proposed development concept of Sheep Wool

The following table illustrates the different functions and elements of the MMM AP Sheep Wool Development Concept:

TABLE 30: MMM AP SHEEP WOOL DEVELOPMENT CONCEPT

Production Flow	Smallholder farmers (SHF)	FPSU	AH	RUMC
Key Role & Function	The key role of the SHF would be the primary production of sheep wool.	The key role of the FPSUs would be to facilitate quality produce of sheep wool, training of shearers and provision of facilities where sheep can be	Some logistics, further processing, but mostly storage and transporting functions with further spin-off opportunities such as sheep wool wahsing and	The RUMC key role would be the facilitation of marketing and selling the SHF's sheep wool on the

		sheared and wool can be processed.	textile development to be considered during the latter stages of the AP development.	appropriate markets.
Location	All off the SHF's and community members that have sheep with wool will be involved, but specialised functions and production will be required from the SHF's.	The FPSUs will be strategically located throughout the MMM and consisst of shearing sheds and storage for pre-processing purposes. The identified FPSUs for aquaculture are as follows: 1. **Felloane**; 2. Botshabelo; 3. Woodridge; 4. Sediba; 5. Rooifontein; 6. Paradys; 7. Groothoek; 8. Rustfontein; 9. Bethesda; 10. Motlatla; 11. Rooibult. More FPSUs can be identified at a later stage during the establishment of the AP; however, it is envisaged that this will be dependent upon local production information.	As proposed by the Province, the Agri-Hub will be located in Thaba Nchu.	It is proposed that the RUMC is located near Bloemfontein. This is due to the prevalence of training institutions and its proximity to market places that would ease distribution. It is therefore proposed that a site such as Bloemdastria is developed and combined with a FPSU to save on construction costs and assist with synchronisation activities.
Human Resources	HR needed by the SHF are: • General farm workers • Sheep shearers (to be provided by FPSU) • Agricultural extension officers	The FPSUs will provide the following HR personel; • Agricultural extension officers • Sheep shearing trainers • Site manager • Sheep shearers • General workers to assist in shearing operations	The AH will provide the following HR; • Storage and processing personel • Sheep wool classers, sorters and balers • Administrative manager • Quality control personnel	The RUMC will provide the following HR; • Administrative manager • Training personnel • Marketing and sales agents

	• Mentors	• Mentor (teither commercial farmer of sheep wool expert	• Staffs to manage the warehousing and transport activities	
Training	SHF will be trained in: • Best farming practices • Sheep wool quality improvement • Feeding schemes • Quality control • Grazing habits and techniques • Basic business skills • Animal health considerations	Staff at the FPSU would need the following training: • Shearing of sheep • Grading and sorting of sheep wool • Quality inspections and best practices	Some training would also be required at the hub, for example, • Training of quality inspectors, graders and balers of sheep wool. • 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 consumers' considerations. • Training on best practices, based on changing demand and supply. • Training on new innovations as they surface.	RUMC Training: • Marketing and sales of sheep wool. • Best practise procedures and qulaity control. • Market intelligence. • Transportation and logistics of sheep wool transportation. • Export procedures and development of a nexus of contracts.
Key product /activities	The core activities of the SHF are: • Production of sheep wool. • Development of quality herds and sheep stock with sufficeint quality and quanitty of wool. • Managing animal health and condition. • Managing effective sheep wool production cycles.	The core activities of the FPSU are: • Sheep shearing • Sheep wool collection points • Processing of sheep wool • Storing of sheep wool • Marking of sheep SHF sheep wool • Quality control	The core activities of the AH are: • Receiving, sorting and evaluating of sheep wool • Baling and potential washing of sheep wool • Quality and procedure control • Preperation of stored goods for either local sales or transportation to appropriate markets	The core activities of the RUMC are: • Maketing and distribution of final products • Further research, training and improving of procedures and best practices • Development of the nexus of contracts • Large scale stroage and

	• Implementation of best farming practices			distribution activities.
Infrastructure/Equipment	The smallholder farmer would require the following equipment and/or infrastructue, • Sheep handling facilities such as pens, sheds, fencing, etc. • Tools to administrate medicine to animals and for disease and pest control • Water provison infrastructure • Fencing, gates, feeders, sahding etc. • Basic farming equipment as required per SHF.	The FPSUs would require to put in place the following equipments/infrastructure: • Transport (e.g small transport bakkie or pick-up trucks) • Sheep shearing sheds and pens • Shearing and handling equipment • Veteniary tools and equipment • Wool transportation tools and equipment • Cleaning 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 • Sheep wool grading, sorting and potentially washing equipment • Sheep wool balers and markers • Sheep wool bales and handling equipment • Logistics and transport facility, with loading docks • Storage facilities • Quality control facilities	The RUMC would require to put in place the following equipments/infrastructure: • Administrative facilities/ information centre • Large scale storage and distribution facilities • Training and research centre • General offices for marketing and sales personel
Logistics	The SHF should liase with the administrative managers at the FPSUs to enquire about the availability of sheep shearers and visa versa. Simultameous sheep shearing	Sheep shearing will occur seasonally with either a sheep shearing team from within the region, or locally trained shearers. SHF will bring their sheep to the FPSUs, were fully equipped shearing sheds will be used to shear the sheep. The sheep wool will be	Sheep wool will be collected at the FPSUs and brought to the AH where it will be further processed. The sheep wool will be graded evaluated and quality control will be done. The wool will then be baled and marked in according with international	The marketing and sales of sheep wool and products will be handled by the RUMC and as such, the logistics and distribution will take place form the RUMC. Large storage facilities will entail the

	activites and transportation of sheep is advised.	marked in accordance with which SHF it belongs to. Sheep wool will then be stored and collected.	standards to be exported of for the domestic market.	distribution fo large wool quantities to reduce transport costs.
Technology/ICT	In order to boost their production efficiency, the SHF would require: • Solar pumps • Modern fencing techniques to facilitate effective herd management • Latest medicines and sheep health techniques • Sheep marking/branding in order to assist with identification of sheep and sheep wool throughout the processing value chain • Mobile devices for subscription to Apps. , to enble them receive information from the RUMC on weather forecast, disease control e.t.c.	The following technologies should be considered for the FPSUs • Latest sheep shearing techniques and tools • 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.	Latest baling and grading procedures and quality control as South African wool is regarded as of the best in the world, as such this high quality should be promoted and adhering to the necessary procedures and protocols would help enormously in this regard	The RMUC will provide Information Data base that all the various basic units of the Agri-Park can subscribe to.

10.3. Proposed development concept of Vegetables

The following table illustrates the development concept for vegetables within the MMM AP. The different elements and roles of the FPSU's, AH and RUMC will be explained.

TABLE 31: MMM AP VEGETABLES DEVELOPMENT CONCEPT

Production Flow	Smallholder farmers (SHF)	FPSU	AH	RUMC
Key Role & Function	Primary production of vegetables.	Provision of supportive services for SHFs and agricultural extension services. Responsible for local logistics support, grading, sorting, mechanisation support, washing and packaging.	The AH will be responsible for agro-processing of vegetables, logistics, storage and warehousing activities, packaging and branding (if required)	Market intelligence, assistance to SHFs, large warehousing and distribution services.
Location	All small-scale and emerging farmers involved in vegetable production within the MMM will be part of the supply chain.	The FPSUs will be developed over the course of the 10-year commitment period of the DRLDR. As such, it is necessary to continually evaluate the need for FPSU and specific services and equipment within each are. It is further anticipated in accordance with the DRDLR guidelines that each of the FPSUs has a catchment area of 10km in high populated areas. The 5 FPSUs for the MMM are: 1. **Sediba;** 2. Botshabelo 3. Felloana; 4. Woodbridge; and 5. Rustfontein.	As proposed by the Province, the Agri-Hub will be located in Thaba Nchu.	It is proposed that the RUMC is located near Bloemfontein. This is due to the prevalence of training institutions and its proximity to market places that would ease distribution. It is therefore proposed that a site such as Bloemdastria is developed and combined with a FPSU to save on construction costs and assist with synchronisation activities.

Human Resources	The HR on SHF level would largely depend on the scale of operations as SHF could also be community members that is part of community gardens. However, as a rule high level skills is only required with more intensive farming practices. As such general farm workers or skill sets are required. Extension services from extension services and experts in the commodity related field would hover assist in improving the quality and quantity of primary production.	The FPSU will provide the following HR personnel and services; • Agricultural extension officers • Agronomists • Local mechanisation centre and Workshops with operators • Administrative manager • Mentors • Skilled workers for processing operations, • Skilled workers (drivers, mechanical and electrical maintenance), • Unskilled workers for processing, • Unskilled workers for maintenance and transportation, and • Indirect labour.	The Agri-Hub will provide the following HR: • Administrative manager, • Quality control personnel, • Staffs to manage the Agro-Processing facilities, • Training personnel. • Mechanical superintendent, • Skilled workers for processing operations, • Unskilled workers for processing, • Unskilled workers for maintenance and transportation, • Office clerks, • Indirect labour.	The RUMC will provide the following HR: • I.T. expert / personnel, • Administrative manager, • Training personnel, • Marketing agents.
Training	SHF would require the following training: • Best farm practices, • Vegetable specific skills such as crop rotation, application of fertiliser, pest and disease	FPSU training of staff will entail the following: • Basic handling of vegetables and best processing procedures • Handling of equipment and tools for sorting, washing and handling of vegetables • Quality management	AH operations will need training staff on the following: • Vegetable processing procedures and protocol • Sorting and grading • Washing and cutting • Operating various equipment and tools • Safety measures, and quality control.	Training at the RUMCs will consist of: • Market analysis, • Value and supply chain management and logistics, • Trading marketing and sales (locally and internationally)

	control, irrigation, etc. • Equipment and tools use and application • Training on basic business skills • Basic market interpretation skills as informed by the RUMC			• Best practices and procedures involving storage and packaging as well as distribution of goods • Customer care and clientele needs
Key product /activities	SHFs' main activities will include the following: • Primary production of vegetables • Crop rotation and optimisation of soil capacity • Basic production activities such as soil preparation, application of fertilizer, plant health, pest and weed control, etc.	The FPSUs' main activities will entail the following: • Provision of seed, fertiliser, weed and pest control, etc. • Provision of basic farming equipment and tools for the operation on SHFs farms • Serve as collection point • Storage and transportation for input materials and equipment for and to SHFs • Preliminary grading and sorting, • Extension services to assist SHF's • Assistance with harvesting of crops • Initial quality control	The AH will have the following main activities: • Receiving of vegetables for the collection points and FPSUs • Grading and sorting, • Further processing. • Further quality control. • Packaging of the goods. • Storage of products.	RUMCs main activities: • Bulk storage, freezing and distribution of processed vegetable products • Marketing and sales of products • Potential exporting of final products to countries such as Lesotho which is nearby.
Infrastructure/Equipment	SHF required infrastructure and equipment: • Basic farming tools, • Where ample water is available irrigation equipment, • Plant health managing equipment	FPSU's equipment and infrastructure will include: • Mechanisation units which will include all the heavy machinery and equipment needed for large scale planting, operating and harvesting functions	AH required infrastructure and equipment: • Loading docks and storage units capable of cold storage • Agro-processing facilities and equipment such as washers etc. • Packaging and branding (optional) equipment and inputs	RUMC required infrastructure and equipment: • Bulk cold storage facilities • Loading docks, transportation facilities and distribution capabilities • Administrative facilities/

	such as pest and weed control etc.	• Transport (e.g., Bakkie or pick-up vehicles), • Preliminary processing equipment such as weighing and packaging material such as crates etc. • Cold storage facilities	• Administrative facilities, • Training centre	information centre. • Vehicles with cool storage capability.
Logistics	A detailed logistics plan will be required to coordinate efficient transportation and logistical functions. SHFs will take their produce to collection points and notify the relevant administrative manager to organise transport from the FPSU. These collection point will need to be demarcated throughout the AP in order to maximise proficiency.	The FPSUs will have transportation in order to collect vegetables from the SHF. In instances of large scale production, harvesting machinery will be dispatched in order to harvest said produce. These transportation services will also be responsible for transporting the produce to the Ah from the FPSU where preliminary processing will have been completed.	At the AH vegetables will be washed, sorted, cut and processed in accordance with the different commodities that have been produced or in accordance with the seasonal harvests. Vegetables will be packaged and stored for transportation to the RUMC.	The RUMC will be responsible for bulk storage and distribution based on the different commodity needs in terms of durability of said products. Marketing and sales will also determine the time efficiency of distribution and the larger logistical arrangement throughout the entire AP.
Technology/ICT	Technologies that small-scale farmers can utilise include, but are not limited to: • Solar pump; • SimJunior, • In-field rainwater harvesting, • AgriSuite Online.	Technologies that can be used at the FPSUs are: • Accord, • Solar technology, • AgriSuite Online.	Some of the technologies that the Agri-Hub can utilise are as follows: • Solar technology, • Management Software and system. • Modern tools	Some technologies that can be utilised by the RUMCs are: • Information Data base. • Solar technology. • Mobile devices.

10.4. Combined Agri-Park concept for the Metro

This sub-section focusses on the combined MMM 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 32: MMM AP COMBINED DEVELOPMENT CONCEPT

Production Flow	Smallholder farmers (SHF)	FPSU	AH	RUMC
Key Role & Function	The key role of the SHFs would be the pimary production of: 1. Cattle 2. Pork 3. Sheep Wool 4. Vegetables	The key roles of the FSPUs would be: 1. Support to SHF's 2. Agricultural extension services 3. Provision of input materials 4. Farming infrastructure and equipment 5. Primary collection point	The key roles of the AH will be: 1. Agro-processing 2. Training of staff 3. Storage and transport	The key roles fo the RUMC will be: 1. Market intelligence 2. Transport and distribution point 3. Bulk storage and freezing facilities 4. Marketing and sales
Location	All SHFs within the MMM borders, as well as the larger AP influence sphere will provide primary produce of the three main commodities to be used in the MMM AP value chain.	Initially, only 3 main FPSUs will be rolled out in order to establish the AP value chain in the area. These three have been identified as: 1. Botshabelo; 2. Felloane; and 3. Sediba. It is envisaged that as the AP process unfolds over the 10-year period, the rest of the 20 FPSUs will be developed.	As decided by the Province, the AH will be situated within Thaba Nchu	The RUMC is poposed to be situated in Bloemfontein due to it being an ideal market area for produce and proximity of training institutions. A site such as Bloemdastria is proposed just outside of Bloemfontein to accommodate larger bulk storage facilities, etc.

Human Resources	SHFs will require general farm workers on the farms as well as additional services for assistance from the FPSUs/AH, such as: • Agricultural extension services • Veterinary services • Agronomist • Researchers • Mentors • Etc.	The FPSU will provide a number of HR functions that include the following: • Agricultural extension officier • Agronomist • Administrative Managers • Skilled workers for operating transportation and loading vechilesand equipment • Mentors • Unskilled workers for general labour purposes • Commercial farmers who are willing to partner with both SHF and FPSU to stimulate production • Sheep shearers • Basic training personel • Vegetable graders and sorters • Auctioneers	The AH will provide the following HR: • Abattoir and red meat processing general manager • Abattoir and red meat processing assistant managers • Floor managers • Meat inspectors • Administrative manager • Quality control personnel • Veteniarians • Blockmen and cutters • Deboners and packagers • General workers responsible for cleaning, loading, etc. • Training personnel • Vegetable processing personel • Sheep shearing sorting, baling and processing personel • Wool quality technisions • General workers that will assist with day to day activities	The RUMC will provide the following HR; • IT expert/personnel • Administrative manager • Training personnel • Marketing and sales personel • Value chain coordinator • Basic loistical workers that will be responsible for the loading and transportation/ distribution of produced and stored goods
Training	SHFs will require the following training: • Best farm practices • Animal health and best practices • Grazing, feeding and handling techniques and practices • Equipment and tool	FPSUs training will entail the following: • Basic handling, storing and transportation of agricultural produce for the three commodities • Extension services training • Compliance with necessary regulatory requirements and procedures • Management skills	Training at the AH will consist of the following: • 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	Training at the RUMc will consist of the following: • Training of training personnels • Market analysis skills. • Supply chain and logistics skills. • Trading (local and international). • Agriculture computer

	handling and use • Basic business skills • Basic interpretation of market information and ICT The extension officers, 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.	• Quality control • Sheep shearing training and pre-processing procedures • Vegetable handling and pre-processing	• Compliance with regulatory and health procedures • 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 consumers' considerations. • Vegetable processing and packaging • Wool quality control, sorting, grading and baling • Correct transportation and storage control of goods • Health and safety training • Management skills	programme training. • Transport, storage and distribution skills
Key product /activities	Key products/activities of SHF's: • Primary production of cattle, prok, sheep wool and vegetables • Animal health and condition • Land preperation and plant health • Disease and pest control • Improvement of quality stock and produce	Key products/activities of FPSU's: • Pre-processing of both vegetables and sheep wool • Provision of transportation and input supplies • Livestock handling facilities • Commodity specific training • Assistance with planting and harvesting • Initial quality control • Serve as collection points of produce for AH	Key products/activities of the AH: • Slaughtering and processing of cattle and pork meat • Vegetable processing and packaging • Sheep wool sorting, classing and baling for market • Storage of goods (both dry and cold storage) • Transportation of goods from FPSU's as well as to RUMC • Training of staff • Quality control • Health and safety	Key products/activities of RUMC: • Bulk storage and distribution of AH products • Market intelligence • Marketing and sales of produce • Value chain coordination to ensure improvements and efficient management

Infrastructure/Equipment	SHF infrastructure/equipment requirements (dependent upon site analysis): • Water provision • Basic farming infrastructure such as fencing, pens, sheds, dams, etc. • Basic Farming equipment and tools • Land preparation and harvesting equipment (can be obtained from mechanisation unit at FPSU's) • Animal health and quality control inputs such as medicine, etc. • Plant growth and control inputs such as fertiliser, pest and weed control etc. • Equipment to administer above bullet points inputs.	FPSU's infrastructure/equipment requirements are: • Basic storage and pre-processing facilities • Shearing sheds and handling pens • Auction facilities as applicable • Transport (e.g small transport bakkie or pick-up truck) • Extension offices and preliminarary training facilities • Storage facilities for feed storage and other input materials for SHF • Farming mechanisation equipment for farming activities	AH infrastructure/equipment requirements: • Upgrading of excisting abattoir to a high tech abattoir capable of handling cattle, pork and mutton lines and capable of adhering to domestic requirements and regulations. • Infrastructure and equipment to assist upgrading of abattoir, larger loading docks and pens, etc. • Deboning and packaging facility • Energy efficient freezing and storage capabilities not only for the meat processed at the abattoir, but also for the vegetable produced • Administrative offices and training facilities • Logistics and transport facility, with loading docks • Quality control facilities • Vegetable processing and packaging warehouse and equipment • Sheep wool sorting, graidng and baling equipment • Logistical facilities that will allow for the efficient loading and transportation of produced goods to the RUMc and market • Training centre • Quality control facilities	RUMC infrastructure/equipment requiremetns: • Administrative facilities/ information centre • Training and research centre • General offices for marketing and sales personel • Bulk storage and freezing facilities • Logistical facilities to accommodate distribution of produce • Customer service desk

Logistics	A detailed logistical plan for the MMM AP will have to be formulated once the initial establishment of the AP, RUMC and 3 FPSUs are in the construction phase. This will be necessary in order to ensure that the efficient transport and handling of goods is done and that the perishable goods such as vegetables are processed and distributed to the market in a timely fashion and of good quality. The logistical plan would need to take cognisance of the three-part process of the logistics, namely transportation of goods form the farm to the agro-processing facilities, then from the processing area/facilities to either the RUMC or directly to the relevant markets for either further distribution of sale. As such, the following sequence of actions is anticipated to take place during the logistical process of the MMM AP: • Production of primary agricultural commodities by SHF; SHF should be registered at the RUMC value chain coordinator (VCC); • SHF or administrative manager at the pre-processing plants indicates to the VCC that his produce, livestock, vegetables or sheep (for wool) are ready for transportation to the abattoir or processing facilities which are located at either the FPSU's or directly in the case of livestock at the AH; • Transportation is administered to collect and transport the said product from the SHF/pre-processing facilities to the required facility. These transportation vehicles is situated at the FPSUs. • 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 is reached. As such, a strategy will be devised 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 therefore, synchronise it with the timing and logistics for transportation of these goods. • Creating a spatial map and transportation locality plan will also assist in combining transportation efforts and reduce expenditure costs to the FPSUs. • Together with this, the best routes for collection and 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 and RUMC. • Bulk storage of goods is anticipated at later stages at the RUMC as production and processing activities increase. The RUMC should be situated close to Bloemfontein in order to ease distribution activities. • 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 distribution markets. • The export of goods need to be carefully monitored and the transportation to the different markets carefully correlated with the capacity at the AH/RUMC and 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.

Technology/ICT	Technology and ICTs for SHFs would be dependent upon the different site requirements and the nature of farming operations; however, there are some general technologies that can be applied to assist SHF: • Modern tools and equipment • Applications and information from the RUMC to assist with logistics and farming practices • Solar energy to lessen dependency upon grid service provision	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 FPSUs. 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 preprocessing activiites that will take place at the FPSU's 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.	Technology to assist with the AH is of high imporatnce due to the nature of activities such as the 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 additio,n technology concerned with environemntal 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.	The RMUC will provide an Information Database that all the various basic units of the Agri-Park can subscribe to. Solar energy and efficient storage as well as distribution facilities will also assist in efficent value chain activities.

10.5. 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 33: HIGH LEVEL COSTING: MMM 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**
	Bulk Water			**R65 000**
Parking	Parking - integral grading	m²	R450	**R544**

(adapted from Rode, 2015; ClearVu, 2016; & Water Policy, 2002)

TABLE 34: 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 35: CAPEX OF COMMODITY EQUIPMENT

Commodity	Items	Cost
Equipment Red Meat	Transport Vehicles	**R3 410 800**
	Implements	**R240 000**
	Processing Equipment	**R**
Equipment Vegetables	Farm Vehicles	**R708 226**
	Transport Vehicles	**R3 410 800**
	Implements	**R818 158**
	Processing Equipment	**R601 845**
Equipment Sheep Wool	Farm Vehicles	**R354 113**
	Transport Vehicles	**R3 410 800**
	Implements	**R145 165**
	Processing Equipment	**R625 105**

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 market prices of various equipment items and brands. The actual price may differ depending on market fluctuations, economic fluctuations, and overall quantity requirements.

TABLE 36: ESTIMATED COST OF EQUIPMENT FOR THE AGRI-HUB

Equipment	Cost
Transport Vehicles	R5 000 000
Processing Equipment:	
Red Meat	R28 000 000
Vegetables	R5 000 000
Sheep Wool	R5 000 000

10.6. Conclusion

This section focussed on the development concepts of each of the different commodities, as well as the combined development concept. Important to note is that the unique character and proximity of activities despite the high rural population provides for the opportunity that a number of FPSUs functions can be combined. It therefore, leaves room for lessening the number of 20 FPSUs in accordance with the DRDLR's guidelines to 15. However, it is anticipated that this number may change as the establishment of the AP is done and the logistical plan is formulated.

In addition to this, the capital outlay of the Agri-Park as a whole is 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.

During the establishment of the Agri-Parks it is estimated that the targeted hectares will be approximately 11 798 ha, with the number of small-holder farmers – a potential of 27 for the three main commodities alone during initial phases. Furthermore, the estimated number of jobs – this is calculated to potentially be between a minimum of 10 211 and a maximum of 15 336 employment opportunities. This is for both direct and indirect jobs within the larger agricultural sector and not only agro-processing job creation.[4]

[4] *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.*

SECTION 11: 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.

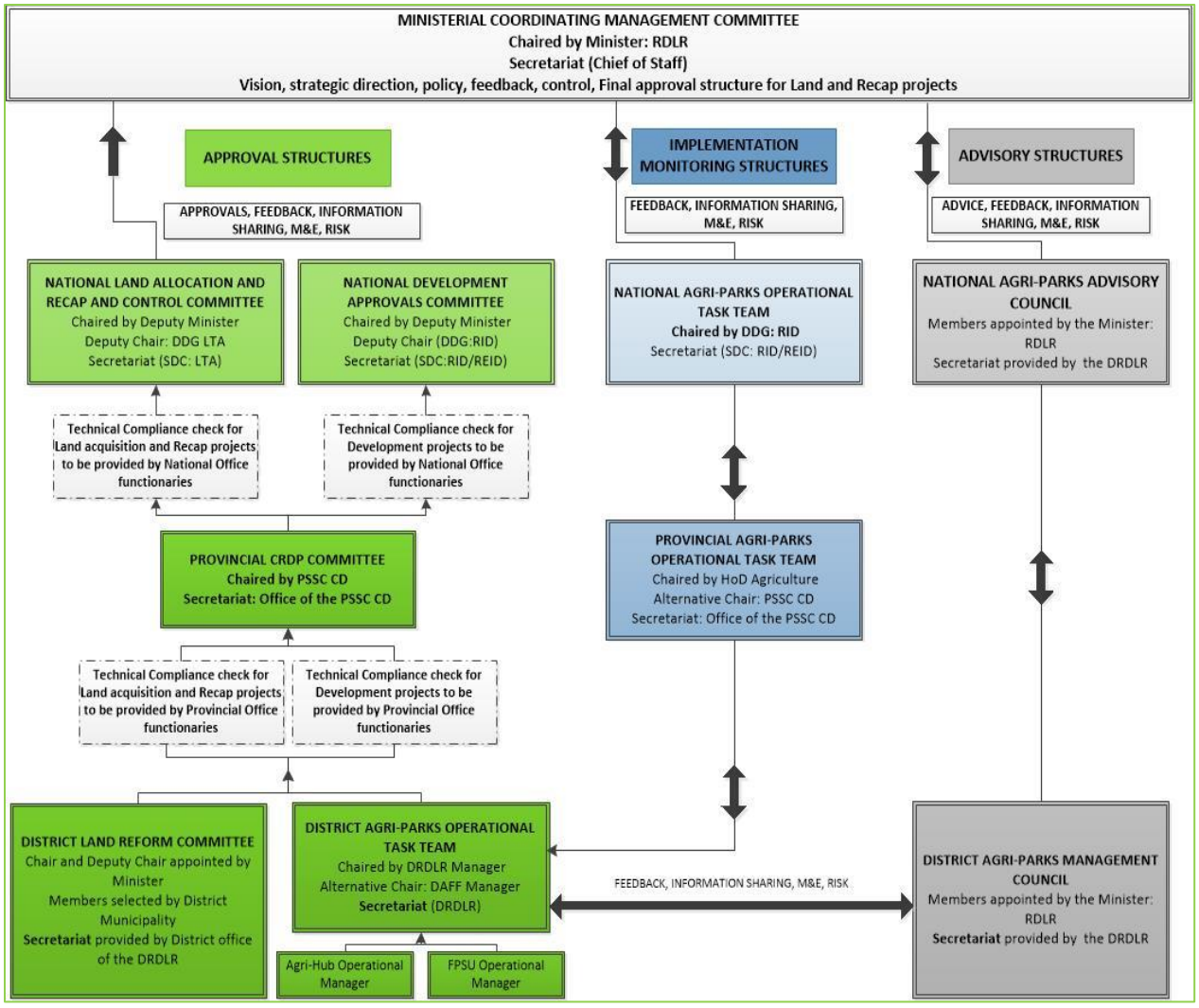


FIGURE 29: AGRI-PARK ORGANISATIONAL STRUCTURE

11.1. 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.

11.1.1 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 f*unctions 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.*

11.1.2 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;*
- *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.*

11.2. 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.

11.2.1 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.

11.2.2 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.

11.2.3 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:

- *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.*

11.2.2 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

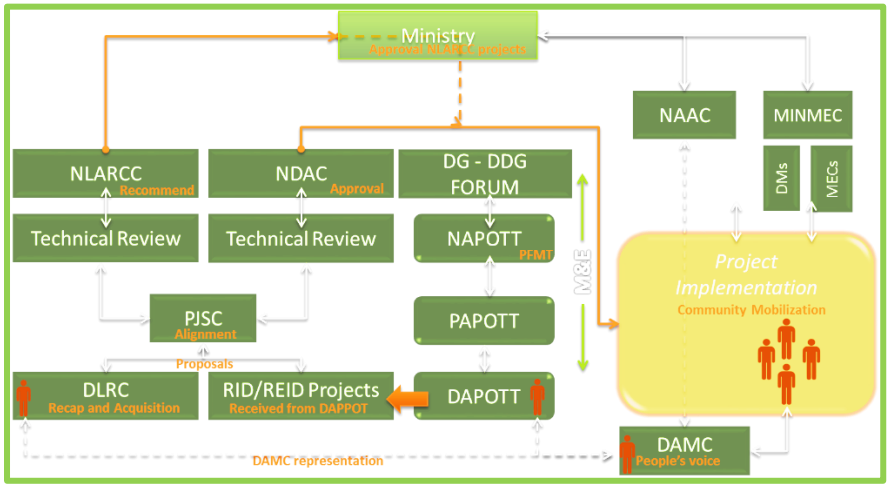
11.2.3 PCRDP

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



11.2.4 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,*

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

11.2.5 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.

11.3. 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.

11.3.1 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:

- *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.*

11.3.2 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.

SECTION 12: IMPLEMENTATION GUIDELINES

With regard to the relevant implementation guidelines, this section aims to align the necessary actions as stipulated within the different and combined development concept with the establishment of the entire MMM Agri-Park. This section will also focus on the specific recommendations that need to be taken into consideration during the implementation process.

1.1. Implementation Process

The following implementation process for the MMM Agri-Park is set out in the figure below, after which a description will be given of each of these steps.

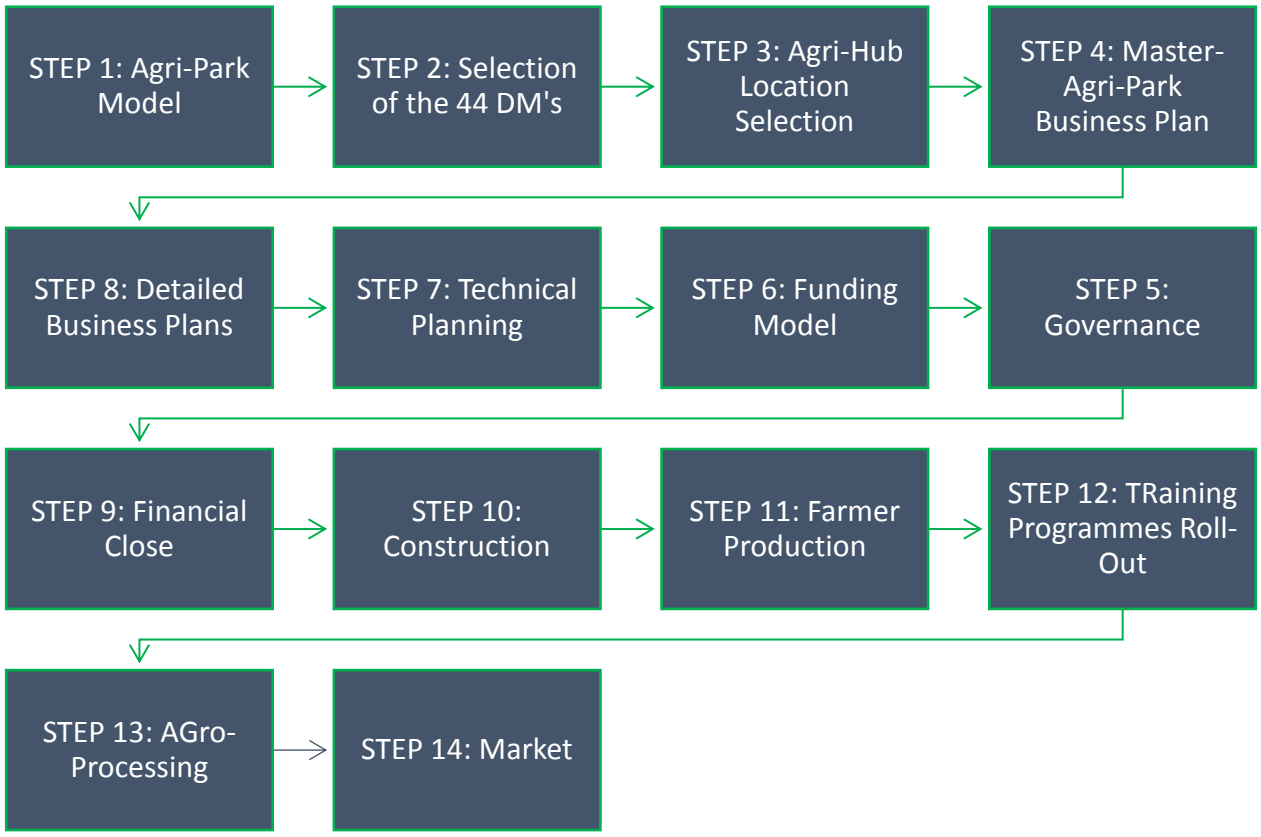


FIGURE 30: AGRI-PARK IMPLEMENTATION PROCESS

The above figure's steps and their core functions are described as follows:

- **STEP 1: Agri-Park Model:** During the first step of the Agri-Park programme, the DRDLR developed the Agri-Park model.
- **STEP 2: Selection of the 44 Districts Municipalities:** After the model was developed, the DRDLR selected 44 district municipalities across South Africa where the model will be implemented over a 10-year period.

- **STEP 3: Agri-Hub Location Selection:** The locations of each Agri-Hub were identified based on various criteria including, but not limited to road networks and market access.
- **STEP 4: Master Agri-Park Business Plan:** A master Agri-Park business plan was developed for each of the 44 district municipalities. The district-specific business plan outlined the top three commodities that should be invested in, as well as climatic conditions, and district demographics; among other aspects.
- **STEP 5: Governance:** Strategic bodies and plans will be formed including definitions of ownership and management structures.
- **STEP 6: Funding Model:** A financial gearing plan will be developed for each district's Agri-Park.
- **STEP 7: Technical Planning:** The technical aspect of the Agri-Park will entail planning, and mainly the physical construction of the Agri-Park along with related infrastructure and technologies.
- **STEP 8: Detailed Business Plans:** The different units of the Agri-Park (namely: FPSUs, Agri-Hub, and the RUMC) as well as the farmers, will have specific detailed business plans developed.
- **STEP 9: Financial Close:** Funding will be sourced from various financial institutions, depending on the funding model.
- **STEP 10: Construction:** The construction of the Agri-Park's units, particularly the FPSUs, and other related infrastructure will start.
- **STEP 11: Farmer Production:** FPSUs will be set-up and run in order to make sure that assistance is available for farmers to start production of commodities that will be used throughout the Agri-Park.
- **STEP 12: Training Programmes Roll-Out:** Training programmes will commence through the FPSUs to all the individuals that require training.
- **STEP 13: Agro-Processing:** Once primary production has taken place, and products are ready to be harvested, milked, or slaughtered; agro-processing activities will commence through the Agri-Park's Agri-Hub.
- **STEP 14: Market:** The final products will be distributed and sold to relevant markets through the assistance of the RUMC.

1.2. Alignment to current incentives (SEZ's)

1.2.1. Department of Agriculture, Forestry and Fisheries (DAFF)

1.2.1.1. Agricultural Broad-Based Economic Empowerment (Argive)

Argive is incremental in the formation of partnerships, linkages, and networks in order to reach results that are both balanced and mutually beneficial for all concerned. It is expected that competitiveness will be enhanced through the Argive, while it simultaneously encourages sustainable development. Argive, is intended to assist in the expansion of entry for new businesses in the agricultural sector. Furthermore, the expansion of existing businesses and the rehabilitation of agricultural businesses that are performing poorly, are part of the intended objectives of Argive. The Argive encourages partnerships between established agricultural enterprises and emerging farmers and entrepreneurs, in an attempt to unlock the full entrepreneurial potential within the agricultural sector,

Alignment

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 ***Argive*** 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.

1.2.1.2. Land Redistribution for Agricultural Development (LRAD)

This programme was designed in order to provide support to previously disadvantaged citizens from African, Coloured, and Indian communities. LRAD essentially assists these disadvantaged citizens in buying land or agricultural equipment, which can be used to support farming purposes and agricultural activities.

According to the DAFF, available funds are granted through this programme to successful applicants who wish to attain land. These funds are used to supplement what the applicants already have in order to better their ability to purchase agricultural land. This programme is primarily carried out through the support of government grants.

Alignment

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 farmer's participants in the Agri-Parks programme have been selected, the farmers are able to approach the department under this programme.

1.2.1.3. Comprehensive Agriculture Support Programme (CASP)

CASP, has been responsible for the provision of agricultural support to numerous land and agrarian reform projects to date. This has made a notable contribution towards food security, job creation, as well as the drive towards eradicating poverty.

The department has recorded a total of 84 agricultural farmer co-operatives across the country that are fully registered and linked to financial services and businesses. These cooperatives are already established, although they could use some assistance. Training and capacity building of all established cooperatives through accredited training institutions and colleges of agriculture is also facilitated by the programme. In this way, farmers who have been through this programme, have better chances at success.

Alignment

Continuous training will have to be conducted at the farm level, as part of the implementation preparation at the FPSUs, the hubs and for professionals providing market intelligence at the RUMCs. 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.

1.2.1.4. Integrated Food Security and Nutrition Programme (IFSNP)

The IFSNP was initiated to work in conjunction with the Food and Agricultural Organisation (FAO); the main objective of this initiative is the increase of food insecurity and the reduction of hunger. In trying to attain this objective, the Special Programme for Food Security (SPFS) will be expanded to encompass South Africa at large (DAFF, 2016). The SPFS and CASP have collaborated, and as a result, 10% of the total CASP budget will also be aligned to projects that contribute directly towards food security.

Alignment

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 the district, thus working in line with the Integrated Food Security and Nutrition Programme.

1.2.1.5. LandCare

LandCare is a community based programme that seeks to ensure sustainable management and use of agricultural natural resources. Although the programme is supported by government, it flourishes through community dedication and being community driven. The essential objective of the programme is to optimise productivity while ensuring sustainability of natural resources. It is envisioned that this will result in greater productivity, food security, job creation, and better quality of life for all.

Alignment

In implementing the Agri-Parks projects, some of the technology that will be used will ensure that the farming activities optimise the productivity at the farm level. This will be aligning to the LandCare programme that encourages communities to ensure land usage sustainability.

1.2.2. Department of Rural Development and Land Reforms

1.2.2.1. Comprehensive Rural Development Programme (CRDP)

The CRDP is intended to assist in mobilising and empowering rural communities to take initiatives that will affirm their development. With the support of government, this will ensure that rural communities are equipped to uplift themselves. As a result, three phases for programme exists namely;

- Promoting enterprise development.
- Establishment of village industries and creation of access to credit facilities.
- Meeting basic needs of rural citizens.

Alignment

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.

1.2.3. Development of Economic Affairs Department of Economic Development, Environment and Tourism (LEDET)

1.2.3.1. Economic Planning and coordination

Various dimensions are encompassed in economic planning; these include:

- Industrial development,
- Employment creation,
- Investment patterns,
- As well as skills development.

Economic Planning and coordination includes the work stream focus on economic development at a sectoral level. Furthermore, rural economic activities are promoted through this programme as a form of empowerment. Economic development at sectoral level is mainly intended to promote rural economic development and the development of industrial policy frameworks for sectors, in order to support the Industrial Policy Action Plan.

There are approximately four programmes that guide the provincial drive to growing the economy within the Province. These programmes are intended to assist in ensuring service delivery, promoting sustainable environment management, and promoting tourism in the Province. The four programmes consist of, Administration, Economic Development, Environment Affairs as well as Tourism.

Alignment

At the provincial level, the Agri-Parks programmes aligns 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.

1.2.4. Department of Trade and Industries (DTI) Incentives

1.2.4.1. Export Marketing and Investment Assistance (EMIA)

The EMIA scheme is used to attract foreign direct investment into the country as well as develop steady export markets for South African products. The major beneficiaries linked to the EMIA include export councils and industry associations, amongst others. The EMIA will have a great impact on the Agri-Parks, assisting in gaining international market exposures for products.

Alignment

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, aligns with the goals of supporting South Africa's export products, as set out by the DTI.

1.2.4.2. Sector-Specific Assistance Scheme (SSAS)

This is an export-focused incentive that encourages industrial sectors, which have been deemed important by the Department of Trade and Industries, as appropriate for export markets. The two major benefits linked to SSAS are Project Funding and Project Funding for Emerging Export.

Project Funding –has a cost-sharing grant of 80:20 for development projects in specific sectors. It is directed at finding new export markets and promote black SMMEs of, women, youth and people with disabilities.

Project Funding for Emerging Exporters – this includes various components, all of which must not exceed the maximum of R1.5 million. This list includes:

- Travel & accommodation,
- Exhibition costs,
- Sample transportation, and
- Marketing materials.

Alignment

The agro-processing activities within the hub, will also serve in providing better alignment of the Agr-Parks with DTI's SSAS. SSAS, as explained above, encompasses industrial sectors which plan to pursue export markets.

1.2.4.3. Critical Infrastructure Programme (CIP)

The main objectives of the Critical Infrastructure Programme, is the attainment of leverage investments through supporting infrastructure that is considered crucial. I this way, the cost of doing business will be lowered and more people will be afforded the opportunity to succeed.

According to the Department of Trade and Industry, infrastructure is "critical" to the investment. In this sense, if investment took place without the said infrastructure, the said investment is likely to be mediocre or fail. Numerous mandatory requirements need to be met by the applicants, as established by the Department of Trade and Industry.

Alignment

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.

1.3. Specific recommendations

The following table provides the recommendations for consideration going forward. These are based on the analysis done during this master plan and stakeholder engagements.

TABLE 37: MMM AP RECOMMENDATIONS

Key areas	Recommendations
Infrastructure	➢ Upgrading of existing infrastructure should occur in identified areas and specifically around the SHFs' farms, the FPSUs, the Ah and the RUMC. ➢ Utilising the railroad as a means of transportation and distribution should be considered. ➢ Infrastructure initiatives that is energy saving and reduces wastage should also be considered in order to reduce the need on bulk services provided by local government.
Natural Resources	➢ Water shortages should be taken into consideration for all AP practices as the excessive use of water will limit the capacity of the whole areas agricultural capability. ➢ Strategic irrigation schemes and water allocation should be considered in order to further assist with the responsible use of water throughout the AP.
Agri-Park Commodities	➢ Both domestic and international standards and procedures should be adhered to in order to maintain the high quality expected of especially, South African sheep wool. ➢ Customers and clientele's requirements should also be taken into consideration in order to create brand awareness and establish markets.

Technology	➢ Communication together with a smart logistics plan is recommended in order to make the whole AP system more accessible to SHFs' and create better linkages with the different functions throughout the AP. ➢ Commodity specific technologies should also be considered on a site basis in order to assist the different functions to be more efficient and productive. ➢ These initiatives and technologies should be user-friendly and help make the whole system more proficient.
Training	➢ Training partners for each commodity and for different areas within the AP have been identified during this guiding document and these should be contacted in order to ascertain what skills development training can be aligned with the needs of the MMM AP. ➢ Bloemfontein is in close proximity to the rural areas and sites identified for AP functionality establishment and as such can become a strategic point for future agri-training and business. ➢ Training is of the utmost importance for the success of this MMM AP and training programmes specifically for the operation and further processing of the abattoir and meat slaughtered here would be the first priority; second would be the training of sheep shearers and associated skills such as grading and sorting; thirdly would be in relation to the process of planting through to harvesting of vegetables; and fourthly that of basic farming skills and practices and lastly that of basic business skills.
Logistics	➢ Establish strong stakeholder engagement meetings and inputs to establish local buy-in and develop initiatives. ➢ Make use of the existing transportation networks and initiatives and ensure alignment with these.

	➢ Develop a logistical plan to ensure the efficient value chain establishment and transportation throughout the AP.
Policy Environment	➢ Establish cross border relationships with other DM's as well as the Kingdom of Lesotho to further develop markets and supply chains. ➢ Align local incentives, projects and programmes with that of the AP in order to further the AP development.
Funding, Investment and Incentives	➢ Develop strong PPP with the stakeholders mentioned in order to facilitate market entry and efficient and productive systems through the AP value chain in order to assist SHFs' to start producing at capacity. ➢ Source funding from the listed accredited institutions to assist in the establishment of all the functions within the AP. ➢ Incentives should be given to commercial farmers in order to assist with the mentoring and supporting of SHFs.
Market	➢ Create local, regional and international market linkages in order to establish a consistent demand for locally produced products. ➢ Partner with existing players within the market place to facilitate market penetration.
Key Catalytic Projects	➢ Upgrading, expansion of existing abattoir within Thaba Nchu Agri-Hub and building of additional deboning facilities ➢ Vegetable packaging and processing facilities at Thaba Nchu Agri-hub for the processing and selling of vegetables ➢ Shearing, sorting and baling of sheep wool facilities at both FPSU as well as AH level

1.4. 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 MMM AP.

TABLE 38: MMM 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.										

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)										
	2. Development of an ownership structure.										
	3. Development of an institutional structures.										

	4. Ongoing policies and procedures: establishes 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.										

	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.											
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.										
	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.										
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.										
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.										

SECTION 13: REFERENCES

DRDLR, 2015. Strategy for Agrarian Transformation. Province of KwaZulu-Natal, [Online]. Available at: http://www.kzndae.gov.za/Portals/0/Documents/2015/Agrarian%20Transformation_Brochure_2015_2.pdf.

Cooperative governance and traditional affairs. 2015. FREE STATE PROVINCE PROVINCIAL SPATIAL DEVELOPMENT FRAMEWORK (PSDF). [ONLINE] Available at: http://www.freestatepsdf.co.za/wp-content/uploads/2014/FSPSDF_Final_7March2014.pdf.

Department of Agriculture Forestry and Fisheries. 2015. AGRICULTURAL POLICY ACTION PLAN (APAP). [ONLINE] Available at: http://www.agrisa.co.za/wp-content/uploads/2014/10/011-APAP-AgriSA.pdf.

Department of Agriculture Forestry and Fisheries. 2015. A profile of the South African pork market value chain. [ONLINE] Available at: http://www.nda.agric.za/docs/AMCP/Pork2015.pdf.

Department of Agriculture Forestry and Fisheries. 2015. A profile of the South African onion market value chain. [ONLINE] Available at: http://www.nda.agric.za/docs/AMCP/Pork2015.pdf.

Department of Agriculture Forestry and Fisheries. 2015. A profile of the South African sheep wool market value chain. [ONLINE] Available at: http://www.nda.agric.za/docs/AMCP/Pork2015.pdf.

Department of Agriculture Forestry and Fisheries. 2015. A profile of the South African potato market value chain. [ONLINE] Available at: http://www.nda.agric.za/docs/AMCP/Pork2015.pdf.

Department of Agriculture Forestry and Fisheries. 2015. A profile of the South African beef market value chain. [ONLINE] Available at: http://www.nda.agric.za/docs/AMCP/Beef2012-13.pdf.

Clay, 2004. *World Agriculture and the Environment: A C O M M O D I T Y- B Y- C O M M O D I T Y G U I D E T O I M P A C T S A N D P R A C T I C E S.* Washington, DC: ISLAND PRESS.

DAFF, 2014. *A PROFILE OF THE SOUTH AFRICAN AQUACULTURE MARKET VALUE CHAIN,* Pretoria: DAFF.

DAFF, 2015. *http://www.daff.gov.za/daffweb3/Branches/Agricultural-Production-Health-Food-Safety/Genetic-Resources/Biosafety.* [Online] [Accessed 07 12 2015].

DWF, 2015. *Water Management Institution Overview,* Pretoria: DWF.

FAO, 2012.
http://www.fao.org/ag/againfo/home/en/news_archive/2011_The_roles_of_veterinarians.html. [Online]
[Accessed 07 12 2015].

Fitzpatrick, 2013. Global food security: the impact of veterinary parasites and parasitologists. *vetpar,* pp. 195-233.

Gittelsohn & Vastine , 2003. Animal Source Foods to Improve Micronutrient Nutrition and Human Function in Developing Countries: Sociocultural and Household Factors Impacting on the Selection, Allocation and Consumption of Animal Source Foods: Current Knowledge and Application. *Journal of Nutrition,* pp. 1-6.

NWGA, 2014. *Guidelines for Livestock Farming.* Centurion: Plaas Publishers.

OECD, 2012. *Higher Education in Regional and City: HUMAN CAPITAL AND SKILLS DEVELOPMENT IN THE FREE STATE,* Free State: OECD.

Potato South Africa, 2015. *Potatonation.co.za.* [Online]
[Accessed 03 12 2015].

Ross, 2014. *Regional Economic Development and Alternative Food Network Governance: A Waterloo Region Case Study.* s.l.:s.n.

Smith, 2006. *Farming Handbook.* Pietermarizburg(KwaZulu-Natal): University of KwaZulu-Natal Press.

StatsSA, 2011. *http://www.statssa.gov.za/?page_id=1021&id=mangaung-municipality.* [Online]
[Accessed 07 12 2015].

Wikipedia, 2015. *https://en.wikipedia.org/wiki/Cabbage.* [Online]
[Accessed 02 12 2015].

WTO, 2015. *https://www.wto.org/english/tratop_e/sps_e/spsagr_e.htm.* [Online]
[Accessed 07 12 2015].