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Rural Development and Land Reform
REPUBLIC OF SOUTH AFRICA

AGRI-PARK

your agri-park; your future

West Rand District Municipality

Master Agri-Park Business Plan

APRIL 2016

FINAL REPORT

Mogale City
local Municipality

West Rand
District Municipality

BUSINESS PLAN: WEST RAND DISTRICT MUNICIPALITY AGRI-PARK

This document was prepared for:

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Agri-Parks Master Plan Roadmap

Chapter 1: Introduction

Summary: This chapter provides a background to the project, the project goal and objectives, as well as the purpose of the project. The chapter also presents the project methodology.
Key Words: Introduction, Master Business Plan, Goal, Objectives, Purpose, Methodology.
Must Read: The background; goals; objectives and the purpose.

Chapter 2: The Agri-Parks Model

Summary: The chapter provides detail of the Agri-Park model concept that was developed by DRDLR.
Key Words: Definition, Model, Farmer Production Support Unit, Agri-Hub H, Rural-Urban Market Centre.
Must read: The Agri-Park definition; The Agri-Park model; The three (3) basic units of the Agri-Park

Chapter 3: Policy Review

Summary: Chapter three provides an overview of key policies that could catalyse the development of the Agri-Park Project
Key Words: National policies, provincial policies, Local policies, APAP, Alignment.
Must Read: Key policies; Alignment

Chapter 4: Location Context

Summary: The chapter provides an overview of the West Rand Districts' locational context, with detail on various important spatial features.
Key Words: Economic Activities, Maps, Infrastructure, Agri-Hub, Location.
Must Read: Spatial features; Location of the Agri-Hub; Maps; Infrastructure

Chapter 5: Main District Role-Players

Summary: Provides a list of the main role-players that could potentially be involved/partner in the WRDM Agri-Park at varying levels of the development process and the agricultural value chain.
Key Words: Extension services, Financial services, Associations and Organisation.
Must Read: Main role-players; Partnership strategy

Chapter 6: Economic and Socio-Economic Analysis

Summary: The chapter details the economic and socio-economic dynamics of the WRDM
Key Words: Demographic analysis; Unemployment rates; Sectoral analysis; Level of education; Income and Poverty level.

Chapter 7: Local Agricultural Industry Analysis

Summary: Provides locational context and agricultural industry status quo for WRDM
Key Words: Activities; Resources; Commodities; prioritisation
Must Read: Main agricultural activities; Environmental conditions; Commodity identification; Commodity prioritization – three commodities

Chapter 8: Commodity Analysis: Vegetables, Broilers, Maize

Summary: The chapter provides a detailed analysis of each of the respective commodities including market assessment, value chain analysis and SWOT analysis
Key Words: Market; Processing; Value chain; Stakeholders; Technology; SWOT.
Must Read: Market assessment; Value Chain Analysis; SWOT Analysis

Chapter 11: Agri-Parks Concept Development

Summary: The chapter provides a development concept for each of the respective commodities at different levels within the Agri-Parks and a high-level capital expenditure estimation.
Key Words: Farmer Production Support Unit; Agri-Hub; Rural-Urban Market Centre
Must Read: Concept development, Summary; Logistics Plan

Chapter 12: Agri-Parks Implementation Guidelines

Summary: Implementation guidelines of the WRDM Agri-Park.
Key Words: Alignment, Implementation Process, Recommendations, Roll-Out Plan.
Must Read: Implementation process; Recommendations; Strategic alignment; Roll-Out plan.

Executive Summary

The concept together with the introduction of an Agri-Park for each district municipality is a relatively new notion to South Africa. This document represents the **West Rand District Municipality (WRDM) Master Business Plan** that is intended to serve as a guiding document toward the implementation of the Agri-Park model that was developed by the Department of Rural Development and Land Reform (DRDLR).

Chapter 1: Introduction
The introduction provides the background information on the concept of an Agri-Park as well as a short description of the project. The chapter encompasses various elements including methodologies, as well as the goals and objectives of the project. Finally, 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.

Chapter 2: Agri-Park Model
The second chapter 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. The chapter concludes with the strategic objectives that have been set out by the Agri-Park.

Chapter 3: Policy Review
In order to achieve set objectives, the Agri-Park Model seeks to align with some of the key government strategies and existing policy frameworks. Chapter 3 of this document therefore 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 WRDM Agri-Park.

Chapter 4: Locational Context
Chapter 4 details some of the main features and major economic infrastructure that are crucial to the development of the Agri-Park in the WRDM. 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 chapter includes maps of the region, details with respect to infrastructural support and what needs to be done to improve the current infrastructure. The chapter, therefore, provides a good understanding of the strength, weaknesses and the comparative advantages that the district holds in order to establish an Agri-Park in the WRDM.

Chapter 5: Main Role-Players per District
Chapter 5 outlines the main role-players that could potentially be involved in the WRDM Agri-Park at varying levels of the development process and agricultural value chain. The role-players are summarised into three categories such as: 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 regards to the recommended agricultural opportunities.

Chapter 6: Economic and Socio-Economic Analysis
Chapter 6 details the economy of the WRDM in relation to population and economic growth; job creation; and income and poverty level, as viewed against the economic performance of Gauteng

Province. A sectoral analysis is also provided, setting out the structure of the WRDM economy with respect to the different economic sectors and their output and employment contributions to the district's economy. The main sections within the chapter include demographic analysis, sector profiling, employment analysis and details on income and poverty.

Chapter 7: 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. Chapter 7 therefore 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 WRDM's agricultural sector presents. In addition, the chapter provides an overview of the status quo for agriculture in the district, as well as important agricultural resource availability.

Furthermore, this chapter identifies the three dominant commodities in the WRDM, through a thorough prioritisation process. Products related to the three (3) selected commodities are also briefly discussed during this chapter. The three commodities identified for the district include vegetable, broiler and maize production.

Chapter 8: Commodity Analysis Vegetables

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

Chapter9: Commodity Analysis Broilers

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

Chapter 10: Commodity Analysis Maize

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

Chapter 11: Agri-Park Concept Development

This chapter develops the Agri-Park concept in relation to the three (3) identified commodities in the WRDM. The purpose of this section is to align the value chain that has been developed for each commodity with the Agri-Park model. The chapter includes detailed functions, roles and requirements of each of the Agri-Park units including the Farmer Production Support Unit, the Agri-Hub and finally, the Rural-Urban Marketing Centre.

Chapter 12 - The Agri-Park Organisational Structure:

In Chapter 12 the proposed organisational structure of the WRDM Agri-Park is illustrated and described. Details of how activities such as: task allocation, co-ordination and supervision of the Agri-Park in the WRDM and across the district municipalities in South Africa are explained.

Chapter 13: 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 and an implementation process. 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 business model canvases.

Farmer Production Support Unit

Key Role/Function

- Input supplies
- Provision of inputs & extension services.
- Mechanisation support
- Facilitation of administrative operations.
- Field preparation and planting.
- Local market sales.
- Training.
- Logistics support.
- Limited processing.

Potential Locations

- Krugersdorp
- Randfontein
- Westonaria
- Muldersdrift
- Randgate
- Greenhills
- Fochville
- Tarlton
- Hekpoort
- Zuurbekom

Note: Locations recommended as per workshopping process. Further study is required

Training

provide training and extension support to farmers, including:

- Best management and production practices
- Data interpretation
- Marketing
- Crop cultivation
- Animal husbandry
- Business administration

Human Resources

- Agricultural extension officers' / support office;
- Machine operators/ Local mechanisation centre and workshops;
- Agronomists
- Researchers
- Voluntary/Established commercial farmers

Infrastructure & Equipment

- Curing shed
- Sorting facilities
- cleaning, sorting, grading, drying machines
- Weighing and packaging machines
- Small scale processing facilities for local market
- Produce sorting facility
- Auction facility
- Farming equipment required for farming activities
- Agricultural input distribution and sales centre

Recommended Number of FPSUs: 13

Estimated CAPEX: R262 000 000

Agri-Hub

Key Role/Function

- Training support
- Logistics support
- Storage/warehousing
- Packaging
- Product branding
- Product grading
- Product distribution
- Vegetable processing/packaging
- Broiler slaughter and processing
- Maize storage and processing

Location

- Randfontein

Human Resources

- Administrative staff
- Quality control personnel
- Processing/floor staff
- Research and demonstration personnel
- Training personnel

Training

- Training of processing staff.
- Training on best practices, based on changing demand and supply.
- Training on new innovations as they surface.

Infrastructure & Equipment

- Agro-Processing facilities
- Veg processing
- Abattoir
- Silos
- Packaging facilities
- Retail facility
- Training centre
- Student and staff housing
- Logistics and transport facility
- Large warehouses/ holding facilities
- Cold storage facilities

Number of Agri-Hubs: 1
Estimated CAPEX: R118 000 000

Rural-Urban Market Centre

Key Role/Function

Links producers to local and international markets through:

- Provision of market intelligence.
- Identification of product markets.
- Interact and negotiate with buyers
- Undertake/manage contractual agreements.
- Storage (DC)
- Logistics support

Human Resources

- IT expert/personnel
- Administrative staff
- Training personnel
- Marketing personnel

Location

- Based on the periphery of Johannesburg.

Note: Recommended due to proximity to major markets

Training

- Data collection/collation
- Data interpretation and
- Data dissemination

Infrastructure & Equipment

- Office facilities/ information centre
- ICT
- Distribution centre

Number of RUMCs: 1
***To be shared within the province by the Gauteng Agri-Parks**

Contents

Acronyms

Acronym	Description
AFF	Agriculture Forestry and Fisheries
AgriBEE	Agricultural Black Economic Empowerment
AH	Agri-Hub
AIDS	Acquired Immune Deficiency Syndrome
APAP	Agricultural Policy Action Plan
ARC	Agricultural Research Council
AVMP	Animal and Veld Management Programme
BBBEE	Broad-Based Black Economic Empowerment
BFAP	Bureau for Food and Agricultural Policy
BLNS	Botswana, Lesotho, Namibia and Swaziland
CASP	Comprehensive Agricultural Support Programme
COGTA	Cooperative Governance and Traditional Affairs
CRDP	Comprehensive Rural Development Programme
CRDP	Comprehensive Rural Development Programme
CSIR	Council for Scientific and Industrial Research
DAFF	Department of Agriculture, Forestry and Fisheries
DED	Department of Economic Development
DEDEAT	Department of Economic Development, Environmental Affairs and Tourism
DL	Department of Labour
DNA	Deoxyribonucleic acid
DPWT	Department of Public Works and Transport
DRDAR	Department of Rural Development and Agrarian Reform
DRDLR	Department of Rural Development and Land Reform
EDD	Economic Development District
EIA	Environmental Impact Assessment
EMF	Economic Management Framework
ESTA	Extension Security of Tenure
EU	European Union
FNB	First National Bank
FPSU	Farmer Production Support Unit
GADS	Gauteng Agricultural Development Strategy
GAP	Good Agricultural Practices
GCR	Gauteng City Region
GDARD	Gauteng Department of Rural Development and Land Reform
GDED	Gauteng Department of Economic Development
GDP	Gross Domestic Product
GDS	Gauteng Development Strategy
GEDA	Gauteng Enterprise Development Agency
GEGDS	Gauteng Employment Growth Development Strategy
GEP	Gauteng Enterprise Propeller
GFS	Glucose, Fructose Syrup
GIPF	Gauteng Industrial Policy Framework
GIS	Geographic Information System
GM	Genetically Modified
GMO	Genetically Modified Organism
GPEMF	Gauteng Provincial Environment Management Framework
GTERS	Gauteng Township Economy Revitalisation Strategy
GVA	Gross Value Added
HIV	Human Immunodeficiency Virus
HR	Human Resources
ICT	Information and Communication Technology
IDP	Industrial Development Plan

Acronym	Description
IGDP	Integrated Growth and Development Plan
IMQAS	International Meat Quality Authority
IPAP	Industrial Policy Action Plan
IPILRA	Interim Protection of Land Rights Act
IT	Information Technology
KPA	Key Performance Area
LARP	Land and Agricultural Reform Project
LED	Local Economic Development
LM	Local Municipality
LRAD	Land Redistribution for Economic Development
LSU	Livestock Unit
MMS	Multimedia Message Service
MTEF	Medium Term Economic Framework
NAFU	National Agricultural Farmers Union
NAMPO	National Maize Producers Organisation
NDA	National Development Agency
NDP	National Development Plan
NDP	National Development Plan
NFPM	National Fresh Producers Market
NGO	Non-Government Organisation
NGP	New Growth Path
NIPF	National Integrated Policy Framework
NW	North West
NWK	North West Korporasie (Corporation)
PICC	Presidential Infrastructure Coordinating Commission
PLAS	Proactive Land Acquisition Strategy
RECAP	Recapitalisation and Development Programme
REID	Rural Enterprise and Industrial Development
RID	Rural Infrastructure Development
RUMC	Rural-Urban Marketing Centre
SADC	Southern African Development Community
SAFA	South African Feedlot Association
SAFEX	South African Futures Exchange
SAFVCA	South African Fruit and Vegetable Canners Association
SAGIS	South African Grain Industry Services
SANHA	South African National Halaal Association
SAPA	South African Poultry Association
SDF	Spatial Development Framework
SEDA	Small Enterprise Development Agency
SME	Small and Medium Enterprise
SMME	Small, Medium and Micro Enterprises
SMS	Short Message Service
SONA	State of the Nation Address
SP	Strategic Plan
SRAC	Sports, Recreation, Arts and Culture
SWOT	Strength Weaknesses Opportunities and Threats
TDCA	Trade Development and Cooperation Agreement
USA	United States of America
WARD	Women in Agriculture and Rural Development
WRDM	West Rand District Municipality

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1 Introduction

The project team understands that the Department of Rural Development and Land Reform (DRDLR) seeks the development of a Master Agri-Park Business Plan for the West Rand District Municipality (WRDM) of Gauteng. The DRDLR has been commissioned the implementation of an Agri-Parks programme that is aimed at the eradication of rural poverty, a critical challenge for the government. This requires that a business plan is developed for each Agri-Park in order to move forward with the operationalisation.

The Agri-Parks system draws from existing models locally and abroad, including educational/experimental farms, collective farming, farmer-incubator projects, agri-clusters, eco-villages, and urban-edge allotments, as well as market gardens. These models exist in both a public and private capacity, serving as transition or buffer zones between urban and agricultural uses. The One District, One Agri-Park programme will promote the objectives for agricultural and rural development as set out in the National Development Plan (NDP). The NDP views agriculture as critical to employment and food security. It is estimated that agriculture would potentially create a million jobs by 20301. The NDP calls for an inclusive rural economy wherein: rural communities should have greater opportunities to participate fully in the economic, social and political life of the country.

Over a third of South Africa's population live in the former homelands, and a large proportion of this group is economically marginalised. Many rural areas in the country are faced with an underdeveloped services sector, including poor road infrastructure, a lack of basic services like running water, primary healthcare, sanitation and electricity. There are also rural areas where transport links are, however, good and where densification is taking place in the absence of effective land-use management and urban governance. As such, policies and development strategies, such as the Agri-Parks model, are required to bring households in these areas into the mainstream economy.

The NDP vision for 2030 speaks of the inclusivity and integration of rural areas, through successful land reform, job creation and poverty alleviation, and places agriculture as the driving force behind this vision.

According to a Statistics South Africa report, Mid-year Population estimates dated July 2014, South Africa's population is growing at almost 2% per year with a population of 54 million in mid-2014, and it is expected to grow to 82 million by the year 2035. Food production or imports must more than double in order to be able to feed the expanding population. Moreover, production needs to increase using the natural resources. The world population is estimated to increase to nine billion by the year 2050 from the current seven billion. This represents an increase of two billion people in 36 years. This increase in population numbers will require agricultural production to increase by at least 70% to meet the people's dietary requirements.

It is within this context that the Agri-Parks programme was developed. The Agri-parks concept will revitalise agriculture and the agro-processing value chain in the Agri-Parks programme, which would be contributing to the priorities outlined in the 2015 State of the Nation Address (SONA), in trying to ensure growth in the agricultural sector.

The programme will overcome current challenges such as high input costs, particularly in animal feed, competing interests for land, anti-competitive behavior which resulted from market dominance, climate change in the form of droughts, floods, and fires, and the degradation of soil as a whole, which affected productivity.

1.1 Document outline

The following document represents the Master Agri-Park Business Plan for the WRDM that covers the following:

- **Chapter 1: Introduction**
- **Chapter 2: Agri-Park Model**
- **Chapter 3: Policy Review**
- **Chapter 4: Locational Context**
- **Chapter 5: Main Role-Players per District**
- **Chapter 6: Economic and Socio-Economic Analysis**
- **Chapter 7: Agricultural Industry Analysis**
- **Chapter 8: Commodity Analysis Vegetables**
- **Chapter9: Commodity Analysis Broilers**
- **Chapter 10: Commodity Analysis Maize**
- **Chapter 11: Agri-Park Concept Development**
- **Chapter 12: Implementation Guidelines**

The abovementioned was informed by the analysis of:

- Primary and secondary data gathering related to the province and, in particular, the district.
- Stakeholder engagement, including
    - DRDLR (National)
    - GDARD (Provincial)
    - GDARD (Municipal)

All the information and analysis for this report is based on expert opinions, in depth market analyses and projections in the case of commodities that have been identified for the WRDM Agri-Park Programme.

1.2 Short description of the project including the goal and objectives

The project is primarily concerned with the development of an Agri-Park within the WRDM that lies to the west of the Gauteng Province. The Agri-park, which forms part of Government's undertaking to review all land reform policies as enunciated in the 2011 Green Paper on Land Reform, will provide a network of contacts between producers, markets and processors, but also provide the physical infrastructure required for the transforming industries. The focus of the agri-park is primarily the processing of 'agricultural products' (and the mix of 'non-agricultural' industries may be low or non-existent).

Of prime importance is access to a viable agricultural land, where a range of productive agri-horticultural enterprises may exist. State land will be made available to, and used for both production and processing. The Agri-park approach, with a strong social mobilisation component, will include the selection and training of smallholder farmers, as well as selecting farms per province for the placement, incubation and training of unemployed agricultural graduates and other agro-entrepreneurs, who will be actively mobilised and organised to support this initiative and targeted to control the agri-parks.

The goal of the West Rand's Agri-Park is to be viable for agriculture and the community, through a functional agricultural model that meets a specific set of conditions that promotes viable operations for small-scale, emerging and black famers, while providing benefits to its stakeholders and the community. The model includes the functional integration that includes general conditions, inputs and infrastructure and other components, which make it desirable for private enterprises, non-profits organisations and the community.

Objectives of this project include:

- Promote growth of the smallholder sector by creating new small-scale producers in the district, as well as new jobs in agro-processing by the year 2020 (as set out in the NGP);
- Promote the skills of and support to small-holder farmers through the provision of capacity building, mentorship, farm infrastructure, extension services, production inputs and mechanization inputs;
- Strengthen existing and create new partnerships within all three spheres of government, the private sector and civil society to develop critical economic infrastructure such as roads, energy, water, ICT and transportation/logistics corridors that support the agri-park value chain;
- Enable producer ownership of the majority of Agri-Parks equity (70%), with the state and commercial interests holding minority shares (30%);
- Allow smallholder producers to take full control of Agri-Parks by steadily decreasing state support over a period of ten years;
- Bring underutilised land (especially in Communal Areas Land and land reform farms) into full production over the next three years, and expand irrigated agriculture; and
- Contribute to achievement of the NDP's "inclusive rural economy" and target of 1 million jobs created in agriculture sector through creating higher demand for raw agricultural produce, primary and ancillary inputs, as well as generating increased downstream economic activities in the sector.

The goals and objectives of the Agri-Park will be achieved through DRDLR's strategic partnerships and collaboration with key government departments such as the Department of Agriculture, Forestry and Fisheries and the Departments of Cooperative Governance and Traditional Affairs and other spheres of govt.

1.3 Purpose of the master business plan

The goal of the West Rand's Agri-Park Business Plan *is to develop a guiding document that aligns with the Agri-Park Model, developed by the Department of Rural Development and Land Reform, and the identified dominant agricultural commodity value chains within the district.*

The purpose of the West Rand's Agri-Park business plan is summarised below:

1. To develop a guiding document towards the implementation of the Agri-Park within the district.
2. Review all existing documentation, maps, and agricultural potential.
3. To engage with district representatives, government officials, and other related role-players.
4. Aligning the business plan with existing policies, strategies, and other relevant development plans.
5. Determine the socio-economic status quo and potential impact of the Agri-Park within the district.

6. To identify the existing agro-processing facilities and farmers within each district municipality and to establish possible linkages.
7. Identify current, or potential agricultural activities (commodities) within the district.
8. To identify three dominant, or most feasible commodities within the district.
9. To identify agro-processing business opportunities for each Agri-Park based on the three commodities.
10. SWOT analysis that includes a legal, environmental, and technical analysis.
11. To conduct a feasibility and viability assessment of the proposed agro-processing facilities.
12. Identify current agro-processing initiatives and possible synergies, linkages and opportunities to buy into existing businesses.
13. Identify potential public-private partnerships.
14. Develop a district specific operational plan for the Agri-Park.
15. Propose an action plan, investment incentives, and further recommendations.
16. Develop black class farmers in terms of technical expertise, ability to supply the market, sustainability, and at the desired market quality.
17. Create Join Ventures that will see Emerging Black farmers participate in supplying the Agri-Park.
18. Create incentives for Private Farmers to join the Agri-Park as a lucrative investment opportunity.
19. Develop partnerships with other government stakeholders to develop critical economic infrastructure like, roads, energy, water, ICT, and transportation/logistic corridors that support the Agri-Park value chains.

1.4 Methodology

Figure 1-1 provides for a methodology illustration of the various steps that are undertaken for the study, these are issue described below in more detail.

Figure 1-1: Methodology

Step 1: Orientation - The purpose of the first step was to engage with the client to achieve a consensus on the goals and objectives of the project. The project team held an inaugural meeting with the relevant stakeholders to finalise project objectives, process deliverables, and present a project management programme.

Step 2: Policy Review - The policy review entails conducting programme and policy alignment, along with advising the government of the possible opportunities in terms of the proposed Agri-Park developments.

Step 3: Status Quo – A status quo analysis of agricultural and agro-processing industry was conducted for the West Rand District Municipality (DM). The status quo analysis will provide the background to the agricultural environment in the district that will be used as a departure point for the project team.

Step 4: Identify existing initiatives – The West Rand DM has a number of existing successful farmers that have agro-processing operations. There are also existing farmer support programmes and support services. Step 4 entails identifying these operations in order to develop linkages and opportunities through collaboration.

Step 5: Agri-Hub Opportunity Analysis - The purpose of Step 5 was to conduct an opportunity analysis of each Agri-Park in order to determine the agro-processing business opportunities. Based on the opportunity analysis the project team was able to develop a business case for the West Rand Agri-Park.

Step 6: Feasibility Assessment – This assessment assisted in the determination the viability of a proposed Agri-Hub and agro-processing business opportunities.

Step 7: Financial Analysis: A financial analysis for the proposed agro-processing business concepts was conducted in this step, which will be prepared over a five-year period taking into consideration both the capital (CAPEX) and operational expenditure (OPEX) of the business

Step 8: Operational Plan - Guidance in terms of the organisational structure of the Agri-Hub is provided through the operational plan. An organisational structure defines how activities such as task allocation, coordination, and supervision are directed towards the achievement of organisational aims. The plan indicates how the existing farmers will be linked with the Agri-park development.

Step 9: Business Plan – A business plan is compiled that focuses on the operational aspects of the business and the inputs from the client, and the district municipalities will be required to compile the plan.

The following section provides further information on the back ground of the Agri-Park and explores the Agri-Park model.

2 Agri-Park Model

2.1 An understanding of the Agri-Park concept

Poverty alleviation has been one of government's key areas to address, especially in rural areas where there is a lack of economic activity. Government has intervened with various anti-poverty programmes, but with a lower impact than what was expected. The key issue, however, has not been the programmes themselves, but rather the co-ordination of anti-poverty activities and integrated package services to match the local priorities.

The lack of co-ordination and an integrated package has thus led to the Agri-Parks initiative, a concept relatively new in a South African context. The concept follows an integrated Agri-Parks approach of collective farming efforts, farmer incubation programmes, Agri-Clusters and Eco-Villages; while also contributing to land conservation and preservation. The initiative is similar to that of a traditional agricultural business park or hub model, where multiple tenants and owners operate under a common management structure where a range of enterprises can exist.

The Agri-Parks model is required to have a strong social mobilisation component for the organisation and mobilisation of black farmers and agri-business entrepreneurs to actively support the initiative. Furthermore, the model should strengthen partnerships between government, the private sector and civil society – partnering with DAFF and COGTA is essential.

For the successful mobilisation of the programme the Agri-Parks should:

- Be based on the locational economic and comparative advantages.
- Have all the elements of a value chain (cluster) present for a dominant comparative, or product advantage.
- Be able to lay a solid economic foundation for the development of rural industrialisation.

To ensure the mobilisation of the Agri-Parks programme the following guiding principles should be followed:

- One Agri-Park is to be established in each district.
- The Agri-Parks should be controlled by the local farmers.
- The Agri-Parks are required to be catalysts from which rural industrialisation can take place.
- The Agri-Parks must be government-guided to ensure economic sustainability.
- The Agri-Parks must strengthen partnerships between the public and private sectors in order to increase access to services.
- The Agri-Parks must maximise access to markets for all farmers with a bias towards emerging farmers and rural communities.
- The Agri-Parks must maximise the use of high-value agricultural land.
- The Agri-Parks must maximise the use of existing support services and industries.
- The Agri-Parks should support growing towns and the revitalisation of rural towns in the way of economic and population growth, as well as promote rural-urban linkages.

The business plans for the Agri-Parks will therefore, be structured around the identification of suitable products, location, potential public and private partners, social mobilisation, value chain linkages, funding sources, a governance model and a budget. These are all viewed by the project team as critical success factors associated with the project. Importantly, an assessment of each district's comparative advantages, in terms of agriculture, will inform the development of the Agri-Parks.

2.1.1 Definition and Background to Agri-Parks

The Agri-Parks system is a relatively new concept to South Africa, but the idea draws from existing models locally and abroad, including educational/experimental farms, collective farming, farmer-incubator projects, agri-clusters, eco-villages, and urban-edge allotments, as well as market gardens. These models exist in both a public and private capacity, serving as transition or buffer zones between urban and agricultural uses. The naming of the concept as a "Park" is intended to convey the role that the Mega Agri-Park (nationwide network) will play in open space preservation.

Although the term "Agri-Parks" suggests permanent land conservation and recreational use that is synonymous with the description "public park", it brings to the fore a more traditional model of an agricultural "business park", or "hub", where multiple tenants and owners operate under a common management structure. The Agri-Parks are intended to provide a platform for networking between producers, markets and processors, while also providing the physical infrastructure required for the transforming industries.

The focus of the Agri-Park is primarily on the processing of agricultural products, while the mix of 'non-agricultural' industries may be low or non-existent. Of prime importance is access to viable agricultural land, where a range of productive agri-horticultural enterprises may exist.

The Agri-Park Programme forms part of Government's undertaking to review all land reform policies as enunciated in the 2011 Green Paper on Land Reform. The approach will include the selection and training of smallholder farmers, as well as selecting farms per province for the placement, incubation and training of unemployed agricultural graduates and other agro-entrepreneurs.

The Agri-Parks will be farmer-controlled with the model having a strong social mobilisation component so that black farmers and agri-business entrepreneurs are actively mobilised and organised to support this initiative

For the success of the initiative the DRDLR's will be required to develop strategic partnerships with key government departments such as the Department of Agriculture, Forestry and Fisheries, and the Departments of Cooperative Governance and Traditional Affairs and other spheres of government. In addition, state land will be brought into use and is to be used for both production and processing.
In summary: An Agri-Park is an innovative system of agro-production, processing, logistics, marketing and training and extension services located in District Municipalities. As a network, it enables a market-driven combination and integration of various agricultural activities and rural transformation services. The Agri-Parks contain three basic units:

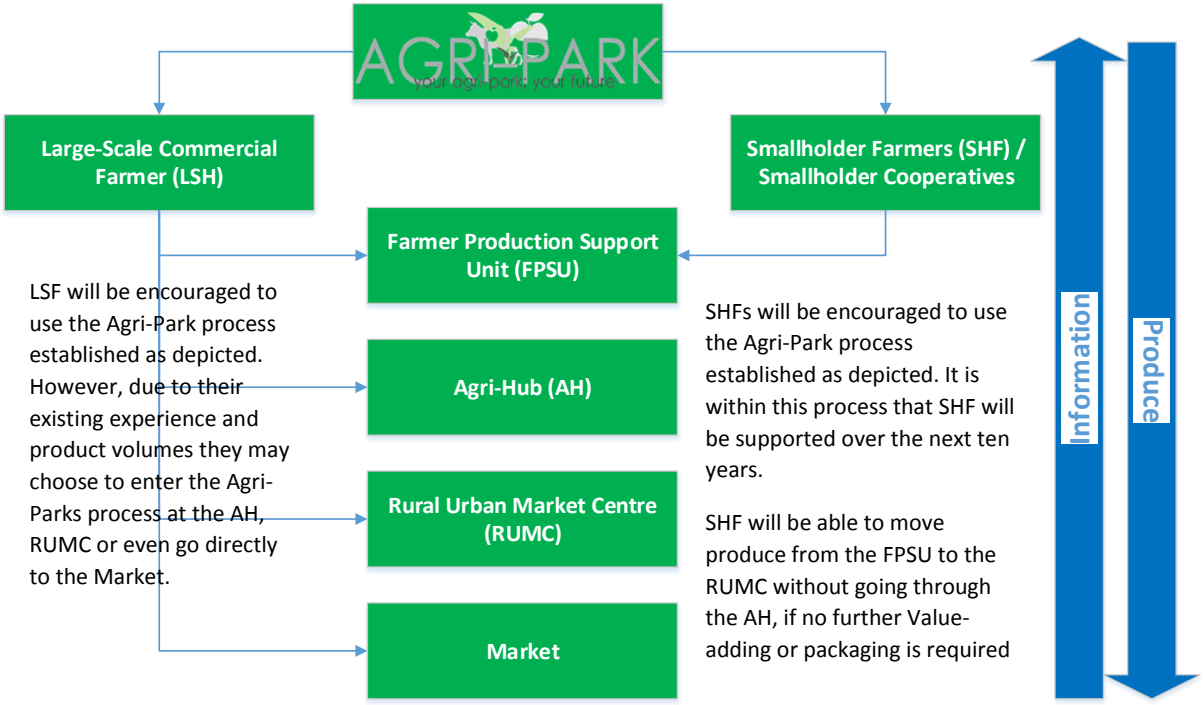
1. The Farmer Production Support Unit (FPSU). The FPSU is a rural outreach unit connected with the Agri-Hub. The FPSU does primary collection, some storage, some processing for the local market, and extension services including mechanisation.

2. Agri-hub Unit (AH). The AH is a production, equipment hire, processing, packaging, logistics and training (demonstration) unit.

3. The Rural Urban Market Centre Unit (RUMC). The RUMC has three main purposes;
   i. Linking and contracting rural, urban and international markets through contracts.
   ii. Acts as a holding-facility, releasing produce to urban markets based on seasonal trends.
   iii. Provides market intelligence and information feedback, to the AH and FPSU, using latest Information and communication technologies.

Diagram 2.1 provides a visual representation of the information and produce flows within the Agri-Hub system.

***Diagram 2.1**: Agri-Park produce and information flows*



Farmer Production Support Units (FPSU): Are centers (more than one per district) of agricultural input supplies, extension support, mechanisation support, local logistics support, primary produce collection, and through-put to Agri-Hubs. The FPSUs have limited sorting, packaging, storage, and processing for local markets with through-put of excess products to Agri-hubs.

Agri-Hub: Agri-Hubs are located in central places in a District Municipality, preferably places with sufficient physical and social infrastructure to accommodate storage/warehousing facilities; Agri-processing facilities; packaging facilities; logistics hubs; agricultural technology demonstration parks; accommodation for extension support training; housing and recreational facilities for labourers. Agri-hubs receive primary inputs form FPSU's for processing, value adding and packaging, which is through-put into the Rural Urban Market Centers or exported directly to markets.

A Rural Urban Marketing Centre (RUMC): RUMCs are located on the periphery of large urban areas, these facilities provide market intelligence assist farmers, processors in managing a nexus of contracts. With large warehousing and cold storage facilities to enable market management. Both FPSU's and Agri-hubs provide inputs to the RUMC. Agri-Parks share RUMCs.

Diagram 2.2 illustrates the strategic representation of the Agri-Park model. This model is to be duplicated in each district across the country, essentially creating a Mega Agri-Park. Each Agri-Park, however will be developed based on its own comparative advantages and its strength, in order to develop each district level economy.

***Diagram 2.2**: Strategic Representation of the Agri-Park model*

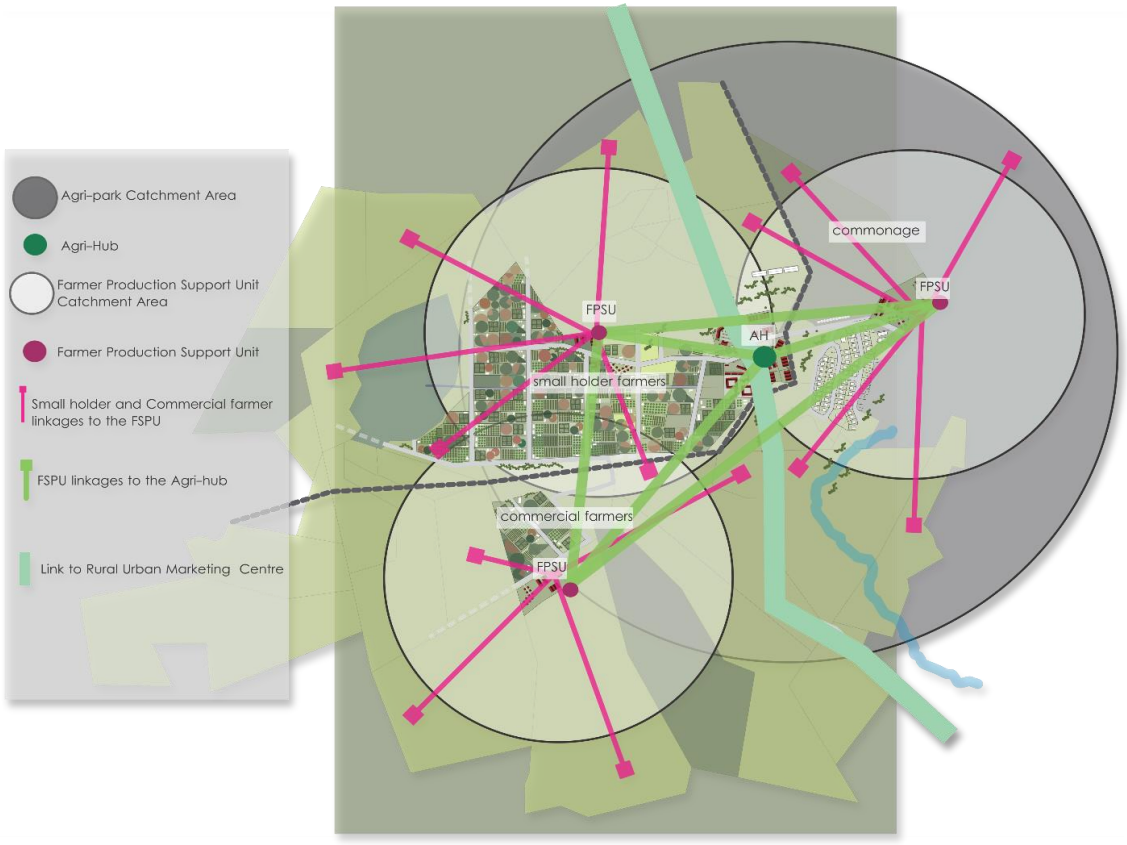


Diagram 2.2 depicts the catchment area of the Agri-Park in the grey circle, essentially illustrating the size and contents of the Park that includes farmers, FPSU's, AH's and RUMC's. The Agri-Hub, or AH, forms the central point of the Agri-Park that is linked to the FPSU's. There will be more than one FPSU per district, which is intended to provide a supporting role between the AH and the farmers. All these components of the Agri-Hub are interlinked, providing a streamlined and integrated approach to agricultural and rural development. Table 2.1 provides the relevant detail of the catchment of each component.

Table 2.1: Norms and Standards for Agri-Parks

Component	Proposed catchment area in areas of low density population	Proposed catchment area in areas of high density population
FPSU	30km	10km
Agri-Hub	120km	60km
RUMC	250km	150km

The FPSU is designed to have catchment areas of 30km in low density areas and 10km in high density areas, indicating that there will be several per district. The AH is designed to have catchment areas of

120km in low density areas and 60km in high density areas, indicating fewer AH's than FPSU's. The RUMC is designed to have the largest catchment areas of 250km in low density areas and 150km in high density areas.

2.1.2 Strategic objectives of the Agri-Parks Programme

The following are the strategic objectives of the Agri-Parks Programme:

- Establish Agri-Parks in all of South Africa's Districts District Municipalities that will kick start the Rural Economic Transformation for these rural regions.
- Promote the growth of the smallholder sector by creating 300 000 new small-scale producers, as well as 145 000 new jobs in the agro-processing industry by the year 2020 (as set out in the National Growth Path).
- Promote the skills of, and support to, small-holder farmers through the provision of capacity building, mentorship, farm infrastructure, extension services, production inputs and mechanisation inputs.
- Strengthen existing and create new partnerships within all three spheres of government, the private sector and civil society to develop critical economic infrastructure such as roads, energy, water, ICT and transportation/logistics corridors that support the agri-park value chain.
- Enable producer ownership of the majority of Agri-Parks equity (70%), with the state and commercial interests holding minority shares (30%).
- Allow smallholder producers to take full control of Agri-Parks by steadily decreasing state support over a period of ten years.
- Bring underutilised land (especially in Communal Areas Land and land reform farms) into full production over the next few years, and expand irrigated agriculture.
- Contribute to the achievement of the National Development Plan's "inclusive rural economy" and target of 1 million jobs created in agriculture sector through creating higher demand for raw agricultural produce, primary and ancillary inputs, as well as generating increased downstream economic activities in the sector.

The Agri-Parks Programme seeks to achieve a rural economic development through an all-inclusive approach to development by developing agricultural value chains that are linked nationally. The programme will also be able to address issues of employment, skills development and productivity of land.

The Agri-Parks programme is viewed as a programme that will address issues of rural economic development, one of government's key areas to address. Government has previously intervened with various anti-poverty programmes, but with a lower impact than what was expected. The Agri-Parks model, however, is expected to co-ordinate anti-poverty activities, providing an integrated package service that will match the local priorities.

3 Policy Review

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

3.1 National Policy Review

3.1.1 National Growth Path

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

Strategic priorities / focus areas
The strategic focus of the NGP is to support employment creation. Efforts will be prioritised in key sectors such as infrastructure, the agricultural value chain, the mining value chain, green economy manufacturing, tourism, and certain high- level services.
Objectives
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.

3.1.2 National Development Plan – 2030 (2010)

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

Challenges

The NDP has identified nine specific and predominant challenges that need to be addressed:

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.

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

The *Industrial Policy Action Plan (IPAP) 2013/14-2015/16* is in the fifth iteration of IPAP and the apex policy document of the Department of Trade and Industry (DTI). It is drawn from a range of visions set out by successive industrial policies such as the NDP, NGP, and National Industrial Policy Framework (NIPF).

Aims and objectives
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.

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

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

Goals and objectives
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.

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

The *Department of Agriculture, Forestry and Fisheries' (DAFF) Agro-Processing Strategy* was developed to create a strategic direction on agro-processing for both national and provincial government.

Goals and objectives
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.

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

The *Strategic Plan for the DAFF* was guided by other key policies such as NGP, NDP, IPAP and the work of the Presidential Infrastructure Coordinating Commission (PICC); aimed at tackling the challenges of poverty, inequality, and unemployment.

Goals and objectives
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.

3.1.7 National Policy Framework on the Development of Small and Medium Agro-Processing Enterprise in the Republic of South Africa 2015

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.

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

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

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

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

The *Integrated Growth and Development Plan (IGDP)* was developed for the Medium Term Expenditure Framework (MTEF) (2011/12 – 2014/15) with the aim of providing a long-term strategy for the growth and development of the agricultural, forestry and fisheries sector in South Africa.

Goals and Objectives
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.

3.2 Linkages to national government programmes

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

3.2.1 Department of Rural Development and Land Reform

3.2.1.1 Comprehensive Rural Development Programme

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.

Goals and objectives
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.
Priorities

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.

Implications for the Agri-Parks development

The implementation of the CASP will result in creating vibrant, equitable, and sustainable rural communities that will be achieved through three-pronged strategy. This will complement the development of the Agri-Park programme which aims to achieve comparable goals.

3.2.1.2 Other Programmes

Other programmes implemented by the DRDLR are the following:

1. Land reform programme

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

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

2. Recapitalisation and development programme

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

stipulates comprehensive development requirements of targeted properties over a 5-year recapitalisation and development cycle.
3. Provincial shared services centres
Provincial Shared Services Centres (PSSCs) are established to coordinate land reform programmes. The PSSC's focus on the following services: 1. Redistribution in terms of the Pro Active Land Acquisition Strategy (PLAS) 2. Tenure (ESTA, IPILRA) 3. Recapitalisation 4. State Land Administration

3.2.1.3 Department of Agriculture, Forestry and Fisheries

The following rural development programmes are driven by DAFF:

1. Comprehensive Agriculture Support Programme (CASP)
To ensure the commercial viability of emerging farmers from a household food security level to a commercial level, a farmer-to-farmer mentorship policy has been developed. The department regards skills development as one of its critical focus areas and this obviously includes providing hands-on training to emergent farmers in various fields of farm management.
2. Micro-Agricultural Financial Institutions of South Africa (Mafisa)
The Micro-Agricultural Financial Institutions of South Africa (Mafisa) encourage partnerships between established agricultural enterprises and emerging farmers and entrepreneurs by providing access to finance for farmers, especially beneficiaries of the land restitution, redistribution, and land tenure reform programmes. The Land Bank administers the credit scheme on behalf of the department and provincial departments provide assistance to access the scheme. Four development finance institutions are currently participating in the disbursement of Mafisa funds in the provinces.
3. Ilima-Letsema
The grant provides for farmers who lack access to credit to be assisted to access agricultural production inputs. The inputs are necessary to increase agricultural production and hence, to improve household and national food security. Jobs are sustained and new ones created when farm enterprises are made operational, and this requires provision of the production inputs
4. Agricultural Broad-Based Black Economic Empowerment (AgriBEE)
The AgriBEE Charter seeks to provide direction on the integration of emerging participants into mainstream agriculture by creating linkages, partnerships, and networks for balanced, mutually benefiting results for all concerned. It specifically encourages partnerships between established agricultural enterprises and emerging farmers and entrepreneurs. It seeks to ensure enhanced competitiveness and sustainable development with improvement/expansion of the existing businesses, rehabilitation of ailing agricultural business concerns, and expanded entry for new businesses in the sector.

It is incumbent on national government to develop plans and service delivery on a national scale. As such, various national legislation, such as the Constitution, have been developed in order to outline the functions and mandate of national and local government. In order to make legislation functional, national government is responsible for the development of various planning and development policies and strategies, as listed above.

The Agri-Parks Programme is a cornerstone to the development of agriculture in South Africa, a key focus of national government over many years. The above policies and plans therefore align and support the development of a programme such as the Agri-Park through complementary goals and objectives and expected outcomes.

3.3 Provincial Policy Review

It is incumbent on provincial, district and local government to decide on development plans and service delivery within its jurisdiction. Various pieces of national legislation, such as the Constitution, the Municipal Structure Act and the Municipal Systems Act outline the functions and mandate of local government. To give impetus to these functions and mandates, local government is responsible for the development of various planning and development policies and strategies.

The purpose of this subsection is to outline the Local legislative framework for the development of the Economic Development Plan for the Gauteng Province. The following polices and strategies are analysed within this subsection:

- Gauteng Agro-Processing Strategy
- Gauteng Industrial Policy Framework
- Gauteng Township Economy Revitalization Strategy Framework
- Gauteng Employment Growth and Development Strategy
- Gauteng 2055
- Gauteng Environmental Management Framework
- Gauteng Agricultural Development Strategy
- Gauteng Department of Agriculture and Rural Development Strategy

3.3.1 Gauteng Agro-Processing Strategy 2015

The Gauteng Agro-Processing Strategy identifies challenges and highlights that interventions are necessary to redress the imbalances of the past and the skewed nature of the sector. In addition, the strategy identifies a significant opportunity for agro-processing to become a driving force for economic growth in Gauteng. While the intent and commitment by the Province in this regard is well documented, a planned and coordinated approach to the development of the industry is required. Through the development of a targeted Agro-processing Strategy, the Gauteng province can strengthen its competitiveness and support localisation.

Vision
The Gauteng Provincial Government, in the Gauteng Employment Growth and Development Strategy of 2009 set out a vision for the Province of" An *inclusive and sustainable Gauteng City- Region that promotes a developmental and equitable society"*. This vision is echoed in the Gauteng City Region Economic Development Plan (2015), which envisages propelling the *"Gauteng City Region into a seamlessly integrated, socially cohesive, economically inclusive region underpinned by a smart, innovation-driven, knowledge-based and green industrial and economic development".* To support this vision, the Province is committed to realising real change by taking active steps in creating an integrated city-region characterised by social cohesion and economic inclusion. This is to be achieved through a programme of radical Transformation, Modernisation and Reindustrialisation of Gauteng. From an economic point of view, this involves the transformation of the economy by creating decent employment and greater economic inclusion focused on bringing township enterprises, cooperatives and SMMEs into the mainstream economy. This will be supported through the modernisation of the economy as a means of unlocking the potential of key targeted development sectors. In terms of re-industrialisation of the economy through strategic economic infrastructure development, with the aim of the Province being to strengthen economic trade and partnerships, given its strategic economic position in the continent.
Key objectives & focus areas
The key objectives to be met in achieving this vision are to: • Develop a modern, efficient and integrated agro-processing industry in the Province;

- Include small enterprises in the mainstream agricultural and agro-processing economy towards the creation of black industrialists;
- Capitalise on and optimally utilise the existing infrastructure, networks and natural resources at the disposal of the Province in value adding activities;
- Invest in human capacity and promote technology transfer to enable greater participation in agro-processing activities;
- Provide the appropriate infrastructure and enabling environment for growth and development of the agro-processing industry in Gauteng.

The Strategic Framework aimed at driving agro-processing development and growth comprises of four main pillars, namely:

- Pillar 1: Government-Led Investment;
- Pillar 2: Partnership Development;
- Pillar 3: Transformation; and
- Pillar 4: Creating a Conducive Environment.

Agri-Specific opportunities

Based on the evaluation framework and the scoring results presented above, the various industries were ranked in terms of the opportunities for development they offer. Based on the rankings, the industries were grouped as follows:

- First order or high priority industries;
- Second order or medium priority industries; and
- Third order or low priority industries.

The following table provides a summary of the priority opportunities:

Rank	High Priority	Rank	Medium Priority	Rank	Low Priority
1	Fruit and Vegetables	6	Dairy	11	Agro-Pharmaceutical
2	Grain Milling and Baking	7	Animal Feeds	12	Aquaculture
3	Poultry	8	Vegetable oil & oil seed	13	Non-alcohol beverages
4	Red Meat	9	Liquor	14	Flowers
5	Piggeries	10	Leather	15	Essential oils

Implications for the development of the AP

The *key benefits* that will be realised through the implementation of the Gauteng Agro-processing Strategy includes:

- Job opportunities in the entire value chain of the agriculture sector;
- Promotion and investment in the agro-processing sector of the Gauteng Province;
- Improvement in competitiveness of the local economy by optimally using the local resource base and locational advantages;
- Stronger integration between the different economic sectors of the Province;
- Enhancement of local businesses/enterprises and skills development for the agro-processing industries; and
- Promotion of overall growth and development of the agro-processing industries.

3.3.2 Gauteng Industrial Policy Framework (2010)

The *Gauteng Industrial Policy Framework (GIPF)* is a framework designed to contribute effectively to wide-ranging industrial development, food security and creation of decent job opportunities in Gauteng. The framework is aligned to the Gauteng's Provincial Government's vision for industrial development.

Vision
This policy framework seeks to move Gauteng's economy towards high value-added and more technological advanced development with knowledge playing a major role.
Strategic priorities / focus areas
The strategic priority is to grow the industrial sectors that are more labour intensive focusing on those that can accommodate both unskilled and semi-skilled workers. The green economy is identified as a potential labour intensive sector within the GIPF. Local food production is key to a developmental of a green economy.
Implications for the development of the AP
The agro-processing sector is one of the key sectors identified to address food security. The GIPF informs the APs Master Business Plan that increasing production within this sector will invariably result into creation of employment opportunities as well as building a stronger regional food economy. It is stated that all provincial programmes should both complement and utilise national policy through the following: • Establishment of a National Food Control Agency; • Development of the organic food sector; • Development of high-value agriculture niche markets – organic cotton; • Competitive enhancement in the fruit and vegetable canning industry; and • Promote exports of beneficiated Rooibos and Honeybush products.

3.3.3 Gauteng Township Economy Revitalisation Strategy (2014)

The Gauteng Township Economy Revitalisation Strategy (GTERS) coordinated by the Gauteng Department of Economic Development (GDED) sets out a programme of action that shows how government together with various partners and intergovernmental working groups intend to take a lead in revitalising the township economy over a period of five and even beyond. The township economy was defined as enterprises and markets based in townships.

Background/Purpose of the policy/strategy
The aim of this strategy is to address specific barriers associated with township enterprises such as the following: • Lack of entrepreneurial and productive activity • Poor understanding of the abilities and values • Little hard evidence to demonstrate the impact and value-added • Limited account taken of their particular characteristics and needs within enabling and supportive environment • Complexity and lack of coherence within township economic sectors combined with widely varying skills and knowledge bases What the strategy sought to achieve is to create an enabling and supporting environment in which township economy can flourish and ensure that township enterprises become key players in the Gauteng economy.
Strategic priorities / focus areas
Government is committed to ensuring that township economies contributes at least 30% of the Gauteng GDP as against the current 10% by 2030. The following seven strategic focus areas have been identified: • Ensuring that there is an appropriate legal and regulatory framework • Promoting manufacturing and productive activities • Economic infrastructure support and clustered enterprise development • Promoting entrepreneurship development • Financing and investing in the township economy • Promoting access to markets • Promotion of innovation and indigenous knowledge systems

Implications for the development of the AP
With cognisance of the productive potentials of township enterprises, the GTERS indicates to the APs Master Business Plan that it is crucial to support and develop agro-processors that will produce and manufacture products within and around the township space. This will play a key role in transforming townships into sites for productive activities, contributing to improved standards of living, job creation, and social cohesion. Agro-processing and infrastructure is needed to expedite economic growth as well as attract and retain investors.

3.3.4 Gauteng Employment Growth and Development Strategy

The Gauteng Employment Growth and Development Strategy (GEGDS) is a multi-stakeholder strategy led by the GDED, set out to create an inclusive and sustainable Gauteng City-Region that promotes a developmental and equitable society. The GEGDS primarily addresses the first strategic priority of the MTSF which is to create decent work and build a growing, inclusive economy. The broad targets of the GEGDS therefore are increased economic growth rate, decreased unemployment rate and decreased poverty rate.

Vision of the strategy
The vision of the Gauteng Employment, Growth and Development Strategy is: An inclusive and sustainable Gauteng City-Region that promotes a developmental and equitable society.
Strategic priorities / focus areas
The long term strategic objective of GEGDS is to create decent job opportunities through endogenous economic growth trajectory based on innovation, green growth and an inclusive economy. The strategic priorities are the following: • Promoting quality education and skills development; • Better healthcare for all; • Stimulating rural development and food security; • Intensify the fight against crime and corruption; • Building cohesive and sustainable communities; and • Strengthening the developmental state and good governance. The following five strategic pillars are identified towards achieving the priorities indicated above: • Transforming the provincial economy through improved efficiency (economic dimension); • Sustainable employment creation (economic dimension); • Increasing economic equity and ownership (equality dimension); • Investing in people (social dimension); and • Sustainable communities and social cohesion (social dimension)
Agriculture Specific
The following agri-specific projects under each pillar have and will be focused on according to Vision 2055: **Pillar 1: Transforming the provincial economy through improved efficiency (economic dimension)** ○ Agriculture and agro-processing **Pillar 2: Sustainable employment creation (economic dimension)** ○ Agriculture and agro-processing **Pillar 5: Sustainable communities and social cohesion (social dimension)** ○ Agriculture and agro-processing
Implications for the development of the AP
The GEGDS informs the APs Master Business Plan that agriculture and the agro-processing sectors are identified as labour absorbing sectors. The sectors will assist in transforming the provincial economy through efficiency. Growing and development of the agro-industrial sectors will play in key role in sustainable employment creation within Gauteng.

3.3.5 Gauteng 2055

Gauteng 2055 is a long term plan envisaged by those people who live and work in Gauteng and who dream of a better future for the city-region. Gauteng 2055 is a development plan which will guide all stakeholders to ensure that the province is prepared to face the challenges presented by urbanisation, migration, poverty, unemployment and climate change and build on the numerous opportunities offered by the region and its people

Vision for 2055
A liveable, equitable, prosperous and united Gauteng City-region (GCR), established through the combined efforts of a developmental state, an engaged civil society and an active citizenry – together targeting the objectives of equitable growth, sustainable development and infrastructure, social inclusivity and cohesion, and the necessary condition of good governance.
Strategic priorities / focus areas
The strategic priorities of the framework presented in this Discussion Paper is to attain a liveable, equitable, prosperous and united GCR. The drivers within the GCR will be a developmental state, an engaged civil society and active citizenry. The four key primary ideals that this framework seeks to achieve are the following: • Equitable growth; • Social inclusivity and cohesion; • Sustainable development and infrastructure; and • Good governance.
Key agriculture specific interventions
1. Develop and implement the Gauteng Integrated Food Development Strategy 2. Providing smallholder farmer development and support (technical, financial, infrastructure) for agrarian transformation 3. West Rand Agricultural College 4. A policy to address the protection of high-potential agricultural land 5. The Gauteng Comprehensive Rural Development Strategy was approved and the first Rural Development Summit was held 6. Increasing access to quality basic infrastructure and services, particularly in education, healthcare and public transport in rural areas 7. Investment in production of bio-fuels from locally produced crops 8. Integration of urban & peri-urban economies
Implications for the development of the AP
The four key primary ideals that this framework seeks to achieve are the following: • Equitable growth; • Social inclusivity and cohesion; • Sustainable development and infrastructure; and • Good governance. The four primary ideals form part of the goals and objectives of the Agri-Park, but it is the key agricultural interventions that are likely to complement the successful development of the local Agri-Parks programme.

3.3.6 Gauteng Provincial Environmental Management Framework (2014)

Background/Purpose of the policy/strategy
The GDARD produced a GPEMF to replace all the EMFs in Gauteng (except the Cradle of Humankind World Heritage Site which is incorporated within the GPEMF).
Strategic priorities / focus areas
The objectives of the GPEMF is to guide sustainable land use management within the GP and serves the following purposes:

- Provide strategic and overall framework for environmental management in GP;
- Align sustainable development initiatives with environmental resources, developmental pressures and growth imperatives of Gauteng;
- Determine geographical areas where certain activities can be excluded from an EIA process; and
- Identify appropriate, inappropriate and conditionally compatible activities in Environmental Management Zones in a manner that promotes pro-active decision making.

Implications for the development of the AP

The EMF is aimed at providing information that can be used by the authorities to support decisions that will take the APs Master Business Plan in the "right direction." The EMF will inform the APs Master Business Plan that it important to find the best possible match between protecting resources (i.e. preventing their loss or degradation) on which humankind depends, whilst addressing the need for development to address pressing social needs such as poverty.

3.3.7 Gauteng Agricultural Development Strategy (GADS) 2006

The Gauteng Agricultural Development Strategy (GADS) is a concise document that assists in directing agricultural development across the GP and presents opportunities to assist in achieving the objectives of the Gauteng Growth and Development Strategy.

Background/Purpose of the policy/strategy

The GADS is fivefold; its purpose is to:

1. Develop Gauteng's agricultural economies (first and second) to attain their maximum potentials and convergence into one;
2. Maximise the contribution of the agricultural economy to job creation, poverty alleviation and economic growth in Gauteng;
3. Provide a co-ordinating framework for investment and implementation in the province;
4. Align agricultural development with the Gauteng Growth and Development strategy; and
5. Create a vehicle which facilitates the integration of the various existing national and provincial agricultural policies, laws and strategies which are applicable to Gauteng.

Strategic priorities / focus areas

This document has identified five strategic priorities to make the vision of long term, sustainable growth of the GP economy, meeting the socio-economic development needs of its people, creating jobs, and reducing unemployment and poverty a reality.

The five strategic priorities:

- Enabling fast economic growth and job creation;
- Fighting poverty and building safe, secure and sustainable communities;
- Developing healthy, skilled and productive people;
- Deepening democracy and nation building and realising the constitutional rights of the people; and
- Building an effective and caring government.

Additionally, the GDS reflects six strategic objectives to assist in achieving its vision, namely:

1. Provision of social and economic infrastructure and services to build sustainable communities and contributing to halving poverty;
2. Accelerated, labour-absorbing economic growth that increases per annum and will create long-term sustainable jobs and contribute to halving unemployment;
3. Sustainable socio-economic development;
4. Enhanced government efficiency and cooperative governance;
5. Participatory democracy, provincial and national unity and citizenship;
6. Contributing to successful achievement of New Partnerships for Africa's Development (NEPAD) goals and objectives across the Continent in an overall commitment to reducing poverty and unemployment.

Implications for the development of the AP
The GADS is aimed at providing information that assists the APs Master Business Plan in the development of the AP. The APs Master Business Plan will contribute in achieving the both the strategic priorities and objectives, such as providing job opportunities that would aid in decreasing unemployment and poverty.

3.3.8 Gauteng Department of Agriculture and Rural Development Strategic Plan (2010 – 2014)

Background/Purpose of the policy/strategy
The Strategic Plan (SP) is guided by the Gauteng's Provincial Government's five year strategic priorities and regulatory mandate, namely: 1. Create work and build a growing inclusive economy; 2. Provide quality education and skills development; 3. Better healthcare; 4. Stimulate rural development and food security; 5. Intensify fight against crime and corruption; 6. Build cohesive and sustainable communities; and 7. Strengthen the development state and good governance. The SP has a vision to create a vibrant, equitable, sustainable rural communities, food security for all, protected and enhanced environmental assets and natural resources.
Strategic priorities / focus areas
The focus area of the SP is to unlock the potential of the environment, agriculture and rural development to enhance the economic, ecological and social wealth of Gauteng. The document indicates that this would be done through: • Improved access to affordable, diverse and nutritious food; • Accelerated sustainable agrarian reform; • Champions of animal health and welfare; • Improved rural services and infrastructure to support sustainable livelihoods with respect to agriculture, environment, education, health, transport, and other forms of infrastructure and services; • Rural job creation linked to skills development and promoting economic livelihoods; and • Sustainable management of natural resources by promoting conservation, better management of waste and reduction of greenhouse emissions.
Implications for the development of the AP
The SP of GDARD supports the development of the APs development. The APs Master Business Plan would play a key role in ensuring an equitable food-secure economy as well as reducing unemployment within the GP.

3.3.9 Gauteng Rural Development Plan 2010

The Gauteng Rural Development Plan is a strategic plan prepared for the rural areas of the province to develop areas of great opportunity for economic activity, job creation, a quality of life and a decent chance at life for all those who live in these areas. A number of novel rural development concepts were introduced through the plan, most notably "functional regional rural zones", "rural design" and transit-oriented rural development".

Key outcomes
1. A set of nine functional Rural Regions spanning rural Gauteng, in many cases "functionally tied parts of neighbouring provinces 2. A set of nine templates, one per functional rural region, for ease of use in intergovernmental planning, budgeting and implementation scheduling-sessions

3. A three-phased approach to developing each of the nine functional rural regions 4. A set of significant quick gain actions that be undertaken in the Gauteng province to, in general, meet governments overarching objective of addressing the triple challenges facing the country in inequality, poverty and employment, and, more specifically contribute the outcome of 7.
Key Objectives
• Strategically plan for and provide guidance for future rural development and land reform projects in the Gauteng province • Provide up-to-date detailed GIS data to assist future rural development and land reform decision making • Provide and integrated framework (i.e. that of the functional rural region) within which to approach, engage, explore think about and undertake rural development and land reform; and\assist with reaching goals of national government as set out in the NDP 2030 Outcomes as adopted by cabinet
Agriculture specific
Using the framework for intervention as set out in the GRDP, significant quick gains can be achieved in the Gauteng Province in meeting the outcome 7 objectives by: • Action A: Transforming rural nodes into high potency, catalytic regional rural development ANCHORS AND rural service centers • Action B: Expanding small-scale farming and supporting small-scale farmers and associated agro-processing • Action C: Enabling and supporting transit-oriented rural development along provincial routes; and • Action D: strengthening and deepening natural systems-based tourism in the province The five most suitable places/areas for Action B are: 1. The Rooiwal Agri-Cluster 2. The Heidelberg Small-Scale Agriculture 3. The Bapsfontein Small-Scale Agriculture 4. The Sokhulumi CRDP Node 5. The Walkerville Agri-Cluster
Implications for the Agri-Park
The plan to transform rural nodes, expand small-scale farming through support and agro-processing, creating transit-oriented routes and strengthening natural systems-based tourism align with the objectives set out by the Agri-Parks programme. As such, the implementation of the development plan will support the development of the Agri-park.

3.4 District Policy and Strategy Review

The role of municipalities is to provide basic services, contribute to community development, as well as promote a safe and healthy living environment. It is also incumbent on district and local government to decide on development plans and service delivery within its jurisdiction. Various pieces of national legislation, such as the Constitution, the Municipal Structure Act and the Municipal Systems Act outline the functions and mandate of local government. To give impetus to these functions and mandates, local government is responsible for the development of various planning and development policies and strategies.

The purpose of this subsection is to outline the Local legislative framework for the development of the Economic Development Plan for the WRDM. The following polices and strategies are analysed within this subsection:

- WRDM Integrated Development Plan
- WRDM Growth and Development Strategy
- WRDM Spatial Development Framework
- WRDM Economic Development
- WRDM Industrial Nodal Strategy

- WRDM Growth and Development Strategy, 2012
- WRDM Local Economic Development Strategy

3.4.1 The West Rand DM Integrated Development Plan 2015/16

The West Rand DM Integrated Development Plan was amended during the 2014 Strategic Planning Session where it was agreed by the participants to recommend a slight amendment to the vision, mission and slogan of the WRDM. This amendment was made to ensure that the vision actually expresses the inspirational destination sought by the people of the district and that the mission gives expression to the way in which this vision is to be achieved.

Vision & Mission
The vision of the district is to provide integrating district governance in order to achieve a better life for all the municipality's citizens. The amended mission now states that the WRDM aims to provide an integrated and excellent developmental district governance system in the West Rand. The plan also states the new slogan adopted by the district which is: "moving towards a greener, better and brighter future for all. "
Strategic Priorities and Focus Areas

The Key Performance Areas (KPAs) of the West Rand IDP may be summarised as follows:
• KPA 1: Service Delivery and Infrastructure Support
  ○ Regional Development Planning and Economic Development
  ○ Health and Social Development
  ○ Public Safety Services
• KPA 2: Public Participation and Good Governance
  ○ Sustainable Governance for Local Communities
• KPA 3: Institutional Development and Transformation
  ○ Business Excellence within the municipality
• KPA 4: Financial Viability
  ○ Business Excellence within the municipality
• KPA 5: Local Economic Development
  ○ Regional Development Planning and Economic Development

Agriculture Specific Findings
• District has a comparative advantage in agriculture and therefore should be developed • Agro-processing opportunities given agriculture development in the area
Implications for the Agri-Park Development
The local agricultural industry has been identified as a comparative advantage and therefore an opportunity for development. In addition, agro-processing opportunities have been identified as high potential. The Agri-Parks programme has the capacity to support the development of agriculture and agro-processing in the district, suggesting that the plans are complementary.

The West Rand IDP states that the region has a comparative advantage in the agriculture, mining and manufacturing sector with the main industrial areas in the district residing within Mogale City and Randfontein. The agricultural sector is in critical need of development, as well as other economic activities/sectors in the district, such as value adding through agro-processing activities. At present, the IDP states that industrial development applications in Westonaria is being approved ad hoc, suggesting the need for an integrated precinct plan to guide development. The West Rand IDP stipulates the need for regional spatial integration and the efficient utilisation of land for industrial purposes.

3.4.2 The West Rand DM Growth and Development Strategy 2012

In September 2007, a Growth and Development Strategy was developed by the West Rand District Municipality. In order for the Regional Growth and Development Strategy to address the current issues within the District and ensure economic growth with regards to the current advantages, it has become necessary to review the Regional Gauteng Development Strategy (GDS). Various changes have also come into play that will affect the District's Regional Growth and Development Strategy, such as the National Growth Path (2010), the Gauteng Employment Growth and Development Strategy (2010) and the 2016 Vision Strategic Framework (2011). The West Rand District Municipality, being one of the poorest regions in the province, needs to be repositioned through the Regional Growth and Development Strategy.

Vision and Mission

The West Rand District Municipality, in cooperation with the four local municipalities embarked on a process to compile a comprehensive Regional Growth and Development Strategy for the district. The Regional Growth and Development Strategy is developed to bring all strategies and programmes of the District together and to promote inclusive development and growth. Growth and development strategies serve to define a chosen growth/development path, providing a foundation for:

- Pragmatically confronting complex challenges and defining long-term strategic choices.
- Framing medium-term operational plans.
- Allowing for the timeous conceptualisation and initiation of projects requiring long-term development.
- Linking long-term district-wide outcomes with operational outputs.
- Stimulating public interest in and action towards agreed future outcomes.

The vision of the West Rand District Regional Growth and Development Strategy is to "develop and sustain an integrated, socio-economically and economically thriving and green environment with a unified society."

Issues and Focus Areas

The growth and development strategy identifies the following six strategic priorities/key focus areas for the West Rand District Area and these form the basis of the West Rand Regional Growth and Development Strategy:

Strategic Priority 1: Spatial Integration

- Suitable development planning around dolomitic areas
- Optimise opportunities/spin-offs from neighbouring areas' initiatives:
- Nodal densification
- Corridor development and diversification
- Mining rehabilitation to increase land availability
- Informal Settlement Management
- Development Incentive Schemes
- Urban Renewal and Inner City Rejuvenation in the four main business areas

Strategic Priority 2: Physical Infrastructure

- Promoting Information and Communication Technology (ICT)
- Focus on strategic economic infrastructure programmes
- Planning for current and future infrastructure
- Maintenance of current infrastructure
- Securing investment for infrastructure development

Strategic Objective 3: Economic Development

- Expanding the Agriculture/Agro-processing industry in the District
- Stimulating mining activity and mineral processing and -beneficiation activities in the District
- Increasing manufacturing opportunities and activities in the District
- Strengthening and promoting the tourism industry in the District

Strategic Objective 4: Environmental Management

- Biofuel
- Alternative energies (such as photovoltaic)
- Hazardous and new waste types
- Mine water pollution (e.g. Acid Mine Drainage)
- Nanotechnology
- Land Degradation
- Creating a renewable energy sector
- Managing and addressing mining-related environmental impacts
- Waste Management and Recycling Programmes
- Mitigate and prevent land degradation

Strategic Objective 5: Social Development

- Reducing Poverty & Unemployment
- Promoting Sustainable Human Settlements
- Ensuring adequate education and training facilities
- Ensuring efficient Health Care and Facilities
- Promoting Safety and Security
- Developing Sports, Recreation, Arts and Culture (SRAC) facilities

Strategic Objective 6: Governance

- Promote Community Participation
- Ensure Clean Audits
- Effective implementation of Council policies
- Maximise resources from other spheres
- Regular Monitoring and evaluation
- Promote easy and affordable business

Agriculture Specific Findings and implications for the Agri-Park

The following key economic development strategies have been identified for the agricultural sector to ensure growth and development within the District:

- Expanding the Agriculture/Agro-processing industry in the District
- Protecting agricultural land within the District. The inappropriate subdivision of high potential agricultural land should be prevented.
- The District needs to intensify their efforts to increase the availability of land for agricultural production, especially high or unique potential land through adopting a Public Private Partnership approach.
- The development and support of labour-intensive agricultural projects (intensive commercial farming) in low-income communities. Job creation and food security are advantages from this approach.
- Promotion of skills development and management training necessary for small scale sustainable farming.
- Development of a Food Export Cluster/Agricultural Hub, with specific focus on exporting from the Lanseria Airport.
- Introduction of new products with special focus on small-scale farming and niche markets.
- o The promotion of agro-processing focusing on a variety of products (such as the Moringa tree with high nutritional value)
- Develop new and young upcoming agricultural entrepreneurs, SMMEs and cooperatives, and support them through local procurement.

These development strategies will not only lead to the development of local agriculture, but also lead to opportunities that are likely to complement the development of the Agri-park.

3.4.3 The West Rand Economic Development Plan

West Rand District Municipality undertook the West Rand Economic Development Plan to evaluate the economic situation of the district and to identify economic development opportunities and strategic projects for the district.

Vision and Mission
The purpose of the study was to undertake an economic evaluation of the district and to identify economic development opportunities and strategic projects for the district.
Strategic focus areas for development

The West Rand Economic Development Plan identified various development opportunities:
 	
• Industrial cluster development:
  ○ Manufacturing development can be promoted through the development of industrial clusters around growth sectors that appear to have a (potential) comparative advantage, e.g. industries linked to the agriculture and agro-processing
• Manufacturing opportunities in niche markets
  ○ Downstream processing of ostrich products
  ○ **Organic food supplements** and bio-medical products
  ○ SMME manufacturing, incl. clothing, upholstery, arts and crafts, etc.
• Manufacturing activities using local produce as inputs
  ○ Agro-industrial processing, e.g. Diary processing, grain milling
• Supportive and service industries linked to the mining sector:
  ○ These industries should be targeted for growth, since more/larger contracts for the delivery of services/inputs to the mines will improve backward linkages
• Promotion of further investment in currently successful manufacturing activities:
• Chemical Waste Sector

Agriculture Specific Findings
The development opportunities identified within the agricultural sector include: • Intensive commercial farming opportunities: • Aquaculture development • Small-scale commercial farming: • Subsistence farming: • Other development opportunities within the agricultural sector: • Food supplements and bio-technology development/application Particular strategies toward agriculture development in the district include: **STRATEGY 1:** The Intensive Agricultural Development Strategy has been developed to promote the strengths that have been identified for the Agricultural sector in the West Rand The main purpose of this strategy is to: • Exploit the opportunities offered by the high potential agricultural land identified within the district • Significantly increase the yield per hectare (relative to extensive farming) and therefore providing more affordable food to the consumer • Provide support to emerging and small-scale farmers, and ensure that appropriate skills development takes place • To increase land availability for agricultural purposes through partnerships with the current mining houses and through mining rehabilitation • To increase job creation in rural areas through labour-intensive agricultural projects

STRATEGY 4: The Agro-processing Strategy has been developed to promote the strengths that have been identified for the Agricultural sector and therefore the opportunities created for agro-processing in the West Rand, namely:

The main purpose of this strategy is to:

- Exploit the opportunities offered by the existing strong agricultural base, and to expand on the value-adding activities
- Increase job creation
- Provide support and technical assistance to existing and upcoming agro-processing businesses
- Enhance the productivity of the agricultural industry of the district
- Promote the development of down-stream and value adding manufacturing and retail industries such as cooling and storage facilities, etc.

Implications for the Agri-Park Development

The above strategies one and four are very much complementary strategies that align with the development of the Agri-Park. The focus of intensive agricultural production and agro-processing activities encompass the goals and objectives that have been set out by the Agri-Parks programme.

The leading manufacturing industries in the WRDM include food products, textiles, non-metallic mineral products, metal products, machinery, motor vehicle accessories and plastic products. The main industrial centers in West Rand are dominated by the production of machinery and metal products, which is a result of the influence of the mining sector in the area. The main industrial areas are Chamdor, Delmas, Aureus, Boltonia, Delporton and Factoria.

3.4.4 The West Rand Spatial Development Framework (SDF) 2014

The SDF was compiled to align it with SDF's of its four Local Municipalities: Mogale City, Randfontein, Westonaria and Merafong City. Through this process the District Municipality ensures that the new revised SDF is well aligned with its Integrated Development Plan and all the recent new Provincial and National policy directives and sector plans completed at national level and for Gauteng Province.

The SDF addresses integration and alignment between spatial, engineering, environmental and socio-economic issues confronting the various municipalities. It will also facilitate implementation of the IDP and all related government intentions to fight poverty and facilitate urban and rural development in the West Rand area, as contemplated in policy documents like the National and Provincial Development Plans and various Master Plans.

Strategic goals

Secondary Objectives: Apart from the above, the following more detailed objectives are to be addressed as part of the WRDM SDF process:

- To provide strategic, indicative and flexible forward planning instrument to guide decisions on land development;
- To provide a set of policies, principles and directives for spatial development;
- To provide a clear and logical framework for private and public sector investment;
- To promote sustainable development in terms of natural and built environment conservation;
- To facilitate the social, economic and environmental sustainability of the WRDM area;
- To provide a framework for dealing with key issues such as natural resource management, land reform, and land use management;
- To facilitate the development of an aesthetical urban and rural landscape;
- Development of the West Rand SDF to comply with legal requirements and also be conversant with the developments within the broader Gauteng City Region;
- Alignment of the West Rand SDF with the recommendations of the NDP, PGDS and District IDP;
- Ensuring consistency in level of detail, general contents, development philosophy, as well as horizontal and vertical integration between the Local SDF's, and the District SDF.

Focus areas

In line with the Development Principles for spatial planning as contained in the Spatial Planning and Land Use Management Act, the West Rand District Spatial Development Framework seeks to achieve the following:

Spatial Sustainability:

- Create a more consolidated settlement structure in the WRDM, so as to allow for the cost-effective and sustainable provision of engineering and community services and infrastructure;
- Ensure the sustainable use of land and other resources in the District.

Spatial Justice:

- Mitigate existing and future conflicts between urban development, mining, industry, agriculture, and tourism which are the main economic sectors in the District;
- Achieve spatial justice by way of inclusion of communities that were previously excluded from services and facilities through processes of urban restructuring and consolidation;
- Provide all communities access to resources to improve their living conditions.

Spatial Efficiency:

- Ensure the channeling of resources to areas in the WRDM displaying both economic potential and development need;

Functionally linking the main growth centers / areas of greatest economic activity in the District to one another and to the regional economy of the GCR;

- Enhance the development potential of existing towns and smaller settlements in rural areas of the District.
- Good Administration:
- Ensure alignment between different sectoral plans and initiatives from various spheres of government, surrounding districts, metropolitan municipalities, and the local municipalities within the WRDM.

Agricultural specific findings

Two areas of extensive agriculture have been identified in the central-western and southern parts of the district. These areas focus on promoting agricultural activity and both form part of the Gauteng Agricultural Hubs

The following agriculture specific spatial development framework and development guidelines (principles) were identified within the SDF:

Principle 1: consolidate and protect environmentally sensitive areas to ensure long term environmental sustainability

- The WRDM should promote the agricultural industry within the municipal area, by encouraging the use of different crops and new techniques.
- Agricultural practices on all land with high agricultural potential to optimize food production.

Principle 5: Optimise agricultural production and processing in and around the two agricultural hubs in the district

- The WRDM should use these two areas of high agricultural potential to promote the agricultural industry within the municipal area.
- Increasing land availability for agricultural purposes through partnerships with the current mining houses and through mining rehabilitation and land reform (where relevant).

The aforementioned purpose can be achieved by means of the following projects (see WRDM EDP for more detail):

- Availing rehabilitated/unused mining land for agricultural purposes/projects (especially within Merafong, Westonaria and Randfontein LMs).

• Promotion of intensive, export-orientated products in the Mogale City area, due to the close proximity to the Lanseria Airport and OR Tambo Airport. • Skills development in agriculture and farming practices. • Developing a partnership between established commercial farmers and the Agriculture FET College.
Implications for the Agri-Park Development
The optimisation of agricultural production and processing in and around the district is a key outcome for the Agri-Parks programme, as it is for the SDF. The development of agriculture as set out in the SDF is therefore complementary and the implications on the Agri-Park can be expected to be complementary.

3.4.5 The West Rand Industrial Nodal Strategy 2013

The nodal strategy focuses on the economic principles for sustainable industrial nodal development as well as the industrial development strategy fundamentals that are intended to guide, inform and accelerate industrial development on the West Rand. The overarching industrial development strategy consists of four pillars, each addressing a unique set of industrial elements. These four strategy pillar are:

Pillar 1: West Rand Industrial Revival Strategy
Pillar 2: West Rand Industrial Maintenance Strategy
Pillar 3: West Rand Industrial Growth and Management Strategy
Pillar 4: West Rand Kick Start Strategy

The overarching strategy informs the revival, growth and maintenance of existing and proposed new industrial nodes. This section will briefly provide an overview of the most important industrial nodes.

Vision
The WRDM Industrial Nodal Strategy is to "Transform the West Rand industrial offerings into new, modern and diversified nodes and proactively stimulate the development of optimally located new industrial nodes to attract clean industry and logistics orientated industrial enterprises, whilst promoting the settlement of a broad spectrum of enterprises (SMME through to large corporates) that promote value chain extension of local resources".
Specific Objectives/focus areas
The following industrial development objectives inform / guide development strategy for the district: • Strengthen the functionality and performance of existing industrial nodes • Diversify the existing industrial base of the nodes • Strengthen existing agglomeration advantages • Contribute to the establishment of sustainable clusters • Create sustainable jobs • Contribute to the regeneration of the industrial node • Unlock local resources • Attract higher skill levels to the node • Contribute to SMME development • Strengthen economic linkages • Contribute to skills development and capacity building of the local labour force • Promote the incorporation of green industries / technology in all nodes • Ensure availability / flexibility of engineering services and related infrastructure
Agricultural specific findings and implications for the Agri-Park
The WRDM industrial Nodal Strategy contains a proposal for a new industrial node: Randfontein poses scope for industrial development aligned with contemporary principles in very specific locations. The N14 is arguably the corridor on the West Rand with the greatest latent potential. Specifically, the node is known as the N14/Bradirile and Tarleton Agri-processing Node

3.4.6 West Rand Local Economic Development Strategy 2011-2016

The West Rand District Municipality (WRDM) has an Economic Development Strategy which focuses on the development of sectoral clusters and resulted in the establishment of the West Rand Development Agency. In view of the requirements for local government to have a credible LED strategy in place, the current Economic Development Strategy needs to be reviewed to reflect the most recent local and regional development dynamics and appropriately packaged as an LED Strategy.

Vision and Mission

The vision of the West Rand LED Strategy is to promote long-term sustainable growth within the WRDM, through job creation, the eradication of poverty and unemployment, meeting the socio-economic needs of the community and diversification of the economic base.

The objectives of the West Rand LED Strategy include the following:

- Higher regional growth
- Beneficiation of primary products
- Build upon the comparative advantage of the areas
    - Increase sustainable employment opportunities
    - Increased labour absorption capacity of the economy
    - Creation of competitive skills base
    - Aid the improvement of annual household income
    - Improved living standards
    - Implementing support services
    - Increase SMME opportunities
    - Increase economic linkages in the region
    - Increase municipal capacity building
    - Building partnerships for economic growth and development
    - Promote Broad Based Black Economic Empowerment (BBBEE)

Strategic Focus Areas

The West Rand LED identified the following strategic thrusts:

- Thrust 1: Expansion of the Agricultural Sector
- Thrust 2: Industrial and Beneficiation Development
- Thrust 3: Waste Recycling/Processing
- Thrust 4: SMME Development and Support Centre
- Thrust 5: Human Resource Development
- Thrust 6: Tourism Development

Agriculture specific findings and implications for the Agri-park

The agriculture and mining sectors are the sectors in the West Rand with a comparative advantage, with the Manufacturing sector demonstrating a latent potential comparative advantage

According to research conducted by Urban-Econ (2006) in a previous study, the agricultural sector in the West Rand had a location quotient of larger than one, indicating a comparative advantage in this sector. The comparative advantage registered the strongest in Randfontein and Mogale City.

The WRDM also possesses the potential to **develop agro-processing** within its borders, as **the majority of required resources are available**. The pursuit of this opportunity would also be in line with the priorities of provincial and national government, as well as the Agri-Parks programme. **Food production and agro-processing are identified as target sectors by not only GEDA**, the Gauteng Trade and Industrial Strategy, the DTI and in the National Integrated Manufacturing Strategy, but also the Agri-Parks programme.

3.4.7 Regional Economic and Industrial Development Plan for the West Rand DM 2013

The purpose of the study of the Regional and Industrial Development Plan was to develop a plan in support of the Gauteng Global City Region concept whereby the West Rand municipal regions are integrated into the provincial space economy. Specifically, the study calls for "cities that complement one another in creating functional economies" (DED, 2014). In addition, the provincial government is seeking to position West Rand as a city that would become viable metropolitan municipality by 2016. This calls for integrated economic and industrial plans characterised by endogenous technologies, green and innovative industries, investment in new sectors and the reindustrialisation of township economies.

"The ultimate goal of the Gauteng Provincial Government is to ensure that new industries across different value-chains are attracted in the lagging areas with the aim of optimising backwards and forward linkages amongst sectors" (DED, 2014)**.**

Vision and Mission
Support the Gauteng Global City Region concept whereby the West Rand municipal regions are integrated into the provincial space economy.
Strategic Focus Areas
Various industrial investment and development opportunities have been identified within the GCR. Such opportunities are influenced by various factors such as market demand conditions, the availability of serviced industrial stands, the availability of skilled labour, the capacity of bulk infrastructure, local investment incentives, etc. From an economic development perspective these factors have been aggregated into the following principles as a basis for determining the industrial development potential of the district: • Trade linkages and value addition • Sectoral competitiveness • Foreign trade and foreign direct investment • Labour and skills development • Strategic investment potential
Agriculture specific findings and implications for the Agri-park
The identification of strategic industry plans: Through careful investigation of the development indicators and alignment with the policy framework, the following agriculture specific industries have been prioritised for economic and industrial development and investment in the West Rand: • **The West Rand Agro-Processing Cluster** Rationale: The West Rand has a vibrant agricultural sector where both crop and animal farming is practiced. The region can be described as semi-arid with many crop farmers making use of irrigation to boost yields. Agriculture is typically not affected by dolomitic formations and often practiced when additional tracts of land are made available- typically by the mining sector. The local agro-processing sector is of central importance to the long-term food security of Gauteng. Opportunities for agro-processing in the West Rand mainly includes food processing and to a lesser extent bio-fuels. Foreign trade and the adoption of international food standards, such as GLOBAL Good Agricultural Practice (GLOBAL G.A.P.) can greatly enhance the size of the market for firms in this industry while foreign investment can curb import leakages. Foreign investment will also introduce new production technologies, processes and knowledge-skills to the local industry. The vibrant agricultural sector and thus potential for agro-processing opportunities bode well for the development of the Agri-Park, which intends to develop the local agricultural sectors value chain and adopting best practices that are of an international standard.

The Agri-Parks Programme is a cornerstone to the development of agriculture in South Africa, a key focus of national government over many years. The above policies and plans therefore align and support the development of a programme such as the Agri-Park through complementary goals and objectives and expected outcomes.

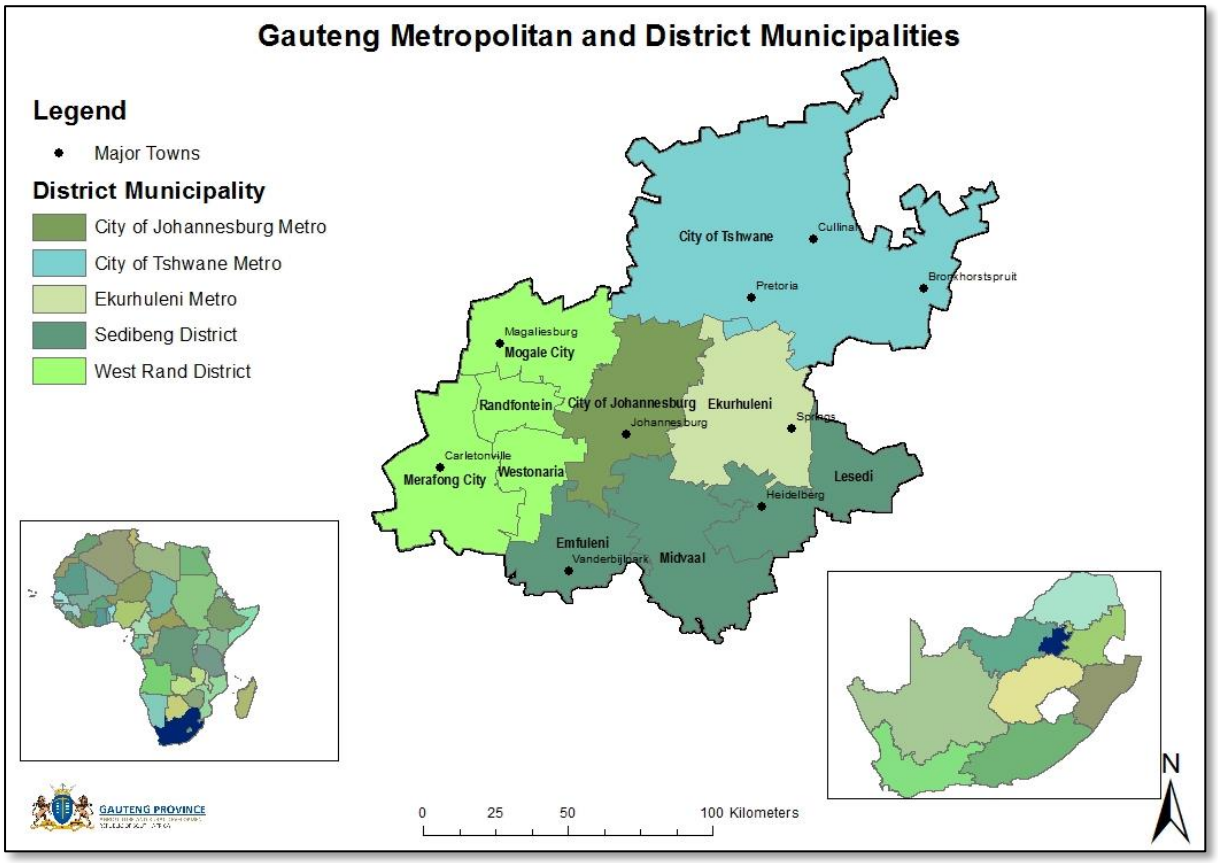
4 Location context

4.1 Description of the district

Within Gauteng there are five metropolitan and district municipalities, including the City of Johannesburg Metro, City of Tshwane Metro, Ekurhuleni Metro, Sedibeng District and West Rand District Municipality as indicated by Map 4.1. The primary area that this project is concerned with is that of the WRDM. The WRDM lies to south-west edge of the province and is made up of four local municipalities that include Mogale City, Randfontein, Merafong City and Westonaria, indicated in Map 4.2. The district borders the North West Province and is easily accessible from all major Gauteng centers. The West Rand Region is 4,095 km2 size of the land cover, and a population size of 848,597.

Key informants for the strengthening and expansion of the rural economy in the province are the presence of agriculture and agri-related activities. Within Gauteng there are some large farm portions that are being used for maize and vegetable production. The activities provide useful information for supporting smaller-scale emerging farmer activities, and a broader overview of larger-scale farming activities. Evidence suggests that the central part of rural Gauteng is primarily used for diverse farming activities, the north eastern parts of the south-eastern and the south-western segments are primarily used for cattle farming, and the southern and parts of the south-eastern parts are used for grain production.

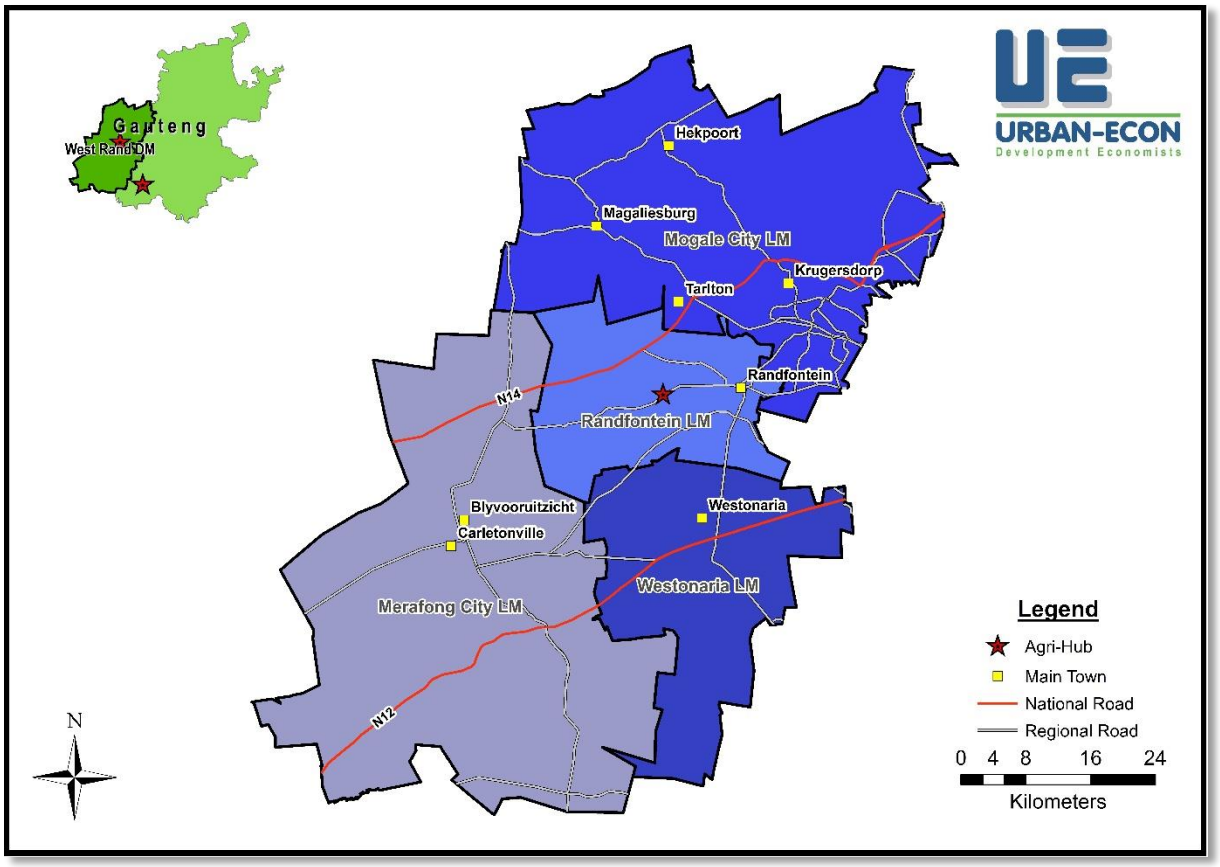
Map 4.1: Gauteng Metropolitan and District Municipalities



Within the context of the WRDM, there are areas with excellent to good agricultural potential, especially in Mogale City, as well as in Westonaria and Merafong City. Mogale City is also by far the most important agricultural district in the West Rand. Even though Westonaria has been identified

as an area with high potential agricultural land, it is rarely used for these purposes due to high mining activity, which contributes to the impacts of pollution in the area. The strategic location of the WRDM in relation to the Gauteng Province creates a major potential for the agriculture sector to grow and stimulate economic development in the region.

Map 4.2: West Rand District Municipality



The advantage held by farmers within the West Rand is their close proximity to the largest consumer market of perishable goods in South Africa (i.e. City of Tshwane and City of Johannesburg), coupled with the fact that the region has areas with good to excellent agricultural potential. Furthermore, the region possesses the potential to develop agro-processing within its borders, as a majority of required resources are available. Mining is still a very important economic sector in the West Rand that should be used as a catalyst for developing other economic activities within the region, especially agriculture.

4.1.1 Spatial Features

The following spatial and physical characteristics are common throughout the WRDM:

- The main transport routes in the district are the N14 and N12, cutting parallel to each other, that form a strong south-east to north-west linkage. R28 act as a seam in the context of the District connecting the main movement lines in a north-south direction.
- The R500 provides the north-south direction connecting to the N14 to the north.
- The district is characterised by the mountain ranges of Magaliesburg to the North West.
- Development and settlements are concentrated towards the east of the district.
- Due to mining activities and their development buffer zones in the district, the main economic centers in the district display a dispersed and fragmented form.

- The district is largely dolomitic, which acts as a structuring element/restrictive factor in terms of land use patterns.
- Agriculture is a potentially important sector, predominating on the western side of the district (agricultural holdings).
- The settlement patterns of the area are a reflection of development dynamics and include historical residential patterns and trends, the related social and economic profile of the population, the economy and concentration of economic activity spatially, transportation infrastructure, engineering infrastructure, land availability and planning initiatives.
- Specific roads and rail routes act as conduits of development and to link development zones with each other and with areas beyond the WRDM.
- The district is characterised by a significant amount of mine dumps, otherwise referred to as —Golden Sand, bearing witness to the significant impact of mining in the district and Gauteng.

4.2 Location of the Agri-hub

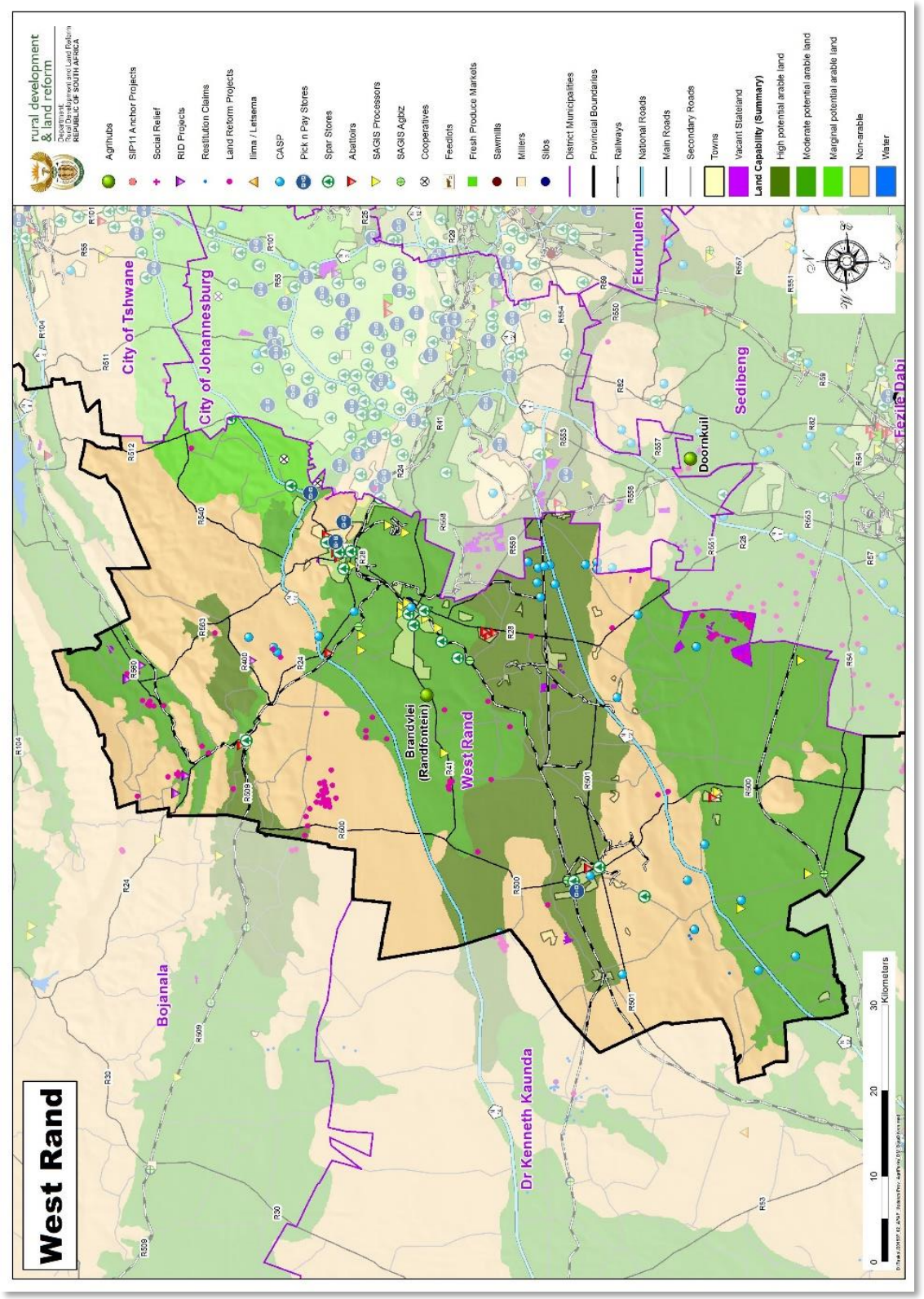
The DRDLR has completed the site selection for various Agri-Hubs in the respective districts across the country. Randfontein (Brandvlei), in the West Rand is the proposed location for the district Agri-Park for the following reasons:

1. Randfontein is not an Economic Development District (EDD) or Regional Gateway.
2. There are no other gateways in the district to choose from.
3. The land capability is moderate to good, which suggests agriculture in the region has moderate to high potential for growth and development.
4. The road and rail makes connectivity easy from the product sources to the markets, in particular fresh produce
5. There are at least 5 Spar food stores in the area that are potential market points.
6. There are many Comprehensive Agricultural Support Programme (CASP) 15-16 projects in the area, suggesting that the production of primary commodities is developing.
7. Close proximity to Mogale City (major market), which is an EDD Regional gateway.
8. Many Land Reform acquisition projects to the west of the proposed location that could contribute to primary production and therefore provide inputs to the Agri-Hub.
9. Animal and veld management (AVMP) farms to the north-west and south east of the proposed location are also potential input suppliers, in particular red meat suppliers.
10. It is located within the 150 poorest wards Provincial Indices of Multiple Deprivation (PIMD) – the Agri-Hub is seen as an economic development contributor.
11. There are some pieces of State Land available in the area (not vacant) that are potential points of production and, therefore, potential input suppliers.
12. Ginner, CASP Projects in the area that have the potential to act as a pillar, or contribute to the development of the Agri-Hub.
13. There is a Comprehensive Rural Development Programme (CRDP) site to the south that is a potential input supplier.
14. There are good water sources available from rivers in the area.

4.3 Maps

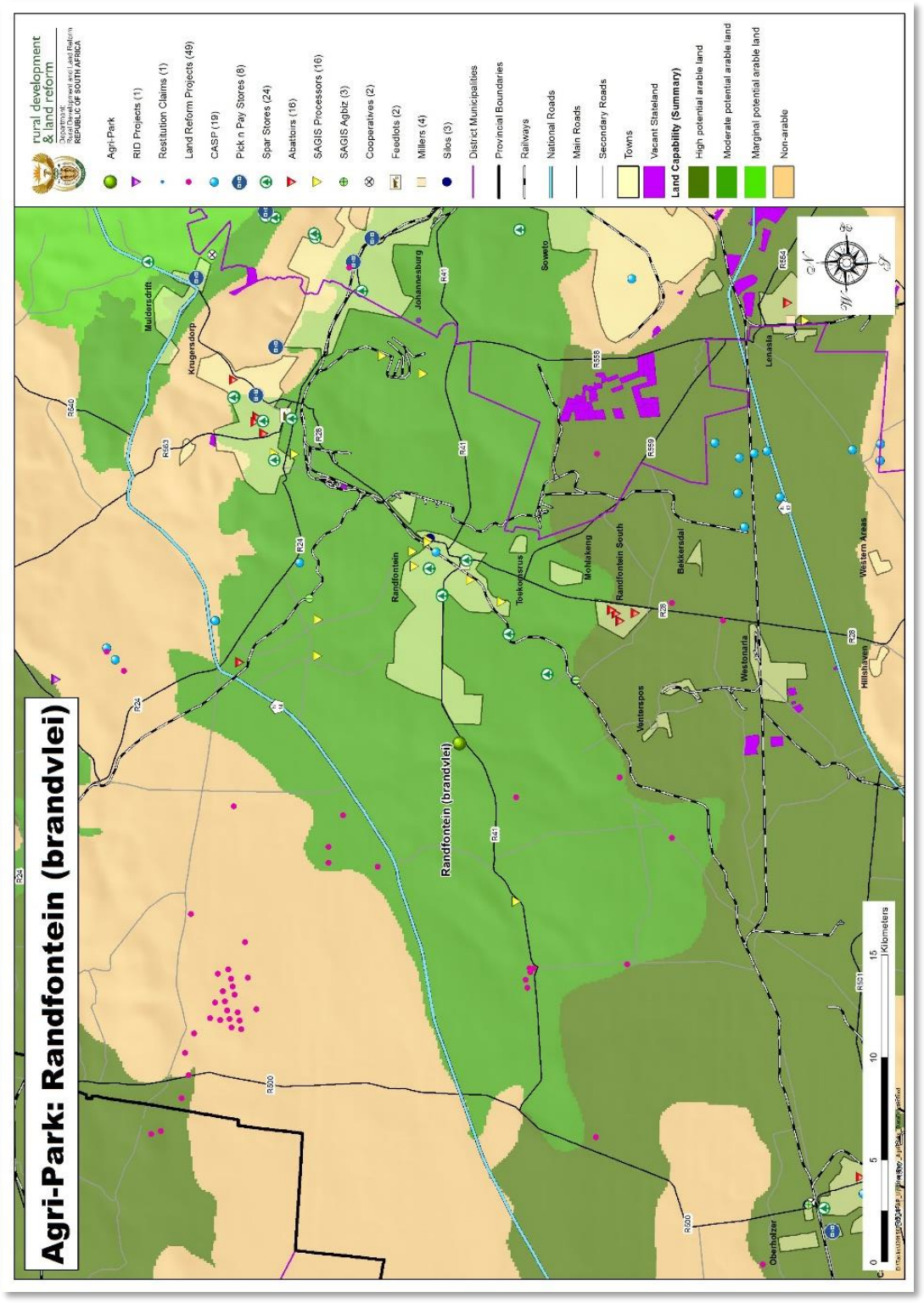
The following maps depict the location of the WRDM as well as important characteristics of the area, especially with respect to the development of the Agri-Park. The maps indicate the proposed location of the Agri-Parks, as well as land use capabilities, important agricultural projects, related infrastructure, markets and transport routes.

Map 4.3: West Rand District Municipality Location of the Agri-Hub



Map 4.3 indicates the proposed location of the Agri-Hub, land capability, water sites, towns/cities and major transport routes. The West Rand District map provides useful information regarding the location of abattoirs, silos and fresh produce markets, which is of crucial importance in proposals for expanding the agricultural economy in the province. Just under two thirds of the District is in a natural or near-natural state (63%), with urban areas (6%), intensive agriculture (28%) and mining (3%).

Map 4.4: Proposed Location of the Agri-Hub



Map 4.4 indicates the proposed location of the Agri-Hub in Randfontein (Brandvlei). This location indicates, clearly, that there are five Spars in close proximity. In addition, the site is located on the R41 in an area that is characterised by moderate potential arable land.

Map 4.5: Proposed Agri-Hub site in Brandvlei (Portion 70 of Farm Brandvlei 261 IQ)

Map 4.5 indicates the portion of land that is proposed for the development of the Agri-Hub. The site, located in Randfontein is located alongside a main road and surrounded by other farms involved in agricultural activities that could potentially feed into the site. There is a site for housing in close proximity that could be a potential labour market.

An important consideration is the location of the Sedibeng District and its related Agri-Hub. Connectivity between districts is provides potential for several linkages, particularly in the way of agriculture. The strategies of the districts need to be aligned such that they become complementary districts, rather than competing districts. The focus of the Sedibeng district Master Agri-Parks Master Plan is centred around beef, poultry and vegetable production while the West Rand will focus on the production of vegetables, poultry and maize.

4.4 Economic infrastructure within the West Rand District Municipality

The WRDM is serviced by National, Provincial and Local roads. The N12 and N14 are the two National roads that cross the district in a west to north eastern direction. These routes generally provide good regional access between the WRDM and Johannesburg to the east, Pretoria to the north and the NW Province to the north-west.

Road infrastructure in the residential areas is generally poor because of e.g. lack of maintenance, improper rehabilitation and pressure from new developments. According to available data, the extent

of the provincial road network within the jurisdiction of the WRDM is 1 529.8 km. The majority of the roads are provincial tertiary roads with an inter-district mobility function.

Movement linkages are essential as they increase a region's connectivity and access to economic and learning opportunities. The district is well serviced in terms of east-west regional linkages and these directly link the WRDM to the northern and central Gauteng economic hubs to its east and the agricultural and mining zones of the North West Province to its west. The economic and developmental benefits that these linkages have added to the district itself so far are still relatively minimal.

On the other hand, the district has not at all been able to create and sustain strong north-south linkages that centralise it between the Free State Province and the eastern parts of the North West Province such as the Bojanala Local Municipality.

The Integrated Development Plan of the West Rand District Municipality, specifically with regards to the Nodal Development Strategy, identifies the Lanseria Airport Node as an important Strategic Project and Programme.

The Lanseria airport node is an important development for the Cradle of Humankind. The airport could influence the development of the K29 road with the development of Cosmo City. The K29 road serves as a regional corridor between Johannesburg area and Rustenburg area and it also connects with the Platinum toll road as spatial corridor. Other important infrastructure considerations include:

ELECTRICITY DISTRIBUTION: Due to the expansion of the economic activities that sustain the district municipality, the areas that are in greater need of electricity supply and maintenance are mainly the urban areas of Randfontein and Mogale City. This is particularly due to the population densities found in these areas coupled with the various land uses that range from residential to commercial and industrial. These are all land uses that require a greater supply of electricity compared to those agricultural areas found mainly in the south to north western parts of the municipality.

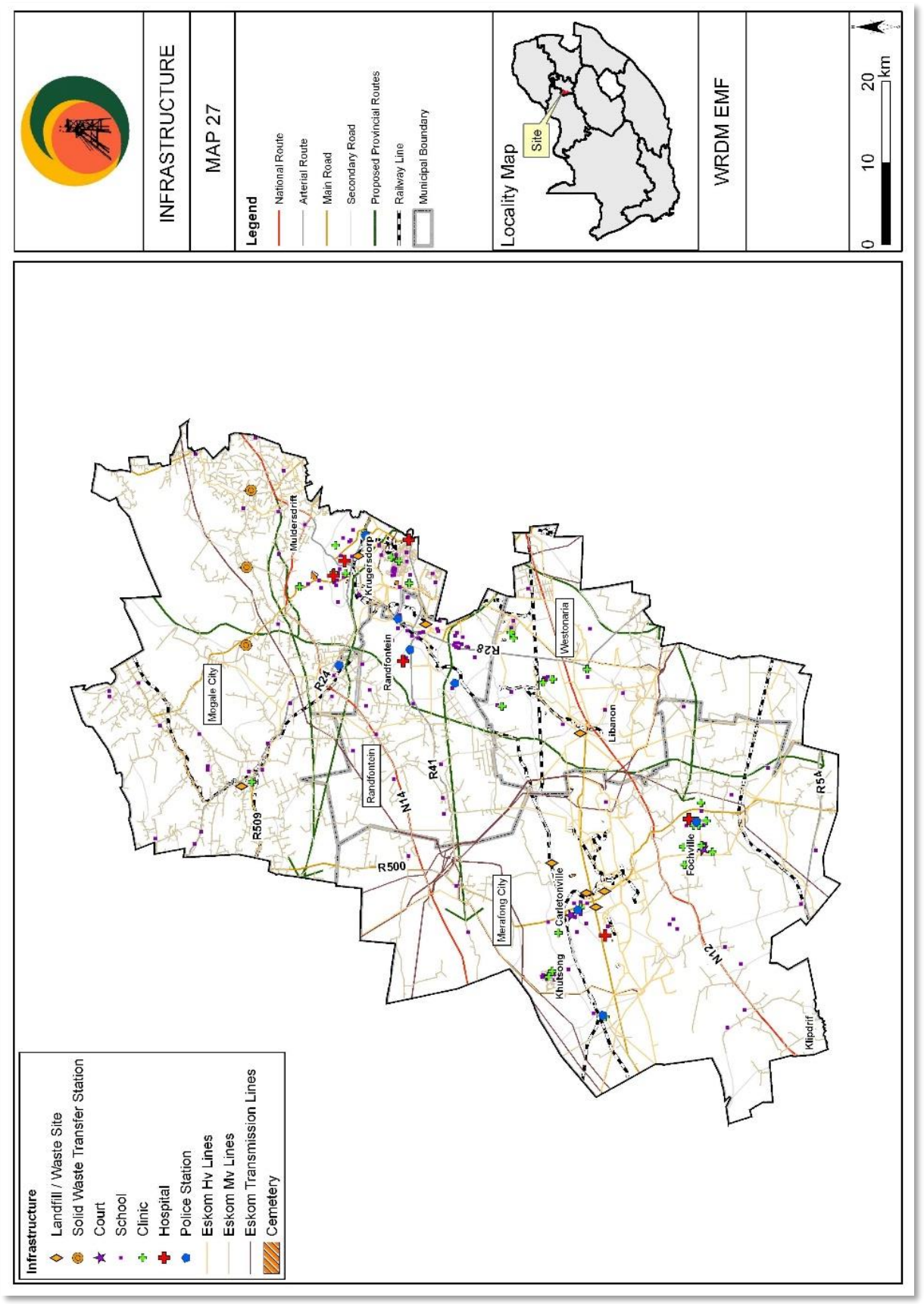
POTABLE WATER SUPPLY: The main water supplier in the municipality is Rand Water; the water is pumped from the Vaal River into local reservoirs. The local councils own and manage the local distribution of infrastructure. Water supply in WRDM can be considered to be fairly good, particularly in the urban areas. Recent community data indicates that most households receive their water either from piped water sources to dwelling or from piped water sources to the yard.

SEWERAGE (SANITATION): Sanitation is fairly good in the urban areas of the WRDM, however in Mogale City LM there is a need for improvement. The Rural Development Plan sets the minimum standards for the provision of sanitation. The RDP refers to a minimum of an "adequate safe sanitation facility per site". This is interpreted in the national sanitation policy as being "a ventilated improved pit (VIP) toilet in a variety of forms, or equivalent, as long as it meets certain criteria in terms of cost, sturdiness, health benefits and environmental impact".

SOLID WASTE DISPOSAL: The District has a relatively high percentage of weekly refuse removal services, and this is most evident in the urban areas of Mogale City, Randfontein and Westonaria. Approximately 5% of the district however does not have any refuse removal, which is a great concern due to health hazards. Through regular and efficient refuse removal a healthy living environment is created as well as an environment that is conducive for conducting business.

Where necessary, infrastructure frailties within the WRDM should be identified for upgrading purposes. Access roads, telecommunication technology, electricity distribution and water supply are all key requirements for the participation of stakeholders within the Agri-Parks projects, and therefore extension, or upgrades may be required.

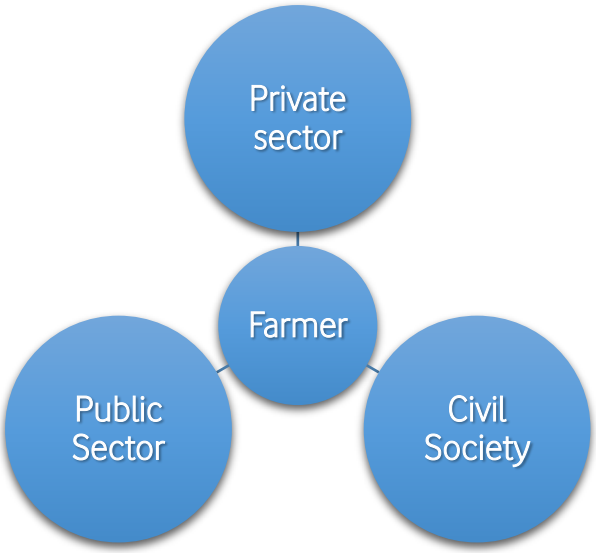
Map 4.6: Infrastructure map of the WRDM



5 Main role-players per district

Section 5 outlines the main role-players within the WRDM including Government stakeholders, Not for Profit Organisations and private companies. Amongst the stakeholders that are present in the district, there is the DRDLR, GDARD on both provincial and district levels, as well as the likes of NWK, SENWES, and Obaro, major agricultural companies.

A critical requirement for the implementation and the evolution of the WRDM Agri-Park is developing partnerships. Each of the stakeholders, broadly categorised as public, private and civil sectors, have essential roles to play in the development and evolution of the programme.



The public sector, or government has a critical role to play in organising guiding strategies and policies that will create and enabling environment for the establishment of the Agri-Park in the districts.

The private sector needs to play a role in driving implementation through innovative partnerships, investment in the agricultural value chain and encouraging healthy competition.

Civil society should be responsible for mobilising communities toward agricultural development. In doing so, managing risk, building local capacity through skills development and addressing gaps that are not served by the market.

To achieve the goals of economic prosperity, food security and sustainability there needs to be a coordination and concentration of efforts of agricultural role-players in the Gauteng Province and WRDM. The following stakeholders have been identified as potential partners and catalysts for the Agri-Parks development:

Table 5.1: Summary of role-players in within the district, and region

Role Player	Potential Role
Government & Public Sector	
Department of Rural Development and Land Reform (DRDLR)	• Monitoring and Evaluation • Provision of institutional support • Provision of funding • Project facilitation
Gauteng Department of Agriculture and Rural Development (GDARD)	• Agricultural institutional support at provincial, district and local levels
Sedibeng District Municipality (SDM)	• Facilitation of District initiatives • Liaison with local stakeholders • Institutional support and facilitation
National Development Agency (NDA)	• Grant funding • Partnering for development • Research and development

Role Player	Potential Role
	• Capacity building
Department of Trade and Industry (DTI)	• Development facilitation • Institutional support
Agriculture Resource Council (ARC)	• Agricultural research support • Institutional support
Department of Public Works and Transport (DPWT)	• Infrastructural support and coordination • Site preparation and bulk services implementation support
Small Enterprise Development Agency (SEDA)	• Facilitation of agri-business development • Small business development • Institutional and soft skills support to emerging farmers and entrepreneurs
Department of Labour (DL)	• Employment equity and support • Creating linkages between employers and employment opportunities
Department of Water and Sanitation (DWS)	• Formulation and implementation of policy • Responsible for water services provided by the Government
Local Municipalities (LM)	• Facilitation of local initiatives • Liaison with local stakeholders • Institutional support and facilitation
Department of Agriculture, Forestry and Fisheries (DAFF)	• Agricultural sector support • Promote rural development
Gauteng Enterprise Propeller (GEP)	• Provide financial and non-financial support to SMME • Provide a one-stop service to entrepreneurs • Facilitate SMMEs from the second economy participating in mainstream economy • Increase the sustainability and profitability of SMME's • Enhance SMME contribution to GDP, equity and employment in the Province
Rand Water	• Infrastructure and storage system management • Water purification • Bulk sanitation, • Water quality management • Water analysis
Financial Companies	
First National Bank (FNB)	• 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
ABSA Agribusiness	• Financial solutions and support for emerging farmers and agri-businesses • Business skills training
Land Bank	• Financial solutions and support for emerging farmers and agri-businesses • Business skills training
Organisations and Associations	
Red Meat Industry Forum	• Facilitation of market penetration • Red meat development support

Role Player	Potential Role
Red Meat Producers Organisation	• Facilitation of market penetration • Red meat development support
Afrivet	• Agricultural Training Services
National Wool Growers Organisation of South Africa	• Emerging sheep farmer support towards wool production • Training of wool workers and farm workers
Emerging Farmers	• Provision of agricultural produce • Identification of agricultural and training needs and requirements
Hortgro	• Production and technical information • Market intelligence and statistics • Administration and legislation • Transformation support
Southern African Poultry Association (SAPA)	• Industry support and solutions • Four subsidiary organisations, namely: the developing poultry farmer's organisation, the egg organisation, the chick producer's organisation, and the broiler organisation
South African National Halaal Authority (SANHA)	• Support base for both the producers and consumers of halaal products.
Poultry Disease Management Agency (PDMA)	• Surveillance, monitoring and management of diseases
South African Pork Producers Organisation (SAPO)	• Emerging farmer support • Product promotion • Research • Quality assurance • Animal health
South African Feedlot Association (SAFA)	• Industry representation • Provides support and solutions • Collective branding of grain fed beef • Educational workshops and tours • Animal health issues
National Emergent Red Meat Producers Organisation	• Lobbying and Advocacy • Access to Information • Access to Finance • Access to Technical Support
Grain SA	• Strategic support and services to South African grain producers
Senwes	• Provision of supporting agricultural equipment and services
National African Farmers Union (NAFU)	• Emerging farmer support • Facilitation of access to land for small farmers
BKB	• Livestock and auctions • Financial services • Wool and mohair information • Grain storage, trading, trading and Gritco • Product trade and property
AFASA	• Facilitate the development of African farmers
AgriMega	• Holistic primary and secondary agri sector development and growth services and products

Role Player	Potential Role
South African Ostrich Business Chamber	• Co-ordinating body for the ostrich industry for producers and processors of ostrich products
WARD	• Representative body for women in agriculture
Red Meat Abattoir Association	• Skills training • Support services
	Training Institutions
Tshwane University of Technology	• Provision of training programmes to emerging farmers, farm workers, etc.
Technikon Sa	• Provision of training programmes to emerging farmers, farm workers, etc.
University of South Africa	• Provision of training programmes to emerging farmers, farm workers, etc.
University of Pretoria	• Provision of training programmes to emerging farmers, farm workers, etc.
West Rand Agricultural College	• Agricultural education • Skills development
	Private Organisations
Tiger Brands	• Product off-taker • Potential partnership in supply agreements
Meadow Feeds	• Product off-taker • Potential partnership in supply agreements
Commercial Farmers	• Potential partner in terms of supply • Technical assistance for smallholder farmer
NWK	• Agricultural services
Obaro	• Agricultural services
AFGRI	• Agricultural services
Pick'n Pay	• Market, off-taker
Checkers	• Market, off-taker
Spar	• Market, off-taker
Other retailer	• Market, off-taker
	Mines
Harmony Gold	• Potential for provision of land • Corporate-Social Investment
Gold Fields	• Potential for provision of land • Corporate-Social Investment

These role-players could all potentially play roles in public-private partnerships (PPP's). PPP's should be developed to enhance the strength and competitiveness of the Agri-Hub –and agglomeration of expertise is required to ensure the success of the Agri-Parks programmes and the respective projects. Logistics, financial, agricultural, market and administrative support is important for the functioning of the programme and employing PPP's to source the support would be critical.

Financial partners are detailed further in the appendix

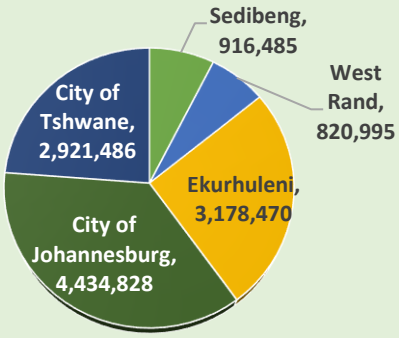
6 Economic and Socio-Economic Analysis

This section outlines key socio-economic characteristics of the study area, as per the delineation provided in the locational analysis. The purpose of compiling an economic profile and a socio-demographic profile is to develop an understanding of the trends, issues and dynamics of the local economy in terms of its micro and macro context. The purpose of the following sub-section is to provide an insight into the socio-economic situation of the Gauteng province and WRDM.

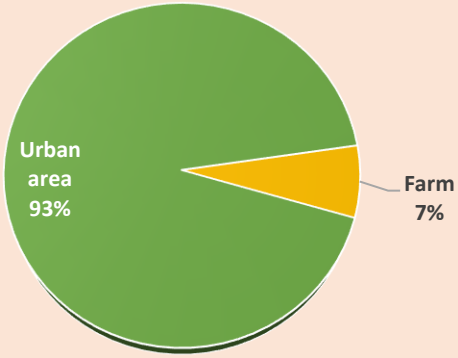
1.1 Demographic analysis

Population

Gauteng province is home to 12.27 million individuals with most residing in high density residential regions that include the City of Tshwane, City of Johannesburg and Ekurhuleni. The Sedibeng and West Rand District Municipalities have smaller populations of under a million. The West Rand District Municipality is not home to significant high density areas, being considered a more rural district with lower population densities (fewer persons per square kilometre).



Dwelling Area



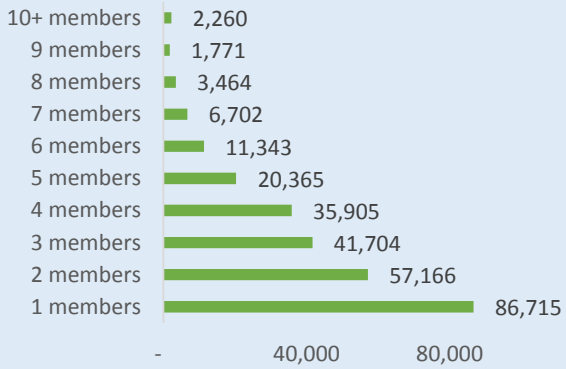
Most of the population within the district are residents of urban areas. The major urban areas within the district include Westonaria, Randfontein, Krugersdorp and Carletonville. 7% of the population live on farms, or rural areas.

It is clear that the greater portion of the population live in urban areas. Amongst the many goals of the Agri-Park, one is to reverse migration patterns from rural areas to urban areas. As long as the Agri-Park is able to create attractive opportunities (the opportunity cost of residing in rural areas is less than that of residing in urban areas) there may be a reversal of the migration trend and individuals will move from urban to rural areas.

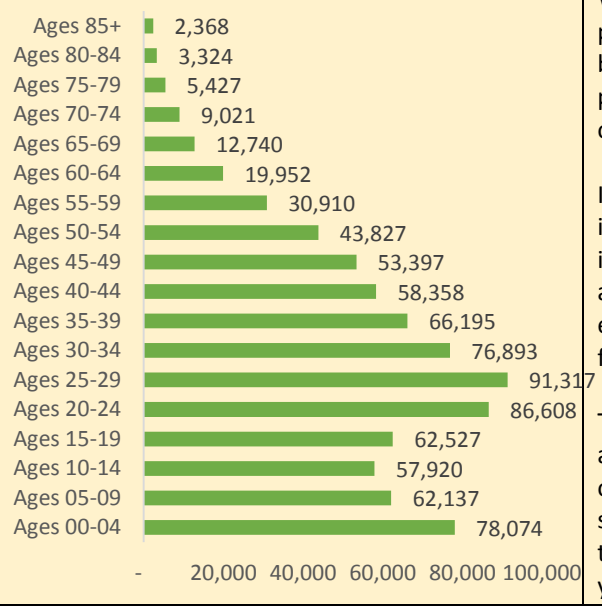
Household Size

The greatest portion of households within the WRDM have only a single member, while there are approximately 57 166 households with two household members. Over 120 000 households are home to three or more members which, in general, may be an indicator that there are families and parents are supporting children.

The Agri-Park, as a catalyst for job creation has the potential to create opportunities for many household members in the way of income earning and, as a result, the ability to support their respective families.



Population by Age Group



Given the relatively small population within the WRDM, there is a relatively large proportion of the population that is of the working age group – between the ages of 16 and 65. A relatively large portion of the working age group is between the ages of 20 and 34 – those that are considered youths.

It is approximated that 27% of the working age group is unemployed. As such, it is an imperative that interventions such as the Agri-Park create initiatives and, as a result, opportunities for job creation, especially amongst the youth who are of working age for a minimum of another 20 years.

The Agri-Parks initiative has the potential to become a major catalyst for job creation, thereby creating opportunities for the unemployed and future job seekers. This is even more important given the fact that mining activity in the region may slow down over years to come.

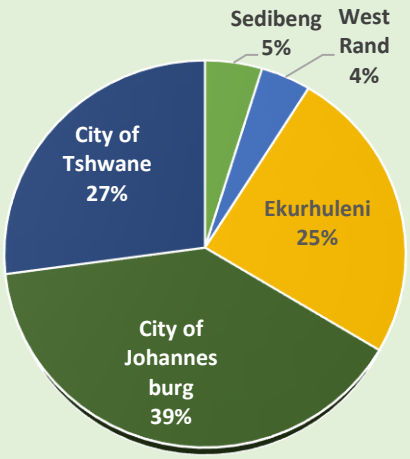
1.2 Economic profile (sector analysis)

GDP & GVA

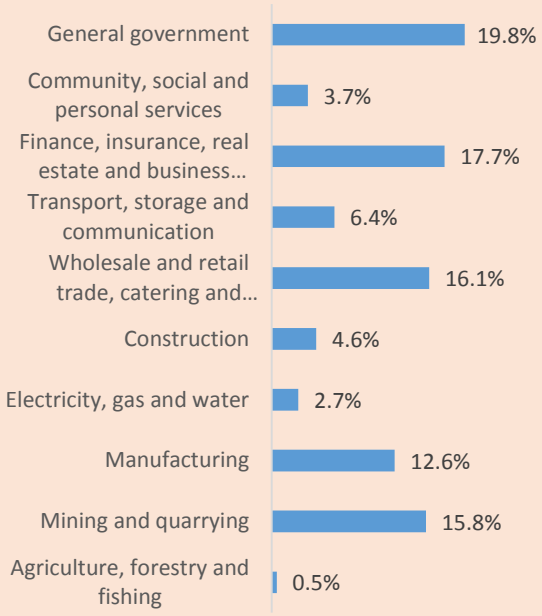
The Gauteng province contributed R1 035 238 million of the Gross Value Added (GVA) (at basic prices) to the economy in 2013. Gauteng contributed the greatest portion of GVA to the economy in 2013.

Within the province, the City of Johannesburg contributes most significantly to local GVA at the 39%. The WRDM on the other hand contributes the least with only a 4% contribution.

It is expected that the WRDM contributes little to GVA, given that is not considered an economic hub of the province. Furthermore, the district is surrounded by three large economic hubs that will, comparatively, be much larger.



GVA by Sector



Within the WRDM, the greatest contributing sectors to the local GVA include the General Government (spending), the Financial sector and Wholesale and Retail sectors.

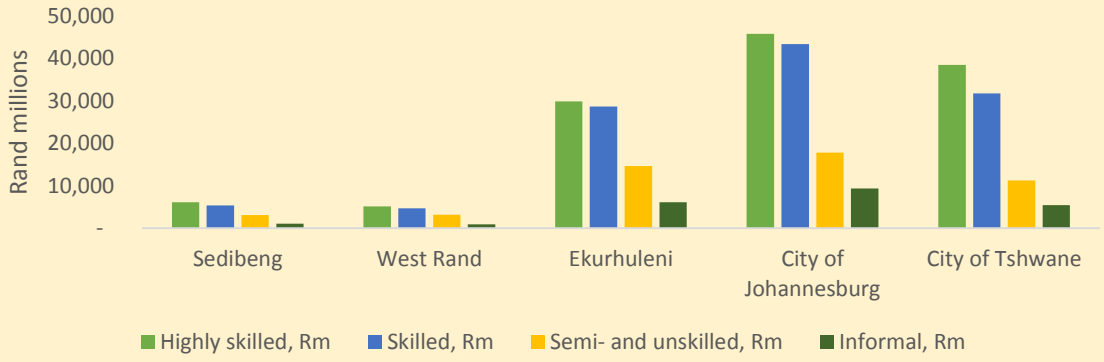
The agricultural sector of the WRDM contributes the smallest proportion towards GVA within the municipality, but importantly there is a significant portion of agricultural products that processed in the Manufacturing industry. Therefore, Agriculture is an important industry for the Manufacturing industry.

Of the sectors that contributed to the manufacturing sector, food, beverages and tobacco contributed most significantly to GVA in 2013. Food, beverages and tobacco contributed 29%, metals contributed 24%, and petrochemicals a further 20%.

This is a clear indication that the agricultural sector within the WRDM is an important sector to the local economy, especially since it contributed significantly towards the manufacturing sector.

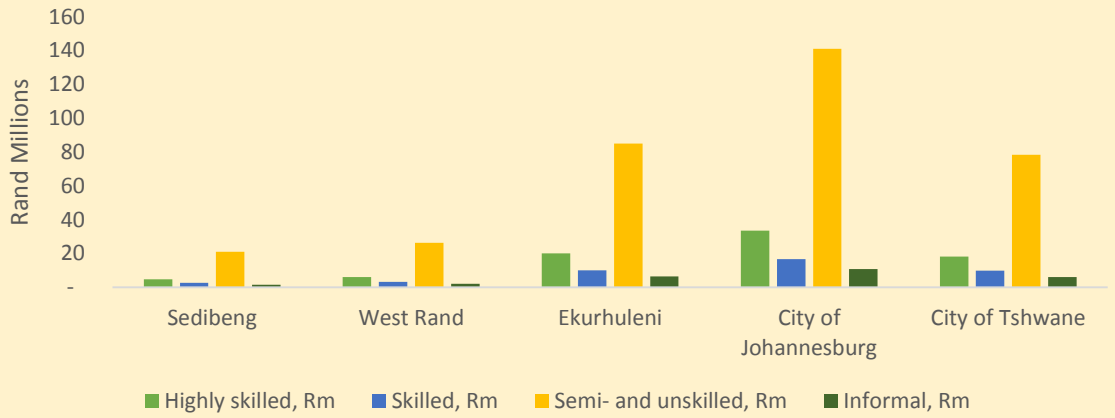
Compensation of Employees

The WRDM has, proportionally, the smallest local economy of the economies within the Gauteng province, while the City of Johannesburg is the largest. As such, it would be expected that the compensation of employees in the WRDM would be smaller than other local economies too. The outcome is expected, given the districts strengths in Mining and Quarrying, Manufacturing and Wholesale and Retail Trade, all relatively labour intensive industries. The labour required within the industries is relatively low-cost given that they would generally be low- to semi-skilled individuals.



It is clear, on average, the WRDM compensates their employees and a significantly lower compensation than in the greater districts, namely Johannesburg, Ekurhuleni and Tshwane. What is clear is that those that are highly skilled and skilled are compensated at a higher rate than those that are semi- and unskilled and, or in the informal sector. The rate of compensation, therefore, highlights the importance of training and skills development which the Agri-Park aims to do.

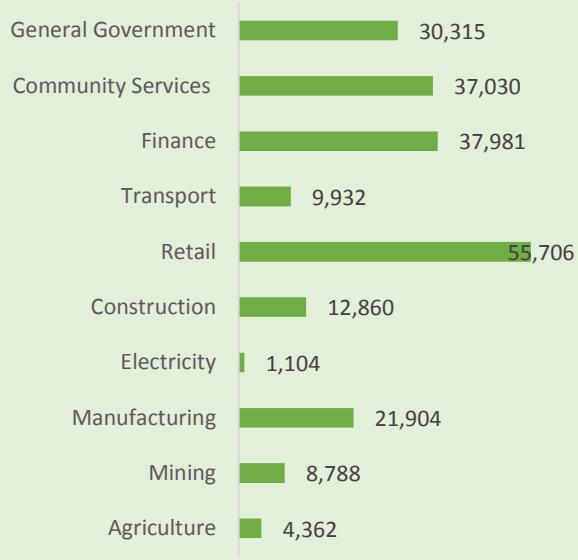
Within the agricultural sector, specifically, it would be expected that those that are semi-skilled, or unskilled would be compensated more than others. The expectation arises because the agricultural sector has a high semi- to unskilled labour absorption rate and therefore receive a higher proportion of the compensation. The table below indicates the proportion of compensation to the various skills levels.



It is clear from the above table that semi- and unskilled receive the highest compensation of the skills levels, but only as a result of the labour absorption rate. There are significantly more semi- and unskilled employees within the sector than there are highly skilled and skilled employees. The level of compensation within this sector of semi- and unskilled is an important indicator for employment within the agricultural sector and it is expected that the Agri-Park will contribute more in the way of compensation and employment for all skills levels.

1.3 Employment per sector

Employment



Most of the employed within the WRDM fall within the retail sector, followed by community services and finance sectors. The sector that contributes least to employment is the electricity sector followed by the agricultural sector that only employs and approximated 4 300 persons.

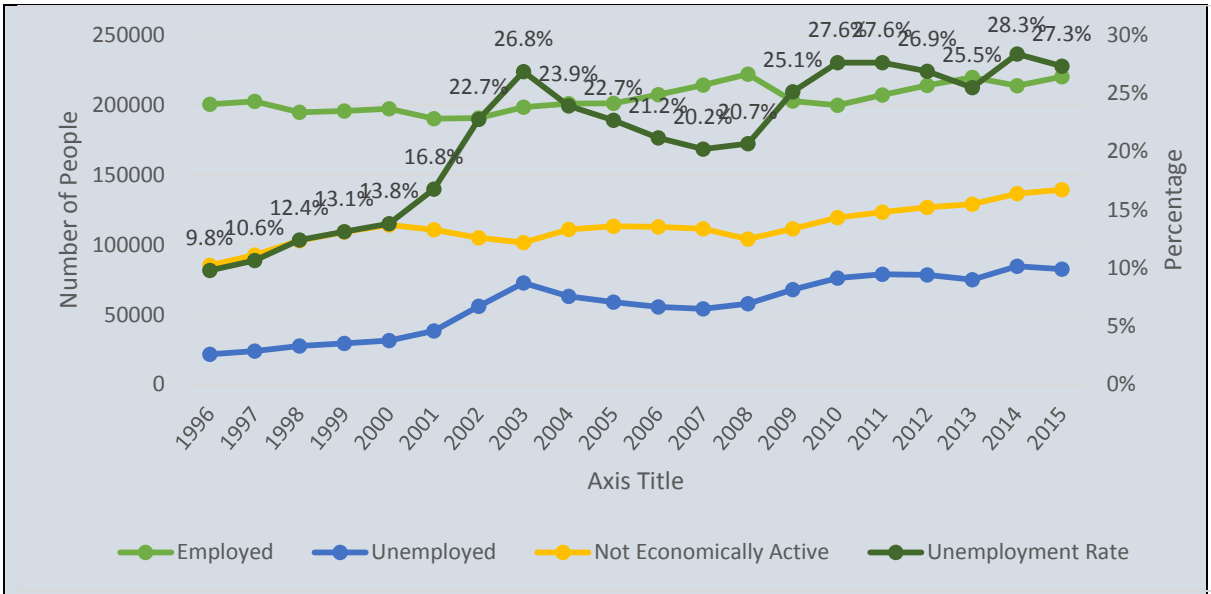
The manufacturing sector employs approximately 21,000 persons, with many likely to work within the foods, beverages and tobacco manufacturing sector, and agricultural linked sector.

The Agri-Park, expected to be a catalyst in developing the local agricultural industry, is likely to create opportunities for employment within the industry and therefore absorb labour that is either unemployed, or switching between industries. As a result, employment in the agricultural sector can be expected to increase.

Unemployment

The unemployment rate in South Africa has been a major point under address by government, with the aim to achieve lower unemployment. The rate, however, has increased significantly over the previous two decades, peaking in 2014 at 28.3%. The increase in the unemployment rate is a result of several factors, including changes in labour laws and slowdowns in economic growth. One of the major contributors to the higher unemployment rate, however, is the cost of labour. The cost of labour has steadily increased and, as a result, employers are searching for labour replacing technologies to reduce the cost of production – this is particularly the case with agriculture.

The table below indicates the employment rate, unemployment rate, the not economically active and unemployed populations. The current estimated unemployment rate in the WRDM is 27.3, higher than the national average at an estimated 25.5%.

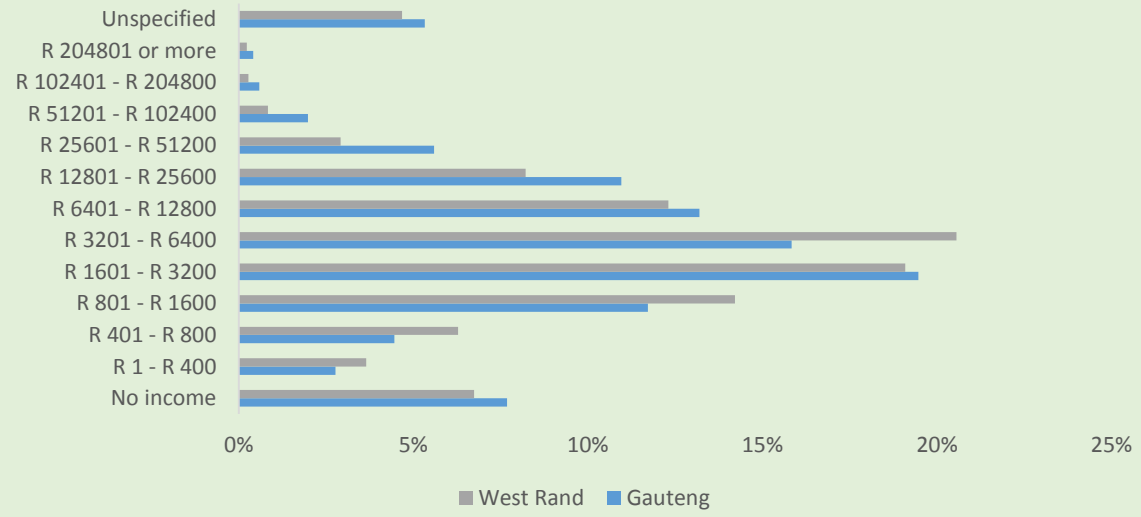


There is a clear increasing trend in the unemployment rate between 1996 and 2015, with the rate almost increasing by three times the 1996 levels. With the agricultural industry being a major labour absorbing industry, interventions are required to create further employment opportunities. The Agri-Park is one such intervention that could catalyse potential job creation, not only directly in the agricultural industry, but throughout the agricultural value chain.

1.4 Social, income and poverty

Income levels

Income levels are a good indicator of equality in any given region. In South Africa the greatest portion of the population earns between R1 606 and R3 200, with R3 200 being the approximate minimum wage per month. Approximately 35% of the entire population earns between R801 and R6 400 per month, while 53% of the total population earns less than R3 200 per month. The table below indicates a comparison of income levels on a provincial and district (WRDM) level.



21% of individuals in the WRDM earn, on average, between R3 201 and R6 400 per month. Comparatively, only 19% of individuals in Gauteng earn the same amount on a monthly basis. 50% of the WRDM population, however earns below R3 200 per month compared to 46% in the province.

Given that a significant portion earns below the R3 200 threshold per month, interventions such as the Agri-Parks programme are necessary to develop the agricultural value chain and create opportunities for additional employment and income creation.

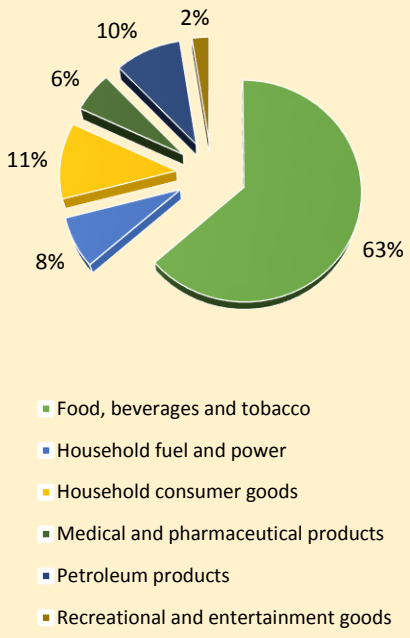
Expenditure on non-durable goods

The average household in the WRDM spends most, 63%, of their disposable income on food, beverages and tobacco items. This is the typical characteristic of low-income household. A further 11% of income is spent on consumer goods.

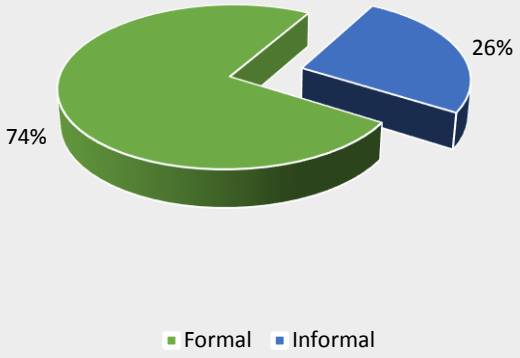
It is clear that the average household places a lot of emphasis on the purchase of food items, generally staple foods to feed themselves and families.

The fact that most households are of a low-income nature in the WRDM makes it clear that there is a need to increase household income and to further develop the agricultural industry to meet the demand of these households.

Developing the local agricultural industry could potentially increase household income through employment creation and, therefore, reduce the proportion of household income spent on food items.



Access to dwelling types, 2015



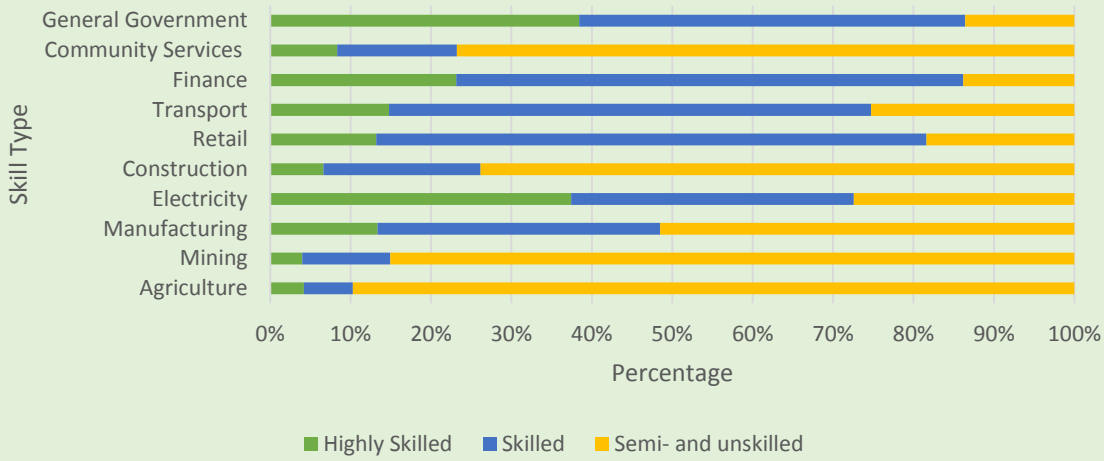
A quarter of the community of the WRDM have access only to informal type housing, an indication of persons having low income, no income, or a lack of access to formal housing.

Given that 50% of the WRDM population, on average, earns below R3 200 per month, it can be expected that a quarter of the population lacks access to formal housing arrangement.

By increasing income levels through interventions such as Agri-Parks, individuals may have increased access to credit that would potentially allow them to afford formal housing, thereby increasing the portion of individuals having access to formal housing.

Skills level

Skills levels and income are, in general, positively correlated so as skills levels increase, so does income. 50% of the WRDM population earn below R3 200 per month, suggesting that there is a large portion of the population that are either semi- or unskilled. The following table indicates the various skills levels in various sectors of the WRDM local economy.



From the table it is clear that relatively small percentages (generally less than one third) of the populations are skilled, while in many cases over 50% of the population is semi- or unskilled. The evidence of high semi- to unskilled workforce indicates that there is a need for skills development within the district especially within the agricultural and manufacturing industries where there is a significant amount of agro-processing. It will, therefore, be of high importance that the Agri-Park programme addresses these skills shortages prior to and during implementation.

7 Agricultural Industry Analysis

South Africa has a dual agricultural economy, with both well-developed commercial farming, and more small-scale subsistence-based production in the deep rural areas. Agricultural activities range from intensive crop production and mixed farming in winter rainfall and high summer rainfall areas to cattle ranching in the bushveld and sheep farming in the arid regions. Maize is most widely grown, followed by wheat, sugar cane and sunflowers. Citrus and deciduous fruits are exported, as are locally produced wines and flowers. 81.9% of South Africa's land coverage is defined as farmland, with only 13.5% that is arable. Table 7.1 indicates the agricultural land characteristics within each of the provinces in South Africa.

Table 7.1: Land use characteristics related to agriculture in South Africa

Province	Total area (ha)	Farmland (ha)	Farmland as % of total area	Potentially arable land as % of total area	Arable land utilised (ha)	Grazing land as % of total area
South Africa	**105 207 300**	**86 186 026**	**81.9**	**13.5**	**12 900 122**	**68.4**
Western Cape	12 938 600	11 560 609	89.3	19.0	2 126 342	70.4
Northern Cape	36 338 900	29 543 832	81.3	1.3	218 247	80.1
Free State	12 711 500	11 572 000	91.0	32.9	3 995 948	58.1
Eastern Cape	11 886 200	10 815 867	91.0	5.4	601 651	85.6
KwaZulu-Natal	5 540 700	3 439 403	62.1	15.1	834 637	46.9
Mpumalanga	7 504 100	4 486 320	59.8	21.3	1 742 601	38.5
Limpopo	8 348 200	7 153 772	85.7	14.0	660 090	71.7
Gauteng	1 876 000	828 623	44.2	23.4	405 773	20.8
North West	8 063 100	6 785 600	84.2	29.9	2 314 833	54.3

Source: Abstract of Agricultural Statistics, 2015

Table 7.1 indicates that Gauteng is the smallest of provinces, covering an area of 1 876 000 hectares, with approximately 23.4% of that being potentially arable. 405 773 ha of land is used as arable land and 20.8% is grazing land. By contrast, Gauteng has very little land available for agricultural production and, as such, it can be expected that it contributes a smaller portion to overall output.

The West Rand, has proportionately more land (59%) available for agricultural purposes. Randfontein, Merafong City and Westonaria have most of the land available to agriculture. Agricultural land area within the district are summarised in Table 7.2 below.

Table 7.2: Total and agricutlural land area available in WRDM

Location	Total (ha)	Agriculture (ha)	% of Total
Mogale City	134,274.51	19,943.86	15%
Randfontein	47,512.59	42,191.50	89%
Merafong City	163,155.98	127,979.66	78%
Westonaria	64,010.70	51,808.94	81%
West Rand District	408,953.78	241,923.96	59%

Source: GAPA, 2013

Table 7.2 suggests that there is a total of 241 924 ha of agricultural land within the WRDM, that is approximately 59% of the total land available within the district. Merafong City has 127 980 hectares

of agricultural land, the most amount of land available to agricultural production of the four local municipalities.

Zones 6, 8, 9 and other indicate areas of various agricultural potential from classes ranging from very low - low to very high (See APPENDIX A for classification and Classes). Most of the land within zone 6 has moderate-high and high potential classes, zone 8 and zone 9 have mostly moderate-high potential classes, while zone "other" is considered very low potential.

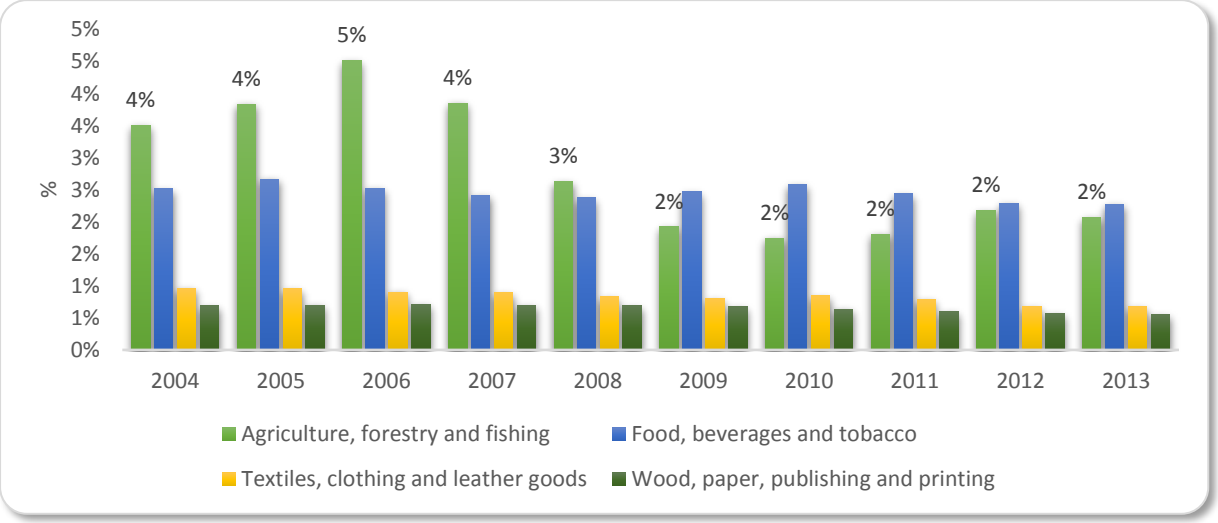
Although agriculture contributes two percent to production, its contribution to WRDM employment is 8 percent, which shows that the sector has low productivity. High input costs such as wages, water and fuel affect the bottom-line for farmers. Another reason for low investment in this sector may be that there is limited availability of arable and grazing land, as large tracts of land belongs to the mines. Table 7.3 indicates the percentage of employment in the agricultural sector, on a national level, between the years 2007 and 2014.

Table 7.3: Employment in the agricultural sector (2007 – 2014)

Year	Sep. '07	Sep. '08	Sep. '09	Sep. '10	Sep. '11	Sep. '12	Sep. '13	Sep. '14
Workers in agriculture, hunting, forestry and fishing	7.82%	5.62%	4.72%	4.93%	4.69%	4.84%	4.92%	4.54%
Skilled agriculture	2.56%	0.73%	0.52%	0.59%	0.46%	0.49%	0.45%	0.57%

Table 7.3 suggests that workers in agriculture, hunting, forestry and fishing declined between 2007 and 2009 and then remained stable from 2009 onwards. The skilled workers represent the percentage of the workers in agriculture that are skilled, which has also declined, but remained stable since 2009. Table 7.1 compares the above figures against other industries related to agriculture in the WRDM.

Figure 7-1: Percentage of total employment in the West Rand for various industries

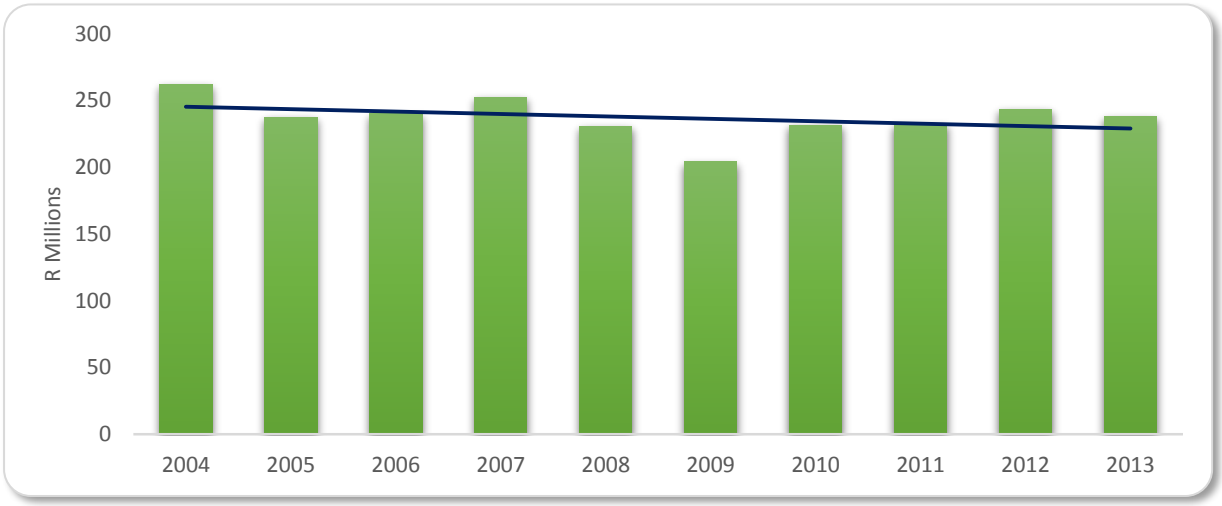


Source: EasyData, 2015

Comparatively, employment in agriculture, forestry and fishing is low in the WRDM compared to national level. The downward trend is similar to that of the national level, also stabilising from 2009 onwards at around 2%. Employment in the food, beverage and tobacco industry, increased above that of the agriculture in 2009, indicating that agro-processing is a relatively important industry for employment. The decline in percent of employment is strongly attributable to the cost pf labour increasing and farmers adopting labour substituting technology, but also because the growth in the WRDM agriculture industry has also remained stagnant. Figure 7-2 below indicates the stagnation in growth.

Gross Value Added (GVA) indicates is the measure of the value of goods and services produced in an area, industry, or sector of an economy. In national accounts GVA is output minus intermediate consumption. Figure 7-2 below shows that the agriculture sector has remained relatively stagnant from 2000 to 2013 as shown by the fact that the contribution and growth percentages have not varied much.

Figure 7-2: Agriculture, Forestry and Fishing GVA contribution WRDM (2004 - 2013)



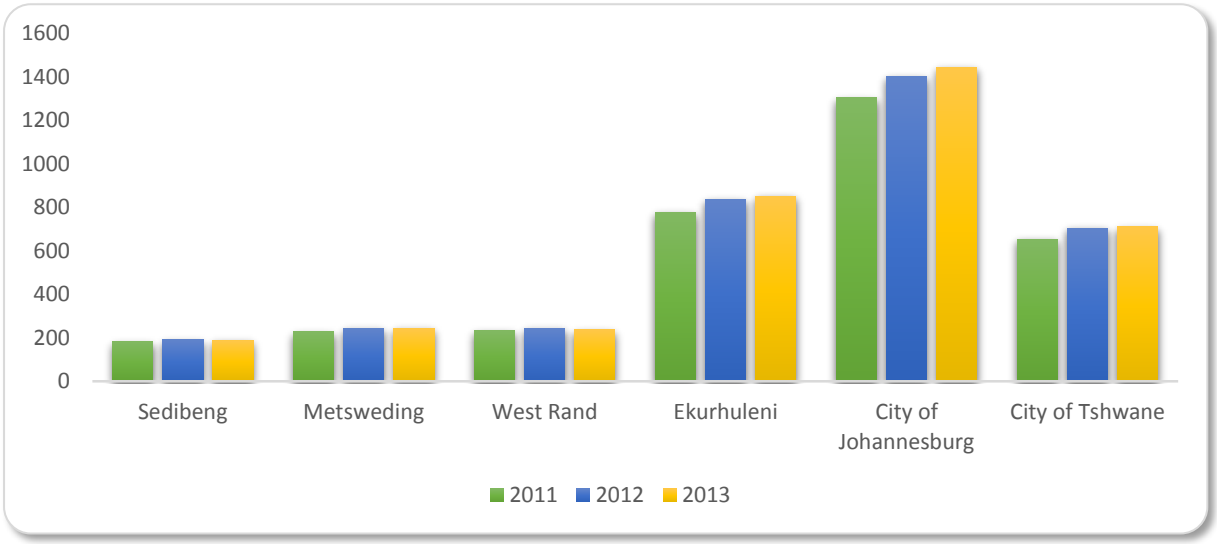
Source: EasyData, 2015

The trend graph, Figure 7-2, shows that production in the agricultural sector has been relatively constant. The stagnation is a result of several problems that are evident within the agricultural industry within South Africa, including:

- Farms that were once productive, but shut down and remain unproductive.
- Purchased farms that were once productive becoming unproductive under new ownership.
- The increasing cost of farming, such as labour, fuel and electricity.
- Decreased output as a result of harsh weather conditions.
- Agricultural land (productive area) not increasing.
- Pollution from mining activities.

Since the WRDM currently has a comparative advantage in this sector, developing and supporting the sector should be a priority in the LED process. The WRDM is close to the huge Gauteng consumer market and to the Lanseria Airport, which potentially could be used for the export of fresh produce.

Figure 7-3: Agriculture, Forestry and Fishing GVA contribution per Gauteng district (2011 - 2013)



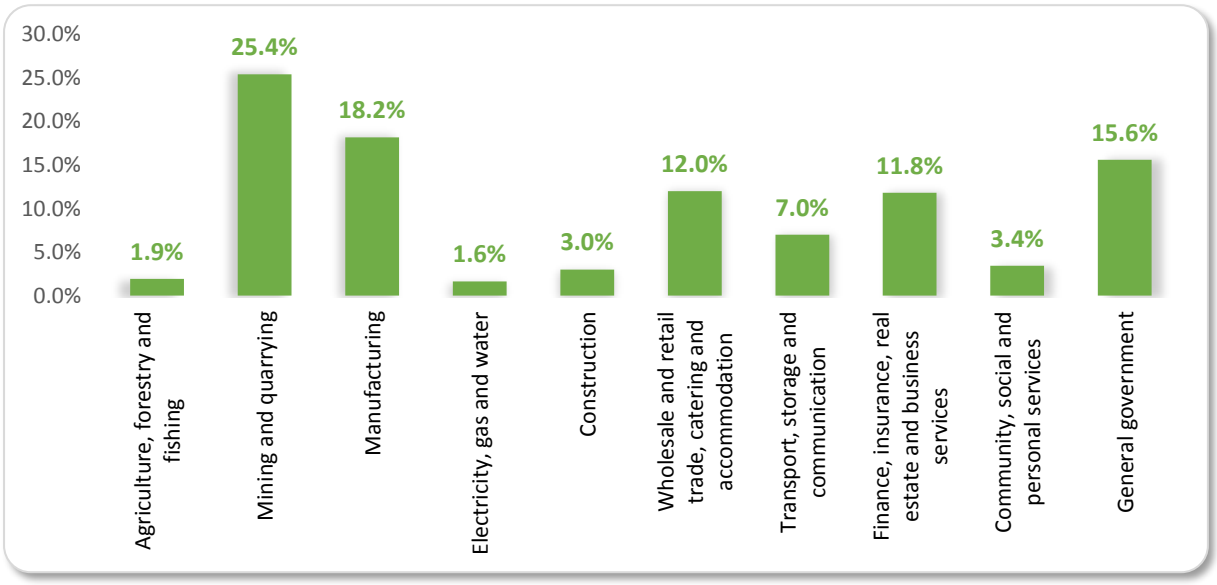
Source: EasyData, 2015

It is clear that the contribution to GVA from the WRDM is low in comparison to Ekhuruleni, City of Johannesburg and City of Tshwane. It should be noted, however, that Ekhuruleni, City of Johannesburg and City of Tshwane are major trading points and are therefore likely to contribute more to GVA through trading activities, rather than primary agricultural production.

Figure 7-4 and

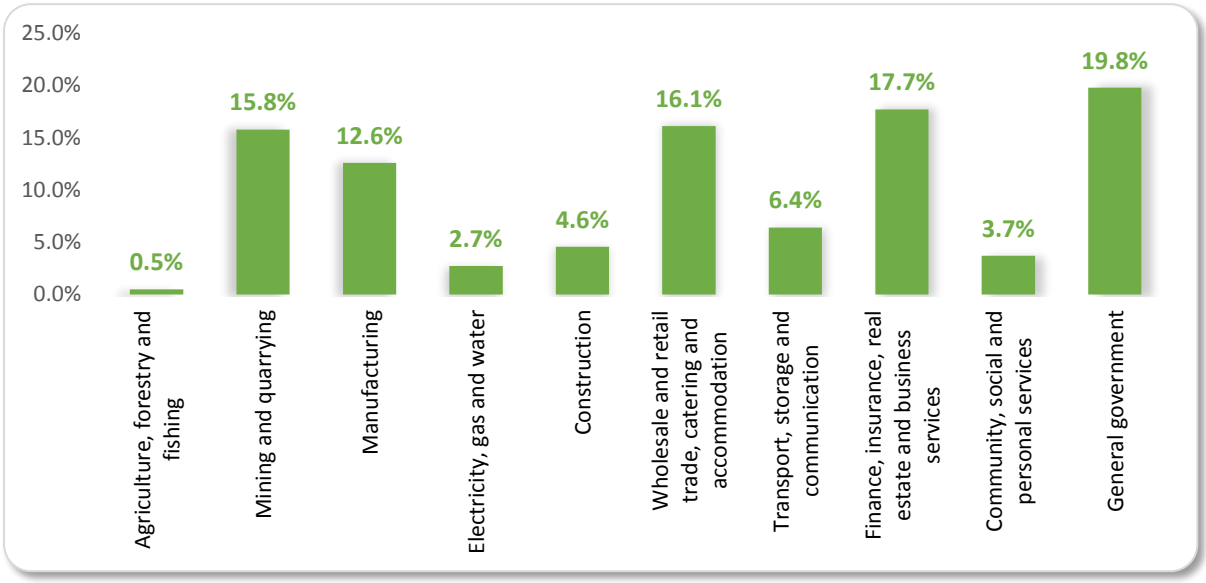
Figure 7-5 indicate the contribution of various industries to the GVA of the WRDM in 2000 and 2013.

Figure 7-4: GVA contribution per industry (WRDM, 2000)



Source: EasyData, 2015

Figure 7-5: GVA contribution per industry (WRDM, 2013)



It is clear from the difference between Figure 7-4 and Figure 7-5 that the GVA contribution of agriculture between 2000 and 2013 has fallen by 1.4%, while manufacturing and retail have increased significantly. Again the drop in contribution of the agricultural sector is a likely result of the problems related to agriculture that are listed above. It is therefore evident that there is a need to revitalise agriculture in the WRDM that will have several positive knock-on effects, including employment and development of downstream industries, like agro-processing.

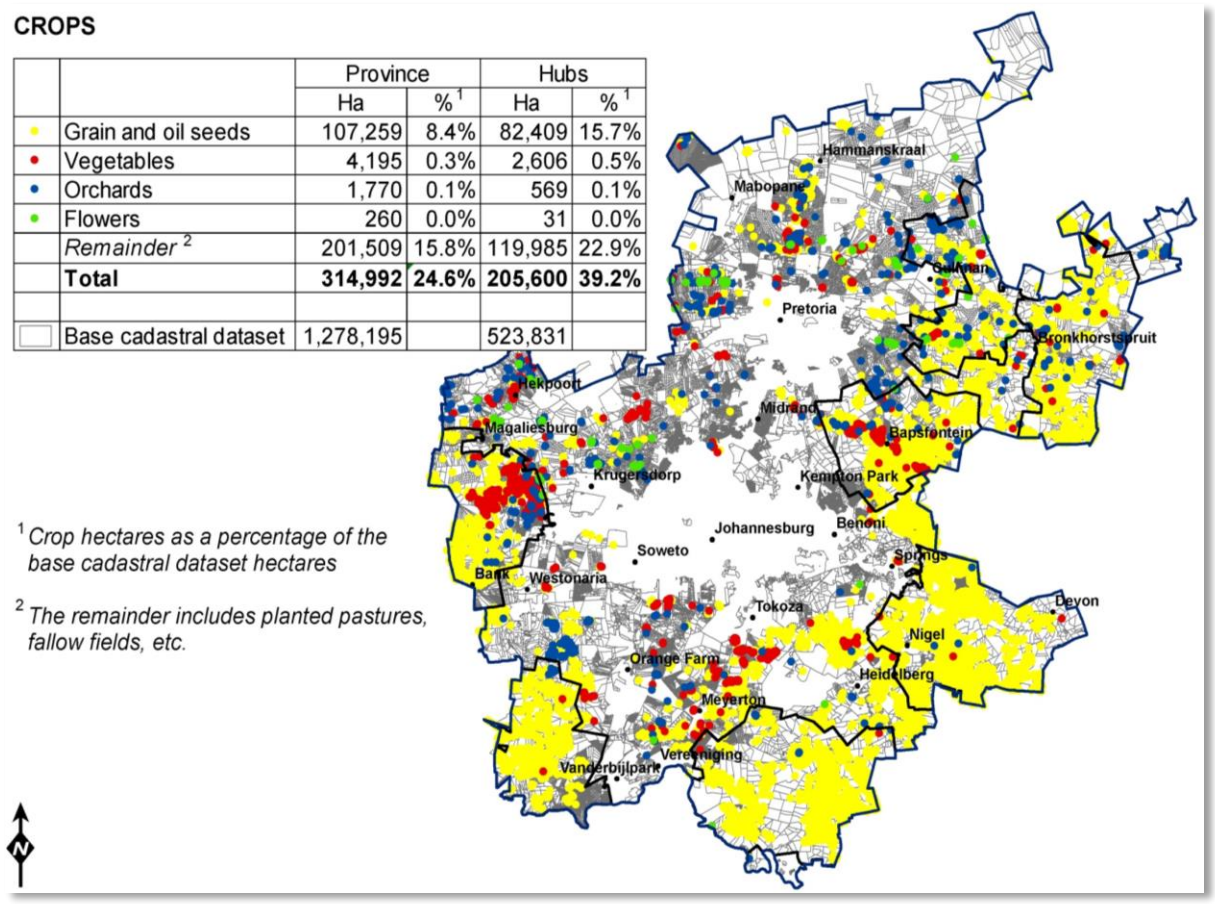
7.1 Main agricultural activities

The Agricultural Sector in the West Rand has been identified as a sector with the potential to stimulate economic growth and job creation in the area. Although the sector had a reasonable growth record up until 2001, production in this sector has been in decline since 2002. In addition, agriculture still plays a minor role in terms of contribution to production value, compared to the rest of the West Rand economy. The main types of agricultural activities in the West Rand are large-scale commercial farming, intensive commercial farming, urban agriculture, rural residential agriculture and subsistence farming. The main agricultural products being produced in the West Rand are:

- Maize
- Grain sorghum
- Dry beans
- Sunflowers
- Various vegetables
- Beef cattle
- Chickens and broilers
- Eggs
- Pork
- Milk
- Floriculture
- Deciduous fruit and berries
- Soya Beans

The main agricultural activities identified above can be assessed against the potential growth-labour matrix that indicates the potential growth of various agricultural commodities and the relative potential labour intensity – detailed in commodity selection criteria. Map 7.1 indicates the agricultural activities that take place at a provincial level:

Map 7.1: Map of Agricultural Activities across Gauteng



Map 7.1 indicates that grain, oilseeds (yellow) and vegetables (red) are the predominant commodities produced within the WRDM, followed by orchards (blue) and floriculture (green) (flowers).

The WRDM is endowed with abundant pockets of land with medium to high agricultural potential as well as favourable climatic conditions. The District also forms part of the Maize Triangle and consequently the Gauteng Provincial Government is reinforcing this strength by investing in the area as part of the roll-out of Agri-Hubs. Map 7.1 further suggests that there is a significant amount of agricultural production in the low to moderate potential areas, suggesting that most of the land available to agricultural in the WRDM can be productive.

7.2 Current and proposed project in the region

Developing the rural economy, especially emerging and small-scale farmers in the district requires a proactive development approach that requires that projects are implemented, both currently and planned for in the short- and long-terms. The current and proposed projects are described below, which include, RECAP, RIED, RID and CASP projects.

The projects are focused on the development of farmers within the district and have the potential to make a positive contribution to the Agri-Development.

Table 7.4: Programmes supporting Agri-Parks in West Rand

PROGRAM	NUMBER OF PROJECTS	COMMODITIES	BUDGET
RECAP	3 projects (Brandvlei & Elandsfontein)	Vegetables	R8 781 667
REID PROJECTS (Enterprise Dev)	5 projects (Hekpoort)	Vegetables, Grains and Poultry	R5 302 819
RID PROJECTS (Infrastructure)	6 projects (Brandvlei)	Vegetables and Grains	R15 500 000
AVMP PROJECTS	2 projects (Bekkersdal)	Red meat	R5 000 000
CASP	14 (Merafong, Westonaria, Randfontein and Mogale)	Grains, Vegetables, Poultry infrastructure	R14 673 500
LETSEMA (FETSA-TLALA)	60 (Merafong, Westonaria, Randfontein and Mogale)	Production Inputs and Urban Agric support	R6 117 000
EXTENSION SUPPORT	25 (Merafong, Westonaria, Randfontein and Mogale)	Farmer Training	R3 220 000
MECHANISATION (18 TRACTORS)	40 (Merafong, Westonaria, Randfontein and Mogale)	Maintenance, fuel and driver costs	R700 000
TOTAL			**R64 794 986**

Other Related Agricultural Projects that should link into the Agri-Parks include:

1. Tarlton where 10 tunnels have been established thus far
2. Carletonville
3. Bekkersdal where 20 tunnels have been established
4. Badirile
5. Merafong where 16 tunnels have been established

It is clear that from the listed projects that progress has been made and that there is a foundation from which the Agri-Park can be developed. The inclusion of these projects into the Agri-Parks model is integral to the development of the Agri-Park, which is intended to have the capacity to support these projects in the way of value adding, market development, skills development and employment creation.

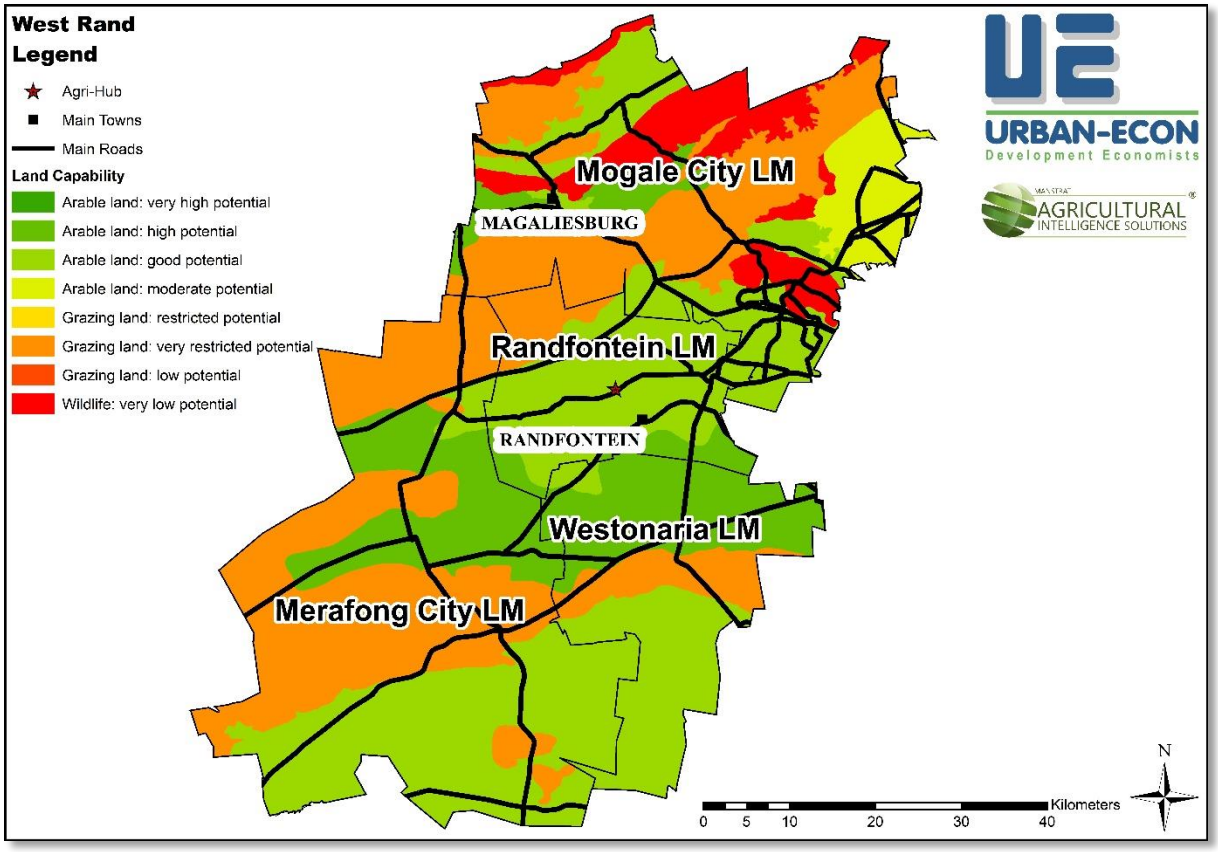
7.3 Environmental conditions and resource analysis

The resources and environmental conditions within the WRDM are important features to consider in assessing the potential for agriculture in the district. This section provides an analysis of the environmental condition and resource availability within the district. The analysis was done based on geographical information (GIS) and areas of agricultural land potential, grazing capacity and rainfall were plotted. The maps below provide an illustrative description of the environmental and resource conditions within the district.

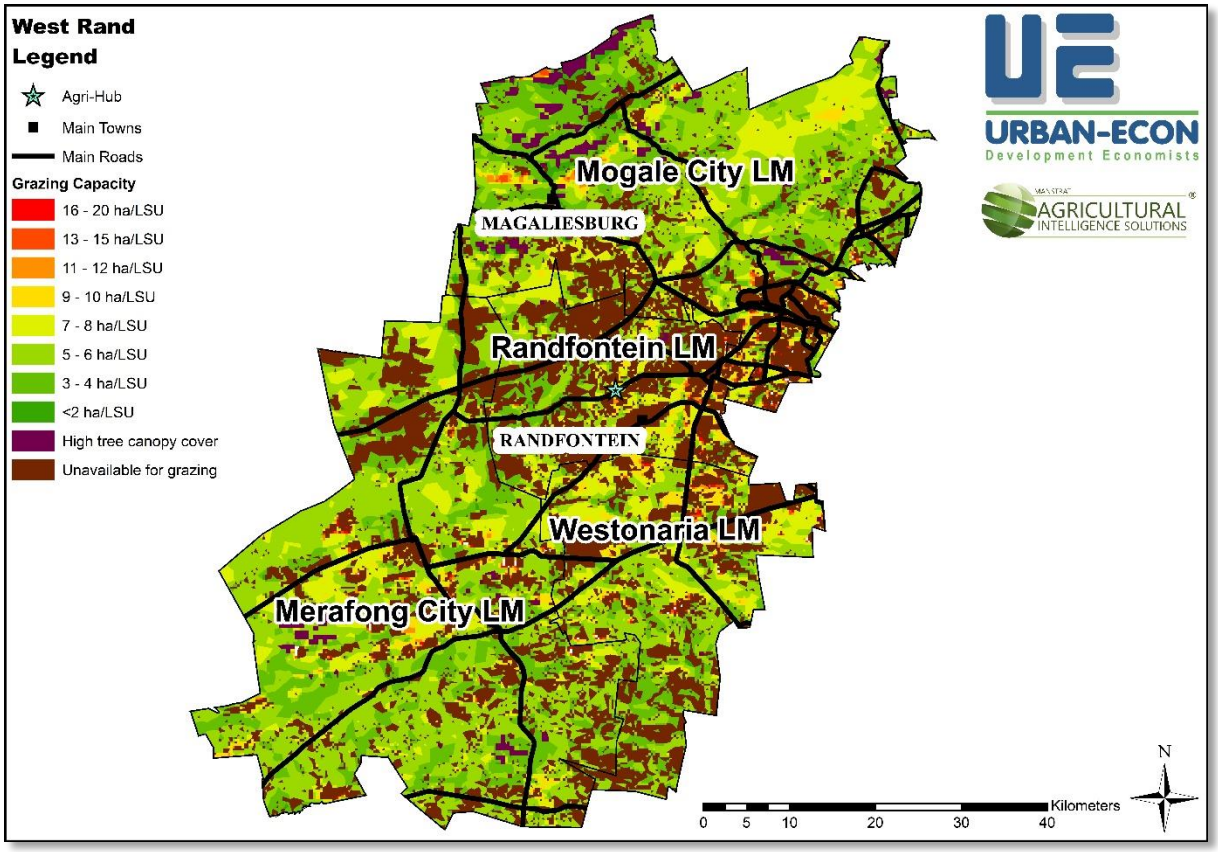
Map 7.2 represents the land potential within the WRDM. There is a significantly large proportion of land that has good- to high potential in the WRDM, as indicated in Map 7.2 above. The green areas of the map indicate the areas that arable and their relative potential, while yellow, orange and red indicate areas that are not suitable for grazing of livestock and wildlife. It is clear that the WRDM has a significant amount of arable and grazing land, although grazing remains restricted.

Map 7.3 depicts the grazing capacity of the land within the WRDM. This is illustrated through hectares per livestock units (LSU (= 450kg animal)) – the number of hectares required to graze a given number of LSU's sustainably.

Map 7.2: WRDM land potential



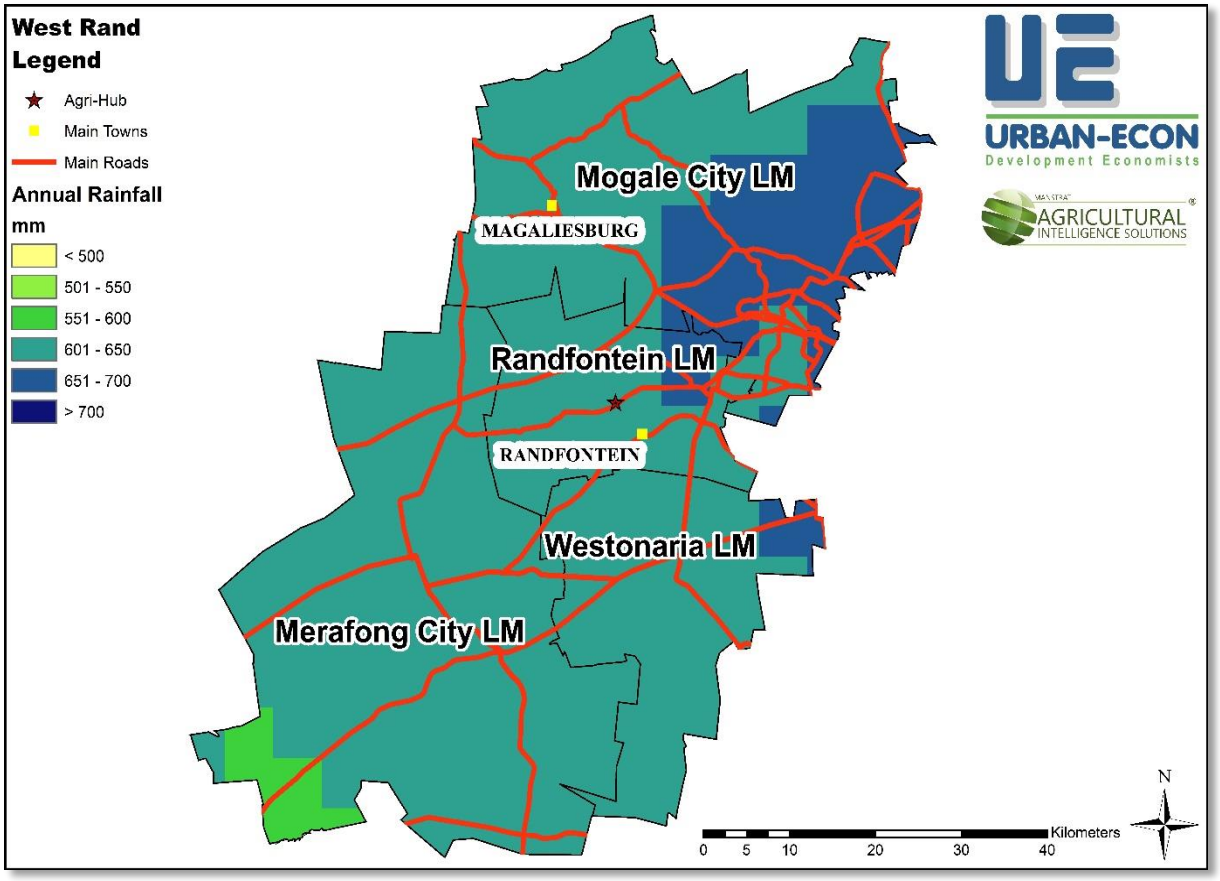
Map 7.3: WRDM grazing capacity



A large proportion of land in the WRDM has the capacity to carry one LSU for every average 2-6 hectares (green highlighted areas). The brown areas indicate areas that are not available to grazing, while red highlights indicate areas of very low potential where 16-20 hectares is required per LSU. The large proportion of green highlighted areas suggest that the WRDM is suitable for red meat production.

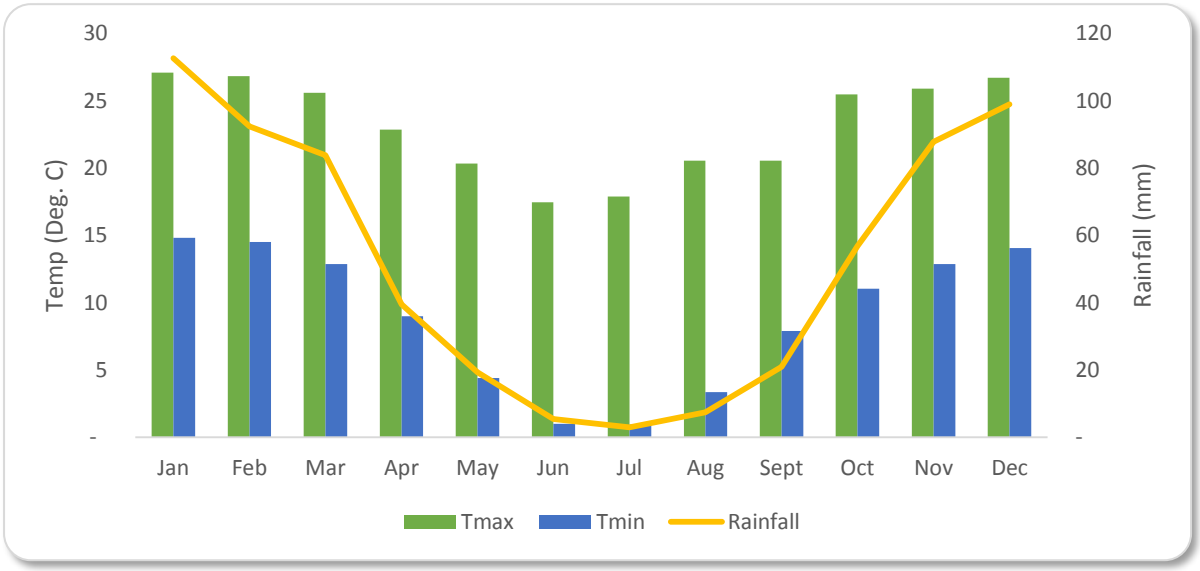
Rainfall is an important indicator of agricultural potential in a given area, with higher rainfalls indicating higher agricultural potential, while also taking into consideration of natural resources, such as soil potential. About 35% of southern Africa receives less than 300 mm per annum as a result of the presence of subtropical high pressure cells which inhibit rainfall generation because of predominantly subsiding air, while only about 7% has a MAP exceeding 800 mm. Map 7.4 indicates the average annual rainfall received by the WRDM.

Map 7.4: WRDM average annual rainfall



It is clear from Map 7.4 that the majority of the WRDM receives between 601 and 650 mm of rain per annum, while the area towards the north east of the district receives amounts of rain that exceed 700mm. The average rainfall in the region suggests that there is sufficient rain for most agricultural practices and is, on average, not a significantly constraining factor. Annual rainfall and temperature patterns are further illustrated in Figure 7-6 below.

Figure 7-6: Minimum and maximum temperatures and rainfall in WRDM



Source: South African Weather Service

The environmental conditions and resource analysis indicates that the WRDM has large proportions of land that have high agricultural potential, good grazing capacity and relatively high rainfall. This suggests that the conditions are favourable for various production methods within the district, including production on arable land, such as vegetables and maize, as well as grazing for cattle and sheep.

Given the favourable conditions for agricultural production in the district it is pertinent that an assessment of various commodities that can be produced is done in order to assess what commodities should be prioritised for the Agri-Parks model in the West Rand. The commodity selection criteria are detailed in the following section.

A critical issue, however, remains access to water and a water resource analysis should be completed in designated agricultural areas to assess water availability, particularly in Westonaria. Given the assessment, a viability assessment should be conducted on potentially drilling for water in the designated areas.

7.4 Commodity selection and prioritisation criteria

The following section outlines the potential commodities identified for production in the WRDM, as well as prioritisation criteria, methodology of prioritisation and the three identified commodities for production.

7.4.1 Commodity identification

Table 7.5 summarise the commodities that could potentially be produced as part of the Agri-Parks Project in the WRDM. These commodities were identified based on expert opinion and what is currently being successfully produced in the WRDM.

Table 7.5: Commodities identified for production in the WRDM

Commodity	Competitive advantage
1. **Grain (maize, sorghum)**	• Conducive rainfall patterns • Conducive soil conditions • Conducive market conditions (high demand) • Summer crop • Within the maize triangle • Investment towards development of the industry • Historical production • Skills availability • Availability of water for irrigation
2. **Dry beans**	
3. **Cowpea**	
4. **Groundnut**	
5. **Sunflowers**	
6. **Various vegetables**	• Proximity to the market • Conducive rainfall patterns • Conducive soil conditions • Availability of water for irrigation
7. **Beef cattle (red meat)**	• Proximity to grain producing areas • Proximity to feedlots • Proximity to Abattoirs • Proximity to markets
8. **Poultry (chickens and broilers)**	• Proximity to grain producing areas • Proximity to market
9. **Pork**	• Proximity to grain producing areas • Proximity to market
10. **Floriculture**	• Proximity to market • Niche market
11. **Deciduous fruit and berries**	• Conducive rainfall patterns • Conducive soil conditions

Table 7.5 indicates the commodity that could be produced and the competitive advantages related to the production of those specific commodities in the area. All of the commodities listed have historically been produced within the WRDM, indicating that the natural resources, market availability and skills availability are in place for further development.

7.4.2 Commodity selection criteria and methodology

The commodity selection criteria for the WRDM was to a large extent based on the APAP, as well as, biophysical, enterprise viability, economic development potential, and political and social considerations. The APAP focuses on several value chains, identified as priorities in meeting the Government priority targets set out in existing policy frame work such the National Growth Plan, National Development Plan and the Industrial Policy Action Plan, using the following general selection criteria:

I. **Contribution to food security** (a food security crop should: be produced all year round; affordable, nutritious and healthy; fit into consumer's daily diet etc.).
II. **Job creation** (**a** crop with the potential of creating job opportunities must be labour intensive).
III. **Growth potential.**
IV. **Potential contribution to trade balance** (imports of such crops should not currently exceed export).
V. **Value of production.**
VI. **Agro-Processing.**

Categories that were assessed included:

- Livestock Integrated Value Chain (including red meat, dairy, wool)
- Poultry Integrated Value Chain (layers, breeders, broilers)
- Fruit and Vegetables
- Wine
- Field Crops (including grains, sugar cane, etc.)
- Forestry: Category B&C refurbishment and forest protection strategy
- Fisheries: aquaculture and small-scale fisheries schemes
- Biofuels

The development of an Agri-park per District Municipality is part of a response to achieve national goals of inclusive rural development and integration; employment creation; poverty eradication; and inequality reduction, the Agri-Park Model also seeks to strategically select the top three (3) agricultural commodities produced within the District Municipality, which aligns with the APAP selection criteria and develop integrated value-chains for these commodities.

In addition to the APAP criteria, the criteria listed in Table 7.6 were used to evaluate the weight of the selected commodities. Scores were allocated based on the importance of commodity to the relation to the criteria, with 3 most optimal and 0 impossible and highly unlikely to succeed. In addition, these weight was from 3 as high importance and 1 low importance. Important considerations for the criteria scoring included:

- Labour indicator
- Real average growth (10 years)
- Market share
- Volatility index
- Trade balance
- Import substitution

The process, categories and their descriptions are indicated below and in Table 7.6.

- Only commodities produced within markets in South Africa (or with reasonable export potential) were selected.
- Then the biophysical requirements of each enterprise (e.g. temperature range, rainfall or water requirements, soil and land requirements etc.) were compared with local environmental conditions. Enterprises that are likely to fail to thrive under local conditions were eliminated. Evaluation was based on a model developed by the Food and Agricultural Organisation (GAEZ), followed by confirmation through a model developed by Manstrat (based on degree of overlap with ideal growth conditions of the particular crop) as well as opinion of agricultural experts and discussions with local farmers.
- A following round of elimination is based on likely enterprise viability and profitability, because a sustainable farming project needs to be profitable over the medium to long term.
- Thereafter the enterprise is evaluated in terms of macro-economic and social performance indicators to ensure sustainability and maximise societal good.

Table 7.6: Selection criteria for commodity prioritisation

Criteria for selection
A. Biophysical criteria
B. Enterprise viability criteria
B.1 Transport, market access and demand
B.2 Strategy, payback and profitability

Criteria for selection
B.3 Human, physical and financial capital
C. Economic development criteria
C.1 Linkages and processing opportunities
C.2 Job creation
C.3 Local development
C.4 Global competitiveness and trade
D. Political and social criteria
D.1 Political and institutional issues
D.2 Social issues
D.3 Food security and sustainability
Sub-totals
Biophysical total
Enterprise viability total
Economic development total
Political and social total
Overall total

See APPENDIX B

Amongst the criteria for selection were elements that are geared towards achieving the goals set out by the Agri-Parks Programme such as employment contribution and the capacity to capacitate the small-holder farmers within the region such as job creation, local development competitiveness, contribution to food security and other social issues.

7.4.3 Commodity prioritisation

The commodities assessed and ranked as priority are tabulated below:

Table 7.7: Prioritised commodities for WRDM

Commodity	Score
1. Vegetables	192
2. Poultry (broilers)	184
3. Grains (maize, sorghum and wheat)	179
4. Red meat production	179
5. Dry beans	176
6. Groundnut	174
7. Mung bean (Green gram)	173
8. Cowpea	169
9. Floriculture	112

Each shortlisted enterprise was the result of a comprehensive elimination process with the top three identified as vegetables, poultry and grain (maize). The top prioritised commodities are detailed further in 7.5.

7.5 Description of the three highest ranked commodities

The following commodities have been identified through stakeholder engagement, expert opinion, research and further agricultural modelling techniques as per the above description.

Table 7.8: Commodity descriptions

Commodity	Description
Vegetables	• High yields attainable under irrigation or hydroponics, and major competitive advantage due to proximity to market. However, water availability may be a limiting factor. The most suitable vegetable is Potato, while Cabbage, Carrot, Cucumber, Green mealie and Tomato can also be competitively produced. Detail will be provided as part of the next phase of this project. • Vegetables are a major production commodity for small-scale and commercial farmers in the WRDM, and close proximity to the market allows for easy access, especially since produce is required to be fresh.
Poultry: Broilers	• Poultry was identified as a suitable enterprise since production can be done successfully on a small-scale. • The poultry industry prides itself as an industry that feeds the nation, as more poultry products are consumed every year than all other animal products combined (SAPA, 2014). The South African poultry industry is an important contributor to the economy of South Africa and to food security. • ***In 2014***the gross value obtained from primary agricultural production from poultry meat was R33.810 billion. The total gross value of animal products during 2014 was R101.970 billion, which contributed towards the total gross value of agricultural products which was approximately R218.045 billion. Animal products contributed a total of 46.8% towards the gross value of total agricultural products, while eggs contributed 4.2%, and poultry meat contributed 15.5%. • In WRDM Competitive advantage due to proximity to both feedstock and market. Due to population density in the district, environmental restrictions may apply therefore potential for growth are limited.
Maize	• Maize is one of the most important grain crops in South Africa and is the staple food of a large portion of the population. The South African maize industry was deregulated in 1997 and is operating in a free-market environment where producers sell to whomever they wish and the prices are determined by supply and demand. • Maize is produced throughout the country in various environments. The production is dependent on rainfall that exceeds 350 mm per year. • Good potential for maize under rainfed conditions. Should be done on a larger scale. • Large expanses of land are available for maize production, particularly state land and mine-owned land.

7.6 Products related to selected commodities

A key undertaking of the Agri-Parks Business Masterplan was the assessment of products that could be produced from the selected commodities. Each commodity was assessed for the potential products that could be developed through value adding activities (agro-processing) within the value chain. Table 7.9 summarise the vegetable, poultry and maize that could be developed from each of the prioritised commodities.

Table 7.9: Potential agro-processing products

Commodity	Potential products
Vegetables	• Dried vegetables • Pickles, and sauces • Purees and pastes • Packaged vegetables • Frozen vegetables • Canned soups and stews • Vegetable juices

Commodity	Potential products
	• Fresh peeled, cut or diced • Pre-made meals • Vegetable oils
Poultry	• Whole chicken • Chicken portions • Skinless breasts • Nuggets • Offal • Flavoured
Maize	• Maize chop • Samp • Super maize meal • Maize rice • Sifted maize meal • Unsifted maize meal • Maize grits • Special maize meal • Other maize products

8 Commodity Analysis: Vegetables

8.1 Market assessment:

The following market assessment provides an analysis of the local markets, global markets, capital markets and commodity markets for the vegetable industry within a South African context.

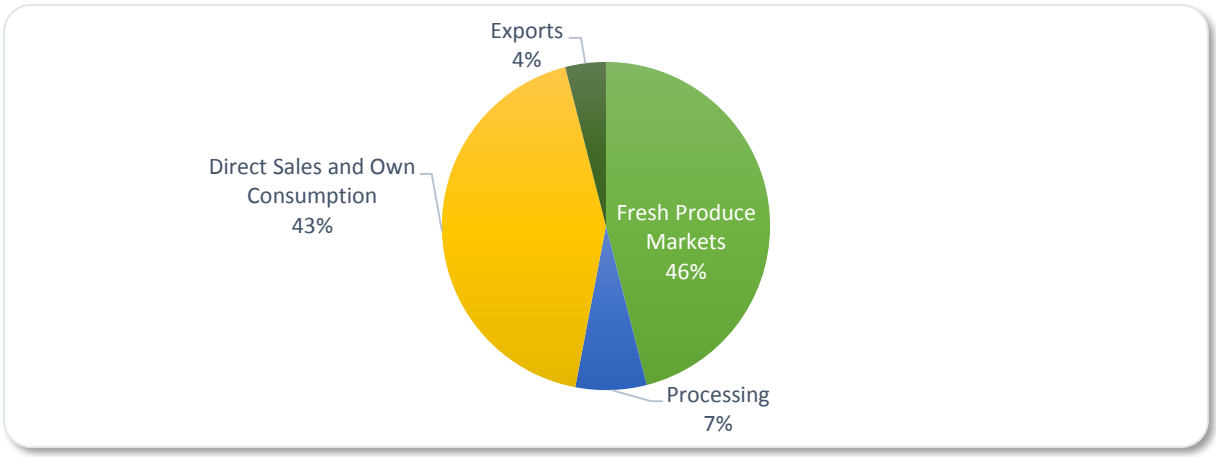
8.1.1 Local markets (who are the local markets)

Most commercial producers consider only one or two of the major national markets as marketing outlets, to the exclusion of all other possibilities. The larger producers will supply even some of the far-distant national markets, provided better prices prevail there. Nationally linked information networks can supply daily prices to producers. These national markets, in all the big centres, must remain the major outlets for many of the large vegetable growers, because of the scale of their operations, but even these growers should investigate other possibilities. Smaller producers may possibly be able to dispose of the bulk of their produce more profitably through outlets other than the national markets. Outlets to consider are:

- Direct sales to hawkers or consumers on the farm. Savings may be made on packaging, agents' fees, market commission and transport and so on.
- Farm stalls. Savings as above, but require suitable reliable staff.
- Direct sales to wholesalers, retailers, consumer groups or individual consumers. Delivery costs may be disproportionately high for small consignments.
- Small municipal markets or farmers' markets. Usually not very different to the national markets, more easily glutted, and lower throughput.
- Export.

In South Africa vegetables are sold through different marketing channels such as the National Fresh Produce Markets (NFPM), via wholesalers such as Freshmark, direct sales to retailers (in both the formal and informal sectors – e.g. supermarkets, greengrocers, hawkers, farm gate sales, to processors; and surplus produce is also exported. It was estimated that in 2014 approximately 46% of vegetables were sold via the NFPM's while direct sales, exports and processing made up the balance. Figure 8-1 indicates the volume of vegetables that are traded through various distribution channels that are available to farmers.

Figure 8-1: Distribution channels for vegetables



Source: Abstract, 2015

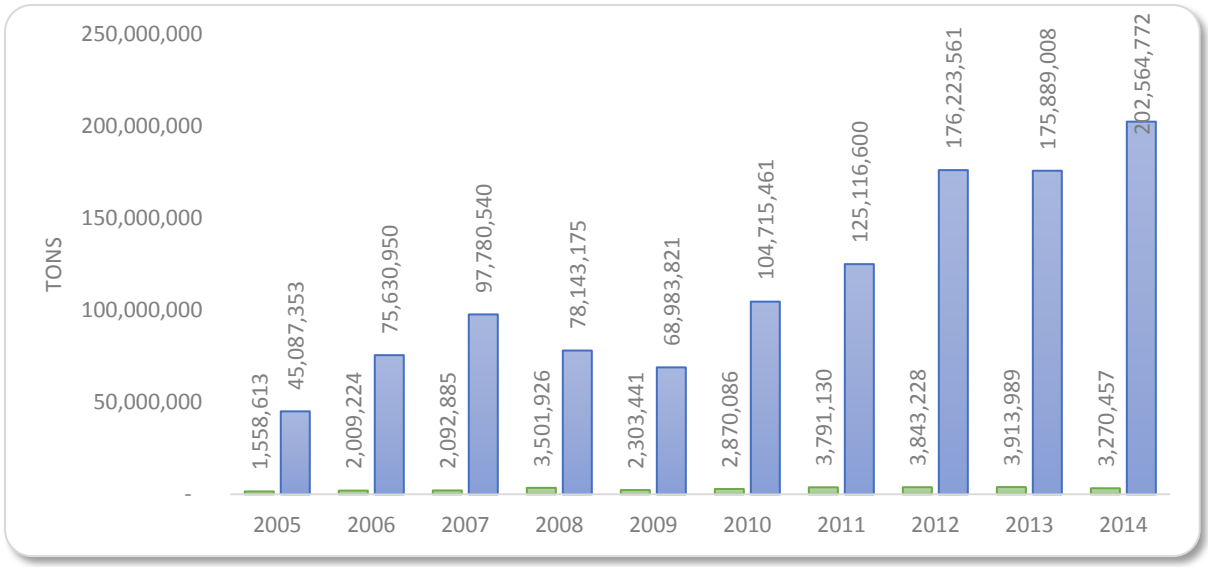
Given the above indicated dominant role of the NFPMs (as the largest and preferred marketing and sales channel of vegetables in South Africa) the NFPM prices are subsequently used as the benchmark for all national vegetable sales.

It is clear from Figure 8-1 that approximately 46% of the volume of vegetables produced is traded on the major fresh produce markets. The total volume of vegetables sold on these markets during 2014 amounted to 2 293.6 thousand tons, compared to the 2 107.8 thousand tons that sold during 2010, an increase of approximately 9%.

8.1.2 Global markets (international market)

Imports and exports are an indicator of South Africa's competitiveness on a global scale, while also contributing to trade balance – whether South Africa is a major exporter, or major importer. Exports, in general, indicate that South Africa produces a surplus of goods (has a competitive advantage in that specific good) that can be distributed to international markets. Imports are generally required to fill a consumption deficit (local production does not meet local consumption) and add to food security. In addition, importing products introduces competition to the local market, requiring that local producers remain efficient. South Africa has historically been a net exporter of agricultural products, importing only deficits in certain commodities, or niche products. Figure 8-2 indicates the quantity of vegetable products imported and exported by South Africa between 2005 and 2014.

Figure 8-2: Import and export of vegetables and vegetable products, South Africa



Source: DAFF, 2015

Figure 8-2 suggests that exports of vegetables and vegetable products was significantly higher than exports in the time period. From 2009 exports of vegetables have been on an upward trend on the back of good production locally. In summary, the figures suggests that recently South Africa has been a major net exporter of vegetables and vegetable products. The import and export products are listed in Table 8.1.

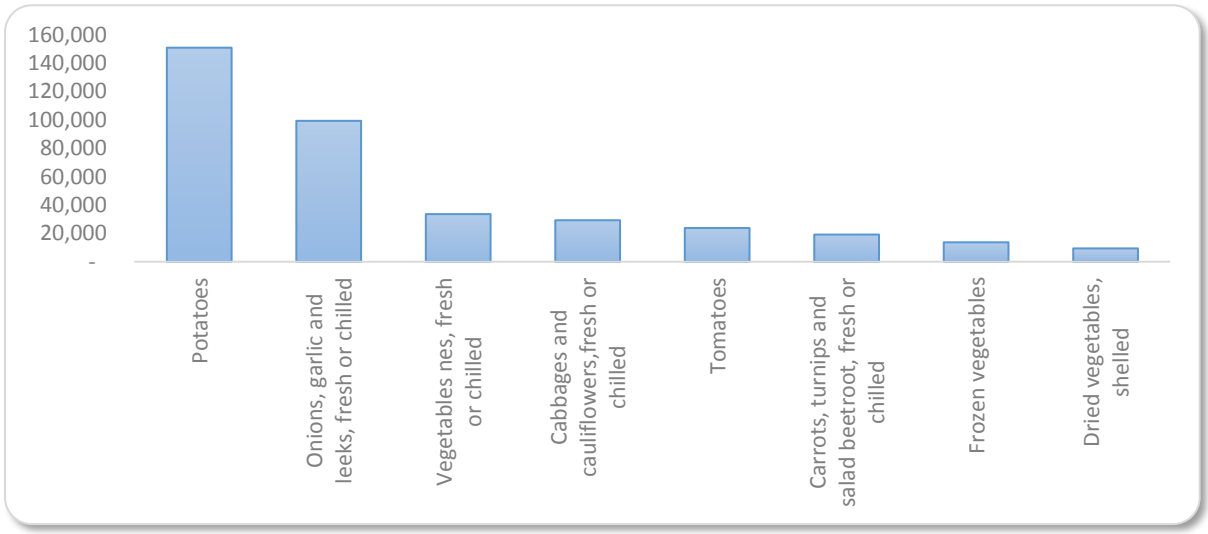
Table 8.1: Import and export products from South Africa

Import products	Export products
1. Dried vegetables, shelled	1. Potatoes
2. Frozen vegetables	2. Onions, garlic and leeks, fresh or chilled
3. Dried vegetables	3. Vegetables, fresh or chilled
4. Onions, garlic and leeks, fresh or chilled	4. Cabbages and cauliflowers, fresh or chilled
5. Vegetables, fresh or chilled	5. Tomatoes
6. Tomatoes	6. Carrots, turnips and salad beetroot, fresh or chilled
7. Leguminous vegetables, shelled or unshelled, fresh or chilled	7. Frozen vegetables
8. Manioc, arrowroot (yams) etc.	8. Dried vegetables, shelled
9. Vegetables, provisionally preserved (unfit for immediate consumption)	9. Leguminous vegetables, shelled or unshelled, fresh or chilled
10. Cabbages and cauliflowers, fresh or chilled	10. Manioc, arrowroot (yams) etc.
11. Potatoes	11. Lettuce and chicory, fresh or chilled
12. Carrots, turnips and salad beetroot, fresh or chilled	12. Cucumbers and gherkins, fresh or chilled
13. Cucumbers and gherkins, fresh or chilled	13. Dried vegetables
14. Lettuce and chicory, fresh or chilled	14. Vegetables, provisionally preserved (unfit for immediate consumption)

Source: ITC, Trade Map, 2015

Some of the major commodities exported from South Africa include potatoes, onions, fresh and chilled vegetables, tomatoes, carrots, and frozen vegetables. The export quantities of the respective products are indicated in Figure 8-3 below.

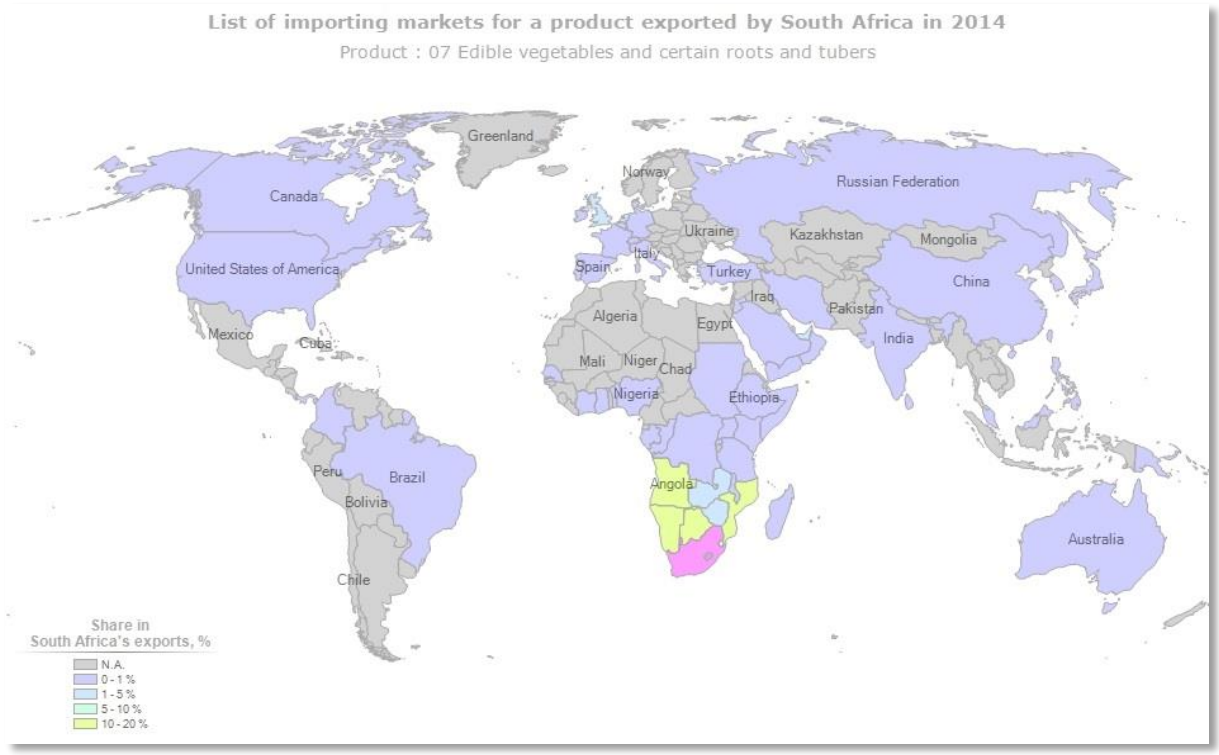
Figure 8-3: Major vegetable export products from South Africa 2014



Source: ITC, Trade Map, 2015

It is clear from Figure 8-3 that potatoes and onions are the major export commodities from South Africa, especially since they are easily stored and transported. The major export destinations for the commodities are South African Development Community (SADC) countries including Namibia, Botswana, Angola and Mozambique as indicated in Map 8.1.

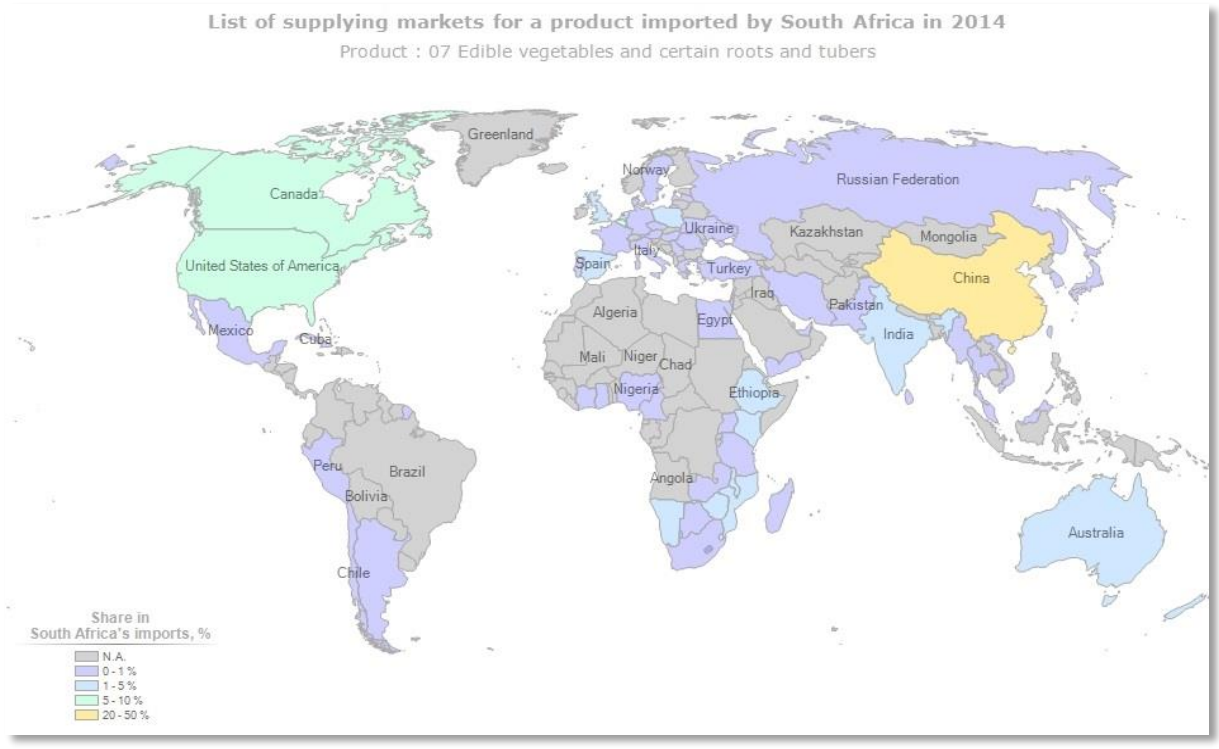
Map 8.1: Export markets for vegetable products from South Africa



Source: ITC, Trade Map, 2015

South Africa's major import markets for vegetable products include China, Canada and United States of America (USA) as indicated by Map 8.2. The major import products include dried and frozen vegetables.

Map 8.2: Import markets for vegetables landing in South Africa



Source: ITC, Trade Map, 2015

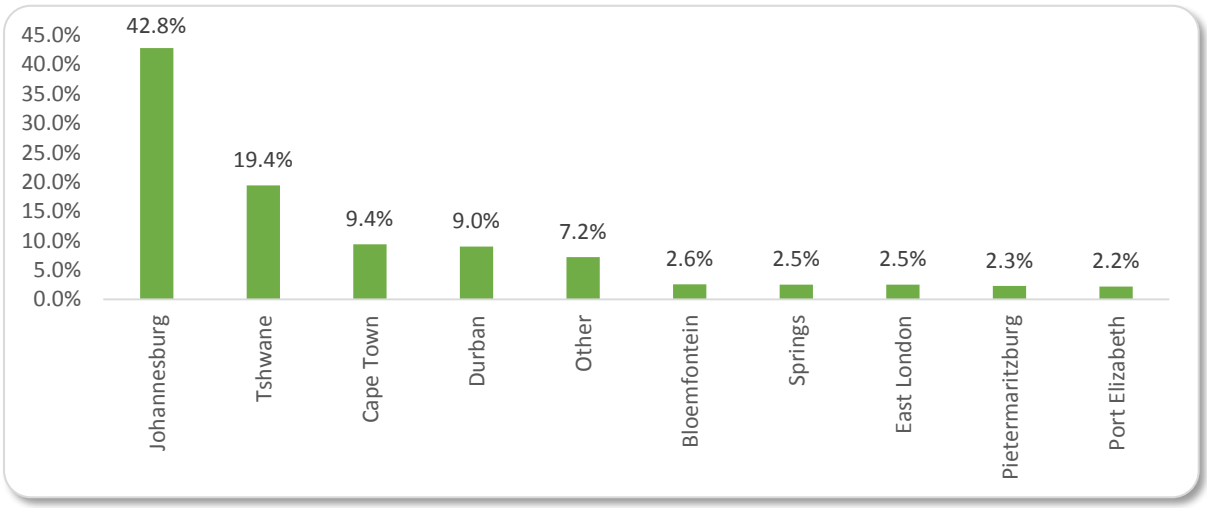
It is clear from the above import-export analysis that South Africa is a net exported of vegetables and vegetable products, with SADC countries being the major markets for these products. The major export commodities include potatoes and onions which can be easily stored and transported to the SADC region with relative ease given the relative proximity and low trade barriers. Of interest is that these commodities are exported mostly in their primary for and have gone through little processing. Major imported vegetable products include dried vegetables and frozen vegetables with most imports originating from China. Importantly, the imported products have gone through value adding activities.

8.1.3 Commodity markets (market that trades in primary products)

A commodity market is a market that trades in primary economic sector rather than manufactured products. Soft commodities are agricultural products such as wheat, coffee, cocoa and sugar Commodities are generally traded through the South African Futures Exchange (SAFEX) and are long-lasting (i.e. can be stored for a long amount of time). Vegetables are generally a product that is quickly perishable if not stored under the correct conditions and are therefore not traded on SAFEX, but rather through quick access points such as NFPM's like the Johannesburg Fresh Produce Market, Africa's largest of its type.

As was indicated by Figure 8-1 approximately 46% if vegetables in South Africa are traded through NFPM's indicating its relative importance within the industry. There are 19 fresh produce markets that trade in fruit and vegetable on a daily basis nationwide who sell product on to hawkers, retailers and fruit and vegetable stores and other stores. The market shares of the fresh produce markets are indicate in the following Figure 8-4.

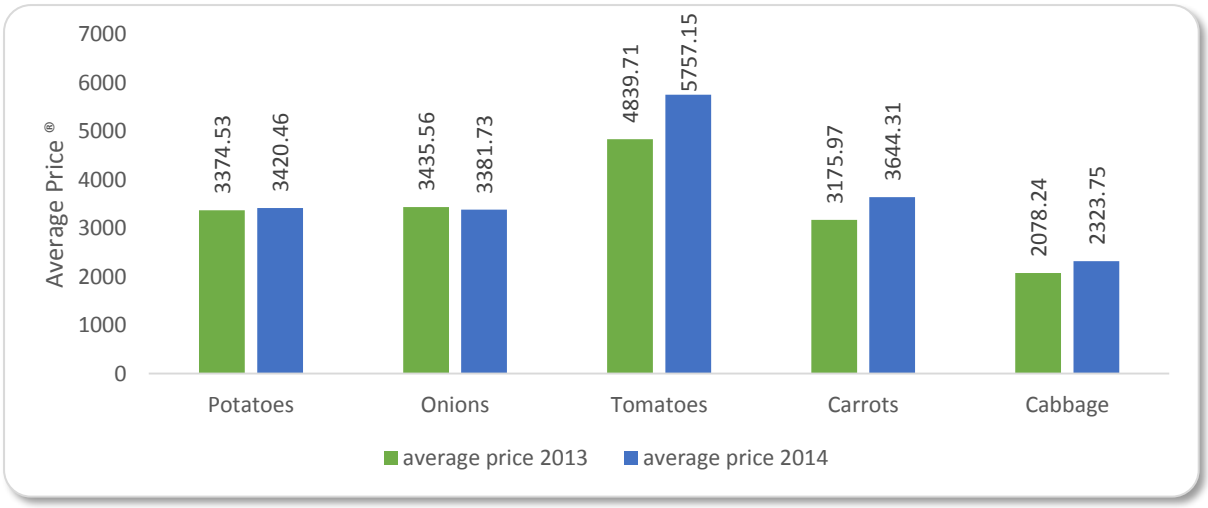
Figure 8-4: Market share of major fresh produce markets based on turnover, 2014



Source: Statistics on Fresh Produce Markets, 2014

It is clear that the Johannesburg Fresh Produce Market is the largest of the markets, followed by Tshwane. Both are located within the Gauteng province and in close proximity to the WRDM. Gauteng is a major marketing point for vegetables given the size of the market and, as such, there are many vegetable farmers that are situated within close proximity. The five major commodities that move through these markets include potatoes, onions, tomatoes, carrots and cabbage, all major staple foods. Figure 8-5 indicates the average price per ton for the five major commodities.

Figure 8-5: Average prices of five major vegetables at 12 major markets, 2013 & 2014



Source: Statistics on Fresh Produce Markets, 2014

Tomatoes are clearly the most valued of the five major vegetable with an average price of R5 757 in 2014, a 19% increase over the previous year. Cabbage was valued at an average of R2 323 per ton in 2014, the lowest valued of the major vegetable products. These differences are a result of supply and demand conditions as well as the production potential of the relative crop. Cabbage is a relatively hardy vegetable crop and can be produced with relative ease in comparison to tomatoes that require closer management. The volume and value of trade of the five major commodities are assessed in more detail in Table 8.2 below

Table 8.2: Volumes and Rand values of five major vegetables traded, 2013 & 2014

Item	Tons			Rand per ton		
Year	2013	2014	% change	2013	2014	% change
Tshwane	337,698	347,563	2.9%	3,343	3,625	8.4%
Johannesburg	726,847	770,017	5.9%	3,387	3,573	5.5%
Bloemfontein	47,332	45,729	-3.4%	3,347	3,757	12.3%
Kimberley	11,829	12,711	7.4%	3,456	3,699	7.0%
Cape Town	174,239	166,403	-4.5%	3,383	3,616	6.9%
Port Elizabeth	57,301	54,912	-4.2%	3,461	3,711	7.2%
East London	52,693	51,237	-2.8%	3,658	3,971	8.5%
Durban	170,781	177,733	4.1%	3,459	3,858	11.5%
Pietermaritzburg	50,916	49,197	-3.4%	3,254	3,715	14.2%
Welkom	30,128	28,690	-4.8%	3,757	4,195	11.6%
Klerksdorp	48,657	48,851	0.4%	3,584	3,915	9.2%
Vereeniging	26,003	25,993	0.0%	3,026	3,205	5.9%
Springs	59,488	58,830	-1.1%	2,874	3,103	8.0%
Uitenhage	8,739	8,950	2.4%	3,656	3,386	-7.4%
Witbank	11,488	11,192	-2.6%	3,360	3,454	2.8%
Nelspruit	5,764	4,723	-18.1%	1,390	1,147	-17.5%
Mpumalanga	31,465	27,659	-12.1%	2,479	2,345	-5.4%
Kei (Mthatha)	5,459	7,053	29.2%	3,650	3,779	3.5%
George	6,699	5,351	-20.1%	3,186	3,908	22.7%

Table 8.2 indicates the volume traded and the value (Rand per ton average) for the five major vegetables. It is clear that Johannesburg Fresh Produce Market is the largest trader of vegetables along with Tshwane, making Gauteng the largest market for these vegetables and, by implication, many other vegetables. Gauteng, being a major market is also surrounded by major vegetable farmers who supply the produce.

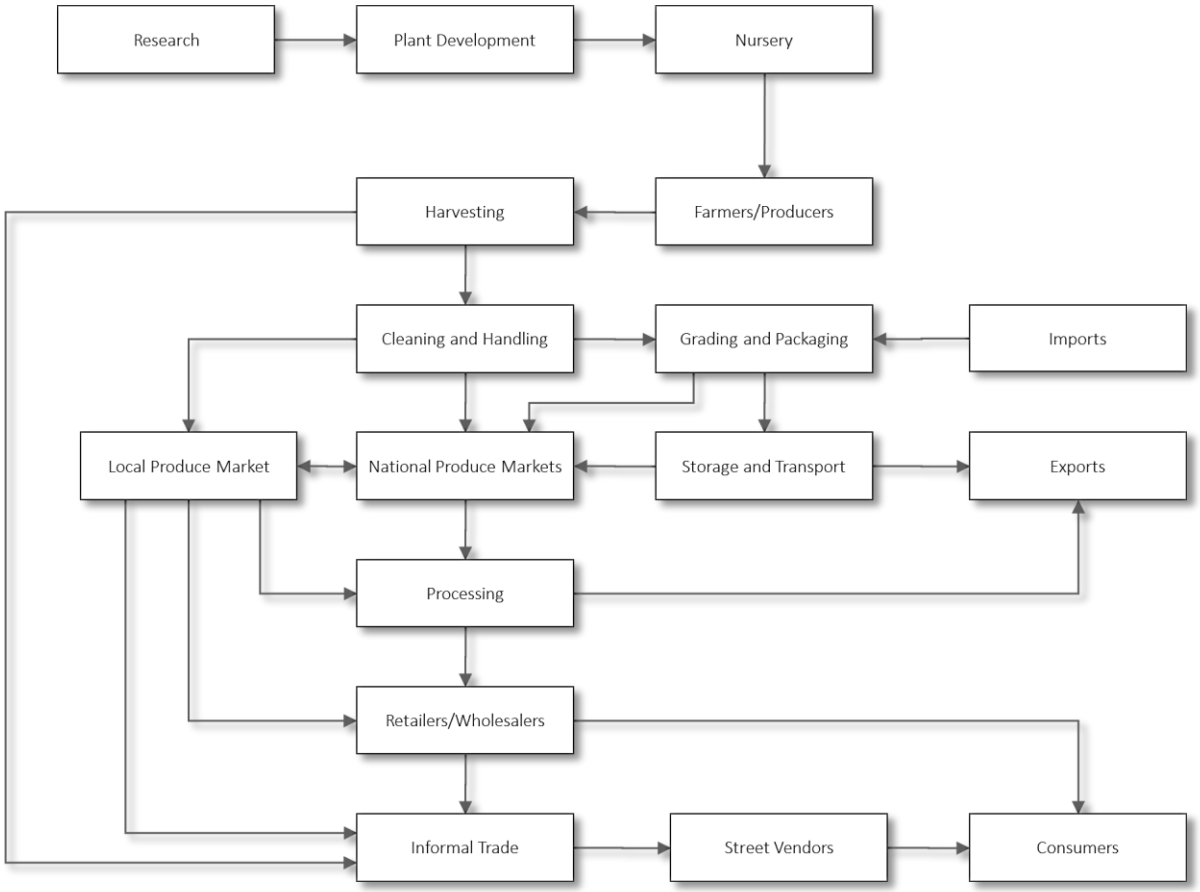
8.2 Value chain assessment

The WRDM district is well suited for vegetable crop production. Several factors impact on the productivity and growth of the sector, namely: growth in the SA economy and rising consumer demand; international trade and trade agreements; the global recession and rise in food prices; the land reform programme; reliance on imports; water availability; changing consumer patterns and demands (e.g. organic food stuffs); rising costs of agricultural inputs ; technological changes and mechanisms; quality standards; farm safety and security; broad based black economic empowerment; skills demand and supply; HIV/AIDS; and changing climate.

Vegetables are amongst the most important crop in South Africa, and production is particularly prominent in the WRDM. Climate, soils and other natural resources such as availability of water is well suited for vegetable production in the region. Most of the production is of vegetables in Gauteng is geared toward the local market in Gauteng, given that is South Africa's largest market. Moreover, domestic demand for potatoes and potato-related products is increasing.

Figure 8-6 summarises a typical vegetable value chain.

Figure 8-6: Vegetable value chain



The value chain represents all upstream and downstream opportunities for the vegetable industry in a local context, where various value adding activities take place and multipliers can be applied. The value chain is detailed further within this chapter.

Factors influencing production of vegetables include: expansion of the fast-food industry; higher average income of the population; the rapid rate of urbanization; and the influx of international processing companies. Competition is also very strong for emerging farmers, especially since there are several large vegetable producers in the district.

8.2.1 Upstream activities

As Vegetable production is classified as primary production, as such the upstream activities relevant to the value chain are primary input suppliers used in the production system. The major inputs for vegetable seedlings, fertilisers and other chemicals for pest, weed and disease control. Most of these inputs are supplied by agricultural organisations that are present in the respective areas. The main suppliers of these products are detailed in Table 8.4.

8.2.2 Downstream activities

Harvesting, handling, washing, trimming, grading, packing, packaging, labelling and transporting are all important practices aimed at preserving the quality of the produce, and presenting it to the best advantage. Prices achieved, and thus differences in income obtained, can be greatly affected by the emphasis placed on these practices. They must, therefore, be considered as important elements in the marketing strategy.

Most commercial producers consider only one or two of the major national markets as marketing outlets, to the exclusion of all other possibilities. The larger producers will supply even some of the far-distant national markets, provided better prices prevail there. Nationally linked information networks can supply daily prices to producers. These national markets, in all the big centres, must remain the major outlets for many of the large vegetable growers, because of the scale of their operations, but even these growers should investigate other possibilities. Smaller producers may possibly be able to dispose of the bulk of their produce more profitably through outlets other than the national markets. Outlets to consider are:

- Direct sales to hawkers or consumers on the farm. Savings may be made on packaging, agents' fees, market commission and transport and so on.
- Farm stalls. Savings as above, but require suitable reliable staff.
- Direct sales to wholesalers, retailers, consumer groups or individual consumers. Delivery costs may be disproportionately high for small consignments.
- Small municipal markets or farmers' markets. Usually not very different to the national markets, more easily glutted, and lower throughput.
- Export.

Significant points of sale for vegetables produced in the WRDM are listed below:

- Johannesburg Fresh Produce Market
- Tshwane Fresh Produce Market
- Spring Fresh Produce Market
- Vereeniging Fresh Produce Market
- Schools (National School Feeding Programme)

- Prisons
- Hospitals
- SPAR (Vegetable Buyers)
- Pick'n Pay
- Significant informal trade

Significant marketing considerations of vegetables produced in the WRDM include:

- Size of outlet, and cost of servicing it.
- Transport availability and cost. Distances, which affects cost, as well as deterioration of the product. Condition of the roads.
- Packaging required, e.g. pre-packs, cartons, boxes, pockets and their relative costs in relation to prices attained.
- Market or consumer preferences.
- Product quality or specifications.
- Contact person or agents.
- Seasonal price trends.
- Market commission and agents' fees.
- Possible delays in payment for consignments.
- Various other possible requirements for the specified outlet.

8.2.3 Agro-processing opportunities (products)

Harvesting, handling, washing, trimming, grading, packing, packaging, labelling and transporting are all important practices aimed at preserving the quality of the produce, and presenting it to the best advantage. Prices achieved, and thus differences in income obtained, can be greatly affected by the emphasis placed on these practices. They must, therefore, be considered as important elements in the agro-processing and marketing strategies. Table 8.3 below highlights a few of the products that can be developed through agro-processing.

Table 8.3: Agro-processing opportunities

Primary Vegetable	Processing Opportunity	Final Product
1. Cabbages	• Juicing • Slicing and Dicing	• Slaw • Juice
2. Carrots	• Washing and sorting • Fresh packing and branding • Freezing • Juicing • Slicing and dicing •	• Baby Carrots • Coloured Carrots • Mixed frozen veg • Baby food
3. Potato's	• Washing and sorting • Fresh packing and branding • Slicing and dicing • Drying • Baking (crisps) • Canning	• Crisps • Frozen fries • Fresh fries • Canned veg • Mixed frozen veg • Baby potato's • Powdered • Baby food
4. Tomato's	• Storage, ripening, washing and sorting	• Tomato puree: Canned or frozen

Primary Vegetable	Processing Opportunity	Final Product
	• Fresh packing and branding • Freezing • Slicing and dicing • Cooking • Drying • Canning/bottling of tomatoes • Tomato jam or preserve	• Tomato soup: Canned or frozen • Tomato paste • Dried tomatoes, possibly stored in oil • Tomato powder • Tomato cooking sauce or pizza/pasta sauce base (frozen or canned) • Ketchup style tomato sauce • Pickled tomatoes • Ripe tomato chutney • Green tomato chutney • Baby tomato's
5. Onion	• Canning • Dehydration • Storage, ripening, washing and sorting • Fresh packing and branding • Onion preserve, marmalade	• Powdered for the use in soups and flavouring • Canned onion • Canned onion and tomato mix • Frozen onion slices or onions mixed in with other frozen vegetables
6. Other	• Canning • Slicing and dicing • Extraction • Drying • Juicing	• Frozen mixed vegetables • Readymade salads • Vegetable fats and oils • Vegetable juices • Homogenised vegetables

Processing companies cannot compete with the premium prices paid for out-of-season produce, but are usually highly competitive with prices in peak season. However, some processing, or value-added practices, such as pre-packing of certain crops, could be done on the farm. Special markets might need to be developed for such products.

Critical points for agro-processing are the generally high quality specifications, chemical residue tolerances, possible pre-chilling or cooling requirements, specific packaging requirements, high transport costs (particularly air transport), the prevailing demand for the product and expected prices, specific market needs, and sales agents.

8.2.4 Main input suppliers

The main suppliers, including NWK, Dicla and Obaro, to the vegetable industry within the WRDM and regionally are summarised in Table 8.4 below.

Table 8.4: Main input suppliers

Input Supplier	Services
Starke Ayres	• Vegetable seed
NWK	• Irrigation • Hardware • Animal health and nutrition • Seeds • Spare parts

Input Supplier	Services
	• Chemicals & fertiliser
SENWES	• Agronomy, • Soil surveys and mapping, • Developing agriculture and • GIS & cartography
Plant Forum	• Vegetable seedlings
Obaro	• Irrigation Hardware • Animal health and nutrition • Seeds • Spare parts • Chemicals & fertiliser
Monsanto	• Agricultural seed
Omnia	• Fertiliser
Dicla Farm and Seed	• Seed • Tunnels • Poultry Supplies • Irrigation Equipment • Tractors and Implements

The main suppliers to the vegetable industry, in general, have the capacity to supply most inputs required for vegetable production including vegetable seedling, fertilisers, chemicals, irrigation equipment and machinery, as suggested in Table 8.4.

8.3 Competitors

The development of sustainable supply and value chains in the vegetable sector from production through processing to markets, where there are unequal power relationships between large retailers/wholesalers and agro processors, and primary vegetable producers is a constraint. Producers are vulnerable to demand volatility and price fluctuations and are "price takers" because of the buyers' market power. The major vegetable processing players in South Africa are tabulated below

Table 8.5: Competitors within the vegetable processing industry

Type of processing activity	Competitor
Fresh Produce	Fresh produce markets: • Johannesburg Fresh Produce Market • Vereeniging • Tshwane • Springs
Canning and Pickling	• Rhodes • Langeberg Food Processors Ltd • Giants Canning - Everyday • Koo • All Gold • SA Fruit & Vegetable Canners' Association (SAFVCA)
Frozen	• McCain Foods SA • Just Veggies • Nature's Choice Products • Lamberts Bay Foods • Tender Harvest

Type of processing activity	Competitor
	• Findus Foods
Slice and Dice	• Retailers own products
Drying and Dehydration	• Just Veggies • Carbocraft (Pty)Ltd

Amongst the above listed competitors are other competitors that are involved in vegetable agro-processing activities, including farmers who have the capacity to process their products.

8.4 Stakeholders

Table 8.6 lists the relevant stakeholders associated with vegetable production in the WRDM.

Table 8.6: Relevant stakeholders

Name	Type	Services
Department of Agriculture and Rural Development Offices (Abe Baile Carltonville)	Department of Agriculture	• Regional Office
Department of Agriculture and Rural Development Offices (Randfontein)	Department of Agriculture	• Regional Office
Dew Crisp (PTY) Ltd	Fruit and Vegetable Packers	• Fresh Produce Agents
Fruit and Veg City (Krugersdorp)	Fruit and Vegetable Packers	• Fruit and Vegetable Distributors • Fruit and Vegetables Packers
Westonaria Local Municipality	Local Municipality Offices	• Local Municipality Office
Merafong City Local Municipality	Local Municipality Offices	• Local Municipality Office

There are several stakeholders in the district that can provide support services, extension, and skills development to potential and emerging farmers within the district. In addition, such stakeholders will provide support to the projects and assist linking all role-players within the Agri-Parks model.

8.5 Commodity related technology

Advances in technology have progressively made it easier for agricultural role-players to access information such as weather and market information, increase production through mechanisation and advanced fertilisers, develop artificial environments and store perishable products for longer periods of time. Access to such technologies are a significant determinant of the competitive nature of businesses, with the most technologically advanced businesses often being the more competitive operations.

As such, it is important to consider technologies that could enhance the competitive nature of producers within the Agri-Park programme. The below table lists and provides a description of various technologies that are likely to enhance the capabilities and competitive nature of producers within the programme.

The following table lists and provides a description of vegetable specific technologies that can be used for the purpose of vegetable production.

Technology & Description	Benefits to the farmer
New generation small hand tools	Many farming activities, especially repetitive day-to-day work, can be greatly enhanced by hand tools designed for the particular task, speeding up production and reduce health and safety risk (e.g. back strain, wearing of joints and skin, etc.).
Precision farming: Gaining real-time or exact information within particular parts of a single field e.g. moisture and nutrient levels, soil type and depth etc., to determine the most appropriate rate of application of water, fertilizer and to adjust implement settings automatically and instantly. Precision farming can also be applied to animal production, aquaculture and agroforestry systems.	Maximise profitability and efficiency automate some management and administrative tasks. Coordinate and simplify management processes.
Integrated farm management software: Combines information and management systems from various on- and off-farms sources to coordinate farming activities in a highly efficient manner. Includes a variety of technologies e.g. farm asset tracking systems, cloud computing, record keeping, accounting, mapping, water and soil management, weather forecasting etc.	
Plan-A-Head Nursery System Software: Management of nurseries for flower, vegetable and tree (forestry or even agroforestry) seedlings.	Integrate with other Plan-A-Head farming software to allow for whole-farm enterprise management. Particular strong features include germination monitoring and marketing (especially order taking and dispatch).
Plan-A-Head Vegetable Management Software Program with Vegetable Management System: Management system for a vegetable production enterprise.	Integrate with other Plan-A-Head farming software to allow for whole-farm enterprise management. A particular strong feature of the system is the fact that it facilitates precision farming due to excellent monitoring, control and record keeping at field and even sub-field level, and its mapping capability.
SimJunior: Basic financial management and accounting software for the small-scale farmer.	Easy to use. Ideal for the small-scale farmer
Accord: Complete human resource management system for farmers, including payroll, HR record keeping and administration.	Particular strong features of the system include its simplicity and coverage of basic employment legislation.
Duet: Fruit and vegetable marketing and distribution software dealing with different products, grades and varieties, prices, market agents, packaging, distribution and even workers involved in these marketing activities.	Integrated with Technofresh (a market price information provider).
Treadle pump: human-powered (stepping on pedals) suction water pump. Can be fixed (Lowe cost) or portable.	Enables small-scale irrigation and larger scale animal watering at a very low cost in areas with a shallow water table.
Rope pumps: human-powered (usually by hand crank) water pump.	Enables small-scale irrigation and larger scale animal watering at a very low cost in areas with a deep water table.
Hand piston pump: pump water from depths up to 35 meter.	Relative low cost option to pump small quantities of water from a groundwater depth of up to 35 meter.
Pond lining fabric: Ponds and earth dams may lose large quantities of water through seepage, or may not be able to hold water at all if the soil is too	Can store very large quantity of water at very low cost.

Technology & Description	Benefits to the farmer
permeable. Lining will prevent this water loss to occur.	
Ferro-cement -lined tank: In-ground storage tanks made of cement and iron wire mesh.	Can store fairly large quantity of water at fairly low cost.
Conventional plastic tank	Can store fairly large quantity of water at moderate cost.
Conventional cement in-ground tank	Can store fairly to very large quantity of water.
Header bag: large open plastic bag suspended above the field on a frame that can be produced from local materials.	Provide water for a drip irrigation system at about half the cost compared to conventional in-field tanks. Can store a very small quantity of water but at a very low cost.
Earth mound bag	Provides water for a drip irrigation system at about half the cost compared to conventional in-field tanks. Can store a moderate quantity of water at very low cost. Can supply a fairly large field of 200m2. Robust and easy to maintain - it can be repaired using same materials, tools and techniques that is required for tyre repair.
Jumbo Thai Jar	Can store a small quantity of water at a moderate cost. Can be build and maintained by farmers themselves using locally available material. Requires only a small space. Ideal closely spaced farms or urban agriculture.
Mulching technology: A variety of new and efficient mulching materials are developed. Mulching material are any material that cover the soil surface. Biodegradable mulches are also available.	Mulching material minimise or eliminate weed growth and water losses through evaporation, and also control various pests and diseases as well.
Biochar: Activated carbon ground into a course powder, then worked into the soil.	Significantly increase yield by assisting with water and nutrient retention and improving soil structure. Can be produced on-farm or at farmer community level using fairly simple techniques. Almost any plant or organic biomass can be turned into biochar. Lasts for thousands of years.
In-field rainwater harvesting: Small basins (that can be made with a shovel) capture rainwater, preventing it from immediately running off the field during a rain event. Apart from cultivated fields, micro-basins can also be established on pastures to increase carrying capacity of animals.	Enable the soil to absorb much more water that would have run off the field. Depending on the type of soil, the additional moisture may benefit the crop for several months and may increase yield significantly.
Wind energy: Wind energy has been used for a long time in South Africa in the form of wind pumps. New generation wind technology allows for uses beyond wind pumping, including electricity generation at micro or farm level scale.	Wind is a renewable form of energy and some areas in South Africa do have sufficient wind development potential, especially when micro-climatic and small-area topographic factors are considered which is appropriate for very small-scale operations. Less vulnerable to theft compared to solar panels.
Solar technology incl. photovoltaic and thermal panels and solar drying and cooking: There are two main forms of solar energy harvesting, i.e. photovoltaic panels that produces electricity, and thermal solar panels or tubes that heat water. Solar energy is also widely used on farms for solar drying and solar cooling.	Solar is a renewable form of energy and most areas in South Africa do have sufficient wind development potential. In fact, some parts of the southern and western Free State, western Limpopo, Gauteng and especially the Northern Cape and North West have excellent solar power potential even at global standards.

Technology & Description	Benefits to the farmer
Video and photographical technology: Fixed point photography, security camera systems and remote sensor-triggered photography.	Valuable to monitor veldt condition, effects of grazing or fire control regime, rehabilitation efforts, and to monitor animal or criminal activity in remote parts of the farm. Some systems notify the farmer by SMS of sensed activity and immediately send the footage by MMS or video clips to the farmer's mobile device (in additional to conventional recording and storage of images or video).
Integrated weed and pest management incl. biological control agents: Pests and weeds are major threats to farmers and food security. Chemical control has been effective for some pests and diseases but it is expensive and causes harm to human health and the environment. Consumers and governments locally and to export markets place increasing pressure on farmers to adopt integrated management practices to reduce reliance on only chemical control. Especially important is biological control where the natural enemy of the weed or pest are released locally to control population levels. It is not only applicable to crop farmers but to all extensive and semi-intensive animal farmers as well (pasture or veldt management).	Usually much more effective and sustainable than chemical control on its own.

The adoption of these technologies will not only make farmers more efficient, but also more competitive in an environment that is dominated by larger commercial enterprises. The technologies are expected to assist farmers in improving production practices and better understand market conditions in order to make appropriate production decisions.

8.6 Demand and needs analysis (market segmentation)

With respect to the importance of, and opportunities posed by the specific marketing channels, the following market segments are the most promising that should be focused on:

- National Fresh Produce Markets during the initial start-up phase.
- Street hawkers including bakkie traders, however, it is essential to establish a logistical and supply coordination system as discussed.
- Government institutions, as soon as the farmers become reliable suppliers.
- Large retail chains should become major priority after the farmers have gained experience in production and the Agri-Parks system successfully established quality control and streamlined logistical arrangements.
- Packhouses (vegetable packers and wholesalers) and processors in case of farms that are situated near packers or processors that handle cabbages.

It is possible to provide an estimate for demand based on historical consumption figures and populations. Table 8.7 provides a summary on estimated demand on a national and provincial level.

Table 8.7: Estimated demand for vegetables

Area of demand	Commodity	Estimated demand for vegetable (tons)
South Africa	Potatoes	1 917 982
	Vegetables (excluding Potatoes)	2 363 679
Gauteng	Potatoes	460 580
	Vegetables (excluding Potatoes)	567 608
Sedibeng	Potatoes	32 749
	Vegetables (excluding Potatoes)	40 359
West Rand	Potatoes	30 176
	Vegetables (excluding Potatoes)	37 189
Ekurhuleni	Potatoes	120 870
	Vegetables (excluding Potatoes)	148 958
City of Johannesburg	Potatoes	167 845
	Vegetables (excluding Potatoes)	206 849
City of Tshwane	Potatoes	108 937
	Vegetables (excluding Potatoes)	134 252

At an average per capita consumption of vegetables at 43kg and potatoes at 35kg, there is a clear demand for vegetables in South Africa. Demand for potatoes and vegetable (excluding potatoes), on a national level, is approximately 1.9 million tons and 2.3 million tons respectively. In Gauteng, the demand for both potatoes and vegetables is nearly a quarter of the total demand – a clear indicator that producers within Gauteng have a market that can be accessed.

8.7 Socio-economic (job creation)

Amongst the objectives of the Agri-Parks Model is to create opportunities for employment within the agricultural sector. Employment, however, may not necessarily be a result of expanding primary production, but also the value adding activities that may occur through the value chain.

Estimates for job creation can be determined through industry standards of employment per hectare Labour input is a key element of the production process and one of the main production factors in any economy. Table 8.8 below displays the Sectoral labour multipliers applicable to the broiler production industry, i.e. the number of the job opportunities created at different levels for every additional 1 ton that that is brought into production.

Table 8.8: Vegetable potential employment

Sector	Direct	Indirect	Direct + Indirect	Induced	Total
Broiler	1.9	0.62	1.52	*	*

The total multiplier is disaggregated into direct, indirect and induced components.

Direct Multipliers – 1.9: The direct multiplier measures the direct impact emanating from a particular sector on itself. For instance, the direct multiplier will measure how an increase in the production of a particular sector will affect employment within the same sector. These direct impacts are very closely related to the sector and, as such, are probably the most important impacts from a strategic planning point of view. The multiplier of 1.9 suggests that close to two jobs are created for every additional hectares of production.

Indirect Multipliers – 0.62: Indirect multipliers reflect the impacts that a particular sector will have on all other industries that supply inputs (materials) for the operations taking place in the relevant sector. These 'backward linkages' are important as they measure the broader impact that changes in the direct sector will have on the economy. Frequently, these indirect impacts are significant, and may even exceed the direct impacts themselves. The indirect multiplier (or linkages multiplier) of 0.62 suggests that for every additional hectare of vegetable production, 0.62 jobs are created.

Induced Multipliers: Economic impacts will result from the paying out of salaries and wages to people who are employed in a particular sector, as well as the salaries and wages paid by businesses operating in the sectors indirectly linked to this sector due to the supply of inputs. These additional salaries and wages lead to an increased demand for various consumable goods that need to be supplied by various economic sectors throughout the broader economy. Clearly, these induced impacts can be considerable and are measured by using induced multipliers.

The vegetable industry is typically very labour intensive industry that is an important contributor to employment.

8.8 Contribution to food security

Food security, also a major objective of the Agri-Parks model, is an essential component to the livelihood of many South Africans. 60% to 70% of low income households' budgets are spent on staple food products. Therefore, it is essential that the deployment of the Agri-Parks contributes positively to issues of food security.

The growing of the vegetable industry within the WRDM is likely to have a two-fold impact on food security. That is, additional food is produced through increased production, and incomes are created through employment creation, increasing the purchasing power of the consumer. Estimated contribution to food security can therefore be estimated by assessing estimates of production and job creation. Estimated production is summarised in Table 8.9.

Table 8.9: Estimated Production

Production	Conservative Yield per Ha (t)
Cabbage	30
Carrot	20
Onions	15
Tomatoes	30
Potatoes	30
Total Average	**25**

The estimated production in Table 8.9 suggests that for every hectare that is brought into vegetable production, 25 tons of vegetables could potentially be produced.

The above estimates make it clear that the vegetable industry in the WRDM has the capacity to contribute positively to food security through food production as well as job creation that allows consumers the power to purchase.

Table 8.10 provides the estimated income generation per hectare of production, as well as the potential portion of that income that could be spent on food and food products.

Table 8.10: Estimated income generation

vegetables	
Multiplier	2.52
Avg. Annual Income (R)	31,680.00
Approximate Income generation per hectare	79,780.80
Portion of income spent on food (65%)	51,857.52

Given a total employment multiplier of 2.52 for every ton of vegetables produced, it is estimated that income generated is approximately R79 780 (Table 9.11), based on a daily income of R120. Many low income households spend between 60% and 70% if their income on food and, as such, it is estimated that for every additional hectare of vegetables produced R51 857 could be spent on food for every job created.

8.9 Regulatory requirements

The legislation listed below are all those that have implications on the production of vegetables within the WRDM. It is critical that the management of the Agri-Parks programme is aware of these legislation and comply accordingly through best management practices.

Table 8.11: Regulations

Regulation	Description	Implications on Agri-Park

CONSERVATION OF AGRICULTURAL RESOURCES ACT, 1983 (ACT NO. 43 OF 1983)	This Act provides for control over
	• the utilisation of natural agricultural resources in order to:
	  ○ promote the conservation of soil, water sources and vegetation, and the
	  ○ Combat of weeds and invader plants.
		• The Agri-Park will be required to implement policies that will maintain and monitor best agricultural practices to ensure the conservation of soil and vegetation, and also combat invader plant species.

CONTROL OF MARKETS IN RURAL AREAS ORDINANCE, 1965 (ORD. NO. 38 OF 1965)	The Act encompasses the • Regional Support Service and • Agricultural Economics components	• The Agri-Park will be required to provide assistance in managing the markets for produce within the Agri-Parks system.
FERTILIZERS, FARM FEEDS, AGRICULTURAL REMEDIES AND STOCK REMEDIES ACT, 1947 (ACT NO. 36 OF 1947)	The Act regulates the • Registration of fertilizers, stock feeds, agricultural remedies, stock remedies, sterilising plants and pest control operators. • Provision is also made for control over the acquisition, disposal, sale and use of fertilizers, farm feeds, agricultural remedies and stock remedies.	• Agri-Parks management will be required to take responsibility of the purchase, distribution, and sustainable use of such products within the programme.
AGRICULTURAL CREDIT ACT, 1966 (ACT NO. 28 OF 1966)	The Act provides for a • System of assistance to persons carrying on or undertaking to carry on farming operations, and • Control in respect of assistance rendered.	• An Agri-Parks committee should be established to catalyse access to credit for role-players within the programmes.

Regulation	Description	Implications on Agri-Park
MARKETING ACT, 1968 (ACT NO. 59 OF 1968)	The Act provides for the introduction of a • system of control over the marketing of agricultural products and • Regulates the quantitative control over the import or export of these products.	• The Agri-Park will be required to implement a system of control over the marketing of agricultural products and regulate the quantitative control over the import or export of products.
SUBDIVISION OF AGRICULTURAL LAND ACT, 1970 (ACT NO. 70 OF 1970)	The Act regulates the subdivision of • Agricultural land and • Its use for purposes other than agriculture.	• The Agri-Parks management will be required to allocate land in a productive manner and ensure strict control over allocated land. Furthermore, the land is to be allocated for agricultural purposes that will contribute to the development of the Agri-Park
PLANT BREEDERS' RIGHT ACT, 1976 (ACT NO. 15 OF 1976)	The Act regulates the granting of certain rights relating to • New varieties of certain kinds of plants, • The protection of such rights and the issue of licences in respect of the exercising of the rights.	• The Agri-Park will not be able to use seed that is harvested from the crops. • The Agri-Park may consider breeding programmes for the development of its own maize, in which case rights may be granted. • The Agri-Park should respect the rights granted to plant breeders from who they purchase seed from.
PLANT IMPROVEMENT ACT, 1976 (ACT NO. 53 OF 1976)	The Act provides for • The registration of establishments where plants and propagation material are sold and packed, • The introduction of schemes for the certification of certain propagation material, • The requirements to which plants and propagation material sold for the purposes of cultivation must conform and for quality control over plants and propagation material imported or exported.	• In the event that the Agri-Park breeds its own specific maize cultivars, it will need to comply with regulations as set out by the Act.
DESIGNATED AREAS DEVELOPMENT ACT, 1979 (ACT NO. 87 OF 1979)	The Act provides for • Measures for the promotion of the density of population and of • Farming activities in certain areas designated by the Minister for the purpose.	• The Agri-Parks management is to ensure that farming activity takes place only in areas allocated for agricultural purposes.
CO-OPERATIVES ACT, 1981 (ACT NO. 91 OF 1981)	The Act regulates the • Formation, registration, management and functioning of various types of cooperatives and • Winding-up and dissolution of co-operatives.	• Cooperatives have already been established within the WRDM, but it is likely that new ones develop and participate in the Agri-Parks system. • Agri-Parks management should be responsible for the establishment and registration of auxiliary cooperatives that will participate in the Programme.
PERISHABLE PRODUCTS EXPORT CONTROL	This Act provides for the control of	• In the event of export, it is imperative that the Agri-Park establishes and

Regulation	Description	Implications on Agri-Park
ACT, 1983 (ACT NO. 9 OF 1983)	• Perishable products intended for export from the Republic of South Africa and • For the continued existence of a statutory board to bring about the orderly and efficient export of perishable products from the Republic.	maintains control over the export products. • It is the onus of the Agri-Park to establish a team that is responsible for food health and safety regulations.
AGRICULTURAL PRODUCT STANDARDS ACT, 1990 (ACT NO. 119 OF 1990)	This Act provides for • Control over the sale and export of certain agricultural products and other related products, with a view to the maintenance of certain standards regarding the quality of products and • The packing, marking and labelling thereof.	• Food and food products will go through various agro-processing activities before being a marketable product. To maintain quality assurance, it is recommended that the Agri-Park establishes a team that will be responsible for carrying out activities that will meet the requirements of the Act.
AGRICULTURAL PRODUCE AGENTS ACT, 1992 (ACT NO. 12 OF 1992)	This Act provides for the establishment of • An Agricultural Produce Agents Council (AAC) and • Fidelity funds in respect of agricultural produce agents, and • For the control of certain activities of agricultural produce agents. This Act has not been brought into operation in its entirety but will eventually replace the Commission for Fresh Produce Markets Act, 1970 (Act No. 82 of 1970), and the Agricultural Produce Agency Sales Act, 1975 (Act No. 12 of 1975).	• The Agri-Park should play and intermediary role in moving produce from farm to market. As such, it is important that marketing activities are managed and monitored according to the standards set out by the Act.
AGRICULTURAL DEVELOPMENT FUND ACT, 1993 (ACT NO. 175 OF 1993)	This Act provides for the establishment of and control over • An agricultural development fund for the handling of money received for development.	• Funding is a fundamental cornerstone to the development of the Agri-Park and its stakeholder. The Agri-Park management should play an intermediary role in accessing and use of such funding.

Given the above exhaustive list of legislation that the agricultural industry is governed by, it will be an **imperative that the Agri-Park management establishes a compliance** committee that implements best management practices while also evaluating and monitoring the effective implementation of the best practices.

8.10 Substitute products and service

Substitute goods/products are goods which, as a result of changed conditions, may replace each other in use, or consumption. A substitute good, in contrast to a complementary good, is a good with a positive cross-price elasticity of demand, meaning that as the demand for a good increases, the price of another good is increased. Table 8.12 below lists and describes potential substitutes for vegetables and vegetable products.

Table 8.12: Substitutes for vegetables

Substitute Product/Service	Description
Other vegetables	Consumers would be more likely to substitute for price and preference when substituting various vegetables. For example, a consumer may prefer sweet potatoes as an alternative to potatoes.
Grains/legumes and cereals	Grains and cereals may be considered as a cheaper alternative to vegetables, although they are often considered complements. A low income household would, however, closely consider price when deciding to purchase these products.

The consumption of vegetables, in general, is of a habitual nature with most consumers eating vegetables as a complement to their meat, or fish dishes. Given that some vegetables are a staple food item and consumed by habit, there is no real substitute for vegetables other than alternative types of vegetables due to the broad availability. A consumer, for example, may substitute potatoes with sweet potatoes within the vegetable category.

The impact that substitutes for vegetables might have on the WRDM Agri-Park is likely to be minor, given the relative non-availability of substitutes for vegetables. The Agri-Park model should maintain a diverse vegetable product offering in order to compete with other vegetables available on the market. In addition, producing and processing of staple food vegetables will be a key undertaking in competing against potential substitutes.

8.11 New entrants

8.11.1 Potential Entrepreneurs (BBEE)

Appendix C list potential entrepreneurs and emerging farmers that could potentially participate in the Agri-Parks programme within the WRDM.

8.12 Societal and cultural trends

Societal and cultural trends are trends that relate to the social and cultural values and practices within a society, or culture. These are long term trends (at least two to five years) that explain why people behave the way they do.

The South African food industry's direction is the growing influence of demographics, especially with respect to societal and cultural trends. As such, it is important that the Agri-Park positions itself to take advantage of such trends by meeting the demands of society through the processing of relevant products. The following, vegetable specific, cultural and societal trends have been identified and described.

Rising incomes: The trend in rising incomes within South Africa has provided the local consumer with increased purchasing power and, therefore, the ability to increase demand for food. Increased purchasing power has also allowed the consumer increased access to a variety of food, including processed, packaged and frozen vegetables (or convenience foods as described below).

Health: Vegetables do not contribute significantly to macronutrient intake, but do make an important contribution to dietary fibre. In developing countries, specifically, vegetables are viewed as a staple food along with other cereals.

Convenience foods: Also known as time-saving foods as they are partially, or complete prepared are increasing in demand as consumers spending power increases and more value is given to time-saving. Vegetable specific convenience foods include microwave meals and chopped, frozen vegetables. The increasing demand of quick-food has increased the number of quick-food items available to consumers in the last two decades. The most likely consumers to buy these items include modern families (families that lead an individualistic lifestyle and do not sit down to as many traditional meals), middle- to high-income families, and younger families.

Organic Products: A new-age trend for organic products has resulted in the increased production of organic foods. The increasing demand for organic vegetables is a result of consumer perception that organic is healthier, more sustainable and less chemical residue is left on the product.

Vegetarian: Animal welfare and environmental issues have driven many consumers towards the adoption of a vegetarian diet, but health and culture can also influence them. To expand the reach of meat alternatives and other foods marketed as vegetarian, Agri-Parks should recognize and attract other consumers, like non-vegetarian, who may not necessarily follow vegetarian diets, but who are reducing consumption of meat and dairy products. The meat-free-Mondays movement is a clear example of a gap in the market that could potentially be accessed through vegetable products.

GMO: Most consumers are uninformed with respect to genetically modified foods and are often not aware that they may be eating GMO's. In many cases consumer attitudes and perceptions of GM food products are fears, concern for, and avoidance of the new technology as a result of the negative connotations attached to the foods.

There is a growing influence of demographics, especially with respect to societal and cultural trends, on the local food industry in South Africa. As such, social and cultural trends as listed and described above should be taken into consideration when considering products that should be produced for local markets. A marketing team that possesses the necessary skills to understand the local market is integral to the Agri-Parks success in accessing local and international markets.

8.13 SWOT analysis

The following table summarises the strengths, weaknesses, opportunities and threats for the vegetable industry within the district:

Table 8.13: SWOT analysis for vegetables

Strengths	Weaknesses
• Major economic advantages • Highly nutritive products • Contributor to food security • Proximity to major market • Availability of natural resources • Maximal soil usage • Wide variety of vegetables can be grown	• shortage of skilled workers • Poor farming practices • Non-standard of product • Limited irrigation resources/capacity • Lack of Good Agricultural Practice (GAP) principles • Short marketing window (perishable product) • Small-scale production not competitive • Lack of access to market • High level of post-harvest losses • Inadequate working capital • Ageing farmer population
Opportunities	**Threats**
• Intensive production • Organic production	• Increasing input costs • Market limitations

• Local labelling (food labelling) • Employment opportunities • Change in consumer preference (healthy living) • Growing preference for convenience • Employment for women and youth • Increasing demand for fresh produce globally (export market) • Cooperative farming (alliances – economy of scale) • Technological advancement	• Consumer habit • Competition • Extreme weather conditions (drought, hail, frost) • Pest problems • Disease • Barriers to entry • Food safety issues • Regional competition • Retailer consolidation (preference toward particular producers)

9 Commodity Analysis: Broilers

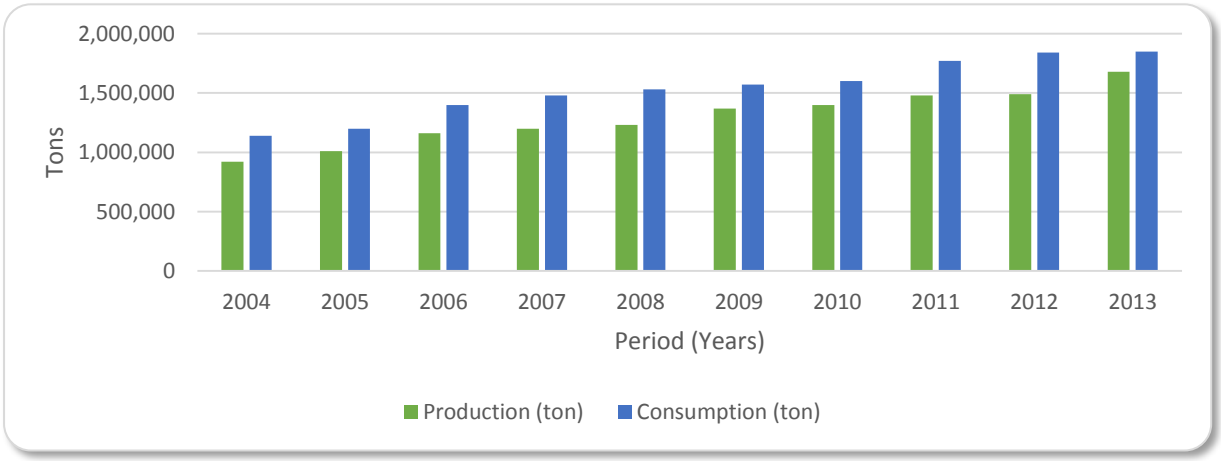
9.1 Market assessment for broilers:

The following market assessment provides an analysis of the local markets, global markets, capital markets and commodity markets for the broiler industry within a South African context.

9.1.1 Local markets (who are the local markets)

Production and Consumption: The number of birds slaughtered has significantly increased by about 60% over the period 2004 - 2013. Both broiler meat production and birds slaughtered followed the same growing trend and in 2013 approximately 1.5 million tons of broiler meat was produced and 947 million birds slaughtered. Following substantial growth from 2004 to 2008, domestic poultry producers have found their margins under pressure and while domestic production has failed to expand sufficiently to meet growing demand over the past 5 years, imports have spiralled.

Figure 9-1: Production and Consumption of broilers in South Africa



(Profile of SA Broiler Market Value Chain, 2014

Figure 9-1 indicates that South Africa consumes more broiler meat than what is produced locally, and we are a net importer of broiler meat, mainly to satisfy the local demand. The gap continues to widen as rising living standards are pushing larger numbers of consumers towards protein filled diets. Meat consumption in South Africa has expanded rapidly over the past decade and while continued growth in meat consumption is projected in the coming decade, relative prices and consumer preferences drive the choice between various meat types over time. In this regard chicken is and will remain the most affordable source of protein and while consumption is projected to increase by only 38% over the next decade (compared to 60% through the past 10 years), it continues to dominate the meat market, accounting for 65% of additional meat consumed by 2024.

The per capita broiler meat consumption in South Africa has increased from 23 kg per person in 2004 to 35 kg per person in 2013 and it is projected to grow to 44 kg per person in 2024. With chicken consumption projected to surpass 2.5 million tons by 2024, production levels will have to increase substantially, resulting in production capacity to just over 2 million tons by 2024. To meet the shortfall in meeting demand (estimated consumption of 2.5 million tons) imports in excess of 550 thousand tons will supply the balance.

Evaluation of South African broiler production in the global context reveals a value chain and production system that is very similar to the leading global producers. Integrated value chains dominate, with the crucial broiler production phase contracted to individual producers. South African companies employ a pricing system that is similar to the tournament pricing used successfully in the US and, based on technical efficiency indicators, South African producers compete well against international counterparts. When the cost of production is considered however, the picture changes, largely as a result of feed cost differentials.

The broiler meat industry in South Africa is dominated by 2 large producers, namely Rainbow Limited and Astral Foods. Together these 2 companies produce 46% of the total broiler meat production. Rainbow produces approximately 235 million broilers per annum and Astral Food produces about 220 million broilers per annum. Country Bird is the third largest producing 68 million broilers per year. The other 4 medium-sized producers (Tydstroom, Daybreak, Fouries Poultry Farms and Rocklands) produce more than 50 million broilers per year and collectively they supply 22% of the market. These top 7 companies supply about 75% of total South African broiler meat and 25% is supplied by hundreds smallholder producers.

The domestic market consists of approximately 265 formal abattoirs. These abattoirs sell mainly to 5 main retailers (Pick n Pay, Shoprite-Checkers, Spar, Woolworths and MassMart) and SMME's in the retail sector. These retailers buy the largest share of domestic production.

Specific local marketing channels: The following table describe specific marketing channels where or to whom farmers can sell broiler chickens.

Table 9.1: Potential marketing channels for local broiler production

Marketing channel	Description	*Volume
Direct sales (farmer-to-consumer)	Sell directly to consumers through personal contact, at the farm gate or less commonly in the case of chickens, at the farm stall.	14%
Street hawkers and visiting hawkers (bakkie traders)	The farmer sells to informal street traders or hawkers who in turn sell the chickens to members of the public from their stalls on the street or isolated patches (as opposed to large market areas), usually in areas where low income people reside, work or transit through. Although street hawkers or their suppliers usually buy chickens from spent hen depots, auctions or free markets, some do buy directly from farmers. The street traders may arrange to pick up the chickens at the farm (bakkie traders), or the farmer or an agent may distribute it to them. Although hawkers usually sell fruit and vegetables and some other farm products, some street traders sell live poultry in a slaughtered or live form, although live animals are usually limited to rural areas or informal settlements.	9%
Free markets, wet markets and live animal markets	Free markets are market areas where many sellers (usually not the farmer him/herself) sell a large variety of products, including farm products. Some of these markets, especially in informal settlements or rural areas, may sell some live animals such as poultry. Wet markets are places where many sellers of perishable farm products like meat, fish, live animals including chickens, fruit and vegetables, have stalls at a single location (unlike hawkers who may sell in isolated spots or in areas other than formal market places). Apart from a variety of other perishable farm products, a farmer could sell live chickens to a stall operator where consumers can choose the chicken and take it home or let it be slaughtered immediately.	5%
Small independent shops or supermarkets	Sell to small, independent retailers, i.e. shops that do not belong to or are franchises of large national or global groups. This channel includes general dealers, "corner shops", spaza shops etc. Will not buy live	3%

Marketing channel	Description	*Volume
	chickens from farmers, however, the farmer may pay a chicken abattoir a fee (known as custom processing) to process the chicken into a braai-pack, then sell this value added product to retailers.	
Large retail chains	A farmer may supply directly to large national or global retail groups, usually by contract. Some large retailer groups buy centrally, while others such as Spar allow local stores to buy independently which makes it easier for small local farmers to sell to this lucrative and growing marketing channel. Will not buy live chickens from farmers, however, the farmer may arrange for custom processing by a chicken abattoir, then sell this value added product to retailers.	4%
Butchers	Sell live chickens directly to butchers who will process the bird then sell the meat to the public. Unlike poultry abattoirs, butchers sell directly to the public rather than to other butchers or retailers, slaughter at smaller scale (therefore poultry are more readily processed by butchers than livestock) and usually do not engage in extensive meat processing. Although chickens are supposed to be slaughtered by poultry abattoirs, many butchers, especially in less developed areas or in the informal sector, do the slaughtering themselves. To sell legally to butchers, a fee can be paid to abattoirs to do the slaughtering (custom processing), then the meet can be collected and distributed to the butcher.	7%
Restaurants and hospitality businesses	Sell to restaurants, pubs, deli's, fast food outlets, shebeens, hotels, lodges and hospitality businesses who will prepare and serve chicken in a ready-to-eat form directly to the public.	1%
Public and private institutions that provide meals to their residents, inmates, learners or patients, and well-funded food schemes	Sell to private or government institutions or businesses with a catering unit e.g. some schools, public university residences and dining halls, prisons, hospitals etc., to prepare and serve chicken in a ready-to-eat form to their learners, residents, inmates or patients. This also includes well-funded government or NGO food schemes with formal and strong food buying contracts. The sales arrangement is almost always by contract.	1%
Poultry abattoirs and processors	Sell to poultry abattoirs or processors, often by contract. Abattoirs are a very important and major marketing channel for broilers. They slaughter the birds and sell the meat to butchers, retailers and sometimes operate their own butcheries or poultry meat processing plants. Poultry processors usually buy from poultry abattoirs or even have their own poultry farms and abattoirs, but some processors do buy directly from poultry farmers.	56%

**Volume of sales made directly by farmers through the particular channel, estimated by Manstrat*

Table 9.1 provides estimates for particular marketing channels used by farmers within South Africa. It is clear that the most popular channels are sales to poultry abattoirs and processors, direct sales, street hawkers and butchers.

The broiler industry within South Africa is well established, but still imports chicken in order to meet local demand. The grain industry, a major input to chicken feeds, remains the greatest challenge to the broiler industry being competitive on a global scale. As such, local farmers need to be innovative in their production approach in order to take advantage of any competitive advantages.

9.1.2 Global markets (international market)

The industry's ability to compete within the global context and the implications for its long term sustainability has been questioned in light of growing imports to meet domestic demand. From 2001

to 2012, chicken consumption in South Africa increased by 74%, almost 800 thousand tons. Of the additional meat consumed over this period, 65% was produced domestically, with imports accounting for the balance. Since 2010 however, almost 200 thousand tons of additional chicken has been consumed, yet only 35% was produced domestically, with imports accounting for 65%.

In light of these numbers, questions have been raised regarding South African producers' competitiveness in the global context. Based on technical efficiency indicators, South African producers compete well against international counterparts. When the cost of production is considered however, the picture changes, largely as a result of feed cost differentials. South African feed costs on a per ton basis is significantly higher than the US and Brazil. Feed accounts for up to 70% of variable production costs per cycle, hence differences in feed costs are considered the main driver behind differences in production costs across these regions.

In order to ensure its competitiveness, a number of trade measures are applied within the industry. In 2013, an application for an increase in the general duty applied on imported products was approved, yet the composition as well as the origin of imports diminished the impact of these duties on domestic prices, as products originating from the European Union (EU) remained duty free under the Trade, Development and Cooperation agreement (TDCA). Furthermore, antidumping duties have been applied to bone-in portions originating from the United States (US) for more than a decade and in 2014, the industry applied successfully for additional anti-dumping duties on bone-in portions originating from the United Kingdom, the Netherlands and Germany. Beyond the level of tariffs however, the underlying reasons behind the lack of competiveness will need to be addressed in order to ensure the long run sustainability of the sector *(BFAP Baseline Agricultural Outlook, 2015).*

Broiler production, consumption, exports and imports from 2004 to 2013 are summarised in Table 9.2 below.

Table 9.2: Broiler production, consumption, exports and imports (2004 – 2013)

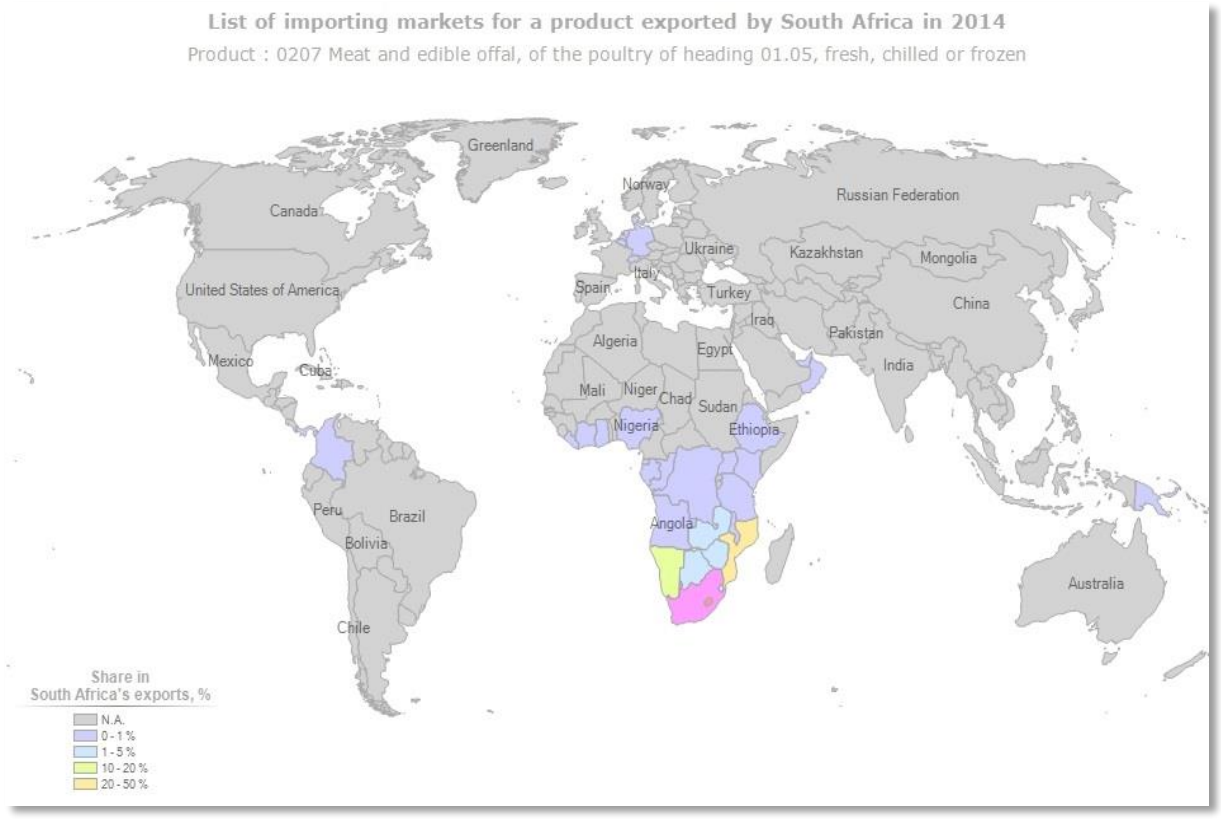
Years	Production	Broilers slaughtered	Consumption	Exports	Imports
	'000 Tons		Million Birds	(Million Kilograms)	
2004	928	701 605	1 082	4	182
2005	1 019	769 379	1 204	2	214
2006	1 143	831 441	1 383	2	294
2007	1 200	864 962	1 470	2	276
2008	1 276	924 072	1 508	3	220
2009	1 358	931 443	1 558	19	231
2010	1 430	968 796	1 645	17	265
2011	1 478	978 873	1 753	10	349
2012	1 499	950 366	1 836	7	403
2013	1 529	947 421	1 899	15	391

Profile of SA Broiler Market Value Chain, 2014

The above table shows that South Africa imports broiler meat to satisfy the domestic demand, while also exporting smaller quantities. It further shows that the imported quantities exceeded the demand due to the dumping of certain parts of broiler meat from Brazil and United States of America. South Africa imposed anti-dumping duties to USA and increased the general tariff on imported broiler meat to minimize imports from Brazil as this dumping was posing a threat to local producers.

Exports: As indicated in Table 9.2 above, SA also exports a small amount of broiler meat to neighbouring countries. Mozambique and Zimbabwe has been competing for dominance throughout the decade. Further evidence of exports is provided in Map 9.1.

Map 9.1: Export destinations for South Africa's poultry meat and other by-products

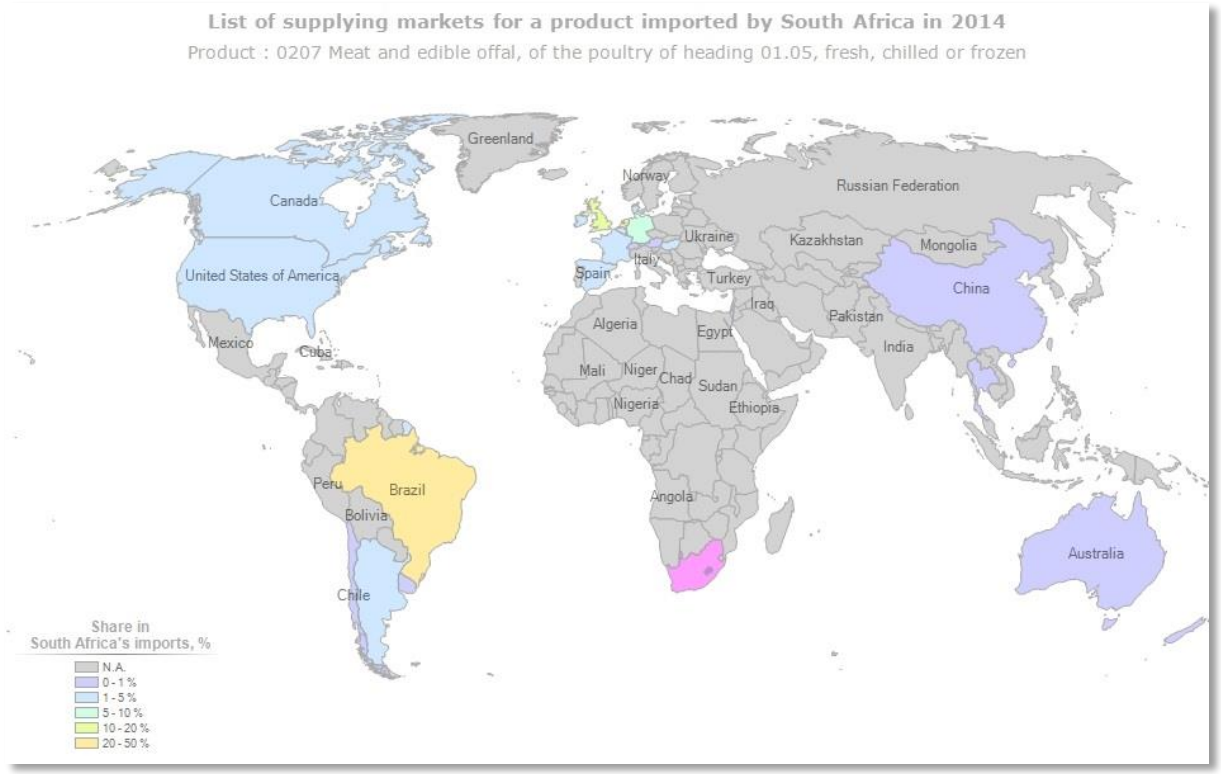


ITC Trade Map, 2015

Map 9.1 illustrates the Mozambique and Namibia are major export destinations for South African poultry meat. Between 20% and 50% of exports land in Mozambique, while between 10% and 20% of exports land in Namibia. Other export destinations include Botswana, Zambia and Zimbabwe, where between 1% and 5% of poultry products are exported respectively.

Imports: South Africa imported approximately 400 million kilograms of broiler meat in 2013 at an estimated value of R 4 billion. The imports quantity and value showed significant increases of 163% and 539% respectively compared to 2003. This drastic increase might have been caused by the alleged dumping of certain pieces of broiler meat from Brazil and Unites States. Map 9.2 indicates the countries from which South Africa received imports. Map clearly indicates that Brazil is responsible for most of the chicken products imported by South Africa with between 20% and 50% of the import share.

Map 9.2: Countries from which South Africa received poultry meat exports



ITC Trade Map, 2015

The United Kingdom and other European countries are also responsible for a major portion of the imports in South Africa, while the USA, Canada and Argentina import shares are between 1% and 5% respectively. Interestingly, South Africa does not import chicken meat products from other African countries.

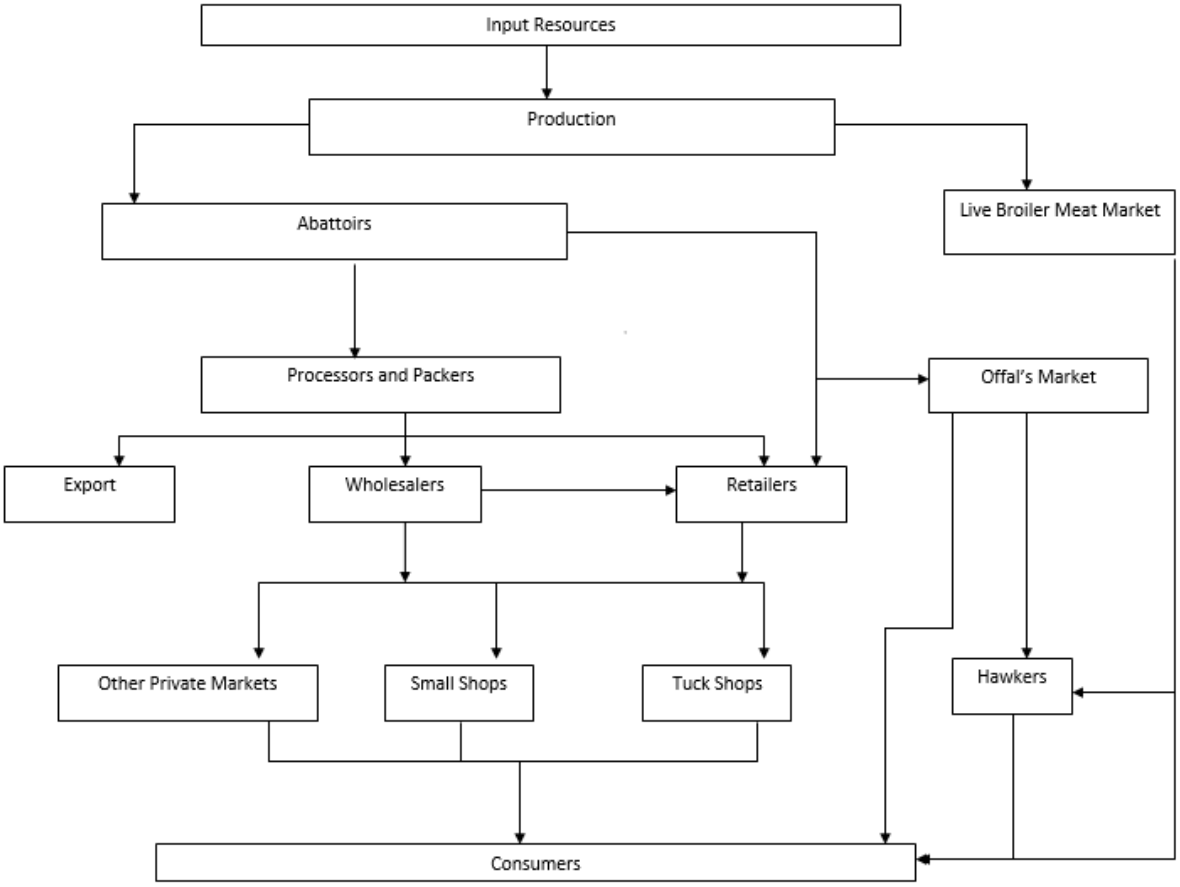
9.2 Value chain assessment

The following section diagrammatically represents and provides an analysis of the broiler value chain. The opportunity analysis will identify potential opportunities within the value chain. The development of sustainable supply and value chains in the broiler sector from production through processing to markets is important. The value chain for broiler production is indicated below in Figure 9-2.

The WRDM is well suited for broiler production and there are several factors which impact on their productivity and growth in the sector. These factors include,: growth in the SA economy and rising consumer demand; international trade and trade agreements; the global recession and rise in food prices; the land reform programme; reliance on imports; water availability; changing consumer patterns and demands (e.g. organic food stuffs); rising costs of agricultural inputs ; technological changes and mechanisms; quality standards; farm safety and security; broad based black economic empowerment; skills demand and supply; HIV/AIDS; and changing climate.

Broiler meat is a highly important commodity in SA. Favourable climate and natural resources are suited for broilers production in the region. Most of the production of broilers in Gauteng is geared toward the local market in Gauteng, given that is SA's largest market.

Figure 9-2: Value chain for broiler production



The value chain represents all upstream and downstream opportunities for the broiler production industry in a local context, where various value adding activities take place and multipliers can be applied. The value chain is detailed further within this chapter.

Factors influencing production include: expansion of the fast-food industry; higher average income of the population; the rapid rate of urbanization; and the influx of international processing companies.

9.2.1 Agro-processing opportunities (products)

Handling, slaughtering, washing, portioning, grading, packing, packaging, labelling and transporting are all important practices aimed at preserving the quality of the produce, and presenting it to the best advantage. Prices achieved, and thus differences in income obtained, can be greatly affected by the emphasis placed on these practices. They must, therefore, be considered as important elements in the agro-processing and marketing strategies.

The WRDM Agri-Park could potentially produce the following products from broilers, all of which can be made available fresh or frozen.

Table 9.3 below highlights a few of the products that can be developed through agro-processing.

Table 9.3: Agro-processing opportunities for broilers

Primary Product	Processing Opportunity	Final Product
1. Broiler		Breast Fillets

Primary Product	Processing Opportunity	Final Product
	• Portioning • Filleting • Skinning • Deboning • Mincing • Brining • Flavouring (basting, spicing) • Packaging (labelling) • Chilling (fresh) • Freezing	Breast Fillets
		Breast Fillets (bone in)
		Drumsticks
		Leg Quarters
		Minced Chicken
		Mixed Portions
		Chicken strips
		Mini Breast Fillets
		Single Packs
		Thighs
		Thighs (de-boned)
		Wings
		Drumettes
		Forequarter
		Whole Chicken
	• Processing (cleaning) • Packaging (labelling) • Chilling (fresh) • Freezing	Chicken Feet
		Chicken Fat
		Chicken Skin
		Gizzards
		Necks
		Hearts
		Liver
		Bones
		Tails
		Mala (intestines)
	Other: • Mincing • Shaping • Crumbing • Packaging (labelling) • Freezing	Sausages
		Chicken Frankfurter
		Chicken Meatballs
		Chicken Ham
		Chicken Nuggets
		Chicken Sticks/ fingers
		Chicken Schnitzel
		Chicken Burgers
		Chicken Bologna

Table 9.3 displays all the main products that can be produced by the Agri-energy Park's poultry abattoir. Chicken cuts and offal can be packaged according to weights similar to that found within the current market. The main chicken cuts can be packaged according to weight and specifications (for example, skin removed vs. skin intact). All forms of offal can be packaged in 500 gram tubs. Chicken bones can be sold in 1 kilogram packages, bones are typically used to make chicken broth/stock

Critical points for agro-processing are the generally high quality specifications, chemical residue tolerances, possible pre-chilling or cooling requirements, specific packaging requirements, high transport costs (particularly air transport), the prevailing demand for the product and expected prices, specific market needs, and sales agents.

9.3 Main suppliers

The main raw material requirements for broiler production include DOC's and broiler feed, including starter mash, grower mash and finisher mash. In addition, sawdust is required for bedding purposes.

Table 9.4: Main input suppliers to the broiler industry

Name	Type	Service
Meadow feeds	Agricultural feed supplier	Animal nutrition
Dicla Farm and Seed	Agricultural equipment supplier	Animal nutrition Equipment
AFGRI Animal Feeds	Agricultural feed supplier	Animal nutrition
Alfa Chicks	Day old chick supplier	Day old chicks

There are several suppliers that are available to the project, including Dicla Farm and Seed, AFGRI Animal Feeds and Alfa Chicks.

9.4 Competitors

Competitors to the broiler product project in particular are other producers of protein products. Other protein producers include producers of chicken, eggs, beef, goats, pork, mutton and eggs. Although other protein producers may compete for market share, the greatest competition will arise through price competitiveness. Poultry products are well placed in terms of price to be able to compete successfully, so most of the competition is expected to come from other broiler producers.

The main competitors in the South African broiler industry are mentioned in Table 9.5 below. They have been identified as main role players with respect to their production outputs which outweigh the majority of producers in the country.

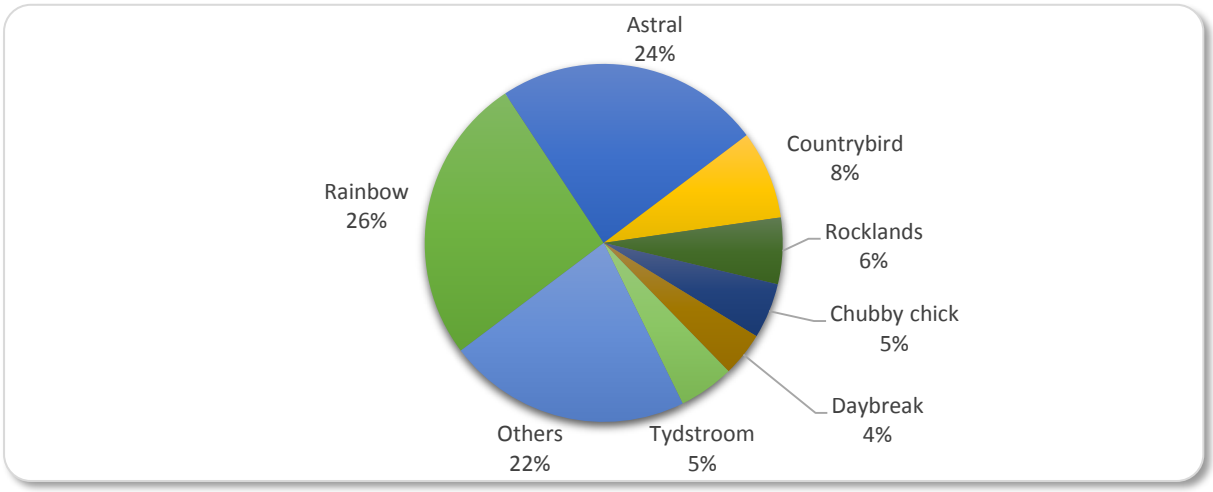
Table 9.5: Main competitors in the broiler industry

Name of Role Player	Description
Rainbow Chicken Ltd	Rainbow Chicken is considered an integrated broiler producer. It has its own feed mill called Epol Feeds, which it uses to feed its chickens. Rainbow Chicken also breeds chicks, processes, distributes and markets value added chickens. Rainbow Chicken farms are located throughout South Africa, however, the main production areas are Rustenburg in the North West Province, Pietermaritzburg and Durban in KwaZulu-Natal, and Cape Town in the Western Cape. The four main processing farms slaughter approximately 4.7 million chickens per week (Rainbow Chicken, 2015).
Country Bird Holdings	Supreme Chicken, Ross Africa, Master Farmer and Nutri Feed are subsidiaries of Country Bird Holdings. Supreme Chicken is located in the Free State and the North West Province. The holding also producers feed and chicks. Approximately 1.5 million broiler chickens are slaughtered per week (Country Bird Holdings, 2015).
Pioneer Foods Poultry Division	The agribusiness segment of Pioneer Foods is divided into three poultry related segments, namely: Tydstroom Poultry, Nova Feeds, and Nulaid Eggs. Tydstroom is located in Durbanville in the Western Cape. Approximately 1 million chickens are slaughtered per week (Pioneer Foods, 2015).
Day Break Farms (AFGRI Poultry)	The leading agricultural solutions and industrial foods company, AFGRI, sold its poultry farms to AFPO Consortium Proprietary Limited in 2015. The poultry farms were named Day Break thereafter. The Daybreak Farms is situated in Sundra in Mpumalanga. Day Break has a subsidiary company called MidWay Chicks that producers day-old chicks. Feed is supplied by AFGRI. Day break slaughters approximately 650 000 broilers per week (Day Break, 2015).

Name of Role Player	Description
Astral Food	Astra Foods has a sub-division called Astral Poultry. Astral poultry is the second largest producer of broiler chickens in South Africa. It also producers feed and feed premixes, which it uses and sells to the market. Astral has operations in Swaziland, Mozambique, Zambia, and South Africa. The three major production areas are Camperdown in KwaZulu-Natal, Boschkop in Pretoria, and Manzini in Swaziland. Astral slaughters approximately 4.125 million broiler chickens per week.
Sovereign Foods	Sovereign Foods was established in 1948. Its broiler farms are located in the Rocklands Valley in the Eastern Cape. Sovereign Foods slaughters approximately 1 million broilers per week.

The broiler meat industry in South Africa is dominated Rainbow Limited and Astral Foods, together producing 46% of the total broiler meat production. Figure 9-3 illustrates the relative market shares of the major producers.

Figure 9-3: Market share of main competitors in the broiler industry



Rainbow produces approximately 235 million broilers per annum and Astral Food produces about 220 million broilers per annum. Country Bird is the third largest producing 68 million broilers per year. The other 4 medium-sized producers (Tydstroom, Daybreak, Fouries Poultry Farms and Rocklands) produce more than 50 million broilers per year and collectively they supply 22% of the market. These major producers supply about 75% of total South African broiler meat and 25% is supplied by hundreds smallholder producers.

9.5 Stakeholders

South Africa has several organisations and associations that represent the interests of the broiler farming industry. The associations aim at providing support for producers and consumers of poultry in South Africa as well as strive to promote the sustainability and profitability of the broiler industry in South Africa.

Table 9.6 below summarise the local stakeholder that are likely to be involved in the broiler industry.

Table 9.6: Local stakeholders in broiler industry

Name	Type	Services
Department of Agriculture and Rural Development Offices (Abe Baile Carltonville)	Department of Agriculture	• Regional Office
Department of Agriculture and Rural Development Offices (Randfontein)	Department of Agriculture	• Regional Office
Westonaria Local Municipality	Local Municipality Offices	• Local Municipality Office
Merafong City Local Municipality	Local Municipality Offices	• Local Municipality Office
Rainbow Chicken Farms (PTY) Ltd (Krugersdorp)	Poultry	• Broiler Producer • Broiler Abattoir • Broiler Distribution

The role of organisations within South Africa is also to maintain a level of standards throughout the broiler industry in order to ensure that the poultry products produced are of a high quality. Table 9.7 below, mentions the organisations and associations related to the poultry industry.

Table 9.7: Organisations and associations

Organisation	Description
South African Poultry Association (SAPA)	In 1904, the South African Poultry Association (SAPA) was established in South Africa. SAPA serves as a voice for the industry. SAPA has four subsidiary organisations, namely: the developing poultry farmer's organisation, the egg organisation, the chick producer's organisation, and the broiler organisation. SAPA engages in a variety of activities among which include lobbying and administration on behalf of its members.
International Meat Quality Assurance Services (IMQAS)	IMQAS was established in 2001, and serves the quality and hygiene needs of South Africa's meat industry on an independent basis.
South African National Halaal Authority (SANHA)	SANHA was established in 1996, promotes professionalism in the certification of halaal products. SANHA is a non-profit organisation. SANHA provides a support base for both the producers and consumers of halaal products.

9.6 Technology

Advances in technology have progressively made it easier for agricultural role-players to access information such as weather and market information, increase production through mechanisation and advanced fertilisers, develop artificial environments and store perishable products for longer periods of time. Access to such technologies are a significant determinant of the competitive nature of businesses, with the most technologically advanced businesses often being the more competitive operations.

As such, it is important to consider technologies that could enhance the competitive nature of producers within the Agri-Park programme. The below table lists and provides a description of various technologies that are likely to enhance the capabilities and competitive nature of producers within the programme.

The following table lists and provides a description of vegetable specific technologies that can be used for the purpose of broiler production.

Table 9.8: Technology adoption

Technology & Description	Benefits to the farmer
Precision farming: Gaining real-time or exact information within particular parts of a single field e.g. moisture and nutrient levels, soil type and depth etc., to determine the most appropriate rate of application of water, fertilizer and to adjust implement settings automatically and instantly. Precision farming can also be applied to animal production, aquaculture and agroforestry systems.	Optimising and tailoring production levels at precise and small-area level so that yield is maximised and inputs are minimised.
Integrated farm management software: Combines information and management systems from various on- and off-farms sources to coordinate farming activities in a highly efficient manner. Includes a variety of technologies e.g. farm asset tracking systems, cloud computing, record keeping, accounting, mapping, water and soil management, weather forecasting etc.	Maximise profitability and efficiency automate some management and administrative tasks. Coordinate and simplify management processes.
Plan-A-Head Poultry Broiler Management Software System: Complete management solution for a broiler enterprise.	Integrate with other Plan-A-Head farming software to allow for whole-farm enterprise management. A particular strong feature of the system is broiler growth monitoring. The light edition is particularly suitable for small-scale farmers.
SimJunior: Basic financial management and accounting software for the small-scale farmer.	Easy to use. Ideal for the small-scale farmer
Accord: Complete human resource management system for farmers, including payroll, HR record keeping and administration.	Particular strong features of the system include its simplicity and coverage of basic employment legislation.
Auto-refill watering troughs: Water troughs fitted with a small reservoir and low pressure floating valves to enable automated re-filling.	Not only steady and easy to clean, but also re-fill automatically from a small build-in reservoir which minimizes contamination and risk of wastage.
Vaccination: Vaccines contains inactive parts (usually the capsid) or molecules that resembles surface proteins of a pathogenic virus or bacterium, which are introduced into the animal's blood stream so that antibodies can be developed. This will enable the animal to develop immunity and to be protected against the pathogen when and if exposed to it later in life. New vaccines are constantly developed therefore it is important to consult with an animal health professional on the most appropriate vaccination program.	Vaccines have a highly positive effect on disease control and even eradication. Very high return on investment.
Antibiotics: Have two main applications in agriculture: 1) To treat infections, which is an important technology but will not be discussed in detail because it is a specialised field that are taken care of by animal health professionals, and 2) As a routine feed supplement to animals in intensive farming systems (feedlots, piggeries, chicken houses, fisheries etc.) which can be considered a dangerous and unsustainable practice.	Increased growth rate and resistance against disease in case of routine feeding supplementation, however, the cost to society could be large and devastating.
Wind energy: Wind energy has been used for a long time in South Africa in the form of wind pumps. New generation wind technology allows for uses beyond wind pumping, including electricity generation at micro or farm level scale.	Wind is a renewable form of energy and some areas in South Africa do have sufficient wind development potential, especially when micro-climatic and small-area topographic factors are considered which is appropriate for very small-scale

Technology & Description	Benefits to the farmer
	operations. Less vulnerable to theft compared to solar panels.
Solar technology incl. photovoltaic and thermal panels and solar drying and cooking: There are two main forms of solar energy harvesting, i.e. photovoltaic panels that produces electricity, and thermal solar panels or tubes that heat water. Solar energy is also widely used on farms for solar drying and solar cooling.	Solar is a renewable form of energy and most areas in South Africa do have sufficient wind development potential. In fact, some parts of the southern and western Free State, western Limpopo, Gauteng and especially the Northern Cape and North West have excellent solar power potential even at global standards.
Biogas fermenters: Biogas can be produced from a variety of on-farm sources, especially animal dung of animals kept in confined areas. Can be used in the same way as conventional petroleum derived or natural gas.	Enable the farmer to become independent of imported and increasingly expensive mineral or natural gas. Especially suitable for intensive livestock, pig and poultry farmers which produce large quantities of animal waste. New techniques enable even small farmers with just a few animals to produce gas in a viable manner.
Video and photographical technology: Fixed point photography, security camera systems and remote sensor-triggered photography.	Valuable to monitor veldt condition, effects of grazing or fire control regime, rehabilitation efforts, and to monitor animal or criminal activity in remote parts of the farm. Some systems notify the farmer by SMS of sensed activity and immediately send the footage by MMS or video clips to the farmer's mobile device (in additional to conventional recording and storage of images or video).
THE MERCK VETERINARY MANUAL Mobile App: available for both Android and Apple. It contains guidelines for the diagnosis, treatment, and prevention of animal disorders and diseases.	Comprehensive animal health and reproduction reference not only to vets but to farmers as well.
Layer Farm Manager: Poultry management software to monitor commercial egg production performance. Provides a comprehensive analysist egg production performance against breeding standard and among the other farms.	Concise overview of the layer industry.
Poultry: The app helps you to learn all about poultry farming. This is a complete guide with tools to run a successful poultry farm. The app also has a question, answer tab, to get clarifications from experts.	Good tool for the new or prospective farmer to gain a better understanding of the poultry industry from a general production perspective.
AgriSuite Online: Internet based agricultural information system developed and maintained for farmers. Provide a variety of general agricultural information directly to farmers.	The system can be accessed on a PC or Mac, on tablets and smartphones, in the office or on the farm. Contains the most essential, useful and concise information in a very simple and user-friendly format.

The adoption of these technologies will not only make farmers more efficient, but also more competitive in an environment that is dominated by larger commercial enterprises. The technologies are expected to assist farmers in improving production practices and better understand market conditions in order to make appropriate production decisions.

9.7 Demand and needs analysis (market segmentation)

The most important marketing channels and channel related opportunities include custom processing arrangements with poultry abattoirs combined with contract farming directly for government institutions, hospitality industry and especially large retailers.

Gaps in the market for processed chicken products are mainly limited to simple value adding techniques, including improved slaughtering, portioning, branding (huge scope for further development), packaging and freezing, and to some degree market development for chicken offal products. Extensive processing is not recommended during the establishment phase due to global competition and high capital expenditure.

It is possible to provide an estimate for demand based on historical consumption figures and populations. Table 9.9 provides a summary on estimated demand on a national and provincial level.

Table 9.9: Estimated demand for white meat

Area of demand	Commodity	Estimated demand for vegetable (tons)
South Africa	White meat	2 115 825
Gauteng	White meat	508 089
Sedibeng	White meat	36 127
West Rand	White meat	33 289
Ekurhuleni	White meat	133 339
City of Johannesburg	White meat	185 159
City of Tshwane	White meat	120 174

At an average per capita consumption of white meat at 38.5kg, there is a clear demand for chicken in South Africa. Demand for chicken, or white meat, on a national level, is approximately 2.1 million tons. In Gauteng, the demand for chicken is approximately a quarter of the total demand – a clear indicator that producers within Gauteng have a market that can be accessed.

9.8 Socio-economic (job creation)

Amongst the objectives of the Agri-Parks Model is to create opportunities for employment within the agricultural sector. Employment, however, may not necessarily be a result of expanding primary production, but also the value adding activities that may occur through the value chain.

Labour input is a key element of the production process and one of the main production factors in any economy. Table 9.10 below displays the Sectoral labour multipliers applicable to the broiler production industry, i.e. the number of the job opportunities created at different levels for every additional 1 ton that that is brought into production.

Table 9.10: Broiler potential employment

Sector	Direct	Indirect	Direct + Indirect	Induced	Total
Broiler	0.0222	0.0143	0.0365	*	*

The total multiplier is disaggregated into direct, indirect and induced components.

Direct Multipliers – 0.0222: The direct multiplier measures the direct impact emanating from a particular sector on itself. For instance, the direct multiplier will measure how an increase in the production of a particular sector will affect employment within the same sector. These direct impacts are very closely related to the sector and, as such, are probably the most important impacts from a strategic planning point of view. The multiplier of 0.0222 suggests that an additional 45 tons of broilers would need to be produced to create an additional one permanent job.

Indirect Multipliers – 0.0143: Indirect multipliers reflect the impacts that a particular sector will have on all other industries that supply inputs (materials) for the operations taking place in the relevant sector. These 'backward linkages' are important as they measure the broader impact that changes in the direct sector will have on the economy. Frequently, these indirect impacts are significant, and may even exceed the direct impacts themselves. The indirect multiplier (or linkages multiplier) of 0.0143 suggests that an additional 70 tons of broilers would need to be produced to create an additional one permanent job.

Induced Multipliers: Economic impacts will result from the paying out of salaries and wages to people who are employed in a particular sector, as well as the salaries and wages paid by businesses operating in the sectors indirectly linked to this sector due to the supply of inputs. These additional salaries and wages lead to an increased demand for various consumable goods that need to be supplied by various economic sectors throughout the broader economy. Clearly, these induced impacts can be considerable and are measured by using induced multipliers.

The broiler industry is typically not very labour intensive given the availability of labour saving technologies, but it is the size of the industry that contributes to much labour absorption.

9.9 Contribution to food security

Food security, also a major objective of the Agri-Parks model, is an essential component to the livelihood of many South Africans. 60% to 70% of low income households' budgets are spent on staple food products. Therefore, it is essential that the deployment of the Agri-Parks contributes positively to issues of food security.

Growing the local poultry industry is likely to have a two-fold impact on food security. That is, additional food is produced through increased production, and incomes are created through employment creation, increasing the purchasing power of the consumer.

Table 9.11 provides an estimated figure on the contribution to food security through job creation.

Table 9.11: Estimated contribution to food security

Broiler	
Multiplier	0.0365
Avg. Annual Income (Rands)	31,680.00
Approximate Income generation per ton (Rands)	1,156.32
Portion of income spent on food (65%)	751.61

Given a total employment multiplier of 0.0365 for every ton of broilers produced, it is estimated that income generated is approximately R1 156 (Table 9.11), based on a daily income of R120. Many low income households spend between 60% and 70% if their income on food and, as such, it is estimated that for every additional ton of broiler produced R752 would be spent on food for every job created.

9.10 Regulatory requirements

The legislation listed below are all those that have implications on the production of vegetables within the WRDM. It is critical that the management of the Agri-Parks programme is aware of these legislation and comply accordingly through best management practices.

Table 9.12: Regulations

Regulation	Description	Agri-Park Implications

CONSERVATION OF AGRICULTURAL RESOURCES ACT, 1983 (ACT NO. 43 OF 1983)	This Act provides for control over
	• the utilisation of natural agricultural resources in order to:
	  ○ Promote the conservation of soil, water sources and vegetation, and the
	  ○ Combat of weeds and invader plants.
		• The Agri-Park will be required to implement policies that will maintain and monitor best agricultural practices to ensure the conservation of soil and vegetation, and also combat invader plant species.

ANIMAL DISEASES ACT, 1984 (ACT NO. 35 OF 1984)	The Act provides for • Control measures for the prevention of diseases and parasites and • For schemes to promote animal health.	• The Agri-Park needs to be aware of various animal diseases and the relative prevention measures necessary. • The Agri-Park will be required to implement an animal health and monitoring programme to ensure the health of the broilers.
ABATTOIR HYGIENE ACT, 1992 (ACT NO. 121 OF 1992)	This Act provides for the • Maintenance of proper standards of hygiene in the slaughtering of animals and • In the handling of meat and animal products.	• The Agri-Park will be required to implement a hygiene and monitoring programme to ensure hygiene standards are met in the abattoir facility.
FERTILIZERS, FARM FEEDS, AGRICULTURAL REMEDIES AND STOCK REMEDIES ACT, 1947 (ACT NO. 36 OF 1947)	The Act regulates the • Registration of fertilizers, stock feeds, agricultural remedies, stock remedies, sterilising plants and pest control operators. • Provision is also made for control over the acquisition, disposal, sale and use of fertilizers, farm feeds, agricultural remedies and stock remedies.	• The Agri-Park, specifically through the farmer support units will need to have a programme in place that will monitor the acquisition, sale and disposal of various agricultural inputs. The programme will be necessary to ensure compliance with
LIVESTOCK BRANDS ACT, 1962 (ACT NO. 87 OF 1962)	The Act regulates the • Registration of a brand in the name of an owner of livestock for the purpose of identifying the livestock.	• It will be the responsibility of the Agri-Park management to register a brand in the name of the Agri-Park in order to identify livestock within the programme.
AGRICULTURAL CREDIT ACT, 1966 (ACT NO. 28 OF 1966)	The Act provides for a • System of assistance to persons carrying on or undertaking to carry on farming operations, and • Control in respect of assistance rendered.	• The WRDM Agri-Park management should provide a service to its producers in the way of easing access to credit. The Agri-Park should, on behalf of the producers, assist in accessing credit for agricultural production purposes. • Access to credit will allow producers access to the relevant inputs for agricultural production purposes and, as such, produce necessary products for the Agri-Hub (marketing point)
MARKETING ACT, 1968 (ACT NO. 59 OF 1968)	The Act provides for the introduction of a • System of control over the marketing of agricultural products and	• Given the system of control over marketing of products, it is recommended that the Agri-Park establishes programmes that will manage the marketing of its own

Regulation	Description	Agri-Park Implications
	• Regulates the quantitative control over the import or export of these products.	products that meet the requirements of the Act.
SUBDIVISION OF AGRICULTURAL LAND ACT, 1970 (ACT NO. 70 OF 1970)	The Act regulates the subdivision of • Agricultural land and • Its use for purposes other than agriculture.	• Subdivision and portioning of land for production will be an important aspect in leasing/making land available to producers. This Act is only critical in the event that land is subdivided for the use of production purpose.
LIVESTOCK IMPROVEMENT ACT, 1977 (ACT NO. 25 OF 1977)	The Act regulates the • Collection and sale of semen and ova and the artificial insemination and • Inoculation of certain animals, • Establishment of a system for the evaluation and certification of the performance of certain animals, • Quality control with regard to the importation and exportation of certain animals, semen, ova and eggs, • Incorporation of livestock breeders' societies and the maintenance of the legal personality of livestock breeders' societies, and • Granting of certain exclusive powers relating to the registration of pedigrees of certain livestock to the South African Stud Book and Livestock Improvement Association.	• Improving livestock, in particular broilers, is integral in terms of production efficiency. It is thus recommended that the Agri-Park establishes committees and programmes that address issues of livestock improvement in order to maintain standards as set out by the Act.
DESIGNATED AREAS DEVELOPMENT ACT, 1979 (ACT NO. 87 OF 1979)	The Act provides for • Measures for the promotion of the density of population and of • Farming activities in certain areas designated by the Minister for the purpose.	• It will be the responsibility of the Agri-Parks management to ensure that development of agricultural activities is done in areas zoned specifically for agricultural production.
CO-OPERATIVES ACT, 1981 (ACT NO. 91 OF 1981)	The Act regulates the • Formation, registration, management and functioning of various types of cooperatives and • Winding-up and dissolution of co-operatives.	• Cooperatives have already been established within the WRDM, but it is likely that new ones develop and participate in the Agri-Parks system. • Agri-Parks management should be responsible for the establishment and registration of auxiliary cooperatives that will participate in the Programme.
VETERINARY AND PARA-VETERINARY PROFESSIONS ACT, 1982 (ACT NO. 19 OF 1982)	This Act provides for the • Establishment, powers and functions of the South African Veterinary Council, • Registration of persons practising veterinary and para-veterinary professions and • Control over the practising of veterinary and para-veterinary professions.	• The Agri-Parks animal health programme will be required to ensure veterinary services are provided and comply with the requirement as set out in the Act.

Regulation	Description	Agri-Park Implications
PERISHABLE PRODUCTS EXPORT CONTROL ACT, 1983 (ACT NO. 9 OF 1983)	This Act provides for the control of • Perishable products intended for export from the Republic of South Africa and • For the continued existence of a statutory board to bring about the orderly and efficient export of perishable products from the Republic.	• In the event of export, it is imperative that the Agri-Park establishes and maintains control over the export products. • It is the onus of the Agri-Park to establish a team that is responsible for food health and safety regulations.
AGRICULTURAL PESTS ACT, 1983 (ACT NO. 36 OF 1983)	The Act introduces measures for the • Prevention and combatting of agricultural pests.	• Best agricultural practices will be necessary to maintain control over pests. Agri-Parks management should develop programmes/schedules to ensure the control of pests.
AGRICULTURAL PRODUCT STANDARDS ACT, 1990 (ACT NO. 119 OF 1990)	This Act provides for • Control over the sale and export of certain agricultural products and other related products, with a view to the maintenance of certain standards regarding the quality of products and • The packing, marking and labelling thereof.	• Food and food products will go through various agro-processing activities before being a marketable product. To maintain quality assurance, it is recommended that the Agri-Park establishes a team that will be responsible for carrying out activities that will meet the requirements of the Act.
AGRICULTURAL PRODUCE AGENTS ACT, 1992 (ACT NO. 12 OF 1992)	This Act provides for the establishment of • An Agricultural Produce Agents Council (AAC) and • Fidelity funds in respect of agricultural produce agents, and • For the control of certain activities of agricultural produce agents. This Act has not been brought into operation in its entirety but will eventually replace the Commission for Fresh Produce Markets Act, 1970 (Act No. 82 of 1970), and the Agricultural Produce Agency Sales Act, 1975 (Act No. 12 of 1975).	• The Agri-Park should play and intermediary role in moving produce from farm to market. As such, it is important that marketing activities are managed and monitored according to the standards set out by the Act.
SOUTH AFRICAN ABATTOIR CORPORATION ACT, 1992 (ACT NO. 120 OF 1992)	This Act provides for the • Privatisation of the South African Abattoir Corporation. At the incorporation of the Corporation as a company the Abattoir Industry Act, 1976 (Act No. 54 of 1976) will be repealed.	• The chicken abattoir is likely to be privatised through the farmer ownership model.
SOCIETIES FOR THE PREVENTION OF CRUELTY TO ANIMALS ACT, 1993 (ACT NO. 169 OF 1993)	The Act provides for control over • Societies for the Prevention of Cruelty to Animals.	• It is the onus of the Agri-Parks management to ensure that the animals are treated fairly through best agricultural management practices.
AGRICULTURAL DEVELOPMENT	This Act provides for the establishment of and control over	• Funding is a fundamental cornerstone to the development of the Agri-Park

Regulation	Description	Agri-Park Implications
FUND ACT, 1993 (ACT NO. 175 OF 1993)	• An agricultural development fund for the handling of money received for development.	and its stakeholder. The Agri-Park management should play an intermediary role in accessing and use of such funding.

Given the above exhaustive list of legislation that the agricultural industry is governed by, it will be an **imperative that the Agri-Park management establishes a compliance** committee that implements best management practices while also evaluating and monitoring the effective implementation of the best practices.

9.11 Substitute products and services

Substitute goods/products are goods which, as a result of changed conditions, may replace each other in use, or consumption. A substitute good, in contrast to a complementary good, is a good with a positive cross-price elasticity of demand, meaning that as the demand for a good increases, the price of another good is increased. Table 9.13 below lists and describes potential substitutes for chicken and chicken products.

Table 9.13 Substitutes for chicken

Substitute Product/Service	Description
High protein vegetables/grains/legumes	Consumers have a choice of consuming high protein vegetables, grains, or legumes. Examples of high protein products include lentils, soy mince and samp and beans. Proteins of this nature are considered affordable alternatives and are particularly popular amongst vegetarians.
Other meat	Consumers are likely to substitute price rather than taste, or preference within this category. Low income consumers, therefore, are likely to purchase cheaper meat alternatives when substituting chicken. Examples might include offal, cheaper pork and beef cuts and other meat that I relatively cheap.
Eggs	Eggs are a cheap, but high protein source and therefore a potential substitute, especially within low income households.

Depending on the availability of a consumer's disposable income, the substitution effect may differ. A high income consumer, for example, will base their purchase decision of taste and preference, while a lower income consumer may base their decision to purchase based on price. As a result, a low income consumer may substitute for cheaper protein products, rather than more expensive protein products such as mutton.

The broiler producer's technology cannot be changed to produce alternative products (the producer has an inability to change to alternative production once a broiler house is erected) and, as such, should be aware of substitutability of products before making a decision to produce.

9.12 New entrants

9.12.1 Potential Entrepreneurs (BBBEE)

Appendix C list potential entrepreneurs and emerging farmers that could potentially participate in the Agri-Parks programme within the WRDM.

9.13 Societal and cultural trends

Societal and cultural trends are trends that relate to the social and cultural values and practices within a society, or culture. These are long term trends (at least two to five years) that explain why people behave the way they do.

The South African food industry's direction is the growing influence of demographics, especially with respect to societal and cultural trends. As such, it is important that the Agri-Park positions itself to take advantage of such trends by meeting the demands of society through the processing of relevant products. The following, broiler specific, cultural and societal trends have been identified and described.

Rising incomes: The trend in rising incomes within South Africa has provided the local consumer with increased purchasing power and, therefore, the ability to increase demand for food. Increased purchasing power has also allowed the consumer increased access to a variety of food, including processed and packaged chicken (or convenience foods as described below).

Organic/Free range: Organic, or free range chicken is considered a "more natural "alternative to chicken that is produced on mass in a battery system. The chickens are also raised in an environmentally friendly fashion. As such, producing organic, or free range chicken responds to an increasing consumer demand for potentially healthier, more natural, and better tasting products.

Health: White meats are commonly considered a healthier alternative to red meats and consumers have shown this by increasing demand for white meat over the last two decades (demand for white meat increased from 19.6kg in 2002 to 24kg in 2012). White meat has a lower fat content, and therefore a lower cholesterol content, in comparison to red meat. Processors have recognised the consumer trend and process products that appeal to the consumer preference such as skinless chicken meat. Note: the increased demand in white meat is also a result of the real price of chicken becoming lower as a result of technology development and the increase in the price of red meat.

Live chickens: There is a demand for live chickens in South Africa, especially amongst specific cultural groups. The national department of agriculture in 2012 noted that there is a significant number of subsistence producers (1 745) producing live chickens that can be assumed to be sold in mostly informal markets. The consumers' preference towards live chicken is a generally a result of the chicken being viewed as value for money and tasting better.

Convenience: Also known as time-saving foods as they are partially, or complete prepared are increasing in demand as consumers spending power increases and more value is given to time-saving. Chicken specific convenience foods include microwave meals and ready-made meals. The most likely consumers to buy these items include modern families (families that lead an individualistic lifestyle and do not sit down to as many traditional meals), middle- to high-income families, and younger families.

Halaal: Halaal is often used in reference to foods and drinks, i.e. foods that are permissible for Muslims to eat or drink under Islamic Shari'ah (law). The criteria specifies both what foods are allowed, and how the food must be prepared. The foods addressed are mostly types of meat and animal tissue. As such, it is an important consideration to produce halaal chicken products, especially since South Africa is home to a significant Muslim community.

There is a growing influence of demographics, especially with respect to societal and cultural trends, on the local food industry in South Africa. As such, social and cultural trends as listed and described

above should be taken into consideration when considering products that should be produced for local markets. A marketing team that possesses the necessary skills to understand the local market is integral to the Agri-Parks success in accessing local and international markets.

9.14 SWOT analysis

The following table sumamrises the strengths, weaknesses, opportunities and threats for the broiler industry within the district:

Table 9.14: SWOT analysis for the broiler industry

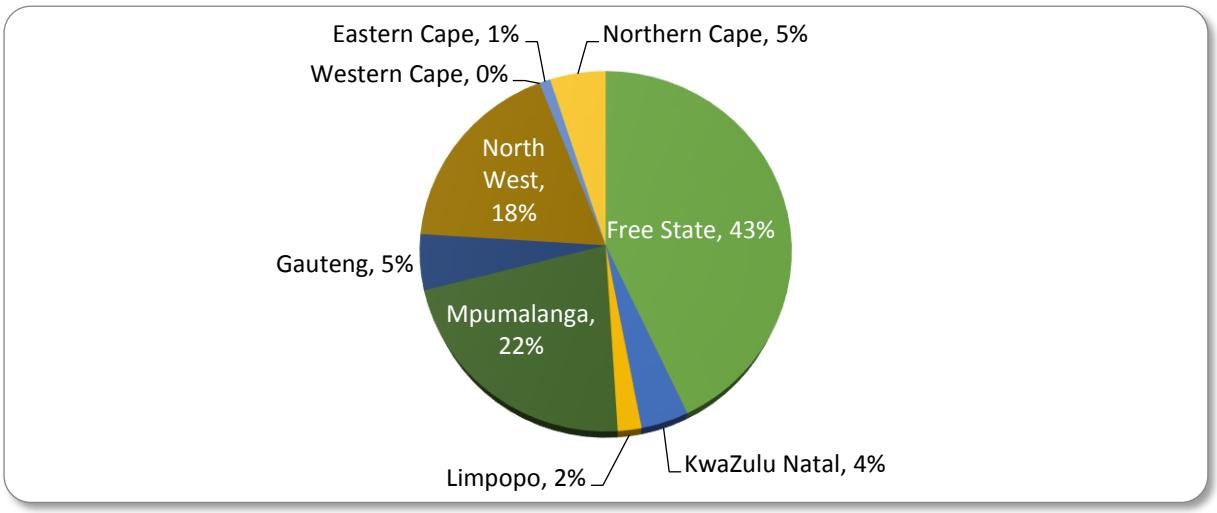
Strengths	Weaknesses
• Highly nutritive products • Contributor to food security • Proximity to major market • Availability of natural resources • Vertically integrated • Growing consumer purchasing power • Access to transport routes for ingredient imports • Growing urban consumer population • Relatively low energy costs • Fulltime veterinarians • Relatively good infrastructure (roads, water, power, rail access)	• Shortage of skilled workers • Poor farming practices • Non-standard of product • Limited irrigation resources/capacity • Lack of Good Agricultural Practice (GAP) principles • Small-scale production not competitive • Lack of access to market • Few parent stock operations • Sourcing feed ingredients • High cost of capital • Use of old technology • Technical staff need training • Information systems require strengthening • Weak association • Weak technical know-how • Access to adequate laboratory testing facility
Opportunities	**Threats**
• Major economic advantages • Intensive production • Free range production • Local labelling (food labelling) • Employment opportunities • Change in consumer preference (healthy living) • Growing preference for convenience • Increasing demand for fresh produce globally (export market) • Cooperative farming (alliances – economy of scale) • Technological advancement • Expansion of cut-up market • Added value products • Investment in new technologies to increase productivity (e.g. incubators, added value processing equipment) • Consumer education • Industry promotion to expand demand • Public financing available • Reduce day-old-chick costs by investing in parent stock	• High/Increasing input costs • Market limitations • Consumer habit • Competition • Extreme weather conditions (drought, hail, frost) • Pest problems • Disease: Avian Influenza scare • Barriers to entry • Food safety issues • Regional competition • Retailer consolidation (preference toward particular producers) • International feed ingredient prices • Expanded/cheap imports

10Commodity Analysis: Maize

Maize is one of the most important grain crops in South Africa, being both the major feed grain for livestock and the staple food for a significant portion of the population. About 60% of maize produced in South Africa is white and the other 40% is yellow maize. Yellow maize is mostly used for animal feed production, while white maize is primarily produced for human consumption. The maize industry is important to the economy both as an employer and earner of foreign currency because of its multiplier effects since maize serves as a raw material for various manufactured products such as paper, paint, textiles, medicine and food. The industry is divided into commercial and developing agriculture with approximately 9,000 commercial farmers, while the number of developing maize farmers is unknown. The gross value of maize production amounted to R 27 billion in 2013/14.

Production and Consumption: Maize is produced throughout South Africa with Free State, Mpumalanga and North West provinces being the largest producers, accounting for approximately 83% of total production. Almost 90% of maize in South Africa is produced under dry land condition and the remaining 10% is produced under irrigated conditions. There are 36 grain production regions in South Africa. Figure 10-1 below reflects the distribution of maize production in South Africa.

Figure 10-1: Maize Production by provinces 2012/13



(Profile of Maize Market Value Chain, 2014).

During the past six years, the total production of maize has experienced substantial fluctuations in all the maize producing provinces. The composition of maize supply consists of maize harvested during that particular season, imports as well as carryover stocks from the previous seasons. Commercial agriculture supplies about 98% of maize in South Africa, while the remaining 2% is produced by the developing agriculture (this figure is potentially misleading as a significant proportion of smallholder farmer crops are used for homestead food supplements and do not get to the market). Over the past ten years, maize total production has significantly fluctuated, with the lowest production experienced during the 2005/06 and the highest in the 2007/08 production season. In 2014 the crop amounted to 15 million tons harvested from approximately 3 million ha planted.

The Table 10.1 below shows that South Africa meets its annual maize consumption requirements entirely from a domestic production point of view. This is the result of implementation of more efficient production technologies and practices by producers, the withdrawal of marginal lands from production and the development of high yielding maize cultivars.

Table 10.1: Total commercial maize area planted, production and consumption (2004 - 2014)

Marketing Year	Maize: Total area planted	Maize: Total production	Maize: Human consumption	Maize: animal feed and other uses
	'000 ha		**'000 tons**	
2003/04	3 017	9 732	3 712	3 416
2004/05	3 185	9 391	3 740	3 740
2005/06	2 843	9 482	3 825	3 360
2006/07	2 032	6 947	3 816	3 767
2007/08	2 897	7 339	3 809	4 221
2008/09	3 297	13 164	4 524	4 088
2009/10	2 896	12 567	4 471	4 187
2010/11	3 263	13 421	4 513	4 344
2011/12	2 859	10 924	4 500	4 395
2012/13	3 141	12 468	4 460	4 440
2013/14	3 238	14 982	4 499	4 736

(Profile of Maize Market Value Chain, 2014).

South Africa produces enough maize to export its surplus to other countries. With regards to consumption, human consumption takes half of the maize consumed domestically (50%) while the remainder is processed for animal consumption (40%) and other industrial uses (10%).

10.1 Market assessment:

The following market assessment provides an analysis of the local markets, global markets, capital markets and commodity markets for the maize industry within a South African context.

10.1.1 Local markets (who are the local markets)

The South African maize market has matured considerably since deregulation of agricultural marketing. Producers, traders and other intermediaries interact freely in the marketing of maize. Most of the maize produced in South Africa is consumed locally and as a result, the domestic market is very important to the industry. Before deregulation the maize price was set by the marketing boards. The price was set lower at around R300/ton. Since the implementation of deregulation policy the price of maize increased gradually because of the adoption of perfect competition in the maize marketing environment in which the prices are determined by market forces i.e. supply and demand factors.

As maize is an internationally traded commodity, it is also subjected to the international market conditions. The demand and supply conditions of maize in the international market influence domestic prices directly. Another important factor that impacts on the domestic market is the import tariff, which is used to protect domestic producers from lowly priced maize imports. Whilst prices have generally been on an increasing trend over the past decade, it has also fluctuated substantially in aligned to supply and demand issues. The lowest average maize producers price was recorded in 2004/05 (R513/ton) and the highest was recorded in 2011/12 (R2 144/ton).

Specific local marketing channels are summarised in Table 10.2**.**

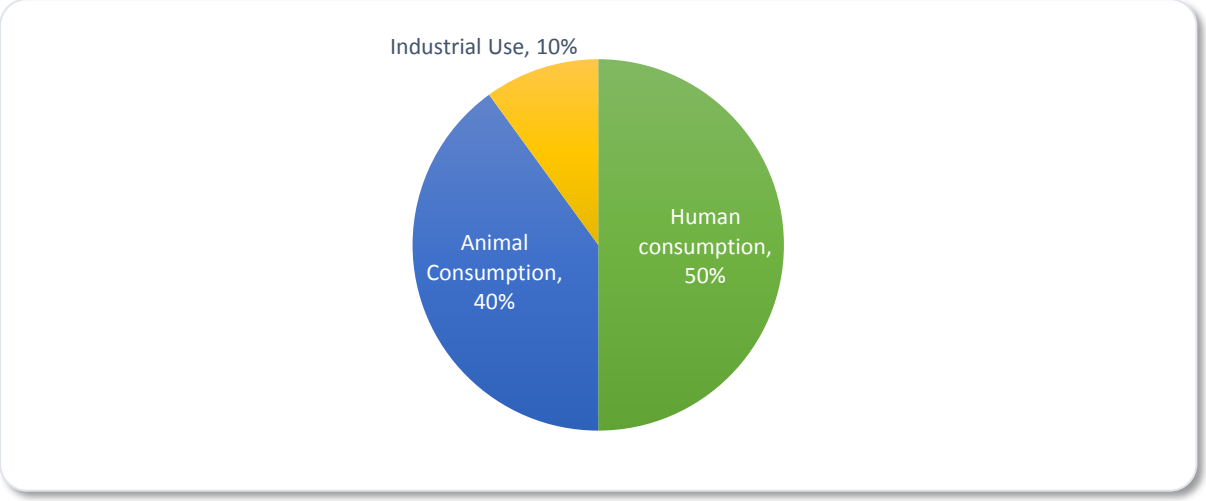
Table 10.2: Marketing channels for maize and maize products in South Africa

Marketing channel	Description	Volume (% of total production sold through this channel, estimated)
Silos and large regional service cooperatives and farmer support businesses (often originally started as cooperatives e.g. Senwes, Afgri etc.)	Farmer sells maize to the local branch of a large cooperative/agribusiness and/or store it at the local silo, often by forward contract. Silos are usually operated by these extensive farmer support businesses (although grain millers or other processors may also operate silos, usually at their own facilities). Some also operate their own grain mills, feed and intensive animal production units, oil crushers, abattoirs and other business units, however, for the purposes of this marketing channel classification those are considered separate channels. Although silo companies may buy and market the product themselves, they often do not buy the maize, but only store it, release a certificate to the farmer indicating the quantity of product stored, then the farmer may sell that certificate to another buyer who then present the certificate to the silo to receive the grain.	48
Grain, oilseed, milling by-product and other commodity crop traders	These traders buy grain, oilseed and milling by-products such as chop, bran and oilcake from farmers or processors and distribute it to grain millers, oilseed crushers, animal feed producers or intensive animal farmers producing their own feed etc. Farmers usually sign a forward contract. They usually act as exporters of grain, including maize.	15
Futures and options contracts (SAFEX)	Trading platform operated by the Johannesburg Stock Exchange. Farmer agree to sell an agreed upon quantity and quality of maize for a specified price and on a specific date in the future.	5
Grain millers	Sell to grain millers, often by forward contract. The miller may take ownership of the maize, or could only mill the maize on behalf of the farmer then the farmer can sell the milled product via various other marketing channels. Milling companies are often owned by other forms of agri-businesses involved in the grain value chain.	6
Animal feed manufacturers incl. larger animal farmers who produce their own feed formulations	Sell to animal feed manufacturers or animal farmers who produce own formulated feed, often by contract. Maize are the major ingredient in feed formulations for most animals including feedlot cattle, piggeries and poultry farms.	26

Silos and large regional service cooperatives are the main marketing channels for maize in South Africa. Animal feed and milling services also make up approximately 40% of the distribution channels. Although 5% is indicated as traded under SAFEX, a large portion of maize product in South Africa is traded on the SAFEX, but mostly as it is stored in silos. The commodity markets are detailed further in the section on commodity markets.

Figure 10-2 indicates the channels in which maize is consumed in South Africa. That is human consumption, animal consumption and industrial use.

Figure 10-2: Consumption of maize and maize products in South Africa



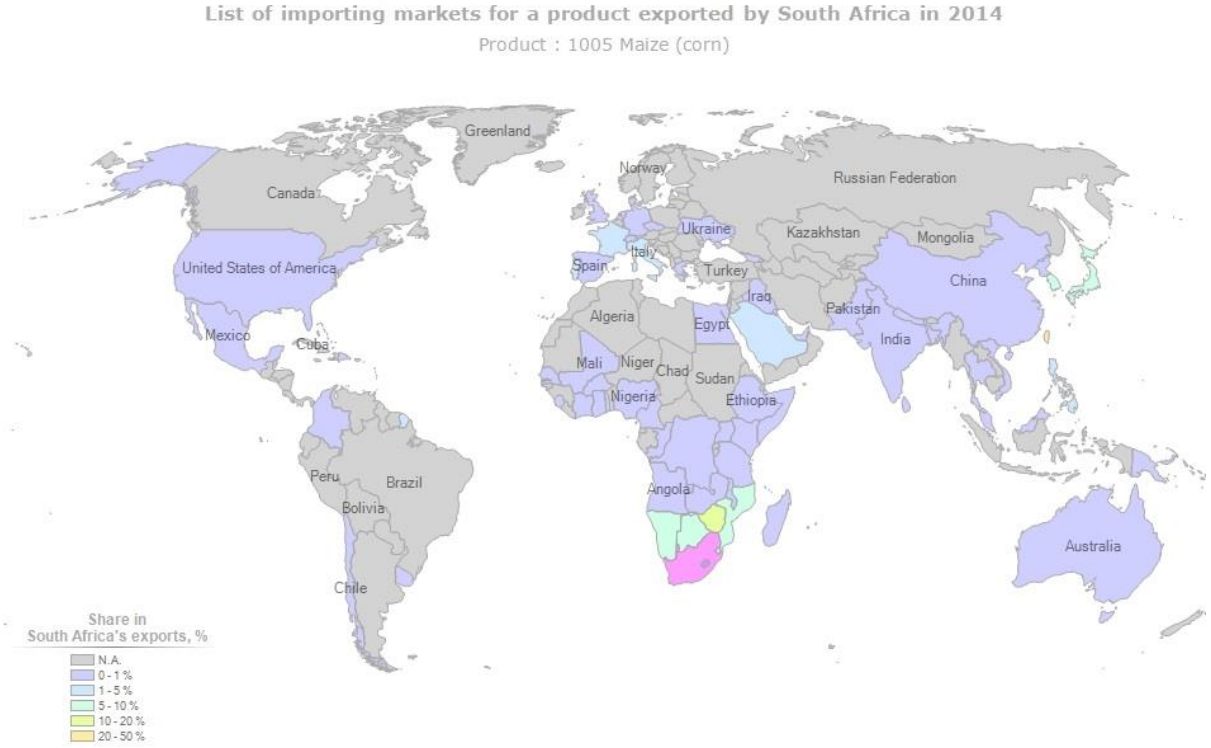
50% of the maize produced domestically is consumed by humans, generally in the form of maize meal, while the remainder is processed for animal consumption (40%), usually yellow maize that is used as an ingredient to animal feed, and other industrial uses (10%). Industrial use includes various manufactured products such as paper, paint, textiles, and medicine.

10.1.2 Global markets (international market)

As record harvests continue to materialise in key production regions, global maize production is set to reach record levels for the 2nd consecutive year in 2014/15, despite a reduction in area planted. Having already plummeted by more than 30% from 2013 highs, maize prices are projected marginally lower again in 2015, inducing further consolidation of maize area in 2016. Despite the projected lower plantings and a return to more normal yields, prevailing stock levels remain high and consequently, lower prices will be sustained in the short term on a global stage. A gradual recovery is expected towards 2020, as global maize demand, driven largely by the animal feed market, rises above production levels. Barring extreme weather conditions, world production is projected to overtake the growth in demand again towards the end of the baseline period, which may result in a marginal decline in international prices.

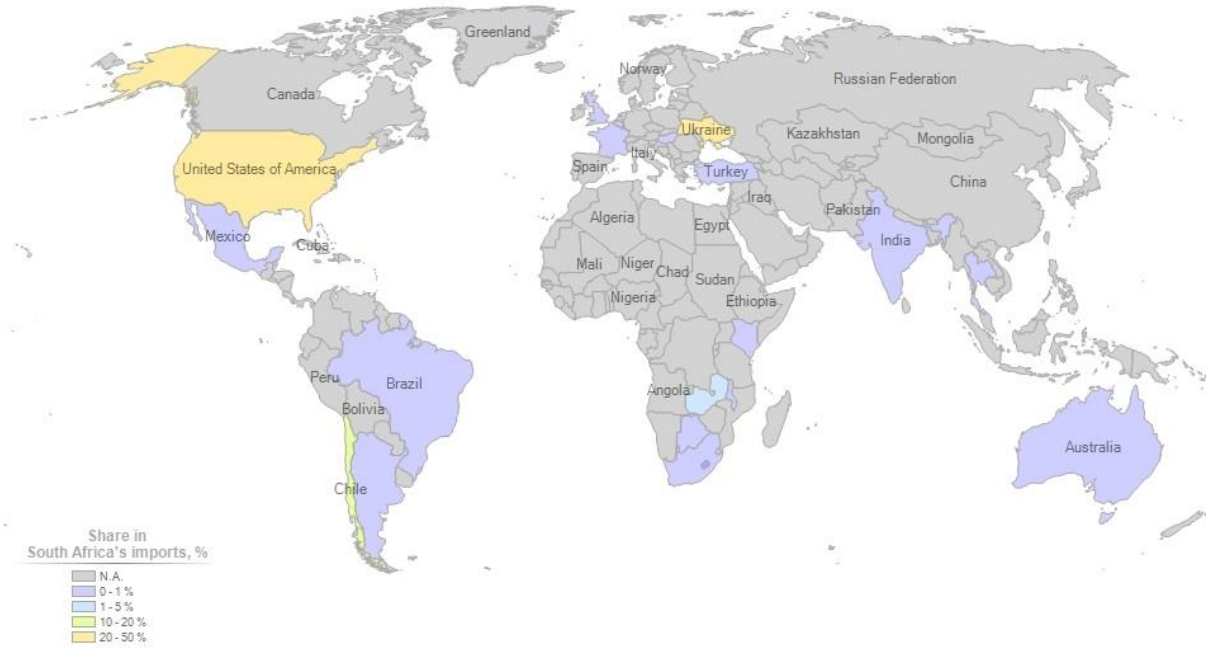
Exports: The above global market perspective is very important since the maize industry is an important earner of foreign exchange through the export of maize and maize products. In 2013 South Africa exported approximately 2 million tons of maize at a value of R 4 billion rand. The South African maize industry exports maize mostly to African countries particularly BLNS (Botswana, Lesotho, Namibia and Swaziland) countries, Zimbabwe, Kenya, Mozambique, Zambia, and Mauritius. In recent years there has also been substantial export to Asia (especially Japan) and to Europe.

Map 10.1: Exporting destinations for South African maize



Source: ITC Trade Maps, 2015

Map 10.2: Import destinations of South African maize imports



Source: ITC Trade Maps, 2015

10.1.3 Commodity markets (market that trades in primary products)

Grain Futures and Options are Derivatives Contracts that provide local market participants with a tool for hedging against agricultural price risk. The JSE currently offers Futures and Options on white maize, yellow maize, wheat, soya beans and sorghum. Contracts are priced and traded in Rand per ton and can be physically settled should the futures position be held on until last trading day.

The tertiary sector consists of traders, retailers and transporters. Traders move the produce to the domestic or export market. There are three types of traders in the maize industry: hedgers who use futures and options to protect an existing portfolio against possible adverse market movements; arbitrageurs who profit from price differentials of maize in different markets; and speculators who use futures and options in the hopes of making a profit on short-term movements in prices. The retail sector provides infrastructure and services for the distribution of maize products from the miller to the final consumer. Transport helps to move the maize from the farmers to the silo owner, from the silo owner to the miller and from the intermediaries to the final consumers (DAFF, 2014).

Traders perform a fundamental and core function in a free trade environment by moving the farmer's produce to domestic or export markets. During times of shortage the traders source goods externally and bring products to the processor or the consumer in the domestic market. Grain traders take positions (forward buying and selling), assume risk, establish value and provide the real cash market for grain. Traders include local grain traders, international grain houses and financial institutions that provide credit facilities (DAFF, 2014).

Table 10.3 summarises the maize commodity derivatives market futures prices for November 2015.

Table 10.3: Maize commodity derivatives market futures prices, November 2015

Contract	Change	MTM	High	Low	Volume	Open Interest	Option Volatility
WHITE MAIZE FUTURE							
Dec-2015	70.00	3369.00	3400.00	3330.00	2101	5375	0.00
Jan-2016	76.00	3373.00	3373.00	3373.00	1	8	0.00
Mar-2016	80.00	3432.00	3432.00	3376.20	2711	14557	39.50
May-2016	80.00	3347.00	3347.00	3320.00	66	472	28.50
Jul-2016	80.00	3334.00	3334.00	3300.00	626	8046	34.00
Sep-2016	80.00	3344.00	0.00	0.00	0	350	0.00
YELLOW MAIZE FUTURE							
Dec-2015	84.00	3359.00	3378.00	3300.00	1344	4976	0.00
Jan-2016	76.00	3324.00	0.00	0.00	13	298	0.00
Mar-2016	57.00	3283.00	3304.00	3241.00	1210	9020	23.50
May-2016	61.00	3037.00	3054.00	2986.00	34	728	24.50
Jul-2016	72.00	2995.00	3003.00	2950.00	315	6765	24.25
Sep-2016	76.00	3006.00	0.00	0.00	0	12	0.00

Table 10.3 summarises the futures markets for both white and yellow maize, indicating prices from December 2015 to September 2016. The table also indicates the month-to-month (MTM) prices, highest price traded, lowest price traded and the volume that was traded. The prices are determined by conditions of supply and demand within the market, with increased demand and low supply pushing up the price.

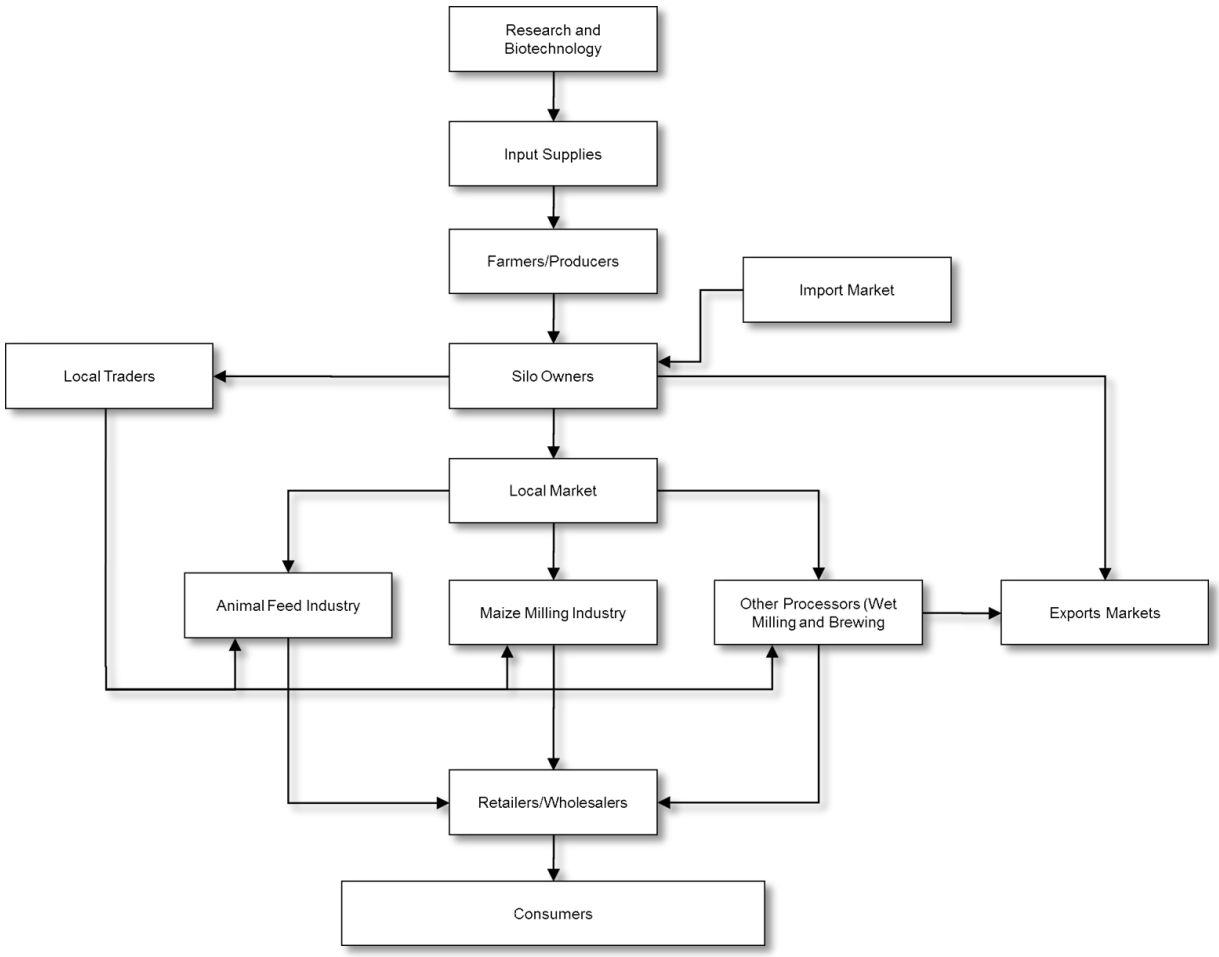
10.2 Value chain assessment

The following section diagrammatically represents and provides an analysis of the maize value chain. The opportunity analysis will identify potential opportunities within the value chain. The development of sustainable supply and value chains in the maize sector from production through processing to markets is important. The value chain for maize production is indicated below in Figure 10-3.

The WRDM is well suited for maize production and there are several factors which impact on their productivity and growth in the sector. These factors include,: growth in the SA economy and rising consumer demand; international trade and trade agreements; the global recession and rise in food prices; the land reform programme; reliance on imports; water availability; changing consumer patterns and demands (e.g. organic food stuffs); rising costs of agricultural inputs ; technological changes and mechanisms; quality standards; farm safety and security; broad based black economic empowerment; skills demand and supply; HIV/AIDS; and changing climate.

Maize is a significantly important commodity in SA. Favourable climate and natural resources are suited for maize production in the region. Most of the production of maize in the province is geared toward the local market in Gauteng, given that is SA's largest market.

Figure 10-3: Value chain for maize production



The value chain represents all upstream and downstream opportunities for the broiler production industry in a local context, where various value adding activities take place and multipliers can be applied. The value chain is detailed further within this chapter.

Factors influencing production include: expansion of the fast-food industry; higher average income of the population; the rapid rate of urbanization; and the influx of international processing companies.

10.2.1 Upstream activities

Since maize production is classified as primary production, the upstream activities relevant to the value chain are primary input suppliers used in the production system. The major inputs for maize production include seed, fertiliser, chemicals for weed, pests and disease control, machinery and equipment, as well as knowledge. Most of these inputs are supplied by agricultural organisations/entities in the respective areas. The main industry role-players in the WRDM, include the likes of:

- SENWES
- Obaro
- NWK

10.2.2 Primary production activities

Maize grows on a great variety of soil types, however, deep, naturally rich, easily tilled soil is preferred. The soil should be free from restrictive layers (hardpan) and soils with a pH of lower than 4,5 should be avoided or can be corrected by the application of lime. The most suitable soil type for maize production is a soil with a good effective depth, favourable physical properties (especially texture and structure), good internal drainage, an optimal moisture regime, sufficient and balanced quantities of plant nutrients and chemical properties.

Climatic requirements: The critical temperature, which, if exceeded, is detrimental to yield is 32°C. Flowering occurs best at temperatures ranging from 19 to 25°C. Frost can damage maize at all growth stages and a frost-free period of 120 to 140 days is required to prevent damage.

Rainfall: Annual rainfall of 500 to 750 mm or more is required for adequate moisture. Water deficiency is usually the most yield-limiting factor where efficient maize cultivation practices are applied. A yield of 3 152kg/ha requires between 350 and 450 mm of rain per annum.

Cultivars: There are many registered cultivars within seed companies that are adapted to various maize producing areas of the country. The most important characteristics which are of assistance in cultivar selection include yield potential, length of growing season, lodging, tilling, prolificacy and percentage grain moisture. To fully utilise these different aspects, it is important that the producer be familiar with the positive and negative properties of each cultivar. For this reason, additional information regarding cultivar characteristics, long-term yield data and relative yields is made available to the producer, by either public or private agents.

Propagation: Maize is propagated from seeds. Soil preparation requires a deep, firm seedbed, free of clods, trash and surface irregularities should be prepared, either in the spring, or preferably on

moderately heavy to heavy soil, in the autumn and left rough over winter, thus allowing be working and planting in spring. Soil should be worked and disked about 3–4 weeks before planting, thus allowing for partial decomposition or organic material.

Fertilisation: It is of the utmost importance that the correct soil sampling methods be used when submitting samples for laboratory analysis. Recommended sampling methods to be used are available in the "Fertiliser Guidelines for Maize". Recommendations supplied by the institute should be strictly adhered to, to obtain the required results in the field.

Planting: Generally, broad optimum planting dates are as follows: for the cooler eastern producing areas, from the beginning of October to the first week of November, for the central regions from the last week in October to mid-November, for the drier western areas from the last two weeks in November to mid-December. Planting depth of maize varies from 5 to 10 cm, depending on the soil type and planting date. Generally, planting should be shallower in heavier soils than in sandy soils. If plantings are made early, it can be shallower.

Commodity Organisations

- The National Maize Producers' Organisation (NAMPO) is the representative body for farmers, which promotes their interests at all levels
- The Technical Advisory Forum represents all directly affected groups in the marketing of maize and maize products
- The Board of Trustees of the Maize Trust ensures that the income derived from the assets in the Trust is utilised according to the objective of the Deed of Trust but to the benefit of the entire industry
- SAGIS administers the information function
- The function of providing information on maize is currently performed by the South African Grain Information Service (SAGIS).
- Research is financed with income from the Maize Trust and is undertaken by the ARC, CSIR and other research organisations.
- Grain SA, formed by NAMPO

10.2.3 Downstream activities

Downstream activities include agro-processing activities, covered in section 10.2.4.

10.2.4 Agro-processing opportunities (products)

There are opportunities for storing (silos), milling (animal feed and maize meal for human consumption) and processing to various alternative produce. Packaging, transporting and branding are important requirements. These require sufficient supply - economies of scale and high level management capacity.

A perspective on South Africa's potential to produce value added maize products: In light of the fact that South Africa has remained a net exporter of maize for several seasons and is projected to remain in a net exporting position over the coming decade, BFAP recently undertook a study for the Maize Trust related to the potential of the domestic value chain to grow and diversify the production of value added goods. Traditionally, leading maize consumers such as the United States exhibit greater

diversity in the consumption structure, whereas in South Africa, the bulk of maize is utilised as animal feed (38.4%) and food (36.1%) products. Exports accounted for 17.3% of the 2013/14 maize crop in South Africa, with the balance of 4.6% being utilised in the production of starch and glucose.

In the United States biofuel production (38.2%) and animal feed (37.5%) accounts for the bulk of the domestic market, with exports accounting for 14.3% of domestic production. The remainder of the stock is used to produce products such as: starch, glucose and dextrose (3.9%); high-fructose corn syrup (3.6%); food and cereal products (2%) and alcohol for beverages and manufacturing (1%). Although the United States is a highly developed economy, the diversified nature of U.S. maize consumption raises the question of whether the South African maize value chain is optimally developed.

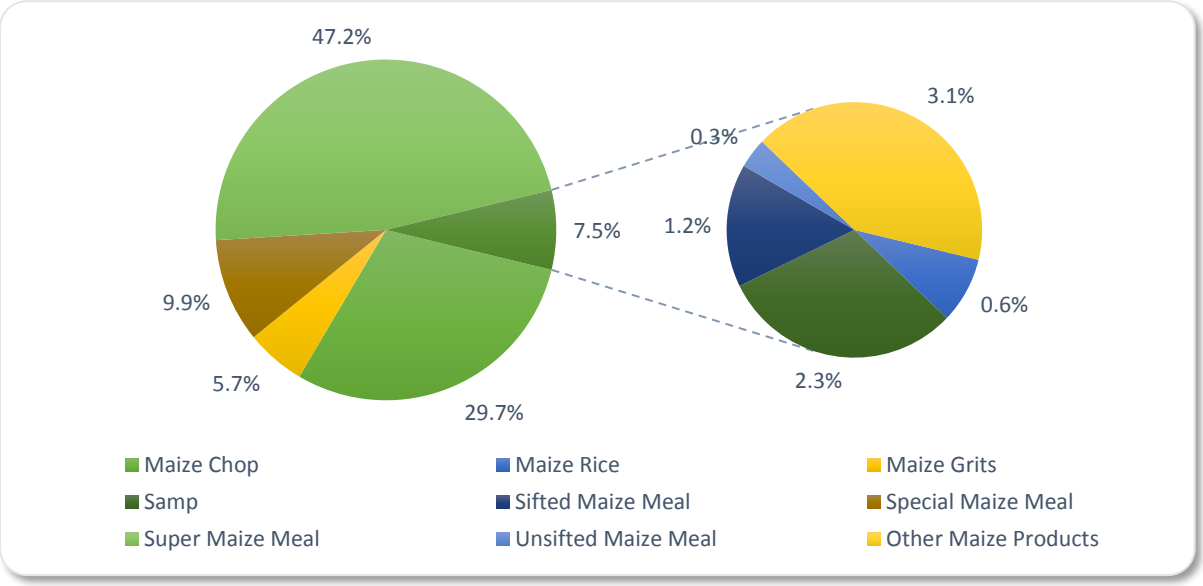
South Africa's potential to add value to the currently exported surplus maize through the expansion of the food, animal feed, ethanol, maize starch and glucose-fructose syrup markets reveal the potential tonnage that could be added to the various marketing channels as follows:

Table 10.4: Agro-processing opportunities for maize

Primary Product	Processing Opportunity	Final Product
1. White Maize	• Storage in Silos • Milling and mixing • Extrusion • Baking and cooking • Packaging • labelling	Popped maize cakes
		Samp
		Super maize meal
		Maize rice
		Sifted maize meal
		Unsifted maize meal
		Maize grits
		Special maize meal
		Other maize products
		Ethanol
		Reconstructed maize chips
		Starch
		Corn steep liquor
		Glucose and Glucose-Fructose Syrup (GFS)
		Fermented beverages
2. Yellow Maize	• Storage • Milling and mixing • Extrusion • Packaging • Labelling • Pelleting	Animal feed
		Ethanol
		Popcorn
		Maize chop

The following figure indicates the breakdown of the various maize products manufactured per month based on the average between July and September 2015.

Figure 10-4: Breakdown of maize products manufactured per month



Source: South African Grain Information Service, 2015

The top maize products manufactured are Super Maize Meal (47.2%), Maize Chop (29.7%), Special Maize Meal (9.9%) and Maize Grits (5.7%).

10.2.4.1 Maize outlook

Exports: BFAP projects that maize exports will decline from 2.23 million tons to 1.96 million tons between 2013/14 and 2023/24. The main driver of this reduction is that growth in domestic demand for maize (especially yellow maize) will marginally outpace production growth.

Feed consumption: Rising demand for animal based products is projected to drive feed demand growth by 2.3 million tons from its current level of 4.8 million tons to just over 7 million tons between 2014/15 and 2023/24. Assuming that 370 thousand tons of dark poultry meat imports could be substituted by 370 thousand tons of white poultry meat exports, a further 410 thousand tons7 of maize could potentially be consumed by the South African poultry industry.

Food: Due to the limited growth in the demand for maize-based food products, BFAP estimates that food consumption will continue to trend sideways over the next decade, only expanding by 90 thousand tons by 2023/24.

Total Potential: In light of the above, the total additional space in the domestic market for maize in 2023/24 is estimated at 3.46 million tons (excluding the potential 410 thousand tons that could be consumed under a poultry export scenario).

10.3 Main input suppliers

The main suppliers, including NWK, Dicla and Obaro, to the vegetable industry within the WRDM and regionally are summarised in Table 10.5 below.

Table 10.5: Main input suppliers

Input Supplier	Services
NWK	• Irrigation • Hardware • Animal health and nutrition • Seeds • Spare parts • Chemicals & fertiliser
SENWES	• Agronomy, • Soil surveys and mapping, • Developing agriculture and • GIS & cartography
Obaro	• Irrigation Hardware • Animal health and nutrition • Seeds • Spare parts • Chemicals & fertiliser
Monsanto	• Agricultural seed
Omnia	• Fertiliser
Dicla Farm and Seed	• Seed • Tunnels • Poultry Supplies • Irrigation Equipment • Tractors and Implements

The main suppliers to the maize industry, in general, have the capacity to supply most inputs required for maize production including seed, fertilisers, chemicals, irrigation equipment and machinery, as suggested in Table 10.5.

10.4 Competitors

The development of sustainable supply and value chains in the maize sector, from production through processing to markets, where there are unequal power relationships between large retailers/wholesalers and agro-processors, and primary maize producers (especially smaller farmers) is a constraint. Producers are vulnerable to demand volatility and price fluctuations and are "price takers" because of the buyers' market power. The major maize processing role-players in South Africa are tabulated below.

Table 10.6: Competitors within the maize processing industry

Competitor	Type of processing activity
Circle Milling	• Milling
Foodcorp Nola	• Milling
Tiger Milling (Randfontein)	• Milling
Unigrain (PTY) Ltd	• Milling

Amongst the above listed competitors are other competitors that are involved in maize agro-processing activities, including farmers who have the capacity to process and store their products.

10.5 Stakeholders

The following stakeholders have been identified within the local maize industry:

Table 10.7: Stakeholders in the local maize industry

Name	Type	Services
Department of Agriculture and Rural Development Offices (Abe Baile Carltonville)	Department of Agriculture	• Regional Office
Department of Agriculture and Rural Development Offices (Randfontein)	Department of Agriculture	• Regional Office
Westonaria Local Municipality	Local Municipality Offices	• Local Municipality Office
Merafong City Local Municipality	Local Municipality Offices	• Local Municipality Office
Circle Milling	Millers	• Maize Milling
Foodcorp Nola	Millers	• Maize Milling • Wheat Milling
Tiger Milling (Randfontein)	Millers	• Grain Milling
Unigrain (PTY) Ltd	Millers	• Maize Milling • Sorghum • Barley • Wheat
Senwes Silo (Enselspruit)	Silos	• Maize • Soya Beans • Sunflower • Sorghum
Senwes Silo (Middelvlei)	Silos	• Maize • Soya Beans
Senwes Silo (Oberholzer)	Silos	• Maize • Wheat • Sunflower • Soya Beans
Senwes Silo (Raathsvlei)	Silos	• Wheat • Soya Beans • Sunflower

10.6 Technology

Advances in technology have progressively made it easier for agricultural role-players to access information such as weather and market information, increase production through mechanisation and advanced fertilisers, develop artificial environments and store perishable products for longer periods of time. Access to such technologies are a significant determinant of the competitive nature of businesses, with the most technologically advanced businesses often being the more competitive operations.

As such, it is important to consider technologies that could enhance the competitive nature of producers within the Agri-Park programme. The below table lists and provides a description of various technologies that are likely to enhance the capabilities and competitive nature of producers within the programme.

The following table lists and provides a description of vegetable specific technologies that can be used for the purpose of maize production.

Table 10.8: Technology adoption

Technology	Benefits to the farmer
New generation small hand tools	Many farming activities, especially repetitive day-to-day work, can be greatly enhanced by hand tools designed for the particular task, speeding up production and reduce health and safety risk (e.g. back strain, wearing of joints and skin, etc.).
Small-scale implements and tractors: New generation of farming implements and tractors tailored for small-scale farming.	Farmers benefit from modern mechanisation and large leaps in productivity even though they farm at small scale, and at a much lower cost compared to conventional implements used by large commercial farmers.
Precision farming: Gaining real-time or exact information within particular parts of a single field e.g. moisture and nutrient levels, soil type and depth etc., to determine the most appropriate rate of application of water, fertilizer and to adjust implement settings automatically and instantly. Precision farming can also be applied to animal production, aquaculture and agroforestry systems.	Optimising and tailoring production levels at precise and small-area level so that yield is maximised and inputs are minimised.
Integrated farm management software: Combines information and management systems from various on- and off-farms sources to coordinate farming activities in a highly efficient manner. Includes a variety of technologies e.g. farm asset tracking systems, cloud computing, record keeping, accounting, mapping, water and soil management, weather forecasting etc.	Maximise profitability and efficiency automate some management and administrative tasks. Coordinate and simplify management processes.
Plan-A-Head Grain Management Software Program with Grain Management System: Software that allows for total management of a grain farming enterprise, from production to finance and human resource management.	Integrates with other Plan-A-Head farming software to allow for whole-farm enterprise management. Widely adopted therefore most software bugs has already been fixed. Particular strong features include the program's mapping, payroll and financial management capabilities.
SimJunior: Basic financial management and accounting software for the small-scale farmer.	Easy to use. Ideal for the small-scale farmer
Accord: Complete human resource management system for farmers, including payroll, HR record keeping and administration.	Particular strong features of the system include its simplicity and coverage of basic employment legislation.
Saaiplan: Software that facilitates comprehensive planning, monitoring and record keeping at field level for field crop enterprises.	Could serve as a base for precision agriculture.
In-field rainwater harvesting: Small basins (that can be made with a shovel) capture rainwater, preventing it from immediately running off the field during a rain event. Apart from cultivated fields, micro-basins can also be established on pastures to increase carrying capacity of animals.	Enable the soil to absorb much more water that would have run off the field. Depending on the type of soil, the additional moisture may benefit the crop for several months and may increase yield significantly.
Wind energy: Wind energy has been used for a long time in South Africa in the form of wind pumps. New generation wind technology allows for uses	Wind is a renewable form of energy and some areas in South Africa do have sufficient wind development potential, especially when micro-climatic and small-area topographic factors are

Technology	Benefits to the farmer
beyond wind pumping, including electricity generation at micro or farm level scale.	considered which is appropriate for very small-scale operations. Less vulnerable to theft compared to solar panels.
Solar technology incl. photovoltaic and thermal panels and solar drying and cooking: There are two main forms of solar energy harvesting, i.e. photovoltaic panels that produces electricity, and thermal solar panels or tubes that heat water. Solar energy is also widely used on farms for solar drying and solar cooling.	Solar is a renewable form of energy and most areas in South Africa do have sufficient wind development potential. In fact, some parts of the southern and western Free State, western Limpopo, Gauteng and especially the Northern Cape and North West have excellent solar power potential even at global standards.
Video and photographical technology: Fixed point photography, security camera systems and remote sensor-triggered photography.	Valuable to monitor veldt condition, effects of grazing or fire control regime, rehabilitation efforts, and to monitor animal or criminal activity in remote parts of the farm. Some systems notify the farmer by SMS of sensed activity and immediately send the footage by MMS or video clips to the farmer's mobile device (in additional to conventional recording and storage of images or video).
AgriSuite Online: Internet based agricultural information system developed and maintained for farmers. Provide a variety of general agricultural information directly to farmers.	The system can be accessed on a PC or Mac, on tablets and smartphones, in the office or on the farm. Contains the most essential, useful and concise information in a very simple and user-friendly format.
Recombinant DNA technology and genetic modified varieties: The process of natural selection by traditional breeders can be accelerated by deliberate insertion of genes that code for a particular trait into the host organism, thereby it is possible to develop crop varieties that have more desirable traits.	Large gains in traits such as drought, salt, pest, pathogen or herbicide tolerance, superior yields, nitrogen uptake ability, taste and texture etc. Particularly important to sustain future expanding populations and to compensate for climate change effects are drought and salt tolerance, nitrogen metabolism and even fixation, herbicide tolerance (to facilitate weeding, a major agricultural problem) and general yield improvements.
Drones: Un-manned aircraft capable of exploring the farm and taking photos from the air.	Very useful for general inspections, monitoring and mapping. Advanced models can even perform some remote sensing functions.
No-till or conservation tillage: Land preparation for crop production without tilling the land at all, or just partially breaking up of the soil.	Significant cost savings in terms of diesel (very energy intensive to lift the soil of an entire field, especially in case of deep tillage). Increased moisture retention. Reduced soil erosion.
Remote sensing: Interpreting satellite images to make farming decisions. Satellite images provide valuable information on biomass production, soil and air mass temperature, soil moisture, plant stress levels, fire warnings etc.	Enable the farmer to make well informed decisions based on information that otherwise would have been too difficult or expensive to obtain. Provides complete information of the entire farm. Some information is provided daily or instantly.
Integrated weed and pest management incl. biological control agents: Pests and weeds are major threats to farmers and food security. Chemical control has been effective for some pests and diseases but it is expensive and causes harm to human health and the environment. Consumers and governments locally and to export markets place increasing pressure on farmers to adopt integrated management practices to reduce reliance on only chemical control. Especially important is biological control where the natural	Usually much more effective and sustainable than chemical control on its own.

Technology	Benefits to the farmer
enemy of the weed or pest are released locally to control population levels. It is not only applicable to crop farmers but to all extensive and semi-intensive animal farmers as well (pasture or veldt management).	

The adoption of these technologies will not only make farmers more efficient, but also more competitive in an environment that is dominated by larger commercial enterprises. The technologies are expected to assist farmers in improving production practices and better understand market conditions in order to make appropriate production decisions.

10.7 Demand and needs analysis (market segmentation)

The most appropriate channel for farmers that market collectively will eventually be to let the hub become a cooperative silo business itself (very much like the traditional "cooperatives" that evolved today into large agribusinesses such as Senwes, Afgri etc.), or to acquire a silo, which then trade in grain like any other grain trading entity.

In the short-term the most promising channels will be to supply to existing silos and/or to sign forward contracts with large feedlots, piggeries and poultry producers that are situated as near as possible to the production areas. Regarding agro-processing, industrial milling and production of simple snacks may be viable. As production issues are streamlined and strong relationships are built with value chain partners, more complex snacks may be considered, especially health snacks, as well as food products that contain hominy chop ("full-grain" version of maize).

It is possible to provide an estimate for demand based on historical consumption figures and populations. Table 10.9 provides a summary on estimated demand on a national and provincial level.

Table 10.9: Estimated demand for maize

Area of demand	Commodity	Estimated demand for vegetable (tons)
South Africa	Maize	4 513 578
Gauteng	Maize	1 083 881
Sedibeng	Maize	77 068
West Rand	Maize	71 014
Ekurhuleni	Maize	284 445
City of Johannesburg	Maize	394 990
City of Tshwane	Maize	256 362

At an average per capita consumption of maize at 82.13kg, there is a clear demand for maize and maize products in South Africa. Demand for maize on a national level, is approximately 4.5 million tons. In Gauteng, the demand for maize is approximately a quarter of the total demand – a clear indicator that producers within Gauteng have a market that can be accessed.

10.8 Socio-economic (job creation)

Amongst the objectives of the Agri-Parks Model is to create opportunities for employment within the agricultural sector. Employment, however, may not necessarily be a result of expanding primary production, but also the value adding activities that may occur through the value chain.

Labour input is a key element of the production process and one of the main production factors in any economy. The table below displays the Sectoral labour multipliers applicable to the maize industry, i.e. the number of the job opportunities created at different levels for every additional R1 million production.

Table 10.10: Maize potential employment

Sector	Direct	Indirect	Direct + Indirect	Induced	Total
Maize	3.49	1.34	4.83	1.91	6.74

The total multiplier is disaggregated into direct, indirect and induced components.

Direct Multipliers - 3.49: The direct multiplier measures the direct impact emanating from the maize industry. For instance, the direct multiplier will measure how an increasein the maize will affect employment within the maize, or grain sector. These direct impacts are very closely related to the sector and, as such, are probably the most important impacts from a strategic planning point of view. The direct multiplier in the case of maize is 3.49, suggesting that for every additional R1 million production 3.49 direct jobs would be created.

Indirect Multipliers – 1.34: Indirect multipliers reflect the impacts that a particular sector will have on all other industries that supply inputs (materials) for the operations taking place in the relevant sector. These 'backward linkages' are important as they measure the broader impact that changes in the direct sector will have on the economy. Frequently, these indirect impacts are significant, and may even exceed the direct impacts themselves. The indirect multiplier in the case of maize is 1.34, suggesting that for every additional R1 million production 1.34 indirect jobs would be created.

Induced Multipliers – 1.91: Economic impacts will result from the paying out of salaries and wages to people who are employed in a particular sector, as well as the salaries and wages paid by businesses operating in the sectors indirectly linked to this sector due to the supply of inputs. These additional salaries and wages lead to an increased demand for various consumable goods that need to be supplied by various economic sectors throughout the broader economy. Clearly, these induced impacts can be considerable and are measured by using induced multipliers. The indirect multiplier in the case of maize is 1.91, suggesting that for every additional R1 million production 1.91 induced jobs would potentially be created.

Maize, however, is considered a non-labour intensive field crop that is has an estimated employment multiplier, per hectare of production, of 0.01 and an indirect employment (upstream and downstream linkages) multiplier of 0.005, suggesting that 100 ha of maize would need to come into production to create a single permanent job opportunity, while 200 ha would be necessary to create an indirect opportunity.

10.9 Contribution to food security

Food security, also a major objective of the Agri-Parks model, is an essential component to the livelihood of many South Africans. 60% to 70% of low income households' budgets are spent on staple food products. Therefore, it is essential that the deployment of the Agri-Parks contributes positively to issues of food security.

Growing the local maize industry within the WRDM is likely to have a two-fold impact on food security. That is, additional food is produced through increased production, and incomes are created through employment creation, increasing the purchasing power of the consumer. Estimates for income per hectare spent on food products is indicated in Table 10.11.

Table 10.11: Estimates for income per hectare of maize production

Maize	
Multiplier	0.015
Avg. Annual Income (Rands)	31,680.00
Approximate Income generation per hectare (Rands)	475.20
Portion of income spent on food (65%)	308.88

Given a total employment multiplier of 0.015 for every additional hectare of maize under production, it is estimated that income generated is approximately R475 (Table 9.11), based on a daily income of R120. Many low income households spend between 60% and 70% if their income on food and, as such, it is estimated that for every additional hectare of maize under production R752 would be spent on food for every job created.

10.10 Regulatory requirements

Table 10.12: Regulations

Regulation	Description	Implications of the Agri-Park
AGRICULTURAL PRODUCT STANDARDS ACT, 1990 (ACT NO. 119 OF 1990)	• Regulations relating to the grading, packing and marking of maize products intended for sale in the Republic of South Africa. • Maize quality is determined by official grading regulations promulgated under the Agricultural Products Standards Act, which governs the classification and grading of maize based on several qualitative factors. The quality of the maize destined for export is confirmed with an export certificate issued by the Perishable Products Export Control Board (PPECB) as the official assignee of DAFF.	• Food and food products will go through various agro-processing activities before being a marketable product. To maintain quality assurance, it is recommended that the Agri-Park establishes a team that will be responsible for carrying out activities that will meet the requirements of the Act.
FERTILISERS, FARM FEEDS, AGRICULTURAL REMEDIES AND STOCK REMEDIES ACT, 1947 (ACT NO. 36 OF 1947)	• The act provides for the appointment of a Registrar of Fertilizers, Farm Feeds, Agricultural Remedies and Stock Remedies; • for the registration of fertilizers, farm feeds, agricultural remedies, stock remedies, sterilizing plants and pest control operators; • to regulate or prohibit the importation, sale, acquisition, disposal or use of fertilizers, farm feeds, agricultural remedies and stock remedies; • To provide for the designation of technical advisers and analysts.	• The Agri-Park, specifically through the farmer support units will need to have a programme in place that will monitor the acquisition, sale and disposal of various agricultural inputs. The programme will be necessary to ensure compliance with

Regulation	Description	Implications of the Agri-Park
NATIONAL WATER ACT, 1998 (ACT NO.36 OF 1998)	• This act encompasses laws relating to water resources and the use thereof.	• Water use, being a valued input into agricultural production, will have to be monitored in order to ensure its sustainable use. • It is recommended that the Agri-Parks management appoint a representative body that will act as an intermediary between the Agri-Park stakeholders and various water governing bodies. This will streamline the application procedure for water use and sustainable use thereof.
CONSERVATION OF AGRICULTURAL RESOURCES ACT, 1983 (ACT NO. 43 OF 1983)	• Control over utilization of natural agricultural resources • Promote conservation of soil • Promote conservation of water sources • Promote conservation of vegetation • Combating of weeds and invader plants	• Agricultural resources will be used for the purpose of production within the programme. • The Agri-Park will be required to implement policies that will maintain and monitor best agricultural practices to ensure the conservation of soil and vegetation, and also combat invader plant species.
GENETICALLY MODIFIED ORGANISMS ACT, 1997 (ACT NO. 15 OF 1997)	The act serves to: • Promote the responsible development, production, use and application of genetically modified organisms. • Limit possible harmful consequences to the environment. • Give attention to the prevention of accidents and the effective management of waste. • Limit, evaluate and reduce potential risks. • Establish a council for GMO's • Ensure GMO's do not present a hazard to the environment. • Establish appropriate procedures for the notification of specific activities involving the use of GMO's.	• GMO maize may be used within the production systems of the WRDM Agri-Park. • It is, therefore, the responsibility of the Agri-Parks management to ensure that GMO's are used conservatively and sustainably.
MARKETING OF AGRICULTURAL PRODUCTS ACT, 1996 (ACT NO. 47 OF 1996)	• Establish and enforce regulatory measures to intervene in the marketing of agricultural products, including the introduction of levies. • Establish a National Agricultural Marketing Council	• Given the system of control over marketing of products, it is recommended that the Agri-Park establishes programmes that will manage the marketing of its own products that meet the requirements of the Act.
PLANT BREEDERS' RIGHT ACT, 1976 (ACT NO. 15 OF 1976)	• Plant breeder's rights are granted for certain kinds of plants. • Establish rights to be complied with to grant the rights. • For the protection of rights and exercise thereof.	• The Agri-Park will not be able to use seed that is harvested from the crops. • The Agri-Park may consider breeding programmes for the development of its own maize, in which case rights may be granted. • The Agri-Park should respect the rights granted to plant breeders from who they purchase seed from.

Regulation	Description	Implications of the Agri-Park
PLANT IMPROVEMENT ACT, 1976 (ACT NO. 53 OF 1976)	• To provide for the registration of premises from which the sale of certain plants or the cleansing, packing and sale of certain propagating material may be undertaken. • To prescribe the conditions for such plants, or propagation material to be sold. • To provide recognition for such plants. • To provide for a system of certification with the objective of maintaining quality. • Control of imports and exports	• In the event that the Agri-Park breeds its own specific maize cultivars, it will need to comply with regulations as set out by the Act.
AGRICULTURAL PESTS ACT, 1983 (ACT NO. 36 OF 1983)	• To provide for measures by which agricultural pests may be prevented and combated.	• Best agricultural practices will be necessary to maintain control over pests. Agri-Parks management should develop programmes/schedules to ensure the control of pests.
OCCUPATIONAL HEALTH AND SAFETY ACT, 1993 (ACT NO.85 OF 1993)	• Aims to provide for the health and safety of persons at work and the health and safety of persons in connection with the activities of persons at work and • To establish an advisory council for occupational health and safety.	• It is recommended that the Agri-Parks management appoints an operational task team that deals specifically with health and safety issues within the programme in order to comply with the regulations as set out in the Act.
BASIC CONDITIONS OF EMPLOYMENT ACT, 1983 (ACT NO. 3 OF 1983)	• Encompasses those regulations associated with fair labour practices.	• The Agri-Park will be expected to meet the regulations set out in the Act. As such the Agri-Park will need to appoint a Human Resources team that will manage compliance.
MARKETING ACT, 1968 (ACT NO. 59 OF 1968)	• The Act has authorised an establishment and enforcement of regulatory measures to intervene in the marketing of agricultural products, including the introduction of levies on agricultural products.	• Given the system of control over marketing of products, it is recommended that the Agri-Park establishes programmes that will manage the marketing of its own products that meet the requirements of the Act.
HACCP	• HACCP is a management system in which food safety is addressed through the analysis and control of biological, chemical, and physical hazards from raw material production, procurement and handling, to manufacturing, distribution and consumption of the finished product **Invalid source specified.**.	• By ensuring that food safety requirements are met the Agri-Park is taking into account the needs of both the producer and consumer as well as enabling a safe and hazard free work environment.
ISO STANDARDS	• ISO certifies standard requirements, specifications, guidelines or characteristics that can be used consistently to ensure that materials,	• The onus is upon the Agri-Park to attain ISO standards in order to meet the requirements of international standards.

Regulation	Description	Implications of the Agri-Park
	products, processes and services are fit for their purpose.	• The standards should be applied throughout the value chain.

Given the above exhaustive list of legislation that the agricultural industry is governed by, it will be an **imperative that the Agri-Park management establishes a compliance** committee that implements best management practices while also evaluating and monitoring the effective implementation of the best practices.

10.11 Substitute products and service

Substitute goods/products are goods which, as a result of changed conditions, may replace each other in use, or consumption. A substitute good, in contrast to a complementary good, is a good with a positive cross-price elasticity of demand, meaning that as the demand for a good increases, the price of another good is increased. Table 10.13 below lists and describes potential substitutes for maize and maize products.

Maize, in many cases, is a staple household item and consumed on a daily basis, particularly in low income households. As such, maize is not easily substituted with other staples for various reasons including the price of alternatives and nutritive quality. As household income increases, however, maize becomes more easily substitutable as consumers have access to a greater variety of food items.

Table 10.13: Substitutes for maize meal

Substitute Product/Service	Description
Vegetables	Potatoes, amadumbes and sweet potatoes, in particular, are alternatives to maize meal.
Other grains & cereals/beans	Lentils and various other grains such as rice have great potential to be substitutes for maize meal depending on price and nutritive quality.

Depending on the availability of a consumer's disposable income, the substitution effect may differ. A high income consumer, for example, will base their purchase decision of taste and preference, while a lower income consumer may base their decision to purchase based on price. As a result, a low income consumer may substitute for cheaper staples, rather than more expensive staples.

A producer of maize would be able to change production given that land has the capacity to produce a variety of products. As such, producers should be aware of market conditions and change production plans accordingly.

10.12 New entrants

10.12.1 Potential Entrepreneurs (BBEE)

Appendix C list potential entrepreneurs and emerging farmers that could potentially participate in the Agri-Parks programme within the WRDM.

10.13 Societal and cultural trends

Societal and cultural trends are trends that relate to the social and cultural values and practices within a society, or culture. These are long term trends (at least two to five years) that explain why people behave the way they do.

The South African food industry's direction is the growing influence of demographics, especially with respect to societal and cultural trends. As such, it is important that the Agri-Park positions itself to take advantage of such trends by meeting the demands of society through the processing of relevant products. The following, vegetable specific, cultural and societal trends have been identified and described.

Rising incomes: The trend in rising incomes within South Africa has provided the local consumer with increased purchasing power and, therefore, the ability to increase demand for food. Increased purchasing power has also allowed the consumer increased access to a variety of food, including processed, packaged maize products (or convenience foods as described below).

Staple household item: Maize meal (the major ingredient for what is popularly known as pap in South Africa) is one of South Africa's main staple food items, as is the case within many emerging markets. Increasingly, maize meal is being fortified with essential macro- and micronutrients in order to increase the nutritional quality of the products, given that it is a staple in many households. In addition, maize meal is a cheaper alternative to most staples and food items.

Organic Products: A new-age trend for organic products has resulted in the increased production of organic foods. The increasing demand for organic foods is a result of consumer perception that organic is healthier, more sustainable and less chemical residue is left on the product.

GMO: Most consumers are uninformed with respect to genetically modified foods and are often not aware that they may be eating GMO's. In many cases consumer attitudes and perceptions of GM food products are fears, concern for, and avoidance of the new technology as a result of the negative connotations attached to the foods.

Maize beer (Umqombothi): The traditional South African beer used as a celebratory drink is made of several ingredients including maize. There are large quantities of the beer being produced by artisans in in an unregulated fashion which raises health concerns. As, such there is an opportunity to produce the traditional beer under regulated conditions, producing a safer product, on a potentially commercial scale that will satisfy consumer demand.

There is a growing influence of demographics, especially with respect to societal and cultural trends, on the local food industry in South Africa. As such, social and cultural trends as listed and described above should be taken into consideration when considering products that should be produced for local markets. A marketing team that possesses the necessary skills to understand the local market is integral to the Agri-Parks success in accessing local and international markets.

10.14 SWOT analysis

The following table summarises the strengths, weaknesses, opportunities and threats for the maize industry within the district:

Table 10.14: SWOT analysis for maize industry

Strengths	Weaknesses
• Major economic advantages • Highly nutritive products • Contributor to food security • Maize is both a staple food crop and source of income • Fairly good rainfall conditions	• shortage of skilled workers • lack of commercial oriented production • inadequate storage facilities • limited expertise in diversification • Poor farming practices

• Proximity to major market • Land with fairly good soils • Maximal soil usage • Good source of input stockists and other auxiliary services • Readily available market information • Existence of an established value chain • Willingness of public sector to invest	• Non-standard of product – limited knowledge of quality standards • Limited irrigation resources/capacity • Lack of Good Agricultural Practice (GAP) principles • Small-scale production not very competitive • Lack of access to market • Inadequate working capital • High level of post-harvest losses
Opportunities	**Threats**
• Intensive production • Increasing demand for maize and maize products • Willingness to enter commercial production • Emergence of farmer groups and organisations • Potential linkages with private sector service providers and development partners • Adoption of improved technologies and efficient labour utilisation reduces unit costs of production • Local labelling (food labelling) • Employment opportunities • Cooperative farming (alliances – economy of scale) • Technological advancement • Alliances with government • Increasing demand for flour • Maize can be processed into various products and by-products	• Increasing input costs • Market limitations • Fluctuations/volatility in prices and dependence on prices • Limited bargaining power • Over usage of land leading to depletion of soil • Erratic weather conditions • Competition • Extreme weather conditions (drought, hail, frost) • Pest problems • Disease • Barriers to entry • Food safety issues • Regional competition • Retailer consolidation (preference toward particular producers)

11 Agri-Parks Concept Development

Investment strategies for the development of Agri-Parks generally imply the use of a wide range of partnerships, approaches, and tools in order to integrate the production chain and collaborate accordingly. In developing and emerging economies, the concept of Agri-Parks has gained momentum as innovative attempts aimed at apply spatial planning principles and have begun to yield positive results.

In order to boost economic activities such as agriculture and agro-processing in specific spatial areas, the use of "economic corridors" are important. An "economic corridor" is defined as a conceptual and programmatic model used for structuring socio-economic and physical responses to develop an area which builds upon a collection of economic activities and people in co-operation with transport infrastructure (Nogales, 2014).

The Agri-Park concept makes use of economic corridors, in this section the Agri-Park concept will be evaluated along with the Agri-Parks alignment to economic corridors. The section will also cover the proposed number of RUMCs, and FPSUs for the West Rand district and the product flows for each of the selected commodities.

11.1 Introduction the Agri-Park Concept

The Agri-Park concept consists of four elements, namely: primary production (which consists of small-scale/emerging farmers and commercial farmers), Farmer Production Support Units (FPSUs), the Agri-Hub, and the Rural-Urban Marketing Centre (RUMC).

In order to state how many FPSUs, Agri-Hubs, and RUMCs are required per district, it is important to identify whether or not a particular district is considered an area of low or high population density. An area which 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 km2 is considered to be a low density area. The WRDM is therefore considered an area of high population density with approximately 207 individuals per km2. Thus, the proposed catchment area for the FPSUs, Agri-Hubs, and RUMCs in areas of high population density are as follows:

- FPSUs catchment area: 10km
- Agri-Hubs catchment area: 60km
- RUMCs catchment area: 150km

The WRDM has an area of approximately 4 095km2 and taking into consideration the proposed catchment areas, as a suggestion, the WRDM will need approximately:

- 13 FPSUs,
- One Agri-Hub, and
- One RUMC which will be shared amongst the Gauteng Agri-Parks.

The key role and function of the FPSU is to provide to the farmers input supplies; extension support; mechanisation support; local logistics support; primary produce collection; limited grading; and through-put to Agri-Hubs. The core focus of their support should be on small-scale/emerging farmers. The FPSUs will have limited sorting, packaging, storage, and processing for local markets with through-put of excess products to Agri-hubs. The proposed development concepts for each of the selected commodities are discussed in the flowing section.

11.2 Development concept for vegetable FPSU

Key Role and Function

The key role and function of the FPSU is to provide: input supplies; extension support; mechanisation support; local logistics support; primary produce collection; limited grading; and through-put to Agri-Hubs.

The core focus of their support should be on small-scale/emerging farmers.

The FPSUs will have limited sorting, packaging, storage, and processing for local markets with through-put of excess products to Agri-hubs.

Location and Size

Given that the district is a relatively high density district it is recommended that 13 FPSU's are established.

Recommended locations for FPSUs include:

- Krugersdorp
- Randfontein
- Westonaria
- Muldersdrift
- Randgate
- Greenhills
- Fochville
- Tarlton
- Hekpoort
- Zuurbekom

Training

One of the key function of the FPSU would be to provide training and extension support on various farm and administrative practices to the farmers.

Extension officers will need to be trained in the respective fields

Production and Activities

The following activities will be facilitated by the FPSU:

- Mechanisation services
- Sowing/planting
- Cultivation
- Harvesting
- Drying
- Weighing
- Training
- Research

Key Products and Services

The core activities of the FPSU are:

- Logistics
- Training
- Planting
- Harvesting
- Extension
- Production planning/ scheduling

Farmer production management

Infrastructure and Equipment

The FPSU would require the following equipment & infrastructure:

- Tractor
- Bed former
- Planter
- Spray equipment
- Fertiliser applicator
- Pack house Transport (e.g Bakkie or pick-up vehicles)
- Storage facility
- Weighing and packaging equipment
- Simple processing technologies
- Retail outlet

The FPSU is obligated to provide machinery and equipment services to farmers.

Logistics

The FPSU will be required to develop a logistics plan to move input products to the farmers and final products to the AH. Central pick up and drop off points should be demarcated by the FPSU.

The logistics schedule should be planned according to the production plan developed by the FPSU.

Technology and ICT

The following technology/ICT can be used by the FPSU:

- Production planning software
- Logistics planning software
- Vehicle tracking devices

Human Resources and Job Creation

The FPSU will provide the following HR/HR facilities:

- Agricultural extension officers / support office;
- Machine operators/ Local mechanisation centre and workshops;
- Agronomists
- Researchers
- Voluntary/Established commercial farmers

It is estimated that vegetable production will create 0.62 indirect jobs for every hectare that is brought into production.

The FPSU has potential to employ between 217 and 434 persons

11.3 Development concept for vegetable AH

Key Role and Function

Key roles and functions of the Agri-Hub include:

- Training
- Logistics
- Processing
- Storage/warehousing
- Packaging
- Product distribution
- Branding of products (optional)
- Grading

The Agri-Hub plays an important role in value adding activities and moving product to market.

Location and Size

The Agri-Hub is to be located in Randfontein.

Logistics

The AH will be required to liaise closely with the RUMC in developing a logistics plan.

The AH will be responsible for the distribution of the final processed product to the market.

Technology and ICT

In order to remain conversant with the trends in the global, national and local market, so as to make necessary adjustments in the production line, the RUMC would also require subscription to certain Apps from the RUMC. This will enable the AH to remain informed.

Production and Activities

The AH will facilitate the following activities

- Slicing and dicing
- Packaging
- Freezing
- Washing
- Sorting
- Labelling
- Canning
- Preserving

Key Products and Services

The core activities of the AH are:

- Collection of fresh vegetables
- Grading and sorting
- Further quality control.
- Packaging
- Processing of fresh vegetables
- Storage of products ;
- Some marketing;
- Transportation of products to the markets

Training

Some training would also be required at the hub, including:

- Training of processing staff.
- Training on best practices, based on changing demand and supply.

Training on new innovations as they surface.

Infrastructure and Equipment

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

- Administrative facilities
- Agro-Processing facilities
- Packaging facilities
- Quality control facilities
- Agricultural input distribution and sales centre
- Retail facility
- Training centre
- Student and staff housing
- Logistics and transport facility
- Large warehouses/ holding facilities
- Cold storage facilities
- Administrative

Human Resources and Job Creation

The AH will provide the following HR:

- Administrative staff
- Quality control personnel
- Processing/floor staff
- Research and demonstration personnel
- Training personnel

It is estimated that vegetable production will create 0.62 indirect jobs for every hectare that is brought into production.

The Agri-Hub has potential to employ between 372 and 744 persons for different activities and roles.

11.4 Development concept for vegetable RUMC

Key Role and Function

The key function of the RUMC is to provide market intelligence, assist farmers, and processors in managing a nexus of contracts.

Location and Size

Given the proximity to the City of Johannesburg, it is recommended that the RUMC be based on the periphery of Johannesburg.

Krugersdorp, or Soweto areas have good access to transport routes and are relatively close to the major markets.

Key Products and Services

The core activities of the RUMC are:

- Dissemination of information
- Marketing and distribution of final products to different wholesalers and major retail outlets

Production and Activities

In linking the products to the market, the RUMC will undertake the following activities:

Sales and distribution

Transportation to markets

Storage

Infrastructure and Equipment

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

- Facilities/ information centre
- ICT

Training

Training of personnel on how to disseminate information to the SHF, AH and the FPSU.

Logistics

The RUMC is responsible for marketing and distribution plans. The responsibilities include:

- Production and processing quantities
- Liaising with buyers
- Distribution/logistics plans

Determining input quantities required for output quantities.

Technology and ICT

The RUMC will provide information technologies that all the various basic units of the Agri-Park can subscribe to.

Human Resources and Job Creation

The RUMC will provide the following HR:

- IT expert/personnel
- Administrative staff
- Training personnel
- Marketing personnel

It is estimated that vegetable production will create 0.62 indirect jobs for every hectare that is brought into production.

The RUMC has potential to create between 31 and 62 employment opportunities.

11.5 Development concept for broiler production FPSU

Key Role and Function

Agricultural input supplies, extension support, mechanisation support, local logistics support, primary produce collection, and through-put to Agri-Hubs.

The FPSUs will have limited sorting, packaging, storage, and processing for local markets with through-put of excess products to Agri-hubs.

Location and Size

Given that the district is a relatively high density district it is recommended that 13 FPSU's are established.

Recommended locations for FPSUs include:

- Krugersdorp
- Randfontein
- Westonaria
- Muldersdrift
- Randgate
- Greenhills
- Fochville
- Tarlton
- Hekpoort
- Zuurbekom

Key Products and Services

The core activities of the FPSU are:

- Logistics
- Training
- Input supply including feed
- Transport of chickens
- Extension
- Production planning/ scheduling
- Farmer production management

Production and Activities

The following activities will be facilitated by the FPSU:

- Provision of inputs (chicks, feed, medications_
- Training and mentoring
- Logistics services
- Veterinary services

Infrastructure and Equipment

The FPSU would require the following equipment & infrastructure:

- Transport (e.g Bakkie or pick-up vehicles)
- Storage facility
- Weighing and packaging equipment (crates)
- Retail outlet

Logistics

The FPSU will be required to develop a logistics plan to move input products to the farmers and final products to the AH. Central pick up and drop off points should be demarcated by the FPSU.

The logistics schedule should be planned according to the production plan developed by the FPSU.

Technology and ICT

The following technology/ICT can be used by the FPSU:

- Production planning software
- Logistics planning software
- Vehicle tracking devices

Training

One of the key function of the FPSU would be to provide training and extension support on broiler production practices to the farmers, including:

- Broiler production
- Marketing
- Animal diseases
- Phytosanitary requirements
- Feeding

Human Resources and Job Creation

The FPSU will provide the following HR/HR facilities:

- Agricultural extension officers / support office;
- Machine operators/ Local mechanisation centre and workshops;
- Agronomists
- Researchers
- Voluntary/Established commercial farmers

It is estimated that broiler production will create 0.014 indirect jobs for every hectare that is brought into production.

Alternatively, one job is created for every 70 tons produced.

The FPSU has potential to create between 50 and 75 employment opportunities.

11.6 Development concept for broiler production AH

Key Role and Function

Key roles and functions include:

- Training
- Logistics
- Processing
- Storage/warehousing
- Packaging
- Product distribution

Location and Size

The Agri-Hub is to be located in Randfontein.

Key Products and Services

The core activities of the AH are:

- Production and distribution of day old chicks
- Collection of live chickens
- Slaughter and processing
- Packaging
- Storage of products
- Marketing
- Transportation of products to the markets.

Production and Activities

The AH will facilitate the following activities

- Slaughtering
- Processing
- Packaging
- Labelling
- Storing, cooling

Infrastructure and Equipment

The AH would require the following equipment/ infrastructure:

- Administrative facilities
- Agro-Processing facilities
- Packaging facilities
- Quality control facilities
- Agricultural input distribution and sales centre
- Retail facility
- Training centre
- Student and staff housing
- Logistics and transport facility
- Large warehouses/ holding facilities
- Cold storage facilities
- Administrative offices

The AH will be required to liaise closely with the RUMC and FPSU in developing a logistics plan.

The AH will be responsible for the distribution of the final processed product to the market.

Human Resources and Job Creation

The AH will provide the following HR:

- Administrative staff
- Quality control personnel
- Processing/floor staff
- Research and demonstration personnel
- Training personnel

It is estimated that broiler production will create 0.014 indirect jobs for every hectare that is brought into production.

Alternatively, one job is created for every 70 tons produced.

The Agri-Hub has potential to create between 86 and 129 employment opportunities.

Logistics

The AH will be required to liaise closely with the RUMC and FPSU in developing a logistics plan.

The AH will be responsible for the distribution of the final processed product to the market.

Technology and ICT

In order to remain conversant with the trends in the global, national and local market, so as to make necessary adjustments in the production line, the RUMC would also require subscription to certain Apps from the RUMC. This will enable the AH to remain informed.

Training

Some training would also be required at the hub, including:

- Training of processing staff.
- Training on best practices, based on changing demand and supply.

Training on new innovations as they surface.

11.7 Development concept for broiler production RUMC

Key Role and Function

Need to provide market intelligence, assist farmers, and processors in managing a nexus of contracts, with large warehousing and cold storage facilities to enable market management

Location and Size

Given the proximity to the City of Johannesburg, it is recommended that the RUMC be based on the periphery of Johannesburg.

Krugersdorp, or Soweto areas have good access to transport routes and are relatively close to the major markets.

Key Products and Services

The core activities of the RUMC are:

- Dissemination of information
- Maketing and distribution of final products to different wholesalers and major retail outlets

Training

Training of personnel on how to disseminate information to the SHF, AH and the FPSU.

Production and Activities

In linking the products to the market, the RUMC will undertake the following activities:

Sales and distribution

Transportation to markets

Storage

Quality and quantity control

Infrastructure and Equipment

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

- facilities/ information centre
- ICT

Logistics

The RUMC is responsible for marketing and distribution plans. The responsibilities include:

- Production and processing quantities
- Liaising with buyers
- Distribution/logistics plans
- Determining input quantities required for output quantities.

Technology and ICT

The RUMC will provide information technologies that all the various basic units of the Agri-Park can subscribe to.

Human Resources and Job Creation

The RUMC will provide the following HR:

- IT expert/personnel
- Administrative staff
- Training personnel
- Marketing personnel

It is estimated that broiler production will create 0.014 indirect jobs for every hectare that is brought into production.

Alternatively, one job is created for every 70 tons produced.

The RUMC has potential to create between 7 and 11 employment opportunities.

11.8 Development concept for maize FPSU

Key Role and Function

Provides facilities for primary and initial processing activities through the following:

- Provision of inputs
- Provision of extension services.
- Provision of machinery and assistance for farming processes.
- Facilitation of farmer organisation and association administrative operations.
- Field preparation and planting.
- Local market sales.
- Training of emerging farmers and agriculture students.

Location and Size

Given that the district is a relatively high density district it is recommended that 13 FPSU's are established.

Recommended locations for FPSUs include:

- Krugersdorp
- Randfontein
- Westonaria
- Muldersdrift
- Randgate
- Greenhills
- Fochville
- Tarlton
- Hekpoort
- Zuurbekom

Key Products and Services

Harvested Maize

Training

The following training opportunities can be made available:

- Extension services training
- Regulatory standards and requirements training
- Health and safety training
- Management skills
- Training for emerging farmers
- Agriculture computer programme skills.

Infrastructure and Equipment

The following infrastructure and equipment will be used at the FPSU:

- Silos
- Planter
- Harvesting Machinery
- Sheller
- Dehuller
- Tractors
- Initial processing machinery
- Weighing equipment
- Training and research facilities and equipment.
- Administrative office
- ICT centre

Logistics

The FPSU will require the following logistical arrangements:

- Management of equipment used by the farmers.
- Provision and delivery or collection of inputs.
- Supervision and planning of the transporting of equipment, inputs and maize produced by the farms.
- Keeping track of the maize stored in silos.

Technology and ICT

The following technology and ICT opportunities can be used:

- Modern farming tools
- Planning tools and computer programmes.
- Tracking devices on farming machinery and transport.
- Computer programmes related to track keeping of maize production activities.
- Internet access for farmers and trainees.

Human Resources and Job Creation

The core HR personnel that the FPSU would require are:

- Extension officers
- Administrative Managers
- Animal health specialist

Addition staff would include the following:

- Administration staff
- Security Guards
- Drivers
- Operators
- Cleaners
- Training personnel
- IT assistants

The FPSU has the potential to create between 18 and 26 employment opportunities.

Production and Activities

The following activities will be facilitated by the FPSU:

- Tilling
- Sowing
- Cultivation
- Harvesting
- Drying
- Weighing
- De-hulling and shelling
- Training
- Research

11.9 Development concept for maize AH

Key Role and Function

Processing of maize through the following:

- Provision of storage facilities.
- Provision of facilities for processing, packaging and labelling
- Inspection and quality control.
- Distribution and transportation of maize products to the market.
- Processing maize produced by commercial farmers.

Key Products and Services

The following key products are produced by the AH:

- Maize meal
- Corn flakes
- Pop corn
- Popped Maize Cakes
- Reconstructed maize chips
- Collets (cheese curls or puffs)
- Baked maize products (Tortillas, maize roti, maize bread or flat bread etc)
- Starch
- Corn steep liquor
- Fermented beverages
- Maize oil
- Ethanol
- Animal feed

Production and Activities

The AH will facilitate the following activities

- Dry Milling
- Wet Milling
- Packaging
- Labelling
- Processing
  - Cooking
  - Baking
  - Frying
- Seasoning/flavouring
- Extrusion
- Oil Extraction
- Hydrolisation and sugar extraction
- Starch extraction
- Fermentation
- Feed Milling

Training

The following training opportunities can be made available:

- Machine operation training
- Processing skills
- Health and safety training
- Management skills

Infrastructure and Equipment

The following infrastructure and equipment will be used at the AH:

- Milling plants
- Milling equipment
- Processing equipment (extractors, ovens and other machinery)
- Fermenters
- Silo
- Cold storage facilities
- Administrative office
- Transport vehicles

Human Resources and Job Creation

The core HR personnel that the AH would require are:

- Administrative manager
- Silo supervisor
- Logistics operation manager
- Food Science Specialists
- Quality control manager
- Hygiene manager

Additional staff would include the following:

- Administration officers
- Processing operators
- Milling operators
- Nutritionists
- Security guards
- Cleaners
- Drivers
- Mechanical operators

The Agri-Hub has the potential to create between 30 and 45 employment opportunities.

Location and Size

The Agri-Hub is to be located in Randfontein.

Technology and ICT

The AH can use computer systems with programmes that will keep a database and assist with processing functions and systems. The processing machinery used will have to be updated as new technologies are introduced.

Logistics

The AH will require the following logistical arrangements:

- Transportation from FPSU to the milling and processing units.
- Transportation back to the FPSU for local sales

Transportation to distribution centres and other markets as advised by the RUMC.

11.10 Development concept for maize RUMC

Key Role and Function

Links the maize producers to local and international markets.

- Provision of market intelligence in the maize and related industries.
- Identification of maize product markets.
- Interact and negotiate with buyers in the various market channels.
- Undertakes contractual agreements.
- Provision of marketing intelligence to commercial farmers at a price.

Location and Size

Given the proximity to the City of Johannesburg, it is recommended that the RUMC be based on the periphery of Johannesburg.

Krugersdorp, or Soweto areas have good access to transport routes and are relatively close to the major markets.

Technology and ICT

Economic and marketing computer applications and programmes can be used by the RUMC.

Key Products and Services

Market intelligence and connection to the market.

Production and Activities

In linking the products to the market, the RUMC will undertake the following activities:

- Sales and distribution
- Transportation to markets
- Market segmentation
- Storage
- Quality and quantity control

Infrastructure and Equipment

The following infrastructure and equipment will be used at the AH:

- Milling plants
- Milling equipment
- Processing equipment (extractors, ovens and other machinery)
- Fermenters
- Silo
- Cold storage facilities
- Administrative office
- Transport vehicles

Training

The following training opportunities can be made available:

- Market analysis skills
- Supply chain and logistics skills
- Trading (local and international)
- Agriculture computer programme training.

Logistics

The RUMC will require the following logistical arrangements:

- Transportation to the different markets from the AH, especially international markets.
- Products that are stored at the RUMC holding facilities will also be transported to the identified markets.
- Keeping track of storage and the supply to the markets.

Human Resources and Job Creation

The core HR personnel that the RUMC would require are:

- Administrative manager
- Marketing manager

Additional staff would include the following:

- Administration officers
- Marketing personnel
- Economic advisors
- Training personnel
- IT assistance

The RUMC has the potential to create between 3 and 4 employment opportunities.

11.11 Summary development concept

The following development concept summarises the above concepts to form a single, streamlined concept that draws on the main elements and activities of each of the role-players. The following concept provides a broader overview of the Agri-Park development in comparison to the individual concepts, and therefore excludes precise detail.

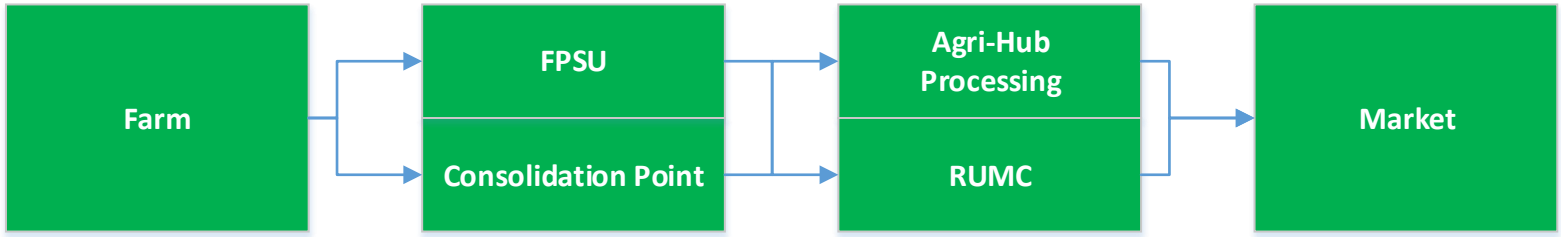
Production Flow	Small-Scale/Emerging Farmers & Commercial farmers	Farmer Production Support Unit	Agri-Hub	Rural-Urban Marketing Centre
Key Role & Function	The major role for the farmers is production management – ensuring that all produce reaches maturity. Quality control is of high importance for farmers to guarantee higher returns on their produce.	Agricultural input supplies, extension support, mechanisation support, local logistics support, primary produce collection, and through-put to Agri-Hubs. The FPSUs will have limited sorting, packaging, storage, and processing for local markets with through-put of excess products to Agri-hubs.	The Agri-Hub has a major function as a processor of agricultural produce and distribution centre. Other auxiliary functions for the Agri-Hub include: • Training • Logistics • Storage/warehousing • Packaging • Labelling • Product distribution	The RUMC is to provide market intelligence and assist farmers, and processors in managing a nexus of contracts, with large warehousing and cold storage facilities to enable market management
Location	These farmers will be distributed throughout the district. In addition to these farmers, state owned land can be allocated for the production of broilers.	Given that the district is a relatively high density district it is recommended that 13 FPSU's are established. Recommended locations for FPSUs include: • Krugersdorp • Randfontein • Westonaria • Muldersdrift • Randgate	The Agri-Hub is to be located in Randfontein.	Given the proximity to the City of Johannesburg, it is recommended that the RUMC be based on the periphery of Johannesburg. Krugersdorp, or Soweto areas have good access to transport routes and are relatively close to the major markets.

Production Flow	Small-Scale/Emerging Farmers & Commercial farmers	Farmer Production Support Unit	Agri-Hub	Rural-Urban Marketing Centre
		• Greenhills • Fochville • Tarlton • Hekpoort • Zuurbekom		
Human Resources & Job Creation Estimates	On farm personnel required to manage production include: • Farm managers • Farm workers/labour • Administrators Primary production, in total, has the potential to create between 2,200 and 4,300 employment opportunities.	The FPSU will provide the following HR/HR facilities: • Agricultural extension officers' / support office; • Machine operators/ Local mechanisation centre and workshops; • Agronomists • Researchers • Voluntary/Established commercial farmers In total, the FPSU has the potential to create between 285 and 535 employment opportunities.	The AH will provide the following HR: • Administrative staff • Quality control personnel • Processing/floor staff • Research and demonstration personnel • Training personnel In total, the Agri-Hub has the potential to create between 490 and 920 employment opportunities.	The RUMC will provide the following HR: • IT expert/personnel • Administrative staff • Training personnel • Marketing personnel In total, the Agri-Hub has the potential to create between 41 and 76 employment opportunities.
Training	The on farm personnel will require training in their respective fields of production. Training of such personnel should include: • Production practices • Business administration • Marketing	A key function of the FPSU would be to provide training and extension support for the various types of production practices to farmers, including: • Best management and production practices • Data interpretation • Marketing • Crop cultivation • Animal husbandry • Business administration	Staff within the Agri-Hub will require training in various processing best practices. Training programmes for such personnel should include: • Training of processing staff. • Training on best practices, based on changing demand and supply. • Training on new innovations as they surface.	Personnel that are actively particpating in the RUMC should be trained in the following fields: • Data collection/collation • Data interpretation and • Data dissemination

Production Flow	Small-Scale/Emerging Farmers & Commercial farmers	Farmer Production Support Unit	Agri-Hub	Rural-Urban Marketing Centre
		In order for the FPSU to have the ability to train on farm personnel, they will need training in the various fields themselves. Trianing is available at various agricultural training institutions.		
Key Products & Services	Key products: • Fresh vegetables • Live chickens and by-products • Maize and maize by-products Key Services: • Preparation of the facilities • Field preparation • Cultivation • Animal husbandry	The core services of the FPSU are: • Logistics • Training • Input supply • Extension services • Production planning/scheduling • Farmer production management	The core products of the AH are: • Collection of produce • Processing of product • Packaging and labelling • Storage • Marketing • Transportion of products to the markets.	The core services of the RUMC are: • Dissemination of information • Maketing and distribution of final products to different wholesalers and major retail outlets
Infrastructure & Equipment	Infrastructure & equipment requirements include: • Broiler houses • Feed silos • Water systems • Irrigation systems • Greenhouses	The FPSU would require the following equipment & infrastructure: • Transport (e.g Bakkie or pick-up vehicles) • Storage facilities • Weighing and packaging equipment (crates) • Retail outlet for the local market	The AH would require the following equipment/ infrastructure: • Administrative facilities • Agro-Processing facilities • Packaging facilities • Quality control facilities • Agricultural input distribution and sales centre • Retail facility • Training centre	The RUMC would require to put in place the following equipment/infrastructure: • Office facilities/ information centre • ICT

Production Flow	Small-Scale/Emerging Farmers & Commercial farmers	Farmer Production Support Unit	Agri-Hub	Rural-Urban Marketing Centre
			• Student and staff housing • Logistics and transport facility • Large warehouses/ holding facilities • Cold storage facilities • Administrative offices	
Logistics plan	The focus of the logistics plan is to develop a strategy to move farm produce to market as smallholder and emerging farmers seek to become important players in the emerging food supply chain in South Africa. The logistics plan draws on challenges and opportunities faces by the farmers that are likely to participate within the Agri-Parks programme, while the focus remains on recognising the importance that transport plays in the emerging farmer value chains. **Understanding the logistics chain** It is important that the transport segments in the emerging agricultural sector are understood. The segments include the primary, intermediate and final transport route segments, described in further detail below: 1. The primary transport segment, also known figuratively as the first mile, is the segment in which product moves from farm to a consolidation/collection point that are found on primary roads where collection is typically easier. The key role-players in this segment are the farmers who move the produce from their farm to the consolidation/collection point. 2. The intermediate transport segment realises the movement of produce from the primary consolidation, or collection point to an intermediate point, or in this case an Agri-Hub. The key role-players at this point are larger, commercial farmers, or transporters. 3. The final transport segment will move product from the intermediate point to the final market, or destination. These segments are exemplified in the following figure:			

Production Flow	Small-Scale/Emerging Farmers & Commercial farmers	Farmer Production Support Unit	Agri-Hub	Rural-Urban Marketing Centre



The above figure is a generic emerging, or small-scale farmer's logistics chain that contains the farm, consolidation/collection points, intermediate processing points and the final markets for the product. The first mile, in general, is the most important segment since it can be the most expensive segment of the logistics chain. It is often the case that product quality is compromised through bruising and ageing in this segment.

Recommended logistics strategy:

Unlike commercial, large-scale farming, small-scale and emerging farmers produce smaller quantities and farms are spread over a wide spatial territory. As such, it is of high importance that consolidation points are developed in order to collect produce in viable volumes, while coordination with intermediaries and transporters is crucial so that the farmers jointly are able to create economies of scale. Consolidation points should therefore be developed at strategic locations on easy access roads and a well-structured approach is required in order to assist the farmers in produce consolidation. This is exemplified in the following logistics plan:

In order to do this, appropriate infrastructure is required at the consolidation points along with organised transport coordination (exploiting ICT) that will reduce value deterioration at the farm gate and consolidation/collection points. The following recommendations can be used in order to develop the logistics plan for the Agri-Park:

1. Locate and demarcate specific areas of production that will participate in the Agri-Parks programme.
2. Develop an inventory of what will be produced in the given demarcated areas.
3. Determine quantities to be produced in the demarcated areas.
4. Determine the total value of production that will be produced my small-scale farmers.
5. Determine and map the spatial location and spread of farms that will be producing within the programme.
6. Determine the location of the consolidation/collection points and what facilities should be made available.
7. Assess the potential perishability of the produce/value of the post-harvest losses.
8. Plan for the availability and reliability of transport services to collect produce.
9. Assess the quality of transport infrastructure in the location.
10. Determine the key market locations/destinations in the given area.

Production Flow	Small-Scale/Emerging Farmers & Commercial farmers	Farmer Production Support Unit	Agri-Hub	Rural-Urban Marketing Centre

11. Develop, or enhance farmers' organisations and support groups.

The above process will assist in providing a better understanding of how to move produce from farm to market, while a comprehensive and integrated logistics management system can be employed to improve the efficiency in which produce can be moved to market taking into account rural infrastructure, consolidation management and collection services. The ability to understand the product movement will provide a foundation from which a logistics plan can be developed.

The following steps provide a broad outline toward the logistics plan, in which all elements of the Agri-Park including the farmers, FPSU, Agri-Hub and RUMC are integrated:

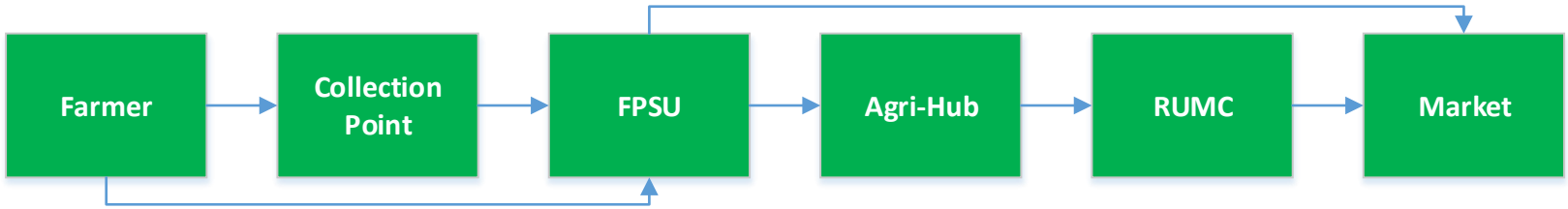
1. Demarcate farmer groups within a given production area, for example Tarlton in the WRDM.
2. Determine a central location of the consolidation/collection point for the produce in each of the demarcated areas.
3. Implement a logistics management system and programme through the FPSU and RUMC that will assist in moving farmers produce to the consolidation points.
4. Implement a logistics management system and programme through the FPSU and RUMC that will move product from the consolidation points to the Agri-Hub.
5. Implement a logistics management system and programme through the RUMC that will move product from the Agri-Hub to the market/final product destination.

The specific roles and functions of the farmers, the FPSU, Agri-Hub and RUMC are specified as follows:

- The farmers may either opt to transport their produce to the collection point themselves, or make use of FPSU transport.
- The FPSU will be responsible for the movement/transportation of the product from farms to the collection point to the Agri-Hub
- The Agri-Hub can opt to collect produce from the FPSU, or have it delivered by the FPSU. The Agri-Hub should also transport final products to the market, or RUMC
- The RUMC will provide the market intelligence and therefore the timing of the movement of the product. The RUMC will play an important role in planning, implementing and managing the logistics programme.

This is exemplified in the following diagram:

Production Flow	Small-Scale/Emerging Farmers & Commercial farmers	Farmer Production Support Unit	Agri-Hub	Rural-Urban Marketing Centre



It is recommended that the logistics plans are further developed and designed for each commodity. Every commodity has differing transport requirements, including cold chains, livestock transport, and various consolidating activities. In this case, vegetables will require cold storage at all points to ensure freshness of product, poultry will require trucks collect chickens in an organised manner that ensures less time on road, while maize will require consolidation points to create economies of scale.

Technology/ICT

To develop the efficiency required to manage the Agri-Park in a successful and meaningful way, an integrated technology/ICT approach is necessary to keep all participants'/role players in the system well informed. Each role-player is required to understand the needs and requirements of the previous, or next role-player within the value chain. For example, the FPSU will be required to understand the production capacity and timing of the farmers, while also needing to know what the demands of the Agri-Hub are in the way of produce. The ability to know this will assist in the FPSU being able to meet the demands of the Agri-Hub.

Technology and ICT is, thus, a key input to the value chain in coordinating activities between role-players. Specific technologies that can assist for the individual entities and the entire value chains are detailed below:

- Production management software: Can assist farmers' and the FPSU in production coordination and management.
- Logistics management software: Can be integrated throughout the value chain in order to assist the coordination of logistical activities and move product from farm to fork in the most efficient manner.
- Weather apps: Can assist farmers' and the FPSU in production.
- Market apps: Understanding the market conditions is integral to making production based decisions (i.e. what to produce and when to supply the market).

Importantly, technologies and ICT within the Agri-Parks project need to be integrated in order to inform all role-players, understand the supply and demand conditions within the programme, and inform each of the role-players of the actions that need to be made in order to complement one another.

11.12 Conclusion

The above concepts address the conceptual roles of each of the actors within the Agri-Park with key role and function, location, human resources, training, key products and services, infrastructure and equipment, logistics and technology being addressed for each one. The concepts indicate the level of interaction between the role-players which illustrate a holistic and integrated development approach that is required to bring to the Agri-Park efficiencies.

It is important that functions are complementary and coordination between the role-players is coordinated in a fashion that streamlines product flow. The ability to do this will ensure that a quality product is moved from farm to the final market and then the consumer. Integration of the system will further allow one role-player to understand the function of the previous, or next role-player and, thus, the ability to meet the expectations, or demands of that role-player.

Most important are the management systems that are implemented in the programme to ensure coordination between role-players is done effectively and timeously. The logistics functions and technology/ICT that is used are therefore integral to the success s of the system.

11.13 Capital Expenditure

The following section provides a summary, and commentary on the projected capital expenditure for the WRDM Agri-Park. The figures were based on estimated bulk connections, building and machinery requirements. The total estimate is for that of a period of ten (10) years, and not an annual capital requirement.

The accompanying capital expenditure projection/estimate is intended solely for the information and use of this strategy and is not intended to be, and should not be, used for any other purpose. The estimated capital expenditure has been compiled by the Professional Economist and not by a registered Accountant or Auditor. These estimates may contain materiality as it was not compiled in accordance with the Generally Accepted Accounting Principles (GAAP) or International Financial Reporting Standards (IFRS).

Materiality is a concept that is judged in light of the expected range of reasonableness of the information; therefore, users should not expect prospective information (information about events that have not yet occurred) to be as precise as historical information.

Table 11.1: Capital Expenditure estimates

District Agri-Park Total	Quantity	Cost/unit	Total Cost
FPSU	13	R20,126,030	R261,638,396
Agri-Hub	1	R117,671,820	R117,671,820
Grand Total			**R379,310,216**

The above estimate is based on a projected 13 FPSUs, one Agri-Hub and one RUMC within the WRDM. The total estimate for the FPSUs is approximately R261,638,396, or R20,126,030 each. The FPSUs are to be implemented over an 8-10-year period and the estimated capital expenditure should be allocated as such.

It is estimated that the Agri-Hub would cost in the region of R120,000,000 to construct, including three different processing lines for vegetables, poultry and maize. The budget includes the estimated turnkey solutions (all-inclusive costs) for each of the processing lines within the Agri-Hub. This construction and expansion of the Agri-Hub will be implemented over a number of years and, as such, the budget should be allocated accordingly.

The RUMC includes warehouse and cooling facilities as a distribution point, while office space is required for the information centres that are responsible for relaying market information to and from the Agri-Park.

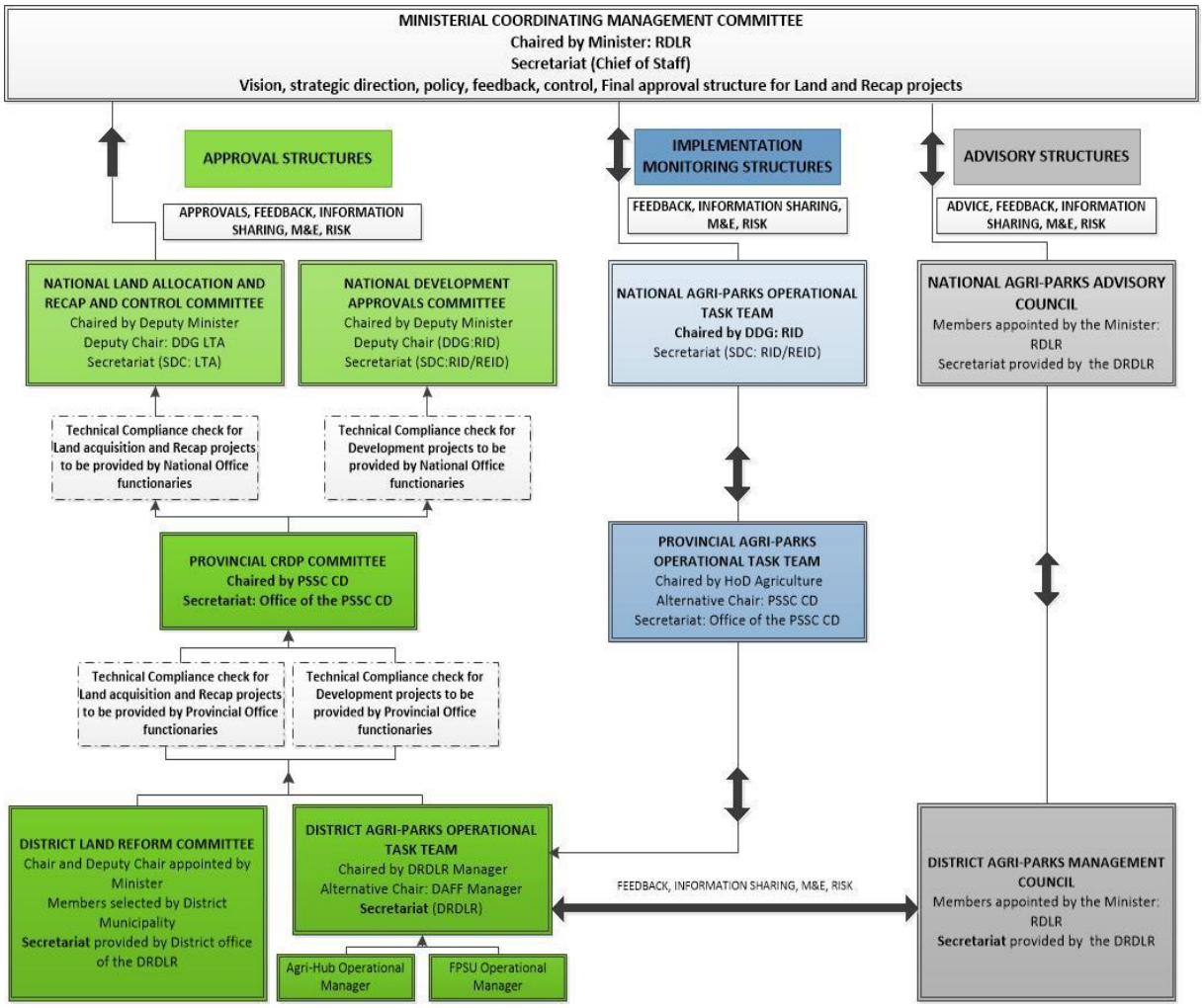
The implementation plan that follows makes it clear the time periods for implementation. The total estimated budget for the Agri-park (FPSU and Agri-Hub components) is R379,310,216 for a 10-year period.

Refer to Appendix E for further detail and a breakdown of estimates

12 Agri-Parks Organisational Structure

To explain the organisational structure of the Agri-Parks the following schematic is used:

Figure 12-1: Agri-Park Organisational Structure



In explaining the organisational structure, there are three sub structures that form part of the Agri-Parks: 1. Advisory Structures, 2. Approval Structures and 3. Implementation Monitoring structures.

12.1 Advisory Structures:

The main functions of the advisory structures within the Agri-Parks organisational structure are to give advice to the approval structures. The advisory structures that are currently identified are the National Agri-Parks Advisory Council (NAAC) and District Agri-Parks Management Council (DAMC). It is important to note that the advisory structures' member primarily comprise of stakeholders and interested party.

12.1.1 The NAAC

This council reports directly to the minister and consists of elected representatives of various organisations. Functions of the NAAC may include (as stipulated in Circular 9 of 2016):

- *To solicit, co-ordinate and advise the Executive, on issues and concerns of the implementation of the Agri-parks Programme;*
- *To encourage public awareness and education of the Agri-parks Programme;*
- *To review studies, plans and proposals as may be referred by the Executive and District Agri-parks Management Councils (DAMCs) and the National Agri-parks Operational Task Team, and to provide comments and advice thereon;*
- *To provide advice on policies, legislation and programmes from the Department of Rural Development and Land Reform (DRDLR) that impact on the Agri-parks Programme;*
- *To initiate advice on the Agri-parks Programme and implementation of the business plans as referred to by the DAMCs;*
- *To liaise with the Executive, the Management of the DRDLR, the DAMCs and any other stakeholder involved in the Agri-parks Programme as required; and*
- *To mediate disputes arising from the DAMCs concerning its operation and/or advice provided to the Department or other bodies that are implementing the Agri-parks programme in a district.*

12.2 The DAMC

The District Agri-Parks Management Council, also referred to as the "voice" of the stakeholders/interested parties in Agri-Parks. The DAMCs like the NAAC consist of representatives from various organisations. The DAMCs main function is to communicate advice from the council members to the NAAC as well as DAPOTT (District Agri-Parks Operational Task Team). Further functions of the DAMC include, but are not limited to the following:

- *Assist in identifying new business opportunities within an Agri-park;*
- *Provide advice on the implementation of the business plans;*
- *To advise on regulatory compliance with applicable policies and legislation;*
- *To advise on the alignment with the National Development Plan, Agricultural Policy Action Plan, Provincial Growth and Development Strategies and other development frameworks; and*
- *To assist in the identification, evaluation and monitoring of risks related to projects.*

12.3 Approval structures:

These structures are responsible for approvals, feedback, information sharing, monitoring and evaluation regarding land reform activities and Agri-Park project approval. To explain the functioning of the approval structure it essential to understand that in terms of the Agri-Parks organisation the project approval process is started on the district level.

The approval structures that form part of the Agri-Parks include the 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.

12.4 DAPOTT

The DAPOTT as part of the Agri-Parks Approval Structure receives advice from the DAMC as well as information from PAPOTT and NAPOTT. DAPOTT appears to have the role to interpret all the information and acting as a monitoring agent to advise on projects and land reform beneficiaries to be included in the Agri-Parks. Some of the functions of the DAPOTT include but are not limited to:

- *To provide technical support and guidance for implementation;*
- *To provide oversight of the implementation of the district Agri-parks business plan;*
- *To monitor expenditure against the district Agri-parks business plan;*
- *To identify all district projects that contribute to the district Agri-parks business plan and to compile a district project register (all DRDLR branches);*
- *To monitor project implementation against the approved project plan and district Agri-parks business plan;*
- *To participate in the identification and packaging of local development projects in support of the mandate of the Department of Rural Development and Land Reform;*
- *To advise on proposals that should be submitted to the Provincial CRDP Committee; and*
- *To provide an oversight function and monitor the implementation of the Government's Rural Development Programmes.*

12.4.1 The Agri-Hub Operational Manager

The main function of the Agri-Hub Operational Manager is to oversee the implementation of the Agri-Hub. The Agri-Hub Operational Manager is to be appointed at the district level and should report directly to the district operational task team.

12.4.2 The FPSU Operational Manager

The main function of the FPSU Operational Manager is to oversee the implementation of the FPSU. The FPSU Operational Manager is to be appointed at the district level and should report directly to the district operational task team.

12.4.3 DLRC

The District Land Reform Committees (DLRCs), are primarily concerned with land reform in general. However, the DLRCs have additional functions linked to Agri-Parks:

- To identify the district projects contributing to Agri-Parks business plans; and
- To align projects and beneficiaries with the identified sites for Agri-Parks.

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

- *Identify farms suitable for acquisition by Government (the target is 20% of agricultural land per district);*
- *Identify and interview potential candidates for farm allocation;*
- *Advise the Minister on the strategic support needs of identified farms and support needs of recommended candidates; and*
- *Advise the Minister on resolving 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

12.5 PCRDP

The PCRDP functions as the provincial approval structure that passes projects/beneficiaries identified by the DLRCs and DAPOTTs onto the National Government structures. Regarding this specific structure within the Agri-Parks organisational structure the name of this structure may have changed to the PJSC (unknown) as suggested in a different schematic (see below). The projects/beneficiaries identified are then catalogued into a Provincial Project Register that contributes to the formulation of a provincial spatial target plan. The functions of the PCRDP include:

- *To provide inputs to assist in the compilation of the provincial spatial targeting plan, as provided by the districts;*
- *To recommend 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*
- *To provide an oversight function in relation to the work of the Provincial Technical Committees and District CRDP Committees, to eliminate disjuncture and to ensure alignment of projects and funding at a provincial level.*

The PCRDP can also include specialists if specialist skills are required to inform decisions to be made regarding project selection.

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

12.6 The NLARCC

The function of the NLARCC is to recommend land acquisition and recapitalisation projects to the MCM (Ministerial Coordinating Management committee). The full list of functions of the NLARCC is as follows:

- *To provide inputs to assist in the compilation of the national spatial targeting plan as provided by the provinces;*
- *To identify all national projects as per operational plans and compile a national project register*
- *To approve land acquisition, tenure and recapitalisation and development projects in line with a delegation of authority framework; and*

- *To provide an oversight function in relation to the work of the National Technical Committee and Provincial Committees, to eliminate disjuncture and to ensure alignment of projects and funding at a national level.*

Looking at the above function, the NLARCC and PCRDP have the same functions but only on different levels within the government.

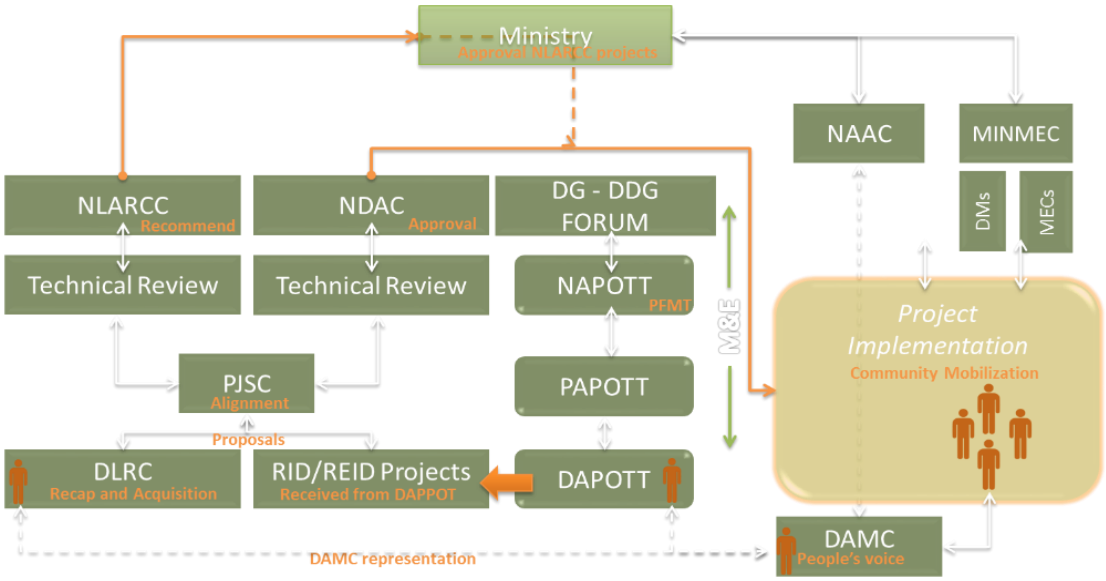
12.7 The NDAC

The main function of the NDAC is to approve all the national development projects and to give oversight to the PCRDP committees and the National Technical Committees (NTCs part of the land reform approval process). The functions of the NDAC are almost the same as the functions of the NLARCC, but the NDAC does not play a role in the identification of projects or the approval land acquisition, tenure recapitalisation and development projects.

12.8 Implementation and Monitoring Structures

Currently there are only two structures within the Agri-Parks organisational structure that are solely dedicated to implementation and monitoring, the PAPOTT (provincial Agri-Parks Operation Task Team). PAPOTT and NAPOTT are however not exclusively dedicated to Agri-Parks, these two structures also play a role in the monitoring and implementation of other programmes that can influence the Agri-Parks programme.

Figure 12-2: Monitoring and Implementation Structures



12.9 NAPOTT

The NAPOTT has various functions that are focussed towards on the operation of Agri-Parks both in terms of implementation and on-going operation. These functions include but are not limited to:

- *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.*

12.10 PAPOTT

The main functions of the PAPOTT is to coordinate and facilitate integrated implementation of Agri-Parks by providing technical support regarding planning and implementation, giving inputs to the compilations of Agri-Parks Business plans etc.

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

13 Implementation Guidelines

13.1 Introduction

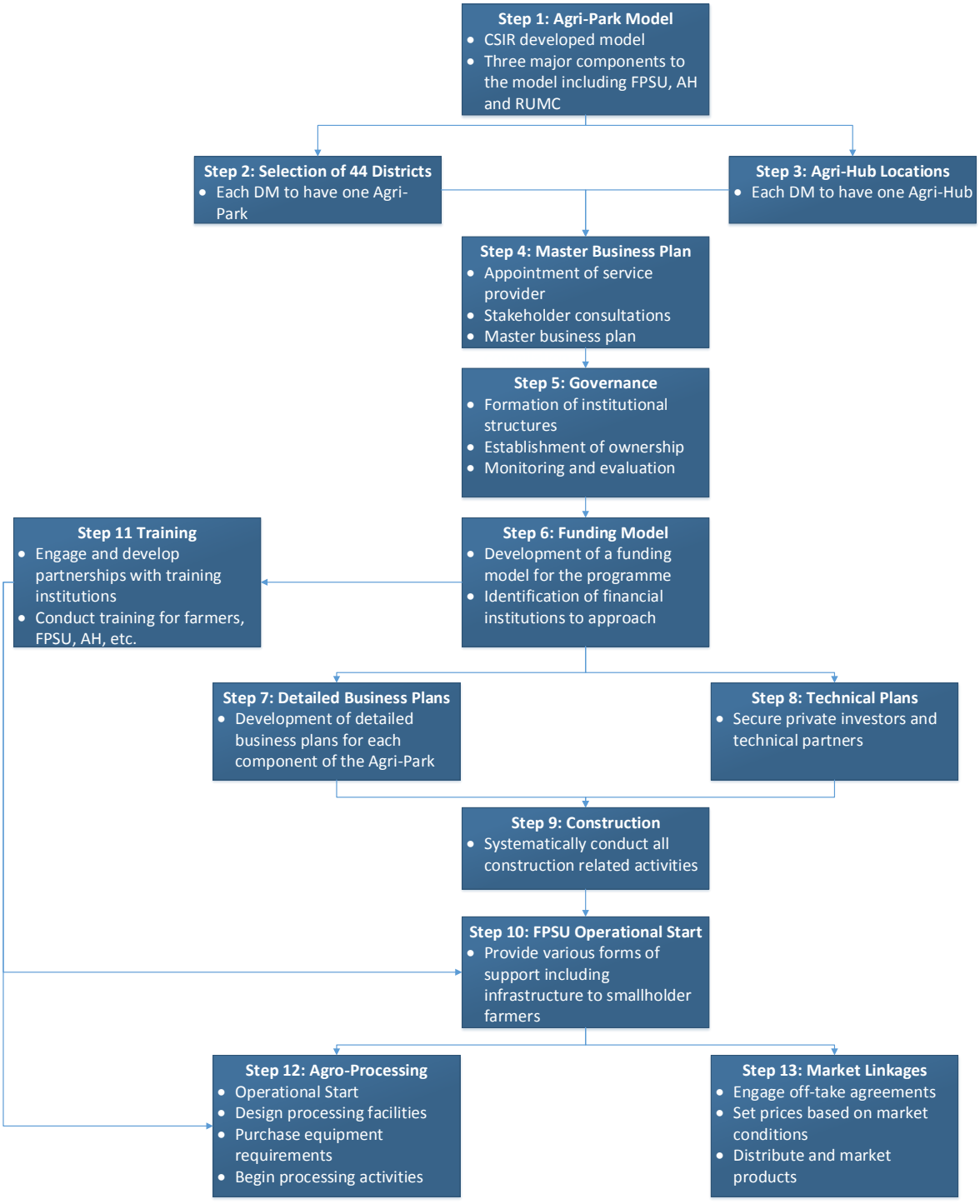
The following **implementation guidelines** provide an overview of what should be achieved in order to successfully implement the Agri-Parks programme within the WRDM. The implementation guidelines provide valuable information about:

- Understanding the implementation process and what is required for the process.
- How to align the implementation of the Agri-Parks programme with various government initiatives in developing agriculture.
- Recommendations that will streamline and assist the development of the Agri-Parks programme.
- Steps to be taken in developing the Agri-Park in the form of a roll-out plan.

This final chapter lays out the implementation guidelines and planning required to implement the West Rand District Municipality's Agri-Parks programme, starting with the implementation process.

13.2 Implementation Process

The above guidelines are used to develop the following implementation process for the rollout of the WRDM Agri-Park. The process follows the following 13 steps:



1. **Agri-park model:** The Agri-Parks model has been developed by the DRDLR and has been adopted as the model of preference nationally.
2. **Selection of the 44 Districts Municipalities:** The Agri-Parks model is to be implemented across 44 districts nationally over a 10-year period.
3. **Agri-Hub location selection:** The DRDLR along with technical partners have identified locations for the Agri-Hubs in each of the given districts. The Agri-Hub forms the heart of the Agri-Parks programmes, where significant agro-processing takes place.

4. **Master Agri-Park Business Plan:** The Master Agri-Parks Business plans were developed for the Agri-Parks. This plan identified specific commodities that agriculture would be developed around within the districts. The plan further outlines challenges and opportunities for each of the Agri-Parks.
5. **Governance:** Strategic bodies and plans will be formed, including the defining of ownership and management structures.
6. **Funding model:** A financial gearing plan will be developed for each Agri-Park once all costs for implementation are established. The plan will also assist in developing investment memorandums to attract investors.
7. **Technical planning:** The technical aspect of the Agri-Park will entail, mainly, the planning of the physical construction of the Agri-Park along with related infrastructure and technologies.
8. **Detailed business plans:** The different units of the Agri-Park (i.e. FPSUs, AH and RUMC) as well as the farmers will have specific detailed business plans developed.
9. **Financial close:** Funding will be sourced from various financial institutions, government bodies and private investment, depending on the funding model.
10. **Construction:** The construction of the Agri-Park's units and other related infrastructure will start.
11. **Training Programmes Rollout:** Training programmes will commence through the FPSUs and other partners.
12. **Farmer Production**: FPSUs will be set-up and run in order to make assistance available for farmers to start production through the Agri-Park.
13. **Agro-Processing**: Once primary production has taken place, and products are ready, agro-processing activities will commence through the Agri-Park's Agri-Hub.
14. **Market**: Completed products will be distributed and sold to relevant markets through assistance of the RUMC. Moreover, the RUMC will responsible for providing information to producers for production purposes.

Importantly the 14 step implementation process should align to current projects that take place in a district context in order to avoid duplication of any existing programmes/projects/campaigns, while also continuing with them to avoid redundancies. Various programmes/projects/campaigns are identified and described in the following sub-section.

13.3 Alignment with Government Programmes, Projects and Campaigns

The implementation of the Agri-Parks programme is required to align with various agricultural programmes, projects, or strategies that have been adopted and implemented by government and its various departments. Table 13.1sumamrises various programmes/projects/campaigns that are currently under progress, their description and how Agri-Parks can potentially align.

Table 13.1: Government programmes, projects and campaigns

Programme/Project/ Campaign	Description	Agri-Parks Alignment
Agricultural Programmes		
Agricultural Broad-Based Black Economic Empowerment (AgriBEE)	The implementation of AgriBEE is based on the commodity value chain approach. The approach is fundamental in creating partnerships, linkages, and networks for balanced, mutually benefiting results for all concerned. The AgriBEE is expected to	✓ The Agri-Park will focus on the development of the value chains for each of the identified commodities. ✓ In developing the value chain there needs to be a focus on integration of all stakeholder to be involved.

Programme/Project/ Campaign	Description	Agri-Parks Alignment
	ensure enhanced competitiveness and sustainable development with expansion of the existing businesses, rehabilitation of agricultural business that are performing poorly and expanded entry for new businesses in the sector. AgriBEE also encourages partnerships between established agricultural enterprises and emerging farmers and entrepreneurs.	✓ Integration of the value chain will create partnerships and linkages that will be mutually beneficial for all stakeholder involved and enhance the competitiveness of the Agri-Park. ✓ Stakeholder engagement is required to encourage partnerships that are beneficial from farmers to markets.
Comprehensive Agricultural Support Programme (CASP)	The programme provides agricultural support to land and agrarian reform projects, which contributes towards food security, job creation and poverty alleviation. CASP is also involved in the development of a number of policies, strategies and projects that are geared toward the development of the agricultural sector. These include: • Agricultural finance lending • Co-operatives establishment • Access to markets • Value chain development • Improvement policies • Production guidelines • Agro-logistics planning • Early warning climate systems	✓ The Agri-Park should work closely with CASP projects to support the initiatives set out within CASP. ✓ Policy alignment is key to achieve a common set of goals. ✓ The Agri-Park should focus on job creation through various initiatives, especially primary agriculture where there is potential for many job opportunities. ✓ The Agri-Park should investigate initiatives to extend credit to farmers. ✓ The Agri-Park needs to encourage and manage the establishment of co-operatives. ✓ Management practices need to be implemented at various stages of the value chain in order to ensure consistent production and product quality. ✓ Information technology should inform all stakeholders within the value chain.
Integrated Food Security and Nutrition Programme (IFSNP)	This programme was initiated by the Food and Agricultural Organisation (FAO). The core goal of this initiative was to reduce hunger and food insecurity. To take further steps toward achieving this objective, the Special Programme for Food Security (SPFS) will be expanded to all nine provinces (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 (DAFF, 2016).	✓ A major objective of the Agri-park is to improve food security. ✓ Primary production should be a key focus of the Agri-Park. ✓ The Agri-Park will therefore be required to improve access to markets through engaging the markets and meeting the requirements of the market procurement policies.
Research and Development (R&D)	The programme encourages research and development within the realm of agriculture and involves all stakeholders within the national agricultural research system.	✓ Training forms part of the Agri-Parks many roles. ✓ Training requires research and development initiatives that should align with R&D programmes set out by government.

Programme/Project/ Campaign	Description	Agri-Parks Alignment
		✓ R&D is required throughout the value chain and will be required to evolve as technologies do.
National Regulatory Services (NRS)	The increased trade in regulated agricultural products has required the development of the NRS that regulates and promotes international trade. This includes inspections of agricultural produce and bilateral negotiations. In addition, the NRS promotes awareness with respect to agricultural produce health matters.	✓ The Agri-park should implement policies that enforce international standards on production and processing that will allow the programme access to international markets.
LAND and AGRARIAN REFORM PROJECT (LARP)	The objectives of LARP are the redistribution of land, increased black entrepreneurship, promoting access to agricultural support services, increased agricultural production, and increased agricultural trade. The programme builds on lessons that have been learnt from previous land reform projects, reviews, the Land Summit and implementation reforms.	✓ The Agri-Park forms part of the market for farmers and will therefore encourage production. ✓ Models are to be developed to distribute state own land and ensure land tenure is in place for producers. ✓ Access to the market through the Agri-Park will further encourage land that was previously not in production to produce.
LandCare	The LandCare programme was established to promote productivity through the sustainable use of natural resources, to improve food security and create employment, therefore encouraging South Africans to use sustainable methods of cultivation, livestock grazing and harvesting of natural resources in order to limit land degradation.	✓ Access to the market through the Agri-Park will further encourage land that was previously not in production to produce. ✓ The Agri-Park is to encourage the sustainable use of land and resources.
Small Holder Farmer Evaluation	The programme focuses on the integration of smallholder farmers into the greater agricultural value chain. The programme works in conjunction with other programmes and provides strategic agricultural support.	✓ The Agri-Park will manage and encourage smallholder production, a primary objective of the Agri-park. ✓ Logistics and management plans are key to the success of integration of smallholder farmers.
Rural Development Programmes		
Comprehensive Rural Development Programme (CRDP)	The CRDP is in place to create decent work and sustainable livelihoods. The programme ensures sustainability, communal ownership and effective contribution toward the objectives of developing rural areas. The overarching objective of the CRDP is social cohesion and integrated development through participatory approaches and partnerships with all sectors of society.	✓ The Agri-park encourage primary production. ✓ Will have support mechanisms in place to ensure best production methods. ✓ Create jobs in primary agriculture. ✓ Ownership models encourage social cohesion, integration and participation from all stakeholders.

Programme/Project/ Campaign	Description	Agri-Parks Alignment
National Rural Youth Service Corps programme (Narysec)	Narysec is a youth skills development and employment programme that also forms part of the CRDP. The programme also provides character building programmes, soft and hard skills training and dispatches youth to rural areas for rural development projects. The programme further transforms the youth of rural areas, from being job seekers to being job creators.	✓ The Agri-Parks programme will encourage youth to participate in agriculture by creating viable and attractive agricultural enterprises.
Rural Enterprise and Industrial Development (REID)	REID is in place to facilitate poverty reduction, social organisation, youth development and the development of cooperatives, rural enterprises and industries.	✓ The Agri-park encourage primary production. ✓ Will have support mechanisms in place to ensure best production methods. ✓ Create jobs in primary agriculture. ✓ Ownership models encourage social cohesion.
GDARD Agri-Hubs Development	The GDARD seeks to develop Agri-Hubs that will result in the growth of the local agricultural sector through integrated agricultural value chains.	✓ Similarities in the programmes are complementary and will align accordingly.

13.4 Recommendations

The business plan has highlighted what needs to be done in the way of developing the agricultural sector within the district. Challenges have been highlighted and recommendations have been made in order to streamline the implementation process. The following list of recommendations has been developed and should be considered for the development of the Agri-Park in the WRDM:

Governance

- A governance structure should be established for the purpose of the implementation of the Agri-Parks project in the WRDM. The role and responsibilities of the governing and implementation/Agri-Parks management structures need to be determined as a priority to ensure a smooth engagement and implementation process.

Infrastructure

- Where necessary, roads should be developed and upgraded to accommodate transport vehicles that collect and distribute good within a district. This will likely result in faster transport times, less bruising to produce, and have a lesser impact on vehicles.in addition, the district should investigate the potential of tapping into rail roads for the transportation of agricultural produce.

- The district should capitalise on all already existing initiatives and infrastructure for the establishment of the Agri-Park. There should be upgrading and revitalisation of any existing infrastructure that can be used to support the development of the Agri-Park.

- Consolidation points should be investigated as an option to collect produce in large quantities. Although FPSU will be established in an organised pattern, even these may not be accessible to remote producers. As such, the option of having consolidation points within remote areas with simple technologies should be investigated. The FPSU should coordinate the management of the consolidation point, while producers will find it easier to access these points,

- Establish infrastructure that will aid the recycling of waste water for use in agricultural activities. Significant amounts of waste water is discharged into natural river systems that should rather be used for agricultural production, especially since water is a scarce commodity.

Natural Resources

- Availability of water for agriculture should be assessed for the programme. This will determine the amount of water that can be used within the Agri-Park and sustainability measures can be implemented. Distribution and water allocation plans should be developed and irrigation schemes implemented in the major production areas, while maximising the use of existing infrastructures.

- Smallholder farmers should implement rain harvesting (e.g. JoJo Tanks) techniques on their farms. The practice of rainwater harvesting can either supplement rainfall, municipal water use or act as a reserve tank, especially when rain is scarce.

- **Engage mines for access to land and water resources**: Mines in the WRDM have expanses of land that could potentially be used for agricultural production. The mines should be engaged and agreements formulated for the use of land that will produce for the Agri-Park, while potential partnerships could be created. The mines have a corporate-social responsibility that should be made and incentives should be developed in order to gain access to this land. Recycled water from mining activity could also potentially be used to irrigate agricultural production. Further investigations should be made in gaining access to this land and land inventories should be developed to assess the amount of land that is potentially available.

- Land leases and use of state land should be administered to ensure use of the land and all leases are up-to-date for the participation within the Agri-Parks project. There has further been an indication of uncertainty in participation within the programme – therefore requiring a systematic process in engagement defining roles, responsibilities and how participation in the project takes place. A participatory engagement process is required and participants should be subject to an application and due diligence process.

Agri-Park commodities

- Best Practices in production and processing must be implemented to ensure a quality product that meet international standards. Efforts should be made to ensure that product that are processed and packaged comply with international standards, to enhance products' suitability for the export markets.

- Although the initial phase of the project will support the development of the value-chain of the three pre-dominant commodities in the district, it is recommended that processing facilities should be expanded in subsequent phases to accommodate the production of other crops and livestock in subsequent phases. The Agri-Park should not be limited to the production of three commodities, but rather look to diversify production and spread risk.

Technology

- Telecommunication services should be upgraded (e.g. erection of cell towers) in areas that are currently underserviced, particularly in the rural areas, since most of the farmers that would be targeted are located in these areas. This will allow farmers the access to information required for production, while also linking to information that is provided by the RUMC and Agri-Hub. Further to this, investigations should be made into government subsidising telecommunication services (e.g. provision of free Wi-Fi) in the district to enable producers to overcome the cost barrier associated with their low levels of connectedness. The ICT to be adopted or introduced to the farmers should be user friendly and not be too complex, since some of the users may have little or no form of education.

- Equipment and machinery used should be of a level that does not significantly replace labour, but still provide the competitive edge required to compete within the industry. Further to this a planning process is required to ensure machinery is distributed according to a production plan that each FPSU is to manage.

Training

- The FPSU and Agri-Hub should establish partnerships with certain research institutions for research and development, and also to facilitate training programmes. Established training and research institutions have the capacity to assist in human capital development and training. The partners would ideally have many years in the industry and have an impressive track record. Partnership should also be established with commercial farmers who are able to assist in production and skills development.

- Practical manuals and information packages should be developed for the smallholder and emerging farmers to assist them in their production processes. These manuals and information packages should cover aspects relating to: regulatory requirements, information on support programmes, production guidelines, etc. Where possible, manuals should be developed in language of choice to enhance easy understanding.

- Training should be geared to agribusiness development and changing the perception that agriculture is for subsistence purposes and/or a sign of wealth (owning land, or herds of cattle

is often viewed as a sign of wealth). Farmers need to be made aware of the economic advantages that lie within agricultural production and that businesses can be developed. As such, producers should be trained in business administration activities.

Agri-Park Units

- The RUMC should be strategically situated in close proximity to the Lanseria International Airport. The strategic location will allow the Agri-Park to take advantage of potential export opportunities, while it remains in close proximity to both the Pretoria and Johannesburg markets. Further investigations should be made to identify a site for the development of the RUMC.

- The FPSU(s) should be strategically located around productive farm areas that have significant potential for primary production. Further investigations should be made to identify a sites for the development of the FPSUs.

- Develop an inventory and map farmers that are earmarked for production within the Agri-Park. Production areas should be zoned and mapped and FPSUs should be centrally located to these production zones. Zoning in this manner will allow for streamlining of logistic activities that take place within the Agri-Park. Farmers are to be engaged and informed of the process and development of the Agri-park – they will also be required to have a representative body for engagement with various stakeholders.

- Business Plans should be developed for each of the entities within the Agri-Park, including the farmers, FPSUs, the Agri-Hub and the RUMC. The business plans are required to detail the operations of each of the entities, further detailing their role and responsibility within the Agri-Park.

- PPP's should be developed to enhance the strength and competitiveness of the Agri-Hub: An agglomeration of expertise is required to ensure the success of the Agri-Parks programmes and the respective projects. Logistics, financial, agricultural, market and administrative support is important for the functioning of the programme and employing PPP's to source the support would be critical.

Logistics

- A comprehensive logistics plan should be developed to guide the implementation of the Agri-Park. The plan should investigate various methods of moving produce from farm to fork. This should be done to allow smallholder and emerging farmers ease of access to markets, a crucial area for the success of these farmers.

- Smallholder farmers with small production capacities should be encouraged to work in joint ventures in order to participate in supplying the Agri-Park. Consolidating produce in order to create economies of scale is critical in gaining access to the market – this should be considered in depth within the logistics plan – consolidation points are of critical importance within the Agri-Parks model.

- The District Agri-Parks Councils should engage with other departments and be responsible for the implementation of the Agri-Parks. A representative body must take ownership of the Agri-Park and implement the project. This body should represent all stakeholders, public and private, within the Agri-Park.

Policies

- Policy should be set in place to encourage cross-border relationships and partnerships with neighbouring districts, where infrastructure and resources can be shared, should the district be short of or have excess of certain resources – this will further develop economies of scale, distribute risk and encourage a fully integrated national Agri-Parks programme.

- It is also recommended that the district should develop a strategic plan that can be reviewed after a certain short term period, to allow for the normative context of the Agri-Park to be upheld, and also to allow for the evaluation of the Agri-Park development.

- Policy around land ownership should be revised such that it provides security of tenure to farmers. Ownership of land encourages farmers to invest in their land and encourages borrowing for financing activities. Ownership of land encourages productivity and is therefore mutually beneficial for the farmer and the Agri-Park.

- Monitoring and evaluation policies need to be set in place: The constant monitoring and evaluation of participants within the Agri-Park is a due diligence process that ensures that the participants are operating and effectively contributing to the programme. Under-performing participants should be assisted and continuous underperformance should result in replacement.

- Meet objectives: Producers should be educated on the objectives of the Agri-Park so that they are able to meet the expectations that are set out within the Agri-Parks business/operating policies. The ability for producers to cooperate within the system is important in meeting the objectives of the programme.

Funding /investment

- Funding mechanisms/incentives need to be developed in order to encourage local investment and attract foreign investments. Investment is a key input to the development and implementation of the Agri-Park. Incentives, or mechanisms that encourage investment in the Agri-Park will have positive spin-offs for the project in faster development and potentially in technologies that have a positive impact on production activities.

- Create local financing outlets through the backing of larger commercial banks at the Agri-Hubs as a point of access for farmers in the district. A banking outfit of this nature should have specific funding models designed for the smallholder farmer. Access to finance for the smallholder farmers is a key requirement to develop smallholder production.

Integrated Development

- Tourism needs to be encouraged within the Agri-Park. Tourism remains a key contributor to local economies, especially through job creation. Agriculture has proven to be relatively successful in encouraging tourism, especially in Western Capes winelands. Efforts should be made to accommodate tourists within the Agri-Park through on-farm activities and tours of agro-processing activities.

Market

- Engage farmers and the market. The Agri-Park must engage the farmers and the market in order to provide farmers with access to the market. Engagement with farmers has indicated that it is difficult to access markets, while engagement with the market has indicated that accessing produce from small-holder farmers is difficult given the transaction costs in managing procurement from these farmers. Understanding the requirements from each side is an imperative in understanding the requirements of one another and therefore access to the market.

- District should form partnership with some of the existing main players in the various industries to enable them penetrate local and international market. The management of the Agri-Park, or RUMC must be responsible for linking the farmers to the market. The RUMC must play a role as the representative body for all farmers participating in the Agri-Parks programme and assist the farmer in access to the market.

- Partnerships should be established with commercial and semi-commercial farmers. Commercial and semi-commercial farmers often have a track record and understand the requirements of the market. As such, smallholder and emerging farmer would be able to piggy back on the more established farmers in order to gain the required skills needed to access the market.

Incentive programme

- Incentive programmes and packages that would make agriculture more attractive as a business/enterprise, (especially to the youths) should be developed. For example, awarding scholarships that would encourage young individuals study in the field of agriculture, creating a youth centre within the Agri-Park, to help the underprivileged youth in a way such that they render services to the Agri-park, while they get taken care of in return.

- Farmer's must apply to form part of the Agri-Parks programme: Farmers need to develop business plan and follow an application process that will allow them to form part of the Agri-Parks programme. This forms part of a due diligence process that is to be formulated by the relevant parties, including the DRDLR and WRDM. Agri-Parks requires that producers for are able to produce and meet market expectations, while farmers need to operate viable enterprises – making the due diligence process important.

- Incentives need to be developed to encourage participation within the Agri-Parks projects: Tax breaks, access to markets, transport subsidies, guaranteed prices, land tenure, ownership,

and subsidised inputs are all incentives that could be developed to encourage participation in the programme. Various incentives should be investigated to develop an environment of participation. The incentives should be such that participants are better off operating within the Agri-Park programme than if they were not.

Linkages

- Importantly, Sedibeng District and West Rand District are neighbouring districts and can be fundamentally linked through agricultural programmes. Amongst the programmes already under investigation is the Gauteng Agrotropolis, which seeks to link the districts and align all agricultural related projects that will create a major agricultural district and economy. As such, it is recommended that the Agri-Parks programmes seeks linkages between the initiatives and aligns strategies.

Catalytic Projects:

The following catalytic projects have been identified for implementation into the WRDM Agri-Park:

- Vegetable Processing Facility (Pack house)
- Chicken Abattoir
- Maize Processing Plant

All three of the above listed processing plants will act as the catalyst of the respective value chains. The processing plants have important upward and downward linkage ramifications – take up product from users and pass on processed goods to the market, acting as the agent between producer and market.

With the development of the processing facilities, producers have incentive to enter into production since they view this as a market opportunity, while the market would view this as an additional supplier.

The above mentioned recommendations are based on the analysis done on the economic infrastructure, socio-economic analysis and consultations with district stakeholders and the understanding of the status quo of agriculture within the WRDM. The recommendations inform what needs to be done in order to achieve the goals that have been set out within the business plan.

13.5 Rollout Plan

Implementation is a crucial element in any strategy and needs to be adhered to realistic timeframes and role-players. This subsection focusses on the implementation actions for the elements as discussed within this document. The implementation plan is structured in a way that it follows a phased approach in order to prioritise the necessary actions that will help in facilitating an enabling environment for the establishment of the Agri-businesses within the Agri-Park.

The best approach for the Agri-Park formulation is in a phased manner, this implies that there are short, medium and long term actions that need to be implemented in order to bring the Agri-Park from identification to implementation. These actions or goals are structured in accordance with the theoretical foundations to the formation stages of a park. These stages are illustrated in the below and show the actions to be taken over the project duration.

13.5.1 Short-term: Agri-Parks start-up

The pre-park formation process are the actions that are necessary as a foundation for the other phases to follow. These actions need to be conducted within the immediate short-term, and forms the foundation on which the agri-businesses within the Agri-Park will develop. This is the first phase in the Randfontein Agri-Hub formation process. These actions are indicated as the steps that should be achieved within the first year.

13.5.2 Short- to Medium-Term: Emergence of the Agri-Park

The next phase in the Agri-Park implementation/development process is that of the emerging park, a short- to medium-term goal. At this stage the required primary infrastructure and statutory requirement process should have been established, or in the process of implementation. The focus should be on implementing the actions required for the formation of the emerging park as the basis for the development of the hub which was laid out in the previous phase.

During this phase the core Agri-Hub businesses should be established and the focus should start shifting towards forming linkages with other agro-processing functions, such as private investors, emerging farmers and supporting services in the WRDM. This phase is centralised around the establishment of the agri-businesses within the hub to form the anchor around which the Agri-Park can be developed. These steps are to be achieved from years two to four.

13.5.3 Medium-Term: Expanding the Agri-Hub

The expanding hub is when the hub has reached a stage when it is starting to operate at full capacity and the potential for spin-off opportunities or expansion of existing practices are present within the hub. At this stage the agri-businesses within the Randfontein Agri-Park functions start operating at a profit and can start depending less on the help of government and more on solidifying operations, supply lines and target markets. Linkages should be starting to become established and the opportunities for new linkages and operations can be formed. This should be the focus from year five to seven, but continue into the evolution for the Agri-Park.

13.5.4 Long-Term: Agri-Hub Evolution

This is a long-term phase when the Randfontein Agri-Hub reaches maturity. The focus of this phase should be on improving and furthering efficiency within the Agri-Park and larger WRDM and the identification of areas for further improvements and development opportunities. The agri-businesses should begin to forming strong linkages, each exploiting economic advantages and the formation of linkages with smaller firms, functions and services is established, as well as taking on new opportunities.

The roll out plan is illustrated below indicates a step-by-step plan that should be followed for the implementation of the Agri-parks within the WRDM

Project / Action	Description / Plan	Time Frame (Years)									
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
1. Agri-Park Model	1. Development of policy framework for the Agri-Parks										
	2. Approval of policy framework for the Agri-Parks										
	3. Establishment of national Agri-Park project support facility to support and coordinate district base operational teams										
	4. Development of detailed plan and design of a prototypical Agri-Park that is adaptable, based on commodity types.										

Project / Action	Description / Plan	Time Frame (Years)									
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	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)										
2. Agri-Hub Location Selection	1. Development of a site selection methodology, as well as location criteria										
	2. Initial site identification together with the generation of site specific maps with district specific narratives and selection criteria.										
	3. Property selection process and selection										
	4. Sign-off of final Agri-Park sites by each district municipality										
3. Master Agri-Park Business Plan	1. Appointment of service providers to develop Master Agri-park Business Plans for each district municipality										
	2. Stakeholder consultations										
	3. Commodity identification										
	4. Policy and strategy alignment										
	5. Identification of major role-players										
	6. Development of an industry report										
	7. Feasibility assessment of three prioritised commodities										
	8. Concept development										
	9. Development of an implementation plan										

Project / Action	Description / Plan	Time Frame (Years)									
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	10. Economic advisory services										
4. Governance	1. Establishment of Agri-Park Working - Group/ Implementation structure (DAAC and other respective groups)										
	2. Training of working groups and role allocation										
	3. Development of an ownership structure for the Agri-Park										
	4. Development of an institutional structures – organisational structures										
	5. 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.										
	6. Monitoring and evaluation: defines scorecards, measures, and metrics to track performance.										
5. Funding Model	1. Development of a funding model for the establishment of Agri-Parks programme										
	2. Develop a financing funding models specifically geared toward smallholder farmers.										
	3. Identification and analysis of Development Financial Institutions in South Africa										
	4. Identification and analysis of incentives in South Africa										

Project / Action	Description / Plan	Time Frame (Years)									
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	5. Identification and analysis of commercial funding organisations in South Africa										
	6. Run a financial model based on various scenarios on project gearing										
	7. Conduct a sensitivity analysis										
6. Technical Planning	1. Design of Agri-Park specific incentive schemes										
	2. Implementation of the operations model										
	3. Identification of potential Public Private Partnership's a. Investment partners b. Production partners c. Technical partners										
	4. Secure private investors / technical partners										
	5. 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;										
	6. Agri-Hub - core activities, production cycles and distribution functions of the Agri-Hub should be evaluated - continuously										
	7. RUMC - Investigate market intelligence										
	8. Identification of land parcels related to agricultural areas (inventory & mapping)										
	9. Consultations with technical specialists										
	10. Development of the Agri-parks Monitoring and Evaluation Framework										

Project / Action	Description / Plan	Time Frame (Years)									
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
7. Detailed Business Plans	1. Development of detailed business plans for each FPSU – rolled out over ten years										
	2. Development of a detail business plan for the Agri-Hubs										
	3. Development of a detail business plan for the RUMC's										
	4. Development of a detail business plan for small holder farmers										
	5. Development of a detailed business plan for the Agri-park logistics										
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										
	6. Financing of projects – continuous process										
9. Construction	1. Site selection for various Agri-Park units										
	2. Finalise the project designs and drawings										
	3. Conduct a bill of quantities										
	4. Prepare tender documentation										
	5. Tender evaluation and selection process										
	6. Site preparation										
	7. Construction Facilities & upgrade of existing infrastructure										
	8. Site handover										

Project / Action	Description / Plan	Time Frame (Years)									
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
10. Primary Production	1. Identify emerging farmers and their capacity to supply the different agri-businesses, assess the capacity of the farms to see what the capacity of the farms are for production (develop inventories)										
	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.										
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.										

Project / Action	Description / Plan	Time Frame (Years)									
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	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.										
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 - continuous										
	3. Analyse processing volumes and capacity - continuous										
	4. Investigate prospective buyers, possible distribution and marketing channels, possible export destinations										
	5. Design processing facilities/ production lines, taking into consideration procedures 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										

Project / Action	Description / Plan	Time Frame (Years)									
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	9. Purchase of: processing equipment, production materials, identification of supplier's location,										
	10. Recruit and train employees										
	11. Secondary processing of primary processed products, packaging, labelling, and storage.										
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 promotion and advertising channels that are best suitable to										

Project / Action	Description / Plan	Time Frame (Years)									
		2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
	influencing consumers' decision to buy the products.										
	6. Distribute and market products										
	7. Continuous engagement with potential/future clients										
	8. Hosting of Road shows, Trade fair, industry summits, etc.										

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14APPENDIX A

Land use capability and land use distribution in Zone 6, 8, 9 and other:

Zone 6

Land Capability			
Class	**Description**	**Area (ha)**	**%**
4	Very low - low	534.32	0.39%
5	Low	14.16	0.01%
6	Low - Moderate	1462.09	1.06%
7	Low - Moderate	5021.33	3.64%
8	Moderate	11695.18	8.47%
9	Moderate - High	17233.05	12.48%
10	Moderate - High	43609.59	31.59%
11	High	13699.67	9.92%
12	High	42804.37	31.00%
13	High - Very high	1923.06	1.39%
14	Very high	65.78	0.05%
	Totals	**138062.6**	**100%**

Land Use	
Class	**% of Zone**
Built-Up	3.66
Cultivated	38.59
Conservation	16
Vacant	41.56
HPAL	35.16
Hubs	41.24
IAS	3.78

Zone 8

Land Capability			
Class	**Description**	**Area (ha)**	**%**
5	Low	484.16	0.39%
6	Low - Moderate	9466.47	7.68%
7	Low - Moderate	14895.6	12.08%
8	Moderate	22171.78	17.98%
9	Moderate - High	32247.21	26.16%
10	Moderate - High	25169.29	20.42%
11	High	11326.94	9.19%
12	High	6103.14	4.95%
13	High - Very high	1378.43	1.12%
14	Very high	42.2	0.03%
	Totals	**123285.22**	**100%**

Land Use	
Class	**% of Zone**
Built-Up	4.11
Cultivated	12.38
Conservation	52.28
Vacant	31.86
HPAL	24.11
Hubs	2.71
IAS	9.69

Zone 9

Land Capability			
Class	**Description**	**Area (ha)**	**%**
2	Very Low	26.32	0.02%
5	Low	106.9	0.09%
6	Low - Moderate	5697.91	4.82%
7	Low - Moderate	16882.4	14.29%
8	Moderate	29434.62	24.92%
9	Moderate - High	16873.95	14.28%
10	Moderate - High	40389.13	34.19%
11	High	5728.81	4.85%
12	High	1985.39	1.68%
14	Very high	1026.89	0.87%
	Totals	**118126**	**100%**

Land Use	
Class	**% of Zone**
Built-Up	4.37
Cultivated	41.09
Conservation	22.93
Vacant	39.82
HPAL	18.55
Hubs	49.83
IAS	2.8

Other

Land Capability			
Class	**Description**	**Area (ha)**	**%**
4	Very low - low	534.32	100.00%

Land Use	
Class	**% of Zone**
Built-Up	12.19
Cultivated	8.67
Conservation	36.29

Vacant	46
HPAL	28.49
Hubs	0
IAS	2.37

15 APPENDIX B

Comprehensive commodity selection criteria

A. Biophysical criteria
Temperature
Water/moisture
Land type, capability and soil
Weed, pest and disease resilience
Adaptability to adverse conditions
B. Enterprise viability criteria
B.1 Transport, market access and demand
Distance to markets and transport cost
Current demand
Future market growth potential
Market openness
B.2 Strategy, payback and profitability
Business strategy and positioning
Payback period
Profitability
B.3 Human, physical and financial capital
Familiarity and local knowledge/skills
Labour cost and productivity
Implements and infrastructure
Ease to finance
C. Economic development criteria
C.1 Linkages and processing opportunities
Forward and backward economic linkages
Processing opportunities at district level
C.2 Job creation
Direct on-farm job creation
Indirect and induced job creation
Job quality/decency
C.3 Local development
Local opportunities and agglomeration
Agro-intensification and local GDP growth
C.4 Global competitiveness and trade
Global competitiveness
Export potential
Import substitution potential
D. Political and social criteria
D.1 Political and institutional issues
Government priority including APAP
Shortlisted by the district
Existing successful or planned projects
State/communal land suitability
D.2 Social issues
Acceptability (Local “buy-in”)
Income equality
Smallholder farmer suitability

Crime and vandalism resilience
D.3 Food security and sustainability
Contribution to food security
Sustainability
Sub-totals
Biophysical total
Enterprise viability total
Economic development total
Political and social total
Overall total

*Key to scores:

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.

Totals: the sub-total scores are weighed averages of the listed criteria. The overall total score is the average of the main heading scores.

**Key to weight:

3 = High importance
2 = Medium importance
1 = Low importance

Note on weight allocation: The above table provide suggested weights for all districts, however, individual districts may amend weights to reflect their unique circumstances and needs. Weight allocation are strongly informed by the fact that assessment is on a district rather than farm level. Therefore, some factors may seem to be severely underrated, and its weight should be considerably stronger at farm level. Also, some factors could only be regarded as positive externalities rather than first order or primary selection criteria. Most biophysical and enterprise viability factors are key to viability therefore carries much more weight than some economic development and social factors. This does not mean that social and economic development factors are deemed less important, rather it is just for balancing purposes to select amongst enterprises that can realistically be established in the first place, and in turn generate the maximum realistically possible positive social and economic development impacts, so that the local community and society at large could benefit to the maximum extent realistically possible. Also keep in mind that the purpose of weighting criteria is to find the best alternative based on different levels of performance against the different criteria, therefore if a weight is raised for one criterion it necessary means that the weight of other criteria are lowered in relative terms, therefore some criteria must be scored lower compared to other.

Note on assumptions made in biophysical assessment include: 1) Temperature and carbon dioxide concentration cannot be modified e.g. in greenhouses because of costs and environmental sustainability criteria, therefore temperature and CO2 controlled greenhouses are not considered, except in case a particular region are likely to be particularly competitive in greenhouse or hydroponic production. 2) Solar irradiation is not a limiting factor in all districts at regional level, however, at farm level it may be a limiting factor on steep south-facing slopes and in valleys that are significantly

shielded from the sun. 3) Artificial growth mediums are not viable at massive scale for most districts in South Africa, however, it is assumed that soil fertility can be improved by fertilizer application. After all, relying on natural soil fertility without adding some form of soil nutrients is not sustainable).

16 Appendix C

The following table represents a list of emerging farmers and potential entrants to the Agri-Parks Programme within the WRDM.

Name of Farmer/Project	Programme Benefited	Type of farming	Total Land Occupied
Molefi Pheto	Private	Emerging	17 ha
Mabutle Mono	LRAD	Emerging	46.5 ha
Kabelo Bogatsu	LRAD & Private	Commercial	45.7701 ha
Sehlare	LRAD	Emerging	21.4 ha
Madula	Private	Emerging	12 ha
Morabane Modise	LRAD	Emerging	8.88 ha
Letsoalo	Private	Emerging	18 ha
Thabang Mamonyane	LRAD	Emerging	3.5128 ha
Tshiro Pheto	Private	Emerging	5ha
Mokgethi	Private	Commercial	42 ha
Ntlhokoa	Private	Emerging	53 ha
Jimmy Khabotha	Private	Commercial	22ha
Sipho Zondi	Private	Emerging	19 ha
Solly Moeketsi	Private	Emerging	2 ha
Ditlhoriso Sello	Private	Commercial	+/- 1000ha
Mello	Private	Emerging	13, 9376 ha
Nthabiseng Thupana	Plas	Commercial	24.953Ha
Stev. Mugunyani	Private	Emerging	21 ha
P.J. Sisinye	LRAD	Emerging	17Ha
Komane	Private	Emerging	21.5 ha
Morudu	Private	Emerging	50 ha
Percy Mkhosi	Private	Emerging	50. 334 ha
Naseer Rahman	LRAD	Emerging	360Ha
Bereng	Private	Emerging	8 ha
Robert Tamba	Private	Emerging	26 ha
Willie Bosoga	PLAS	Commercial	450
Tenehi Project	PLAS	Emerging	22 ha
Stanley Mabulu	Private	Emerging	16 ha
Lentswe	Private	Emerging	74 ha
Busi Sibisi	PLAS	Emerging	22 ha
Nkosi	PLAS	Emerging	28 ha
Marcia Matlala	PLAS	Emerging	
Stephina Matotzi		Emerging	
Khumalo	PLAS	Emerging	
Kroomdraai commonage	ESTA	Commonages	64 ha
Indigo flowers	ESTA/LRAD	Commercial	46.55 ha

Name of Farmer/Project	Programme Benefited	Type of farming	Total Land Occupied
Caroza Farms Pty.LTD		Commercial	21 ha
Yabco	LRAD	Emerging	29 ha
Sikhona Agricultural farm			346 ha
Tarlton Commonage	Commonage	Commonages	29 ha
Ally I G	CASP	Emerging	2.5ha
Bacela R.N	CASP	Emerging	2.5ha
Buthelezi	CASP	Emerging	2.5ha
Cebekhulu J	GFSP	Emerging	2.5ha
Cembi L	CASP	Emerging	2.5ha
Chisale MM	CASP	Emerging	2.5ha
Dlamini K	Private	Emerging	2.5ha
Dlamini Q	GFSP	Emerging	2.5ha
Gumbi D	CASP	Emerging	2.5ha
Mthimkulu H	Private	Emerging	2.5ha
Hlapolosa S	CASP	Emerging	2.5ha
Hlatshwayo M.S	CASP	Emerging	2.5ha
Lensley J. S	CASP	Emerging	2.5ha
Kgobe J	GFSP	Emerging	2.5ha
Kgwele D	Private	Emerging	2.5ha
Khongweni J	Private	Emerging	2.5ha
Khoza L	CASP	Emerging	2.5ha
Khoza T	GFSP	Emerging	2.5ha
Khumalo Z	CASP	Emerging	2.5ha
Khuzwayo V.M	Private	Emerging	2.5ha
Kubang A	GFSP	Emerging	2.5ha
Kumalo A	Private	Emerging	2.5ha
Sefuri L. D	GFSP	Emerging	2.5ha
Lefakane A. S	GFSP	Emerging	2.5ha
Litheko S	CASP	Emerging	2.5ha
Ngwenya M. L	CASP	Emerging	2.5ha
Makoko M.P.	GFSP	Emerging	2.5ha
Setwaba M	Private	Emerging	2.5ha
Tshabalala M.M	GFSP	Emerging	2.5ha
Mafuna O	GFSP	Emerging	2.5ha
Makase P	GFSP	Emerging	2.5ha
Makaya E	Private	Emerging	2.5ha
Makhubu M	GFSP	Emerging	2.5ha
Makwe I	Private	Emerging	2.5ha
Malapo S	Private	Emerging	2.5ha
Maleka M	GFSP	Emerging	2.5ha
Malindi E	CASP	Emerging	2.5ha
Malope P	CASP	Emerging	2.5ha

Name of Farmer/Project	Programme Benefited	Type of farming	Total Land Occupied
Maluleka J	CASP	Emerging	2.5ha
Maluleke I	CASP	Emerging	2.5ha
Marule O	GFSP	Emerging	2.5ha
Masilela T	Private	Emerging	2.5ha
Masinuku M	CASP	Emerging	2.5ha
Masipa D	Private	Emerging	2.5ha
Masipa S	GFSP	Emerging	2.5ha
Masitle J	GFSP	Emerging	2.5ha
Mathonsi M	GFSP	Emerging	2.5ha
Matla L.E	GFSP	Emerging	2.5ha
Maumakwe D	GFSP	Emerging	2.5ha
Mazibuko C	CASP	Emerging	2.5ha
Mbatha K	GFSP	Emerging	2.5ha
Mbatha P	GFSP	Emerging	2.5ha
Mbhele B	GFSP	Emerging	2.5ha
Mbhele W P	GFSP	Emerging	2.5ha
Mdluli MB	GFSP	Emerging	2.5ha
Mhlongo D	CASP	Emerging	2.5ha
Mngumezulu Thandeka	CASP	Emerging	2.5ha
Mnisi T	Private	Emerging	2.5ha
Mogale C M	CASP	Emerging	2.5ha
Mohlabi A L	GFSP	Emerging	2.5ha
Mohlakoane D	Private	Emerging	2.5ha
Mohohlo A	GFSP	Emerging	2.5ha
Mokgage R	CASP	Emerging	2.5ha
Mokoena F	Private	Emerging	2.5ha
Monono N.M	GFSP	Emerging	2.5ha
Mophuthing M	GFSP	Emerging	2.5ha
Morris J	GFSP	Emerging	2.5ha
Mosala C	GFSP	Emerging	2.5ha
Moshoadibe	CASP	Emerging	2.5ha
Mothlala A.T	Private	Emerging	2.5ha
Motlhala D	CASP	Emerging	2.5ha
Mpendu G	CASP	Emerging	2.5ha
Mphuting S J	Private	Emerging	2.5ha
Shai P. A	GFSP	Emerging	2.5ha
Msibi Zodwa	LRAD	Emerging	2.5ha
Mthembe G	GFSP	Emerging	2.5ha
Mtshali A M	GFSP	Emerging	2.5ha
Mtshali N S	GFSP	Emerging	2.5ha
Mtshali S	GFSP	Emerging	2.5ha
Mvelase S	Private	Emerging	2.5ha

Name of Farmer/Project	Programme Benefited	Type of farming	Total Land Occupied
Ndlovu E	CASP	Emerging	2.5ha
Nhlapo N	GFSP	Emerging	2.5ha
Njikelana O	GFSP	Emerging	2.5ha
Nkosi B	GFSP	Emerging	2.5ha
Nkosi E	GFSP	Emerging	2.5ha
Ntombela P	GFSP	Emerging	2.5ha
Ntsele S	GFSP	Emerging	2.5ha
Ntsoane E	CASP	Emerging	2.5ha
Ntuli	GFSP	Emerging	2.5ha
Oosthuizen J	CASP	Emerging	2.5ha
Phiri T	Private	Emerging	2.5ha
Phungula Z	GFSP	Emerging	2.5ha
Kgasoe P	GFSP	Emerging	2.5ha
R. J. Mpofu	GFSP	Emerging	2.5ha
Raditlalo A	GFSP	Emerging	2.5ha
Mchunu S.J.	GFSP	Emerging	2.5ha
Sangweni B Q	GFSP	Emerging	2.5ha
Sithole	GFSP	Emerging	2.5ha
Motau T. S	Private	Emerging	2.5ha
Thobakgale P	GFSP	Emerging	2.5ha
Thwala S	GFSP	Emerging	2.5ha
Tshabalala E	GFSP	Emerging	2.5ha
Tshabalala R	GFSP	Emerging	2.5ha
Tshabangu S	GFSP	Emerging	2.5ha
Tsokolibane Lilly	GFSP	Emerging	2.5ha
Vilana S	GFSP	Emerging	2.5ha
Zondo S	GFSP	Emerging	2.5ha
Maboe S	LRAD	Emerging	2.5ha
Langa K	Private	Emerging	2.5ha
Manthatha M	Private	Emerging	3ha
Brodie M	Private	Emerging	3.5ha
Ngqumeya D	LRAD	Emerging	3ha
Khambule T	Private	Emerging	3ha
Mjova Z	Private	Emerging	2.5ha
Kgwadi O	LRAD	Emerging	2.5ha
Legodi T	Private	Emerging	3ha
Skhosana P	Private	Emerging	3ha
Ntshingila K	Private	Emerging	3ha
Thema C	LRAD	Emerging	3ha
Letsholo N	Private	Emerging	3ha
Ramorola J	Private	Emerging	3ha
Sigwele P	Private	Emerging	3ha
Mosweusweu D	Private	Emerging	71,911ha

Name of Farmer/Project	Programme Benefited	Type of farming	Total Land Occupied
Mogapi J	Private	Emerging	8.5ha
selebano N	LRAD	Emerging	5ha
Well of Rabohoth	Private	Emerging	3ha
Tirisano Piggery	LRAD	Emerging	2.5ha
Gazi T	GFSP	Emerging	5ha
Beqezi M	LRAD	Emerging	2.5ha
Keep on going	Private	Emerging	2.5ha
Elonabhono Enterprises	GFSP	Emerging	5ha
Maxeke	Private	Emerging	4ha
Elandsfontein commonage	LRAD	Emerging	749.9676ha
Mokoto	Private	Emerging	2ha
Mogami D	Private	Emerging	5ha
Mkhabele T	Private	Emerging	3ha
Daba S	Private	Emerging	17ha
Kutu farming /Sebl Construction	Private	Emerging	2.5596ha
Eja Chicken	Private	Emerging	5ha
Western Gauteng General Agriculture co-op	Private	Emerging	720ha
Sambo E	Private	Emerging	3ha
Moleke P	Private	Emerging	3ha
Mthimunye M	Private	Emerging	2.ha
Moses M	Private	Emerging	3ha
Gama B	Private	Emerging	3ha
Dube T	Private	Emerging	3ha
Parache P	Private	Emerging	3.5ha
Mokone T	GFSP	Emerging	5ha
Hanyani	Private	Emerging	2.5ha
Loeto co-op	LRAD	Emerging	5.5ha
Mzondeki V	LRAD	Emerging	5ha
Peterson D	LRAD	Emerging	6ha
Fernando (Commercial farmer)	Private	Commercial	
Mgoboli D	LRAD	Emerging	5.5ha
Congota T	LRAD	Emerging	3ha
Mbegwa V	Private	Emerging	5.5ha
Mpayipeli T	LRAD	Emerging	6ha
Khanana Trading cc	LRAD	Emerging	17ha
Ngxande G	Private	Emerging	5ha
Mzi	Private	Emerging	3ha
George	Private	Emerging	5.5ha
Evening flame	LRAD	Emerging	73.6035ha
Dasi	Private	Emerging	14ha

Name of Farmer/Project	Programme Benefited	Type of farming	Total Land Occupied
Tenehi M	Private	Emerging	2.5ha
Mthimunye	Private	Emerging	2.5ha
Molele	Private	Emerging	5ha
Jonker J	Private	Emerging	2,5ha
Rutlokoane K	Private	Emerging	9 ha
Moeketsi	Private	Emerging	24 ha
Malefane	Private	Emerging	10ha
Carrol Shawn Memorial Center	Private	Emerging	8.5ha
Luthendo Farming Co-op	PLAS	Emerging	135ha
Robela A	Private	Emerging	2.5ha
Mpye	Private	Emerging	13ha
Letsapa I	Private	Emerging	2.5ha
Ferguson	Private	Emerging	2.5ha
Nefale P	Private	Emerging	10ha
Two for Joy	Private	Emerging	14ha
Nangu P	Private	Emerging	2.5ha
Moremane	Private	Emerging	2.5ha
Sebethe S.N.	Private	Emerging	4.5ha
Makayi L	Private	Emerging	3.5ha

Source: Made available by Gauteng Department of Agriculture and Rural Development

Note: The above database may not be complete and requires updating for the purpose of the Agri-Park. The above list does not necessarily mean that the listed participants MUST participate in the Agri-Park, nor does it discount anyone from participating if not listed. Participation in the Agri-Parks is a function of the farmers'/producers willingness to produce, and as such will be required to demonstrate willingness to participate through a participation process that will be determined by a relevant body.

17 Appendix D

Financial Service providers

The WRDM Agri-Park will require a significant amount of funding over the next 20 years and the many years thereafter, therefore, necessitating the identification of potential funders. Funders that finance projects of an **agricultural and agro-processing nature** have been identified for the Agri-Park. Included in the following funder identification summary is information based on the specific nature of the project that the funder is willing to support.

Typically, there are five sources of funding that are available to various project types, including funding from **governments departments, entities and agencies, donors, the private sector, corporate social investment (CSI), and private equity and venture capital.** The five funding sources are described further below, along with potential funders.

Note: Various organisations may fit into several categories, depending on the type of funding offered. For simplicity, the organisations identified below fit under one category only.

Governments departments, entities and agencies

This is funding made available by the public sector in the way of grants and loans. Departments, entities and agencies, such as the department of agriculture and the National Development Agency are mandated to provide funding for ongoing and start-up project, given the specific criteria for the funding are met.

The following departments, entities and agencies have been identified specifically for this project:

Name	Information	Funding opportunity
1. National Development Agency (NDA)	Funds are available for existing and new projects. **Two types of funding** are offered: 1. Request for proposals for new projects advertised in newspapers 2. Programme formulation - for existing projects	✓ Funding for existing agricultural projects. ✓ Potential for expansion funding.
2. International Finance Corporation (IFC)	There is no standard application form for IFC financing. A project seeking to establish a new venture or expand an existing enterprise can approach IFC directly by submitting an investment proposal. **IFC operates on a commercial basis.** It invests exclusively in for-profit projects, fully shares risks with its partners and charges market rates for its products.	✓ Potential for capital to invest in the Agri-Park and related projects. ✓ Expansion capital. ✓ Funding for existing projects.
3. World Bank	A proposal must be submitted to World Bank for fund applications. It is necessary for the applicants should be members of a developing country.	✓ Funding for the Agri-Park and related agricultural activities. ✓ Funding for existing related projects.
4. Industrial Development Corporation (IDC)	The IDC has funds available for agro-processing, value adding and projects under controlled environment e.g. hydroponics **Special Funding:** 1. Risk Capital Facility - provided to BEE and previously disadvantaged groups. 2. Support Programme for Industrial Innovation, for which **three schemes** exist:	✓ funding for agro-processing facilities (AgriZone development). ✓ funding for controlled environment agricultural projects – greenhouse agriculture. ✓ Funding for current agro-processing initiatives.

Name	Information	Funding opportunity
	a. Product Development Scheme - financial assistance for small, very small and micro enterprises b. Matching Scheme - financial assistance for SME's in the form of a grants of up to 50% of the qualifying cost incurred during the technical development stage, to a maximum of up to R1,5 million per project c. c. Partnership Scheme - financial assistance provided in the form of conditionally repayable grant of 50% of qualifying cost incurred during development activity with a minimum grant amount of R1,5 million per project, repayable	
5. Social Development	Funding is given to at least a group of 5 members **(co-operatives)**. The group must have a constitution, and then Social Development will assist in registering the group as a not-for-profit organization (NPO).	✓ Funding produce suppliers (farmers and farmer cooperatives)
6. Development Bank of Southern Africa	Grants are available for feasibility studies and BEE initiatives. Loans are provided for infrastructural & rural development and commercially viable projects.	✓ Funding for the Agri-Park and related projects ✓ Feasibility study for the AgriZone ✓ Funding for farmer producers and other agricultural projects falling under the umbrella of the Agri-Park
7. Department of Trade and Industry (DTI)	**Individual Credit Guarantee Scheme:** Enables entrepreneurs to access funding from a participating bank or other financial institutions. The scheme enables the entrepreneur to access funding for purposes of establishing, expanding, or purchasing a business. Facilities secured under this scheme include; term loans, bank overdraft, revolving credit, instalment sale, bank guarantees as well as construction performance guarantee. Emerging Entrepreneur Scheme-Credit Guarantee Provides up to R100 000 with the fee payable at 4% annually in advance. The duration is 24 months initially but can be extended three times for periods of 12 months each time. The condition is mentorship of the loan.	✓ Funding for producers/farmers ✓ Funding for the Agri-Park and related projects ✓ Establishment of small businesses (input suppliers)
8. National Empowerment Fund (NEF)	iMbewu Fund: This Fund is designed to support black entrepreneurs wishing to start new businesses as well support existing black-owned enterprises with expansion capital. The Fund supports these entities by offering debt, quasi-equity and equity finance products with the funding threshold ranging from a minimum of R250 000 to a maximum of R10 million.	✓ Funding for agro-processing initiatives ✓ Funding partners in the Agri-Park and related projects
9. Department of Agriculture, Forestry and Fisheries (DAFF), including Gauteng Department of	**AgriBEE Funds:** **New Equity Deals**: The empowerment of the designated groups who are starting new projects which would result in their equity ownership and/or acquiring other interests in an agricultural business enterprise.	✓ Funding partnerships in the Agri-Park and potential AgriZone ✓ Funding buyouts ✓ Funding development projects/farmers/producers and agro-processing facilities

Name	Information	Funding opportunity
Agriculture and Land Reform (GDARD)	**Increasing Equity Ownership and Interest Acquisition:** For funding increased equity share and/or other interests in a measured agricultural entity. In essence, the funds will be available for transforming narrow-based empowerment into broad-based through increasing shareholding and interest acquisition by black owned entities. **Enterprise Development Initiatives:** Funding for the support of enterprise development initiatives as outlined in the AgriBEE Charter/Sector Codes. The funding of these qualifying enterprise development initiatives as defined in the AgriBEE Charter must lead to employment creation and access to the economy for black people.	

Sources: Department of Agriculture, Forestry and Fisheries, 2014 & websites for said institutions

Private sector

Private sector funding includes for-profit organisations that are not state controlled. Funds are generally provided in the form of loans that are subject to repayment over a given term. The following tabulated private institutions have been identified as potential funders for this project.

Name	Information	Funding opportunity
10. ABSA Bank	**Production Credit:** A short-term loan that enables the farmer to pay for agricultural inputs over time. Other financial solutions include working capital, risk and insurance solutions and workplace banking.	✓ Funding producers/farmers ✓ Investments in agricultural projects and secondary industries (agro-processing)
11. Standard Bank	**Agricultural Production Loan**: A short-term loan that enables the farmer to pay for agricultural inputs over time. Loans must be paid back in full at the end of each season (at the latest a year after it was taken up). The loan limit depends on the risk profile, assessed by taking into account any other medium-to-long term loan the farmer has. A loan ceiling applies whether the farmer is medium or high risk. Other financial solutions include expansion loans, risk management tools.	✓ Funding producers/farmers ✓ Investments in agricultural projects and secondary industries (agro-processing)
12. First National Bank	**Agri Short-Term:** A loan Available in the form of a fluctuating overdraft, this loan is aimed at farmers or farming businesses operating as proprietors, partnerships, close corporations, companies, trusts & co-operatives. It provides the working capital for day-to-day expenses & to purchase items necessary for production. - This loan is normally repaid after the harvesting season. The interest rates are linked to prime Other financial solutions include medium-term loans, long-term loans for expanding capacity.	✓ Funding producers/farmers ✓ Investments in agricultural projects and secondary industries (agro-processing)
13. Nedbank	Nedbank offers several lending solutions to the agricultural industry. Their target markets include the sectors of agronomy, horticulture, animal production and	✓ Funding producers/farmers ✓ Investments in agricultural projects and secondary industries (agro-processing)

Name	Information	Funding opportunity
	processing activities. in addition, Nedbank provides financial solutions to cooperatives. Some of the products include revolving credit, contract farming facilitation, prepayment solutions and collateral management.	
14. Land Bank	**Special mortgage loans:** a. Special interest rate set at 10% fixed for 24 months. b. maximum loan at the special interest rate is R500 000 c. If one borrows more than R500 000, the interest rate on the amount over R500 000 will be charged at standard rate for long-term loans. Various other loans are available, including production and equipment loans.	✓ Funding producers/farmers ✓ Investments in agricultural projects and secondary industries (agro-processing)

Sources: Department of Agriculture, Forestry and Fisheries, 2014 & websites for said institutions

Corporate social investment (CSI)

CSI encompasses projects that are external to the normal business activities of a company and not directly for purposes of increasing company profit. These projects have a strong developmental approach and utilise company resources to benefit and uplift communities and are not primarily driven as marketing initiatives. For the purpose of this project, the following investors have been identified.

Name	Information	Funding opportunity
15. Joburg Market	**Rural farmer assistance programme:** Under the expert guidance of the Market, emerging black farmers are assisted in reviving old pack houses, building of new pack houses and are provided with packing material. In addition, as a market leader with impeccable standards in terms of food hygiene, the Market plays a leading role in providing food safety management systems to these emerging farmers.	✓ Provision and funding of training activities ✓ Provision, and funding of monitoring and evaluation services

Sources: Department of Agriculture, Forestry and Fisheries, 2014 & websites for said institutions

Private equity and venture capital

This type of funding will generally be made by a private equity firm, a venture capital firm or an angel investor. Each of these categories of investor has its own set of goals, preferences and investment strategies, but all provide working capital to a target companies, or projects to nurture expansion, new-product development, or restructuring of the company's operations, management, or ownership. The following funders have been identified for this project.

Name	Information	Funding opportunity
16. Business Partners (Major Industry Role-Players)	**Equity Partner:** The implementing agent may have capital to enter as an equity partner on the project.	✓ Investment equity in production and agro-processing activities
17. Small Enterprise Development Agency (SEDA)	SEDA Provides information to small enterprises and prospective entrepreneurs that will assist and encourage start-ups and building sustainable businesses.	✓ Provision, and funding of training services ✓ Business monitoring services

Name	Information	Funding opportunity
	Services provided by SEDA include: • Information advice & referrals • Import & export training • Trade information • Businesses assessments • Technical support • Business mentoring • Market access • Business linkages	✓ Funding of feasibility studies and business plans

Sources: Department of Agriculture, Forestry and Fisheries, 2014 & websites for said institutions

18 Appendix E

Estimated Capital Expenditure:

The accompanying capital expenditure projection/estimate is intended solely for the information and use of this strategy and is not intended to be, and should not be, used for any other purpose. The estimated capital expenditure has been compiled by the Professional Economist and not by a registered Accountant or Auditor. These estimates may contain materiality as it was not compiled in accordance with the Generally Accepted Accounting Principles (GAAP) or International Financial Reporting Standards (IFRS).

Materiality is a concept that is judged in light of the expected range of reasonableness of the information; therefore, users should not expect prospective information (information about events that have not yet occurred) to be as precise as historical information.

Entity	Category	Item	Units	No. of units	Cost/Unit	Total Cost
FPSU	**Consolidation/ Collection Point**	Cold Storage (Perishables)	m^2	10	R14,677	R146,770
		Warehousing Facility + Office Space	m^2	30	R4,892	R146,760
		Fencing	m	120	R1,975	R237,000
		Parking	m^2	500	R544	R272,000
		Electricity Connection	m^2	30	R755	R22,650
		Water Bulk Connection		1	R65,000	R65,000
		Roads/Paving	km	0	R3,500,000	R0
	Buildings	Agriculture Extension and Support Office	m^2	36	R7,791	R280,476
		Mechanisation Centre and Workshop	m^2	25	R3,500	R87,500
		Warehousing Facility (Sorting, Processing, Packaging & Storage Facility)	m^2	100	R4,892	R489,200
		Cold Storage	m^2	25	R14,677	R366,925
		Retail	m^2	25	R10,872	R271,800
		Auction Facility	m^2	200	R3,500	R700,000
		Agri-Tourism Facility	m^2	50	R4,892	R244,600
		Training Facility	m^2	30	R7,852	R235,560
	Infrastructure	Water Bulk Connection		1	R65,000	R65,000
		Electricity Connection	m^2	200	R755	R151,000
		Road	km	0	R3,500,000	R0
		Fencing + Installation	m	200	R1,975	R395,000
		Parking	m^2	500	R544	R272,000
	Equipment Poultry	Farm Vehicles				R708,226
		Transport Vehicles				R1,122,338
		Implements				R160,000
		Processing Equipment				R369,000
	Equipment Vegetables	Farm Vehicles				R1,416,452

		Transport Vehicles				R410,800
		Implements				R1,636,316
		Processing Equipment				R552,045
	Equipment Maize					
		Farm Vehicles				R1,957,404
		Transport Vehicles				R660,800
		Implements				R6,608,408
		Processing Equipment				R75,000
FPSU Total Cost						R20,126,030
Agri-Hub	**Buildings**	Administration offices, ablution and change room block	m^2	80	R7,368	R589,440
		Training Facility	m^2	50	R7,852	R392,600
		Warehouse + Processing Facility	m^2	600	R4,892	R2,935,200
		Retail	m^2	40	R10,872	R434,880
		Cold Storage	m^2	100	R14,677	R1,467,700
	Infrastructure	Water Bulk Connection		1	R65,000	R65,000
		Electricity Connection	m^2	600	R755	R453,000
		Road	km	0	R3,500,000	R0
		Fencing + Installation	m	400	R1,975	R790,000
		Parking	m^2	1000	R544	R544,000
	Equipment	Transport Vehicles		1	R5,000,000	R5,000,000
		Processing Equipment:				
		Poultry		1	R50,000,000	R50,000,000
		Agroforestry		0	R15,000,000	R0
		Dairy		0	R15,000,000	R0
		Red Meat		0	R28,000,000	R0
		Vegetables		1	R40,000,000	R40,000,000
		Orchard Crops		0	R10,000,000	R0
		Aquaculture		0	R16,000,000	R0
		Wool		0	R5,000,000	R0
		Maize		1	R15,000,000	R15,000,000
		Dry Beans		0	R7,000,000	R0
AH Total Cost						**R117,671,820**

District Agri-Park Total		Quantity	Cost/unit	Total Cost
FPSU		13	R20,126,030	R261,638,396
Agri-Hub		1	R117,671,820	R117,671,820
Grand Total				**R379,310,216**