MPUMALANGA PROVINCIAL GOVERNMENT

DEPARTMENT OF ECONOMIC DEVELOPMENT AND PLANNING

FEASIBILITY STUDY FOR THE DEVELOPMENT OF AN INDUSTRIAL PARK IN THE VICINITY OF THE KRUGER MPUMALANGA INTERNATIONAL AIRPORT

FINAL REPORT

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SECTION ONE: BACKGROUND

1.1 Purpose of the study

Urban-Econ: Development Economists were appointed along with African Development Economic Consultants (ADEC), by the ***Mpumalanga Provincial Government Department of Economic Development and Planning*** to compile a **feasibility study for the potential development of an industrial park in the vicinity of the Kruger Mpumalanga International Airport** (KMIA).

The need for the study originated on a local municipal level, however due to the wider anticipated impact of the project it was **elevated to provincial level**.

The purpose of the study is to determine the economic potentials and financial viability of an industrial park in close proximity to KMIA. The findings of the study are packaged as a business plan supported by an implementation framework designed to maximize the creation of sustainable employment opportunities in the local and regional economies, strengthen linkages to local and rural businesses and industries, and improve the overall viability of the airport.

The KMIA is located within the Mbombela Local Municipal area and serves as an important gateway to the Lowveld and prime tourist attractions such as the Kruger National Park as well as sites in Swaziland and Mozambique. The airport has international status but is currently viewed as being underutilized, especially with respect to **freight movements.** The provincial and local focus is aimed at unlocking the latent development potential for employment-generating industrial activity and airport utilisation. It is anticipated that unique economic activity linkages and interactions arise from the location of an airport with international status which offers the **opportunity of industrial clustering**. A key part of this work investigates and tests these potentials to help inform the overall feasibility study.

The study is also aimed at ensuring that Provincial Government can efficiently and effectively facilitate an enabling environment conducive to development implementation and investment attraction.

It is important to understand that the potential development of an Industrial Park will be realized by targeting specific industrial uses that could benefit from proximity to KMIA but that would not necessarily depend on the airport for most shipping needs.

1.2 Study area

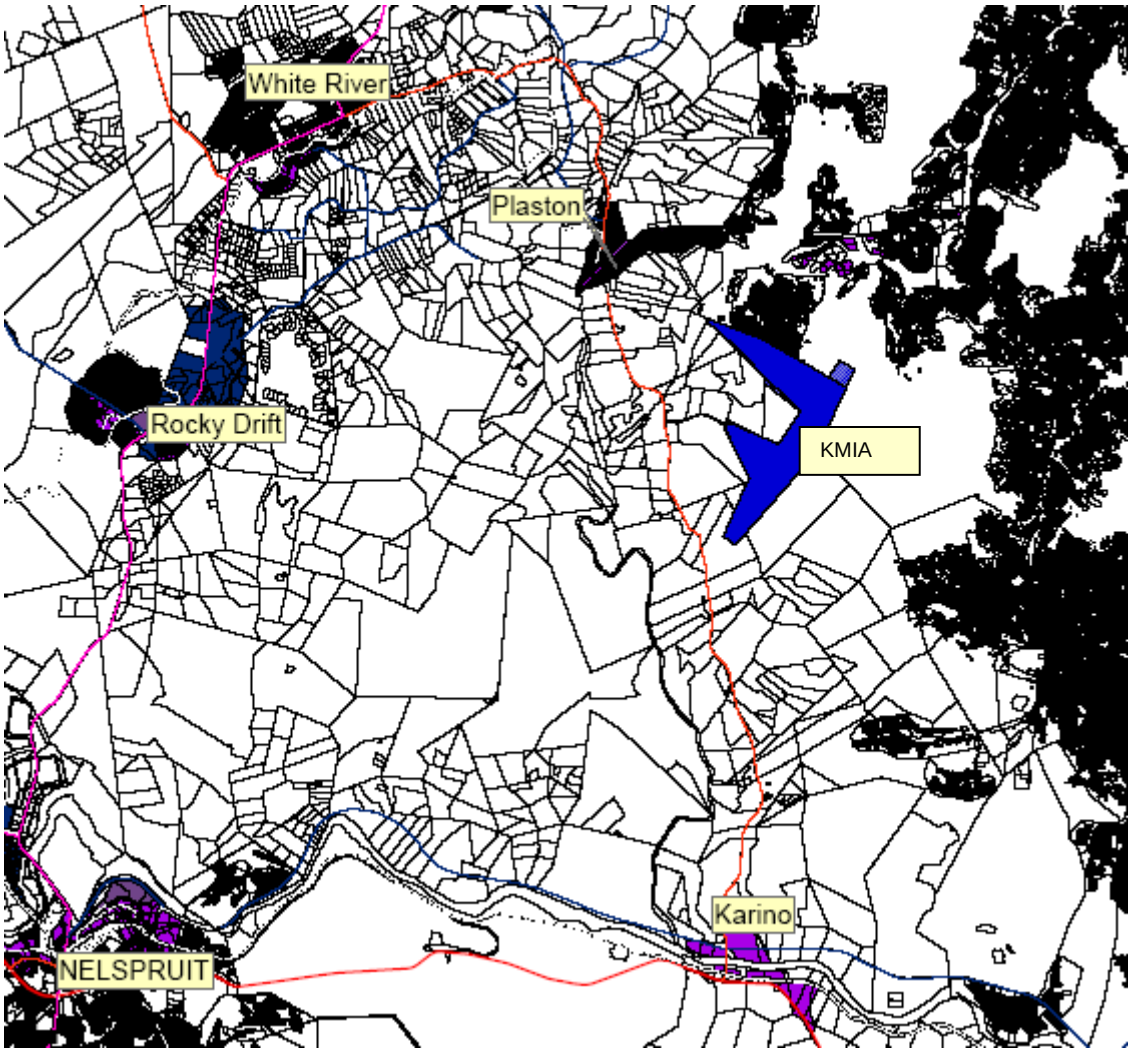
For the purpose of this investigation, the Steering Committee recommended the simultaneous assessment of four specific sites that could potentially house the proposed industrial park development while providing easy access to KMIA.

Firstly, only three sites were considered, namely that of Karino, Plaston and Rocky's Drift. During presentation of initial findings, the Steering Committee indicated that it might be beneficial to indicate a fourth site, namely that of land next to KMIA (therefore known herein as the KMIA site).

The main consideration in the choice of the sites was based on the requirements placed by the Mpumalanga Provincial Government team, which emphasized the need for the site to be located within the vicinity of the KMIA.

The four short listed sites are Karino, KMIA, Plaston and Rocky Drift, as indicated on the map below:

Map 1 Potential site locations



1.3 Purpose of the report

The aim of this report is to provide feedback to the process, provide specific findings with regard to the identification of industries that have the highest economic development potential for the area, and providing an overview of the findings of the feasibility assessment of the proposed industrial park.

The following sub-sections provide more insight into the specific problem statement that was investigated.

1.3.1 Industrial sectors identification background

The Mpumalanga Provincial Growth and Development Plan (PGDS) is a 10-year vision of the Mpumalanga Province that set the tone for and pace for growth and development in the Province. The PGDS prioritizes agro progressing of food and non-food agri-products, manufacturing of stainless steel downstream products, wood processing, tourism, increase in service sector, SDI initiatives, infrastructure investment and chemical and petro-chemical production.

The specific industrial sectors that have been investigated as part of this study was greatly informed by the Mpumalanga Growth and Development Strategy, guidance provided by the Steering Committee, an investigation into airport economics, a Stakeholder Workshop, the Mbombela Investment Strategy, as well as various other studies that have been done in and around the area.

1.3.2 Project goals and objectives

The goal of this report is to develop a profile of industrial sectors and sub-sectors in terms of sector dynamics, their growth trends,and to test the economic and financial viability of the proposed industrial park as a tool for attracting industry and improving the overall performance of the KMIA Once the sector and sub-sectors are understood it is important to identify how Government and other stakeholders, such as the private sector, can facilitate growth and development by addressing the constraints facing industry in the Mpumalanga but with specific focus on the Mbombela area and more specifically the KMIA area.

Based on this goal, the following objectives have been identified:

- To assess for specific sites and to determine which of these are most suitable for the proposed development
- To assess the manufacturing sector along with agro-processing to indicate which sectors are most like to benefit from this type of development (i.e. sectors that might be air-transport dependent or where growth indicate a need for light industrial space or warehousing)
- To undertake a detailed assessment of airport logistics and the area's competitive advantages in order to have a clear idea of the types of industries that are most likely to benefit from proximity to the KMIA, and also to determine the types and scale of freight movements which could be generated through enhanced industrial development opportunities proximate to KMIA.
- To assess the town planning environment and take into consideration any development changes that might take place over the next few years that might impact on the sites being investigated as potential location for the proposed industrial park
- To determine the associated bulk infrastructure costs along with the costs of development of such an industrial park,
- To determine the financial feasibility and public return on investment from the industrial park,
- To determine the potential economic impact of the proposed development, and.
- Based on all these aspects, to make specific recommendations regarding the proposed development.

1.4 Steering Committee Members

The Steering committee was established by Mpumalanga Provincial Government and consisted on a diverse group, as set out in the table below:

Steering Committee Member	Organization representing
Ms GM Makgamatha (Chairperson)	Department of Economic Development and Planning
Mr L Mdluli	Department of Economic Development and Planning
Mr P Khumalo	Department of Economic Development and Planning
Mr T Briers	Silulu (project Admin)
Mr I Penyane	KMIA
Mr K Thejane	NAFCOC
Mr M Schorman	LCBT
Ms N Majola	SEDA
Mr N Vermaak	Development Bank of Southern Africa
Mr R Kotze	Mbombela Local Municipality

Throughout the process, the SC provided constant direction, feedback and assistance in terms of the findings or the various investigations and the directions that should be taken during the development of the final concept plan. It was

also based on a request from the SC that the process included a stakeholder workshop as set out in the next sub-section.

1.5 Stakeholder participation workshop

A number of information and data sources were utilised during the detailed investigation and assessment of the economy of Mpumalanga in order to ascertain the industrial development potential that exists. Although the databases as well as previously undertaken work in the area provided a clear direction for the investigation to take, it was of the utmost importance that the ideas, challenges and development potential identified was tested through discussions with the stakeholders located in the area and involved in the various sectors identified by the Provincial Growth and Development Strategy (PGDS) and which came out in the preliminary investigations.

A Stakeholder workshop was held on the 17th of August 2006 at the Kruger Mpumalanga International Airport.

1.5.1 The program

Due to the fact that a number of studies and initiatives are currently being investigated and implemented in and around the KMIA, various consultant study teams were invited to participate in the process, provide more detail information as to what specifically their investigation entail, and to provide input into the study currently being undertaken by Urban-Econ and ADEC.

The programme included the following speakers and topics:

- International Speaker: Dubai International Airport – Ms R. Ismail – Dubai International Airport - Case Study of the successful Aerocity and Destination Development: - What practical lessons for Mpumalanga, beyond 2010 Soccer World Cup"
- Overview of the Feasibility Study to Establish an Industrial Park in the Vicinity of the KMIA - Urban-Econ Development Economists And African Development Economic Consultants
- Aerocity – Overview Of KMIA Related Project Clusters - Mega (Mpumalanga Economic Growth Agency)
- 3 Year Empowerment Plan For Mbuyane Communal Property Association - Mbuyane Community Trust
- Development Of Provincial Aviation Strategy – Progress Report -Khuthele Projects
- Towards KMIA Airport 30 Year Master Plan - Virtual Buro
- 2010 Airport to City Linkage Plans - Delca Consultants & Mbombela Local Municipality

It is thus clear that not only were the speakers diverse, but the topics, although interrelated, covered a wide variety of aspects that could have potential impact on the operations of the KMIA. The diverse range of speakers, as well as the international speaker ensured that the workshop attracted a diverse range of guests or stakeholders that are all interested in facilitating economic growth and development in the area.

1.5.2 The guests

The stakeholders that were invited to the workshop held on the 17th of August 2006 were identified in a combined effort between Urban-Econ and ADEC as well as the various Steering Committee members involved in this current project.

It was essential to include organized business, organized labour, farmers associations, land owners, interested and affected parties as well as various government officials, government departments and other government agencies.

Please refer to Annexure A for a complete list of attendees and an overview of the discussions that were held.

1.5.3 Conclusion

Based on the presentations that were made as well as the breakaway groups that were facilitated during the procedures, some definite recommendations were made by the audience and these recommendations were seriously considered by both the projects team and the Steering Committee, and these are set out in more detail in Annexure A.

1.6 Document outline

Apart from this introductory section, the report consists of the following sections.

Section 2	Development imperatives	This section deals with aspects that guide development such as agglomeration advantages, integrated development and cluster growth.
Section 3	Policy environment	In order to ensure that the proposed development contributes to the beneficial development of Mbombela and/or Mpumalanga it is important to ascertain the alignment with specific key policy documents such as PGDS and ASGISA.
Section 4	Industrial growth trends	The Steering Committee indicated that manufacturing and agro-processing should be the economic sectors that receive the most consideration for inclusion into the proposed industrial park. These sectors were evaluated at the hand of a variety of aspects in order to determine future growth potential. It should also be noted that this section deals with economic sectors that might or might not be air transport sensitive.
Section 5	Study area delineation and spatial development trends	The aim of this section is more specifically to investigate the specific sites in terms of selection criteria and also to have a clear understanding of the concepts of industrial and airport clusters.
Section 6	Airport related industrial uses	The preceding section did not discriminate between air-related and non air-related industries, but the aim of this section is to determine in more detail those industries that could benefit by close proximity to KMIA, and vice versa.
Section 7	Integrated development concept	The aim of this section is to provide a concise overview of the specific constitution of the proposed industrial park, ranging from location, size and land use mix.
Section 9	Financial analysis	The aim of this section is to provide an overview of the findings from financial feasibility & sensitivity analyses, define the basic development and financing structure, and provide information on innovative financing.
Section 10	Economic impact analysis	This section investigates the concept of multiplier analysis by simulating future growth and undertaking a multi-criteria impact

		assessment.
Section 11	Marketing plan (strategy)	The marketing plan (strategy) deals with the specific services and composition of the development that must be present in order to make the concept of an industrial park in the vicinity of KMIA a marketable concept that will attract investors and other developers.
Section 12	Recommendations	The final section deals with specific recommendation that will guide the ultimate development of the industrial park in terms of the different roles and responsibilities assigned to the relevant role-players, the overview of partnerships and hosting of an investment conference.

SECTION TWO: DEVELOPMENT IMPERATIVES

In order to ensure that the Proposed Industrial Park Development in the vicinity of the KMIA has the desired effect on economic growth and development in the area it is essential to keep in mind the development context which brought this project into being, as this will also provide the framework within which the outcomes of the project will be implemented. Keeping in mind the fact that the project has been elevated to provincial status, KMIA is an international airport, Mbombela is one of the 2010 Soccer World Cup host cities and the latent development potential, a number of critical issues shaped the thinking during investigating the potential for an industrial park.

It is important that these critical issues are highlighted, as these played a very important role in ensuring that the final concept proposed for development would be an economically and environmentally sustainable development, which is viable and financially feasible.

This section therefore provides an overview of the visioning directives and strategic imperatives identified as important.

2.1 VISIONING DIRECTIVES

According to the original Terms of Reference, the idea behind the development of an industrial park flowed from the fact that KMIA is an international airport which is currently being underutilized and it was felt that there was latent development potential that should be unlocked.

It was further believed that the '*unique economic activity linkages and interactions arising from the location of an airport with international status offers the opportunity of industry clustering to attain the optimal development of the forward and backward linkages*'. The general consensus was that these opportunities were largely unutilized.

Goal for the proposed development

The specific goal that was therefore set for the proposed development is that it should create economic activity and employment opportunities for the local community.

Project objectives for the proposed development

The project objectives set out in the TOR stated that the aim of the study is to '*establish the feasibility of concentrated industrial economic activity in the vicinity of the airport using the facility as a catalyst for development. This development at the airport should build on the existing economic strengths in the area and should inter alia take into account the location advantages of the facility, extension possibilities, regional economy and the trends and dynamics of the aviation industry, etc.*'

It is therefore clear that there was a number of aspects that were identified as potential outside influences that could ultimately play a role in the specific type of development proposed for the area.

The project goal and objectives highlight some critical issues that had to be taken into consideration, and the aim of this section is to provide more information on the critical issues that shaped the investigations that were undertaken as part of the feasibility assessment of the proposed development.

2.2 STRATEGIC IMPERATIVES

The following strategic imperatives will be most critical in achieving the desired goals set out for this project:

2.2.1 Imperative one: Infrastructure development

In order to ensure that the industrial park performs on par with similar facilities, it was determined that the proposed park should be characterized by the provision of **world-class infrastructure** to investors. When talking about infrastructure it does not only refer to physical infrastructure such as roads and the airport, but also 'soft' infrastructure such as IT facilities and e-commerce support to industrialists and service providers.

It is of strategic importance to ensure that government spending is guided into ensuring that appropriate infrastructure is put in place, with regard to **all needs related to economic growth and development**. This could indeed include transportation, water resources and institutional infrastructure.

According to an article in the Engineering News[1] improving infrastructure **has the potential to improve the business environment** for existing businesses and to promote investment in new businesses. Spending on infrastructure promotes increased economic growth because it creates more business opportunities in the economy.

From various studies that have been conducted in the area, as well as the National Freight Strategy that was complied, and the formation of the Mpumalanga Freight Logistics Forum, it has been known for a number of years that there a some major problems with regard to the transport sector. Not only is the quality of the available systems questionable, in some instances the prices are so high that it places SMME's in positions where they could not afford to become involved in the open market.

Mohamed[2] also points out that currently the infrastructure deficits and the available macro- economic policies are serious obstacles to industrial development and job creation. It is therefore indicated that infrastructure development should go beyond reducing the freight costs of exporting mining and slightly-beneficiated products. There is an urgent need to have an integrated macroeconomic and industrial strategy with clear plans on how infrastructural investment will increase industrial development.

2.2.2 Imperative two: Inter-sectoral linkage formation

The key challenge of the project was to identify the competitive and comparative advantages with respect to industrial and cluster development. As such, it implied that innovative concepts and techniques had to be applied to elevate the region above its competitors but also to undertake this in a unified effort to improve competitiveness in and of the respective activities. The feasibility analysis and strategy therefore studies and explored ways and means of improved cooperation and collaboration to introduce innovation in the clusters and thus improve competitiveness and leading to regional prosperity.

A cluster is a set of inter-linked private sector industries and public sector institutions, whose final production reaches markets outside the region. Clusters represent activities in which a Province or local area specializes, that is, it has a relative concentration of employment or output in that set of related activities, compared to other provinces.

As Michael Porter has pointed out, evolving, disaggregated forms of business organization and the emergence of clusters mark the convergence of business strategy with urban economic development strategies. These two elements converge in the cluster. Relationships with other businesses and organizations are critical to the success of individual businesses. Provinces are shifting away from older, more narrowly defined economic development strategies that

[1] Mohamed,S. *Smarter infrastructure planning can support industrial development* in Engineering News, April 2005.
[2] 2005.

focused on individual companies or specific business areas to a more comprehensive and inclusive approach that supports the advancement of strategic clusters.

It is helpful to conceive of clusters as having three layers. The top layer consists of the companies that directly export their products outside of the region. These companies are often large, and in some cases, trans-national.

The second layer consists of the many companies that supply the main exporters. Although, not all such suppliers will be located in the same geographic region, those that are, form a local supply chain.

The network of critical local linkages that define a cluster spread beyond institutional boundaries, just as they cross administrative and geographical boundaries. Both public and private sector institutions are responsible for providing the economic foundations for cluster competitiveness. Shown in the third layer, these include increasingly important factors such as:

- Human resources, including education, skills training and entrepreneurship
- R & D and technology, including adoption of new technologies, research institutes, and commercialisation of research
- Financing, including access to conventional, venture capital and to support new business and business expansion
- Business climate, including industry regulation and taxation
- Infrastructure, including hard infrastructure such as roads, transit, airports and telecommunication, but also soft infrastructure such as social programs and local institutions, and
- Quality of life, including housing, school, recreation, neighbourhood vitality, safety, parks, open spaces, arts and culture, civic pride, and the quality of the built and natural environment.

In many ways, these economic foundations are the most important elements supporting cluster formation and development. For example, a company's ability to respond to new competitive pressures by moving toward higher value-added production is directly tied to the local availability of certain resources – such as advanced skills, or new technology, or risk capital to support a new venture.

An expanding export base – or competitive clusters – benefits the whole urban economy. Export-oriented growth brings new revenue and wealth into a region, generating demand in other sectors, including local-serving industries such as retail, house construction, personal services, restaurants, and business services.

Clusters are also important because they create competitive business environments within a region. Having several internationally competitive firms within the same region drives each company to be more innovative, develop new products, and deliver higher quality service. Similar competitions occur throughout the supply chain as each firm strives to be the best by improving its products and services. This competition to be the best strengthens the entire cluster and improves the competitiveness of the city-region. The inter-firm competition that occurs in strong, well-developed clusters also benefits workers. It increases the number of job opportunities, creates pressure for increased wages and benefits, and establishes a local market of sufficient size that workers can spin-off their own businesses with reduced risk.

2.2.3 Imperative three: Appropriate business support

In order to ensure that viability and sustainability of the proposed development, it is important to provide a development concept that is capable of attracting the required investment. It was therefore important to ensure that the correct **enabling environment** is created, and it was equally important to ensure that entrance of the correct development partners, to the economic market is enabled in such a manner as to ensure maximum benefit accruing to the local community. With appropriate investment formulation and implementation, it is necessary to attract especially SMME's to the market due to the specific role it plays.

While export clusters bring new wealth into a region, small and medium sized enterprises (SMEs) predominantly geared to serving their local communities generate the vast majority of jobs. The quality, diversity and vitality of local SMEs is a good indicator of a province's cities/towns' overall economic and social well being. In addition to creating jobs, strong local-serving businesses and industries provide the products, services and amenities that help maintain and improve the quality of life residents enjoy. Efficient, cost-effective local businesses, which provide services as basic as equipment repair, local courier delivery, printing, etc. also contribute to the success of the region's export clusters.

Since, most SME enterprises are initiated by local residents, activities and programs that foster entrepreneurship help maintain and expand the local economy. Improvements to the economic foundations (human resources, technology, financing, business climate, infrastructure, and quality of life) that support export clusters also support the local economy.

Access to capital, fair taxation, and supportive government policies, are important to establishing a positive business climate within a city. While the policies and taxes imposed by all orders of government are of concern, local municipal property taxes, regulations and programs often have the most immediate impact on many SMEs. The economic foundations within a city or town must therefore address business issues at this micro-local level as well as the macro-global level.

2.2.4 Imperative four: Scientific and Technological Innovation

The key challenge of the project was to identify the **competitive and comparative advantages** with respect to industrial and cluster development. As such, it implied that innovative concepts and techniques had to be applied to elevate the region above its competitors but also to undertake this in a unified effort to improve competitiveness in and of the respective activities. The feasibility analysis and strategy therefore studied and explored ways and means of improved cooperation and collaboration to introduce innovation in the clusters and thus improve competitiveness and leading to regional prosperity.

In a globalizing world, a competitive advantage cannot be achieved by simply doing what everyone else is doing. Instead, regional competitive advantage is derived from building upon the particular and unique strengths of that region, the strengths that Mbombela has that its competitor local or district municipalities may not.

The industrial sector needs to be uplifted and strategically promoted to ensure it can compete in terms of attraction of foreign investment and **secure growth to provide in the need for employment**. The cluster approach has been successfully employed to attain just these goals worldwide and will also provide an approach where innovation in industrial development and production can be captured. The existing linkages need to be strengthened and innovative opportunities explored to expand the identified clusters in the economy.

It is however essential to realise that the emphasis of the sectoral development should be on both existing and new opportunities. Known opportunities were verified and reviewed, whereas new trends was investigated to identify innovative opportunities. Specific niche markets have to be promoted as comparative and competitive advantages of the region to generate interest, investment and development. Specific attention was given to the identification of a range of specific economic sectors that could potentially benefit from the international airport, but it was also realized that although KMIA might provide a number of benefits to industrial development, additionally industries might located at the proposed development irrespective of KMIA, and for these industries other aspects might be important, such as human resources, and IT support.

2.2.5 Imperative five: Human resource development

In order to ensure that the various focus sectors that have been investigated as part of this project, addresses the gap between the second and first economy, it is essential to address the skills issues prevalent in each of these sectors. It is also important to note that even if the correct physical enabling environment is created, the benefits of this environment

and the investment potential it unlocks as a result will only be catalytic for development if appropriately qualified people are in place to take development to the next level.

Urban environments can act as a source of skilled / specialist labour, as a medium for innovation and the cross-fertilization of ideas, and as a source of corporate expertise found in other firms. In addition, the urban environment provides the basic infrastructure, such as airports, high capacity telecommunications networks, and roads needed to be globally connected. In other words, as firms become more "embedded" in or dependent upon their local environments, Provinces can play a critical role in supporting the competitiveness of local business.

It is human capabilities that drive the knowledge economy – people, and their creativity, ingenuity, knowledge, know-how, skills and expertise. Producing, attracting and retaining knowledge economy workers, is probably the most critical element for success in the contemporary economy. Entrepreneurs and skilled labour are increasingly mobile assets. Qualified knowledge economy business people and workers can choose which Provinces they will live and work in. The quality of place a region provides, which is often indicative of the quality of life offered, can be an important factor in their location decision.

From this section it is clear that the global environment and the environment in which countries, provinces as well as local regions are competing for investment to ensure that a strong growth trajectory with regard to economic growth and development is maintained have changed significantly. It is therefore essential to ensure that Mbombela adapts to the new situation by ensuring that it could provide the correct environment to attract appropriate investment.

It is therefore essential to address not only the sector specific development issues, but also to ensure that the general investment and development environment provides an economic development enabling environment.

2.3 DEVELOPMENT OBJECTIVES

Based on the previous sections that demonstrated the strategic imperatives for the proposed development, the aim should be the attainment of the following development objectives:

1 Promote holistic development interventions

An integrated and holistic approach to the development planning process is of paramount importance. This implies that the interrelationships between economic activities and other development dimensions such as social, demographic, institutional, infrastructural, financial and environmental aspects should be carefully considered.

2 Develop an integrated economy and ensure improved linkages

It is important to develop an integrated economy where the different sectors have increased interrelationships. This could be achieved by using main economic linkages to identify opportunities for cluster development, i.e. the development of a group of economic activities, which have a high degree of interaction between them. This clustering of activities gives rise to the concept of agglomeration advantages (or scale economies) and is characterised by a high degree of multiplier or spin-off effects.

3 Aim at broadening the economic base and product offering

Southern African companies operate in a fiercely competitive environment as a result of the liberalization of trade and accelerated technological advances. These challenges can be turned to the advantage of companies by combining product, process and management technology in a holistic approach, matched to each unique business situation. Global markets are highly competitive, characterised by short product lifetimes and rapid just-in-time markets. For local manufacturers to compete, ongoing product development and shortened production time are therefore essential. Technology alone will not solve the complex problems facing the manufacturing and materials industries, but the

integration of technology with improved business processes and the necessary skills and capabilities will produce tangible results. Not only leading to greater product offerings but increase market share and consumer base.

4 Encourage SMME development and provide appropriate support structures

President Thabo Mbeki, in his State of the National Address on 21 May 2004, referred to the two categories of economies that are evident in the South African context. The First Economy refers to areas that are in need of continued growth, development and modernization, while Second Economy areas pose developmental challenges of the structural manifestation of poverty, underdevelopment and marginalization. The development approach to these two categories varies significantly. The focus of development in the First Economy is generally on infrastructure investment, skills development, scientific and technological research, development and expansion of the knowledge economy, modernization of the manufacturing and services sectors, deeper penetration of the global markets, increased in savings, black economic empowerment and SMME development. Development of the Second Economy focuses more on urban and rural development programmes, expanded public works programmes, expansion of micro-credit and small enterprises, provision of adult basic education and modern skills and the development of the social and economic infrastructure. It is also crucial that innovative mechanisms be identified and implemented to increase linkages between the two spheres of economies.

It is with this objective that the Mpumalanga Government should aim at addressing the discrepancy between the First and Second Economy by providing the players in the Second economy with more access to the formal economy.

5 Ensure focussed human capital development.

This objective will further aim at creating an enabling environment by addressing the skills needs of the local community to ensure improve local labour market utilization.

2.4 CONCLUSION

There are various economic growth and development opportunities prevalent in Mbombela, but that the market is inept in some instances to take these opportunities to the next level. It is therefore essential to create an environment that is conducive to unlocking of latent potential and translating the potential into tangible benefits of the province and its people. This section illustrated ways in which this can be achieved but in order to ensure that the recommendations are indeed taken down to ground level, it is essential to provide specific policy directives to give more authority to the recommendations made.

Additionally it is important to ensure that all the existing support measures for development is accessible to the relevant groups of people that will work in conjunction with the government of Mpumalanga and more specifically Mbombela to achieve its strategic vision for economic growth and development.

SECTION THREE: POLICY ENVIRONMENT

In the previous section, all the critical issues that influenced the investigation into the characteristics of the proposed industrial park development concept as well as the financial feasibility and potential economic impact, were listed as discussed.

The aim of this section is to take these critical issues to a more detailed level by assessing the most influential policy documents that were considered for guidance in the most appropriate combination of components to address the specific project goals and objectives that have been set for the industrial park, while at the same time ensuring that the concept adheres to guidelines set out in these documents.

The purpose of this section is to outline the key strategies, initiatives and incentives that aim to promote and develop industry in South Africa and Mpumalanga and Mbombela more specifically. The information presented in this section sets the scene for the subsequent analyses of secondary sub-sectors, focus areas, and will assist in identifying gaps in government support.

The section is structured according to the following sections:

- National strategies and programmes
- National initiatives
- National incentives
- Provincial government support
- Local guiding documents.

3.1 National Strategies

The following key programmes and strategies support the development of industry in South Africa. This is not intended to be an exhaustive list of strategies, but rather provide insight into national government priorities and objectives.

Table 3.1: Selected National Strategies

Strategy/Programme	Description
Accelerated Share Growth Initiative for South Africa (ASGISA)	The objective of this strategy is to improve the environment and opportunities for labour-intensive activities, to ensure that economic growth is shared by all and inequalities are reduced. Realistically assessing the capabilities of the economy and the international environment, the strategy sets a two-phase target. In the first phase, between 2005 and 2009, ASGISA aims to achieve an annual growth rate that averages 4, 5% or higher. In the second phase, between 2010 and 2014, ASGISA seeks to achieve an average growth rate of at least 6%. The following sectors are the focus of the strategy: • Infrastructure programmes • Sector investment (or industrial) strategies • Skills and education initiatives • Second Economy interventions

Strategy/Programme	Description
	• Macro-economic issues • Public administration issues
The African Growth and Opportunity Act (AGOA)	AGOA (October 2000 to September 2008) provides exports from South Africa (and all other African countries) with customs duty free and quota free access to the USA. Export products from South Africa must be of South African origin as defined in three rules of origin (RoO) provisions.
EU-SA Trade Agreement	South Africa entered into an agreement with its largest trading partner in 1996 to remove 90% of all market trade barriers over the next decade.
The Microeconomic Reform Strategy	The Microeconomic Reform Strategy (2002-2014) seeks to positively impact on six key performance areas, namely: growth, competitiveness, employment, small business development, black economic empowerment, and geographic spread of economic activity by focussing attention on the following sectors: agriculture (including food production), tourism, ICTs, cultural industries and export sectors, including minerals and metals, clothing and textiles, automobiles, agro-processing and chemicals. A key objective of the Microeconomic Reform Programme is to improve the effectiveness and integration of public sector investment.
Integrated Manufacturing Strategy	This Department of Trade and Industry (dti) strategy recognizes that the future of South Africa's industrial development will depend on the integration of interventions related to competitiveness. These interventions include market access, beneficiation and value addition, regional production, equity and economic participation, knowledge-intensity and services integration, and the development of integrated value matrices. The dti will provide three types of support to industry in order to improve industrial performance, namely: 1. The championing of competitiveness within government 2. Customised support measures to promote competitiveness in specific sectors and value chains. The focus will be on: clothing and textiles, agro-processing, metals and minerals, tourism, automotive and transport, crafts, chemicals and biotechnology and knowledge-intensive services. 3. Broad-based support measures to address cross cutting issues that influence growth and development including: competitive market access, the regulatory environment, investment promotion, access to finance and policy coherence.
Advanced Manufacturing Technology Strategy	The goals and objectives of the Advanced Manufacturing Technology Strategy (AMPS) (2002-2014) are to: • Develop a vision of the technological profile of the industrial sector in the year 2014 • Ongoing identification of priority sectors that have the greatest potential for supporting relevant goals contained in the IMS and the NRDS. These goals include national and social goals such as job creation and equity • Stimulate technological upgrading in industry • Facilitate the flow of technological resources to industry through new knowledge networks to foster innovation • Facilitate the building of a conducive environment for innovation, particularly through the supply of skilled manpower, technology infrastructure and funds

Strategy/Programme	Description
National Skills Development Strategy (NSDS)	The NSDS (2005 – 2010) spells out the national priority areas to which R21, 9 billion incomes from the skills development levy, will be allocated over the next five years. It provides the aggregate performance indicators of the skills development system that will be used as a basis to formulate performance indicators through legally binding Service Level Agreements with the SETA's and projects funded under the National Skills Fund (NSF).

In addition to the general strategies described above, a number of sector-specific programmes and strategies have been introduced by national government to support the development of the focus areas that are assessed in Section 5 of this report. Table 3.2 highlights these key strategies.

Table 3.2: National Focus Sector-Specific Strategies

Sector	Policy/Strategy	Description
Bio fuels	White Paper on Renewable Energy	In order to meet the long-term goal of sustainable renewable energy, government has set the following 10-year target for renewable energy in the White Paper on Renewable Energy (2004-2013): "10 000 GWh (0.8 Mtoe) renewable energy contribution to final energy consumption by 2013, to be produced mainly from biomass, wind, solar and small-scale hydro. The renewable energy is to be utilised for power generation and non-electric technologies such as solar water heating and bio-fuels. This is approximately 4% (1667 MW) of the estimated electricity demand (41539 MW) by 2013. This is equivalent to replacing two (2x 660 MW) units of Eskom's combined coal fired power stations". The White Paper on Renewable Energy supports the Government's goals by addressing the following key strategic areas: • Financial instruments • Legal instruments • Technology development • Education, capacity building and awareness raising
Chemicals	The Integrated Manufacturing Strategy – Customised Sector Programme (CSP)	The Integrated Manufacturing Strategy proposes a number of CSP's to support the development of national priority sectors. The chemicals sector is one of these. The CSP aims to address the following issues within the chemicals industry: • Improvement of global competitiveness • Enhancement of exports • Attraction of local and foreign investments • Maintenance and creation of new employment • Encouragement of broad based BEE
Furniture	The Integrated Manufacturing Strategy – Customised Sector Programme (CSP)	The Integrated Manufacturing Strategy proposes a number of CSP's to support the development of national priority sectors. The furniture sector is one of these.

Sector	Policy/Strategy	Description
Tourism	The Integrated Manufacturing Strategy – Customised Sector Programme (CSP)	The Integrated Manufacturing Strategy proposes a number of CSP's to support the development of national priority sectors. The tourism sector is one of these.

3.2 National Initiatives and Programmes

Table 3.3 presents some of the initiatives and programmes aim to support the development of industry in South Africa. It is not intended to be an exhaustive list of government initiative and programmes, but rather provide the reader with an overview of key initiatives.

Table 3.3: Selected National Development Initiatives

Initiative	Description
Procurement Support	This initiative assists SMMEs to win tenders in through Tender Advice Centres.
Supplier Development	The initiative aims to develop potential entrepreneurs to start new ventures and to enhance the capacity of existing enterprises to seize market opportunities.
Technology and Human Resource for Industry Programme (THRIP)	THRIP (2003-2007) aims to increase the number and quality of people with appropriate skills to manage technology for industry, to stimulate industry and government to increase their investment in research, technology, development, etc.
SEDA	The Small Enterprise Development Agency (SEDA) is the Department of Trade and Industry's agency for supporting small business in South Africa. SEDA has consolidated the Business Referral and information Network (BRAIN), Franchise Advice and Information Network (FRAIN) and Manufacturing Advisory Programme (MAC) programmes into one organization. The mandate of SEDA is to design and implement a standard national delivery network that must uniformly apply throughout the country. Its role includes the support and promotion of co-operative enterprises, particularly those located in rural areas.
Technology for Development	This initiative (established 1995) provides technology solutions and information to support sustainable development and economic development in priority sectors such as Manufacturing, Water Environment and Forestry, Food processing, Small scale mining, etc.
Missing Link Training Programme	This initiative (2005-2009) provides SMMEs with knowledge/ skills necessary for manufacturing products that conform to national and international standards.
Women In Business	This initiative promotes innovation amongst women SMMEs using technology, creating role models of women in business and promoting public/private sector support to women SMMEs.
The Community Public Private Partnership Programme (CPPP)	Facilitation and promotion of economic activity in rural areas by developing suitable and on-going guidelines for community-based PPP in the key economic sectors of agri-business and forestry, agro-biodiversity, fishing and aqua-culture, small-scale mining and tourism.
SMME Finance Initiatives	A number of initiative including the Emerging Entrepreneur Scheme, Individual Guarantee Scheme and the Empowerment Scheme have been put in place to increase access to finance for SMMEs through banks.
Equity Fund	To fund joint ventures, expansions, recapitalisation of companies and buy out of existing shareholders to promote transformation.

Initiative	Description
The Institutional Guarantee Scheme	Provide a guarantee to a financial institution, in favour of a lending institution, to enable the latter to access funding for lending to the SMME market.
Technology Transfer Guarantee Fund	Provide loan guarantees for SMMEs to acquire manufacturing technology
Service Provider Network Programme	Ensure that SMMEs receive affective business development services from a network of service providers that have been identified, selected, developed and supported for this purpose.
Incubation Programme	Contribute to the establishment of new enterprises and the expansion of those that already exist by providing start up support and advice.
SAQI SMME Membership Incubation Programme	To develop a database of quality role models, make SMMEs more competitive, create a culture of high-quality enterprises, develop enterprises with high quality products and services.
National Pavilions	Trade and Investment South Africa (TISA) participate in selected trade fairs and exhibitions abroad by means of a National Pavilion or Mini National Pavilion. Assistance is therefore provided to qualifying South African products into foreign markets by participating ins suitable foreign exhibitions in a cost effective manner.

In addition to the general initiatives described above a number of sector-specific initiatives have been developed by government to support the development of the focus areas assessed in this report. Table 3.4 highlights these initiatives.

Table 3.4: National Sector-Specific Development Initiatives

Sector	Initiative	Description
Dairy	Livestock Improvement Programme	The Department of Agriculture's Livestock Improvement Programme encompasses the following objectives: • Provision of quality breeding animals (bulls and rams) to improve animal productivity. • Support to improve market infrastructure, especially shearing sheds. • Advice and support through veterinary services on animal dipping and dosing and on animal health and care. • Livestock auctions in the former homelands.
Leather	Footwear and Leather Cluster Initiative	The Footwear and Leather Cluster Initiative is a joint exercise between the Department of Trade and Industry (DTI) and the leather and footwear industry to define a strategy for growth for the industry. Six working groups have been established: Customs, Industrial Relations, Materials Procurement, Marketing (export and local), Manufacturing, and Training. The cluster is represented by manufacturers, suppliers, labour, government, the IDC, retailers, and by the Skin and Leather Council.

Sector	Initiative	Description
Wool	The Wool and Mohair Cluster Initiative	The Wool and Mohair Cluster Initiative is the joint exercise between the dti, Trade and Investment South Africa and the wool and mohair industry to increase value adding in the industry. The strategy encompasses: • Evaluation of capacity, bottlenecks and constraints of South African wool and mohair industry • Identify potential export markets at each stage of the value chain with an emphasis on finished products • Facilitation of clustering of companies to supply large export orders
Plastics	Plastics Industry Cluster Initiative	The initiative aims at overcoming obstacles to competitiveness in plastics, petrochemicals and synthetic fibres industry. The initiative improves public and private sectors communication and encompasses studies into improving shop floor relationships, industry's logistics and technological base.

3.3 National Incentives

National government, through the dti, has developed a suite of incentives to facilitate improved productivity, competitiveness and promote export-orientated sectors. The table below provides information related to some of these incentives. The table does not pretend to be a comprehensive list of all incentives offered by government, but is aimed at providing an understanding of government priorities.

Table 3.5: Key National Incentives

Incentives	Description
Sector Partnership Fund (SPF)	This is an incentive offered by the dti through the Enterprise Organization (TEO) division to provide financial support to clusters/partnerships of local manufacturing companies in order to enhance their competitiveness, both locally and internationally.
The Small and Medium Enterprise Development Programme (SMEDP)	This is a grant paid to local and foreign investors, starting new or expanding their current operations, based on approved qualifying assets and activities / projects.
Strategic Industrial Project	50-100 % tax allowance to manufacturing and selected services with a minimum investment of R50 million.
Skills Support Programme (SSP)	Offers 50% of training costs, subject to a minimum of 30% wage bill in terms of certifiable training programmes
Small/Medium Manufacturing Development Programme	The Programme offers a tax-free reimbursement to manufacturing industries as well as cover international transport costs of new machinery and equipment.
National Industrial Participation Programme	It is aimed at leveraging strategic and export through the instrument of government procurement.
Support Programme for Industrial Innovation (SPII)	Promotes technology development in manufacturing industries in South Africa through support for innovation of competitive products and/or processes. This programme offers a 50% reimbursement for costs incurred in development of projects of significant

Incentives	Description
	technology advanced nature and has commercial advantage over existing ones.
Foreign Direct Investment Research Scheme	Financial contribution by TISA to partially compensate exporters for costs incurred in recruiting new foreign direct investment into South Africa through personal contact by visiting potential investors in foreign countries.
Export Marketing and Investment Assistance initiative (EMIA)	This incentive (initiated in April 2005) partially compensates exporters in terms of costs incurred in activities aimed at developing export markets for domestic products and services and attracting new foreign direct investment
Foreign Investment Grant (FIG)	Is a cash incentive offered to foreign investors who investment in manufacturing businesses in South Africa
Competitiveness Fund	It is an incentive offered by the dti through The Enterprise Organisation (TEO) division to provide financial support to local manufacturing companies in order to enhance their competitiveness, both locally and internationally

In addition to the general incentives described above, the following sector specific incentives (related to the focus areas assessed in this report) are available from national government.

Table 3.6: National Sector-Specific Incentives

Sector	Incentive	Narrative
Bio fuels	The fuel levy rebate	National treasury developed this incentive in 2000 and it offers a 40% rebate on general fuel levy for bio diesel producers. Plant and machinery used to produce bio fuels (and other renewable energy sources such as wind, solar and hydro) qualifies for a 50:30:20 per cent write-off over a 3-year period.
	Renewable energy subsidy	Focus is to develop strategies and co-ordinate studies to support bio fuels for job creation in the second economy and to use the first economy as a market for bio fuels
Dairy	SA-EU TDCA	South Africa was granted a 50 000 duty-free quota for cheese in 1999.
Food processing	EU Intervention Price System for Cereals	In terms of this system, in order to protect developing countries from effects of world market prices, the EU compensates producers by means of direct payments to help support their incomes.
Automotive & Leather	Motor Industry Development Programme (MIDP)	The MIDP has been in effect from 1995 and has recently been extended from 2007 to 2012. The aim is to promote motor vehicle and related component exports. The incentive is based on the promotion of exports

Sector	Incentive	Narrative
		through the issue of Import Rebate Credit Certificates. The MIDP provides incentives on leather seat-cover on South African exports, which has benefited the leather industry. In 2006 this incentive was removed for companies exporting leather seat covers to Australia.
Textile and Clothing	Duty Credit Certificate scheme	In terms of this scheme, exporters get a duty credit of R25 for every R100 worth of goods they export. Exporters could acquire credit certificates on exports, which they could exchange for custom duty rebates on imports.

3.4 Provincial Government Support Initiatives

With regard to Provincial support and guidance documents that were used to decide on the specific direction the investigations for the proposed industrial park, The Mpumalanga Provincial Growth and Development Strategy (PGDS) was the most crucial. The MPGDS is regarded as a strategic framework of the Mpumalanga Province, but the document should also be regarded as a living document which should ideally be updated when more recent information becomes available in order to always reflect the current situation. It sets the strategic development direction for growth and development in the Province by specifying goals and objectives that Province needs to achieve by 2014.
The PGDS highlights the following areas as the priority sectors:

- **Economic development** comprising, inter alia, SMMEs, BEE, tourism, agriculture, mining and manufacturing
- **Infrastructure development** consisting of land reform, housing, water infrastructure, sanitation, telecommunications, transport infrastructure, and ICT
- **Human resource development** focusing on General Education and Training (GET), Further Education and Training (FET), Higher Education and Training (HET), staff development, skills training, and Adult Basic Education and Training (ABET)
- **Sustainable environmental development** with environmental management, waste management, nature conservation, sustainable development and pressures on environmental resources as focus areas
- **Social infrastructure** comprising of social development, population development, HIV/AIDS band communication diseases, safety and security, sport and recreation, arts and culture, heritage and education
- **Good governance** comprising public sector management, co-operative governance, accountability and transparency, regulatory frameworks, public service delivery, and promotion of democratic governance as dominant elements.

The PGDS highlighted the following major challenges of the Province:

- Poverty
- HIV/AIDS
- Slow agricultural development
- Lack of downstream manufacturing activities
- Infrastructure and service delivery backlogs
- Lack of appropriate skills
- Environmental degradation

At the same time, the PGDS highlighted the following opportunities in the area:

- Development of agro-processing industries
- Production of non-food agricultural products (e.g. wool, tobacco and cotton)
- Manufacturing of downstream products, including tubes, pipes, catering equipment, hollowware, catalytic converters, kitchen sinks and cutlery
- Manufacturing of chemicals and chemical products
- Wood processing and manufacturing of furniture, timber frames, packaging materials, ultra boards, coffins, paper products, printing products, etc.
- Tourism development.

To address the above-mentioned challenges and realize identified opportunities, the PGDS set the following goals and targets grouped according to six strategic pillars.

Table 3.7: Mpumalanga PGDS goals and targets

Strategic pillar	Goal	Target
Economic development	To improve the economic performance of the Province	• 2.5% annual GGP growth • 15% increase in exports • Increase by 10% per annum in SMME contribution to GGP • Increase by 10% per annum in tourism contribution to GGP • Increase agricultural growth rate by 2% per annum • Halve he unemployment by 2014 • Increase by 5% per annum in private investments
Infrastructure development	To improve socio-economic development through the provision of integrated infrastructure	• 80% of HH with direct access to roads that are 80% graded and 20% gravel in 5 years • 90% of HH with access to piped water by 2014 • 90% of HH with legally connected electricity by 2014 • 90% of HH with access to sanitation • 80% of HH with access to public telephones within 5 years • 90% of HH living in formal dwellings by 2014 • 30% increase in land ownership by previously disadvantaged • 10% of HH increase in access to ICT • 5% latent economic potential exploitation per annum • 90% of communities with access to all government services by 2014
Human resource development	To improve the level of education and training within the Province	• 100% registration of school going children • 5% increase in pass rate at final FET year per annum • 10% reduction in brain drain per annum • 100% relevant skills training and placement by 2014 • 95% literacy rate by 2014
Social infrastructure	To provide integrated social services	• 50% reduction in the number of households with income below poverty line by 2014 • Increase by 10% per annum in social welfare services provision • Increase by 10% per annum in income through poverty alleviation projects • Maintenance of up-to-date information on population dynamics within two years • 25% reduction in HIV/AIDS infection rate within 5 years • Reduction by 15% per annum in communicable diseases • 10%-20% social crime rate reduction within 5 years • Access to sport and recreation facilities by 80% of the population by 2014 • Increase by 10% per annum of income generated from arts, culture and heritage
Environmental	To develop a structure to	• 90% compliance to national legislations and international

Strategic pillar	Goal	Target
development	manage, integrate and align environment management issues	conventions and agreements on environmental issues by 2014 • 90% of communities services by appropriate integrated waste management systems by 2014 • 85% of all waste disposed of in an appropriate waste management facility by 2014 • Protection of 80% of land of high intrinsic biodiversity conservation value and 60% of land of medium intrinsic biodiversity value by 2014
Good governance	To improve efficiency and effectiveness	• 90% achievement of all government goals by 2014 • 100% integration of planning initiatives

The goals and objectives of the PGDS indicate a clear priority to achieve higher quality of living for local communities by developing a thriving economy, which is translated into creation of new job opportunities and providing adequate service delivery, including education and health facilities. Based on the PGDS, the Steering Committee indicated that the industrial park should ideally focus on industries and activities that promote beneficiation of products and resources found locally in order to provide more downstream value-adding before exporting the products to other regions.

Additionally research and provincial support initiatives that support this notion are set out in the following table.

Table 3.8: Provincial Support Initiatives

Strategy/Incentive	Description
Mpumalanga Customised Sector Strategy Programme	Urban-Econ Mpumalanga had been appointed to provide project management services with respect to sector studies that were undertaken as a part of the Mpumalanga Customised Sector Studies Programme, with the main focus of interpreting the information and findings of each Sector Study in a coherent and integrated provincial trade and investment strategy for the Mpumalanga Province under the auspices of the Mpumalanga Department of Economic Development and Planning. In May 2002, the National Cabinet approved the Microeconomic Reform Strategy (MRS), which represents the integrated action plan of the economic, investment and employment cluster of the South African Government. The fundamental thrust of the MRS was that macroeconomic stability is necessary but not sufficient for growth. It states that improvement of the business environment at the microeconomic level is also necessary. The MRS proposes the following key microeconomic improvement measures. • **Crosscutting issues**: technology, human resource development, access to finance and infrastructure • **Competitive input sectors** (utilities): transport, telecommunications and energy • **Prioritised growth sectors** • **Equity and growth**: BEE, small business development, employment and geographic spread

Strategy/Incentive	Description
	The Integrated Manufacturing Strategy (IMS), sought to define the dti Group's[3] contribution to the MRS. It identifies eight areas of intervention: • Market access • Regional production • Beneficiation and value-addition • Equity and economic participation • Knowledge-intensity and services integration • Integrated value matrices • Access to finance • Policy coherence It further proposes that the IMS be implemented through the following seven mechanisms: • Customised sector programmes • Broad-based programmes / Standardised offerings • Competitive market access • Regulatory environment • Investment promotion • Access to finance • Policy coherence As the department responsible for sector development, both the MRS and the IMS place an obligation on us to develop sectors that have been prioritised by government. The method for doing so is via the development of Customised Sector Programmes for each of the priority sectors. Additionally the Sector Programme stems from the mandate given by the Premier and was also informed by the priorities of the President's State of the Nation Address. The main objective of these sector studies was the development of "value matrixes" for the identified sectors and with that as point of departure, to analyze the sectors in order to identify structural changes needed to ensure that these sectors become more competitive. These studies identified major projects for government intervention, private sector involvement and Public Private Partnerships. In short the project can be interpreted as the manifestation of the ASGISA Programme of the Central Government, and the aim of this document will be to make reference to the relevant findings of the various sectors studies, but also to provide an overview of the strategic thrusts, programmes and projects that have been formulated for implementation. This list below provides an overview of the sectors that were investigated as well as the consultancy firm responsible for each sector: • Agro-processing sector – Buyiswa ADC • Tourism sector – Grant Thornton • Metal and quarrying sector – Blueprint • Manufacturing sector – Blueprint

[3] I.e. The Council of Trade and Industry Institutions (COTII), which includes institutions such as the CSIR, Khula and the Competition Commission.

Strategy/Incentive	Description
	• Petro-chemical sector – Blueprint • Wood and wood products – Blueprint These investigations culminated in sector development strategies that identified not only the specific status of each sector, but it also identified gaps in that specific sector, using these gaps to indicate specific development opportunities that exist. The opportunities in turn have been translated in sector specific key action programmes or projects that should be implemented in order to unlock the inherent development potential of that particular sector. The Sector Strategies are part of separate documents that have been compiled in terms of the CSP, and the following diagram provides an overview of the specific number of key documents that have been formulated, including the key operational documents, the sector development studies, key action programmes and investment strategy.
Mpumalanga Corridor Logistics Initiative (MCLI)	Unlocking the landlocked regions of Mpumalanga, Gauteng and Limpopo Province, the Maputo Development Corridor is a true transportation corridor. Comprising road, rail, border posts, port and terminal facilities, the Corridor runs through the most highly industrialised and productive regions of Southern Africa. Johannesburg and Pretoria are on the western end of the Corridor's axis with large concentrations of manufacturing, processing, mining and smelting industries. The corridor passes through vast industrial and primary production areas containing steel mills, petrochemical plants, quarries, mines, and smelters, through plantations of forests, sugar cane, bananas and citrus to the eastern end of Mozambique. Ninety-two kilometres beyond the Lebombo / Ressano Garcia frontier are the Mozambican deep-water ports of Maputo and Matola, which have traditionally provided the nearest facilities for the importers and exporters of this region. The governments of South Africa, Mozambique and Swaziland have promoted the revival of the Maputo Corridor with bilateral policies and substantial public and private sector investments, designed to stimulate sustainable growth and development in the region. Now it is up to private business to ensure full optimisation of the Maputo Development Corridor. The following have been identified as areas where much work is still needed • Continuous improvement of Border procedures and operational hours. • Scope and competitiveness of transport services must be increased: additional capacity, higher service levels and more competitive rates for road, rail, port, terminals and shipping lines. • Information services must be put in place and enhanced continually. • The promotion of investment zones must be coordinated and accelerated. The initial strategic focus of MCLI is to engage with South African, Mozambican and Swaziland governments to reinforce the public-private partnerships in the arena of logistics, to ensure that the Maputo Corridor is the first choice for regional importers and exporters alike. *What is MCLI?*

Strategy/Incentive	Description
	• MCLI was established in the true spirit of public-private partnership. • MCLI is a group of infrastructure investors, service providers and users, focussed on the promotion and further development of the Maputo Corridor, as a contribution to the aims and objectives of the Maputo Development Corridor. • MCLI is incorporated in South Africa as a membership organisation. Members are drawn from South Africa, Mozambique and Swaziland and co-operate closely with organised business, engage with relevant authorities, and represent the combined views of all users of the Corridor and all parties involved in the provision of services in the Corridor. • MCLI will promote greater utilisation of the Corridor by current and future investors and users. <u>*Strategic objectives of MCLI:*</u> • To coordinate the views of service providers and users of the Corridor to promote development and change, making the Maputo Development Corridor the first choice for the region's importers and exporters alike. • To inform the market about the Corridor and to market the strategic benefits and opportunities offered by the Corridor.
MEGA (Mpumalanga Economic Growth Agency)	The Mpumalanga Economic Growth Agency, born out of the merger between the former MEEC and MII, is designed to be a responsive, efficient organ of change. MEGA was conceived in order to enable the province to have a public institution that has an exclusive focus on economic growth. That clearly indicates the critical importance of economic growth in the policy agenda of government. The task of growing the economy however is being pursued in an environment of widespread poverty in which black people largely remain marginal players in the economy of the country and the province. As the founding Act of the organisation compels us, we must "…develop the business sector in Mpumalanga; provide funding in respect of approved enterprise development focusing primarily on the previously disadvantaged individuals." We are also called upon to promote trade and investment. Black economic empowerment therefore has to be a central operating tenet of the work of MEGA. The following are some of the challenges we need to overcome in order to reach our goals: • Like the development institutions in other provinces and nationally, MEGA must generate surpluses from its own operations that in turn can fund your approved enterprise developments. In other words, MEGA must be an active player in the economy that is run as a sustainable business without losing sight of its developmental focus. • Given the current limited financial resources at your disposal, the organisation must fulfil its role by finding ways of leveraging resources and partnering with like-minded institutions that complement our strengths. • It is easy to come up with a whole range of areas where MEGA must intervene in the

Strategy/Incentive	Description
	economy. Such areas of intervention could be in all sectors of the economy, covering all areas of the province. In order to achieve maximum impact we must intervene in areas with the highest concentration of people and in sectors where prospects for growth are highest. • MEGA's areas of focus must interface with the high impact programs of government and the private sector to ensure that our efforts and resources support each other rather than dissipate in the broader economy. This will require that you are informed about such programs and you have the research and analytical capacity to pursue business plans in those value chains. Examples are the current public and private focus on ' *biofuels', the FIFA 2010 program, Infrastructure program etc.* MEGA must be an active participant in such programs. As it was the case before, MEGA's deportment must be a proactive one. We must actively seek out entrepreneurs in the province who can partner with big enterprise in these areas and in high growth sectors. • A critical area of intervention by MEGA is the facilitation of BEE in the procurement expenditure of big companies in the province. My office is engaged in a process that in partnership with the private sector will in due course unlock value in the area of procurement spend of big companies in the province. • MEGA must sharpen and streamline its relationship with SEDA so as to have clear roles and cooperation on financial and non-financial support for entrepreneurs. Duplications and turf wars must be avoided. It is common knowledge that our capacity to undermine poverty and achieve higher levels of human development is enhanced if we achieve consistently high levels of economic growth. It is therefore important that we appreciate both the global as well as the local economic environment in which we seek to achieve these higher levels of human development. The rationale behind the decision to amalgamate investment promotion and enterprise support must still be justified by what MEGA will in time achieve. I am convinced that the future of business in Mpumalanga has never been brighter, with the potential and innovative spirit we all sense in MEGA. It is the hope of all of us, that this novel initiative will breathe new life and give further impetus to the not-so-strong endeavour to realise the strategic goal of ensuring shared growth and the deracialisation of Mpumalanga's economy.
Mpumalanga Agricultural Development Corporation	The Mpumalanga Agricultural Development Corporation (MADC) was established through provincial legislation (the MADC Act number six of 1999) with a mandate to provide services that are core to agricultural development in the Province. Agriculture can rightly be described as the heart of the rural economy as it is the major source of employment and income for many households. The dominant branches of farming in Mpumalanga are field crops, animals and animal products, followed by horticulture. The reality faced by many farmers in the rural areas is that they have limited access to land and capital, and have received inadequate or inappropriate research and extension support. The aim of the MADC is to fight poverty and create employment thereby promoting economic growth through providing vital support in terms of loan finance, infrastructure development and business support to enhance commercial farming. The

Strategy/Incentive	Description
	services offered remain central in promoting and facilitating sustainable agricultural empowerment, development and entrepreneurship of primarily previously disadvantaged individuals and communities in the Province. **Loans** Loans have mainly been granted to animal husbandry and in particular broiler chickens, which have a lesser degree of risk than other animal husbandry, followed by horticulture and lastly field crops. Paprika has become one of the leading crops due to infrastructure loans for this new opportunity. Sugarcane is the best performing crop, which is mainly due to the cession payment arrangements signed between Transvaal Sugar Limited (TSB), the farmers and the Corporation. The provincial government has from time to time intervened through the provision of bulk infrastructure, whereby MADC plays an implementing agency role. In this regard, MADC boasts successful projects such as Mlondozi canal and dam, Honningklip (Badplaas) canal and dam and centre pivots within the Kwa-Mhlanga farms. MADC's interest rates are competitive and based on the Prime Overdraft Rates. Loans are made in the following ways: **MADC Seasonal Loans:** The Seasonal Loan helps the farmer to pay for the production inputs needed to produce the farm outputs. The loan is repaid in full within the same year. **MADC Business Loans:** The Business Loan is aimed at helping farmers to acquire new farm ventures or improve existing farm. The loan assists in funding the assets, stock and working capital of the farm venture. The loan is repaid between a 5 and 8 year period. **MADC Revolving Credit Facility:** The Revolving Credit Facility (RCF) is aimed at existing entrepreneur who seek financing to trade in the agriculture sector. This includes livestock speculation and other re-selling opportunities. Repayment is within 12 months. To alleviate the problem of provision of security, the corporation has adopted what is called 'Contract Farming'. The farmers that are being financed are linked to the market by way of a supply contract. This has drastically reduced the risk posed by lack of security for the loans. Contract Farming has been very successful especially in the area of poultry, paprika, sunflower, maize and sugarcane. **Success Stories Masombuka Sunflower Farmer** The only black emerging woman Sunflower Farmer, Ms. Letty Masombuka has high praise for MADC after the corporation came to her rescue in 2003. She is the first black woman to export her Sunflowers overseas through an export agency, Euro Africa. "Last year I produced 62 tons of Sunflowers which was all exported to Europe, I was able to pay back the loan I owed to MADC, including interest, through the sales of my product".

Strategy/Incentive	Description
	Goedehoop Farm The Corporation recently funded the first Black Poultry Farmer who also won Five-year tender contract with Early Bird to produce Chickens. The 42 year old Ermelo Poultry Farmer, Mr. Sipho Nkosi secured a R900 000 Loan from MADC to produce 49 000 chickens per week to one of the country's biggest poultry company, Early Bird. Nkosi believes he is about to achieve his dream through the loan that he received from MADC. Securing a market for his business is posing a very great challenge, otherwise you will never get profits should one sell 1 000 chickens per week" says Nkosi. **MADCs Agri-business** The MADC own agri- business initiatives consist of Tekwane estate, Loopspruit Estate and Molotolo roses. Tekwane Estate has seven lemon tree orchards with 10 996 trees with an export market to the Far East, middle East as well as a local market in South Africa. Molotolo Roses produces cut flowers mainly for the export trade. It is planned to sub-divide the project into viable units and dispose of these units to individual farmers especially targeting the youth and women. Loopspruit is a wine-estate and vineyard. In 2004, the estate yielded 85 tons of grapes and produced 60 000 litres of juice, as well as 15 005 bottles of wine, which were sold for R271 909. **Training** MADC has extended its role of empowerment through the provision of mentorships' programmes, training and skills development. It has developed relevant modules and curriculum in collaboration with its sister organisation, the Mpumalanga Regional Training Trust which are conducted by PAETA accredited service providers. The courses are being certificated and this is highly motivational. Farmers are trained in farm business management, bookkeeping, taxation, and the usage of pesticides and herbicides. Farmers Outreach programmes and seminars are also organized along with radio and television presentations to market the corporation as well as communicate strategic issues and share information. **The Way Forward** MADC is committed to development and the corporations endeavours have been praiseworthy. MADC aim is to continue to maximize business opportunity to address agri-black economic empowerment so that the challenges in the sector are met. MADCs strategy is to identify future needs so that the organization is able to ascertain where it can add most value and therein concentrate their efforts in an optimal manner.

3.5 Local Government policy documents

There are many aspects that influence development, and these can range from economic changes to development guidelines set out in various government documents. The local documents which impact on development are set out in the following table:

Table 3.9: Local guiding documents

Document	Description
Integrated Development Plan	An integrated development plan (a) is the principal strategic planning instrument which guides and informs all planning and development, and all decisions with regard to planning, management and development, in the municipality; (b) binds the municipality in the exercise of its executive authority, except to the extent of any inconsistency between a municipality's integrated development plan and national or provincial legislation, in which case such legislation prevails; and (c) binds all other persons to the extent that those parts of the integrated development plan that impose duties or affect the rights of those persons have been passed as a by-law. (d) Is a product, in the case of Metropolitan and District Municipalities, of inter-sphere planning at the Technical District Intergovernmental Fora Additionally the IDP also includes a Spatial Development Framework which provides a graphic representation of the proposed developments to take place in the relevant area. Based on the relevant IDP it was possible to evaluated the various sites short listed for the possible location of the proposed industrial park in terms of any restrictions or future development plans, and these are discussed in more detail in a later section of this document.
Local Economic Development Plan	"Local Economic Development (LED) offers local government, the private sector, the not-for-profit sectors and the local community the opportunity to work together to improve the local economy. It aims to enhance competitiveness and thus encourage sustainable growth that is inclusive". It is therefore also proposed that the relevant LED documents be assessed in order to determine the direction proposed for development in White River to ensure that any new development proposed for the area is aligned with overall strategic thinking.

3.6 Synthesis

This section has sought to outline the key national and provincial government strategies, initiatives and incentives that have been put in place to promote economic, industrial and enterprise development in South Africa.

Many of the incentives and programmes have been developed to counter the negative effects trade liberalisation has had on the South African economy and target specific priority sectors.

The section has illustrated that there are many programmes and incentives aimed at improving competitiveness, productivity and efficiency, which should boost exports by local industry. In addition to this, there are a number of programmes and incentives aimed at promoting the development of SMMEs and BEE companies within industry.

It has also illustrated that the Mpumalanga Province has developed some province-specific programmes/incentives and various support mechanisms to target high priority sectors, there is still a magnitude of work that could potentially be done in order to ensure the efficient and effective development of the various opportunities provided to the province with regard to Industrial and further economic development and growth.

With regard to the developmental directions to be focused on during the development of the proposed industrial park, strategic direction in terms of which sectors should received priority are identified in the Mpumalanga PGDS. It is also important that the various organizations available in Mbombela be utlised for implementation of the proposed development in order to ensure sufficient stakeholder buy-in and developmental momentum.

SECTION FOUR: PROVINCIAL, DISTRICT AND LOCAL SECONDARY SECTOR ANALYSIS

The aim of this section is to provide an overview of the Mpumalanga economy, and then provide an overview of the assessment of the manufacturing sector on a district and local level referring to the specific sub-sectors (detailed overview provided in Annexure X). The reason for concentrating on this sector specifically is mostly derived from inputs provided by the Steering Committee as well as the Mpumalanga PGDS which played a role in the key sectors that were identified as the focus areas for positive economic intervention in order to ensure further growth and development of the provincial economy.

Additionally reference is made to agro-processing and more specifically the food processing sub-sector as it is believed that there is some definitive development potential for the proposed industrial park due to the abundance of agriculture land around KMIA.

This section therefore investigates the structure and dynamics of the economy of the Mpumalanga Province. The objective of this section is to **understand the historical trends** in the sectors by conducting a **competitive advantage assessment**.

The analysis includes a review of the following indicators: Gross Geographic Product (GGP), employment, exports and imports, and a competitive advantage analysis (both on a provincial level and on a district level)[4]. The district and local level analysis provided in Annexure X was intended to illustrate the spatial distribution of industry within Mpumalanga, and a synthesis of the findings of that analysis is provided in this section of the document.

4.1 Economic structure

The economic structure of an economy is a function of the sum of all different economic activities in the geo-political boundaries of the area. In South Africa, the Standardized Industrial Classification (SIC) is employed as the main economic sectors together with an indication of the activities associated with each main sector.

The economic sectors are listed below and subsequently described:

- Agriculture
- Mining
- Manufacturing
- Electricity
- Construction
- Trade
- Transport
- Finance
- Community services
- Government services

The **Agriculture Sector** incorporates establishments and activities that are primarily engaged in farming activities, but also includes establishment focusing on commercial hunting and game propagation and forestry, logging and fishing.

[4] A more comprehensive discussion related to the methodology used to complete the competitive advantage analysis is provided in Annexure B. It is important to note that this assessment is not conclusive and that the quality of the data impacts on the outcomes of the assessment. The assessment should also be interpreted together with local knowledge of the area to provide a more thorough assessment; due to time and budget limitations the assessment provided in this section has been based on secondary information.

The **Mining Sector** includes the extracting, beneficiating of minerals occurring naturally, including solids, liquids and crude petroleum and gasses. It also includes underground and surface mines, quarries and the operation of oil and gas wells as well as all supplemental activities for dressing and beneficiating of ores and other crude materials.

The **Manufacturing Sector** is broadly defined as the physical or chemical transformation of materials or compounds into new products and can be classified into 10 subgroups which is discussed in more detail later in this section.

The **Electricity Sector** incorporates the supply of electricity, the manufacture of gas and distribution of gaseous fuels through mains, supply of steam and hot water, and the collection, purification and distribution of water.

The **Construction Sector** includes the site preparation, building completion and the renting of construction or demolition equipment with operators.

The **Trade Sector** entails wholesale and commission trade, retail trade, repair of personal household, goods, sale, maintenance and repair of motor vehicles and motor cycles, hotels, restaurants, bars, canteens, camping sites and other provision of short-stay accommodation.

The **Transport Sector** relates to all activities that provide passenger or freight transport, whether scheduled or not, by rail, road, water or air and auxiliary activities such as terminal and parking facilities, cargo handling and storage. It also includes both postal activities and telecommunications.

The **Financial and Business Services Sector** includes inter alia financial intermediation, insurance, pension, real estate activities, renting or transporting equipment, computer an related activities, research and development, legal, accounting, bookkeeping and auditing activities, architectural engineering and other technical activities and business activities.

The **Government and Community Services** includes public administration and defense activities, activities of government, government department and agencies, education, public and private, health and social work, sewerage and refuge disposable sanitation and similar activities of membership organizations, recreational, cultural and sporting activities, washing and dry-cleaning of textile and for products, hairdressing and the beauty treatment, funeral and related activities.

4.2 Overview of the Mpumalanga Economy

It is important to note that the proposed Industrial Park is planned for development in the vicinity of the Kruger Mpumalanga International Airport (KMIA). It is therefore essential not to look only at the various sectors identified in the **PGDS** and other related documents, on provincial level, it is also important to understand the specific situation in the Mbombela area. Economic information is only available on District Municipality level, so were possible Mbombela data will be used, otherwise reference will be made to the Ehlanzeni District.

4.2.1 Gross Geographic Product (GGP)

In 2004, Mpumalanga Province's GGP equaled R60 billion and the Province contributed 6.33% to the South African economy. The Province's contribution to national GGP peaked in 1999 at 6.88% but then slightly decreased toward 2004. There was an overall upswing in South Africa's economic growth since 1999 and this period has also been described by the longest period of expansion in the country's recorded history.

The initial increase can therefore be attributed to this overall upswing in the economy, while the decrease was attributed to the fact that the economy of Mpumalanga grew at a slower rate (2.5%) than the national economy (3.04%) over the same period.

Table 4.1: Mpumalanga GGP (R' million), 1995-2004

Year	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Mpumalanga GGP	48,267	51,182	52,891	53,491	55,210	57,111	57,805	59,392	60,643	60,414
Contribution to SA	6.63%	6.76%	6.81%	6.84%	6.88%	6.81%	6.70%	6.65%	6.60%	6.33%
Ehlanzeni GGP	10,739	11,562	11,871	12,108	12,591	12,929	13,137	13,731	13,971	14,460
Contribution to Mpu	20.93%	21.28%	21.15%	21.34%	21.51%	21.33%	21.41%	21.80%	21.72%	22.56%
Mbombela GGP	6,282	6,729	6,924	7,064	7,323	7,458	7,618	7,884	8,054	8,312
Contribution to Ehlanzeni	62.55%	62.18%	62.28%	62.28%	62.08%	61.63%	61.96%	61.32%	61.57%	61.44%

Source: Quantec 2006

Looking at the available data in more detail, it is necessary to understand the role and function of the Ehlanzeni District's contribution to the Provincial GGP. From Table 4.1 it is clear that Ehlanzeni contributed almost 23% of the total GGP in 2004.

The focus area for this study is Mbombela and therefore it is essential to understand the data according to the performance of this area specifically, and when taking the GGP contribution that Mbombela makes to that of the Ehlanzeni District, it is clear that in overall terms it seems that this contribution has grown during the period 1995 to 2004, but it is also clear that the percentage contribution has decreased over the same period.

This could be an indication that some of the other areas that fall within the Ehlanzeni District have increased their contributions to the District GGP. But it is still important to note that even though there was a slight decrease in percentage contribution; Mbombela is responsible for more than 61% of the total GGP of the Ehlanzeni District.

Mbombela, as well as the Ehlanzeni District have experienced growth rates higher than the provincial and national averages with 3.16% and 3.36% respectively.

4.2.2 Sectoral contribution to Gross Geographic Product (GGP)

Diagram 4.1 illustrates the sectoral economic profile of the Mpumalanga Province in 1995, 2000 and 2004 based on the formal (i.e. first) economy. This means that the full importance of some sectors (e.g. agricultural and trade) in the province is not captured because much of the activity in these sectors is undertaken at a subsistence level, or within the informal (i.e. second) economy.

It is evident that the formal Mpumalanga economy is strongly based on the **mining sector** (which forms part of the primary sectors), **manufacturing** (which is a secondary sector) as well as various tertiary sectors[5].

The mining sector was the largest contributing sector in 1995 with 22.7% contribution which dropped to 18% in 2004. This could be ascribed to the increased importance of the tertiary sector in the province as well as the contraction of the gold-mining industry over the past few years.

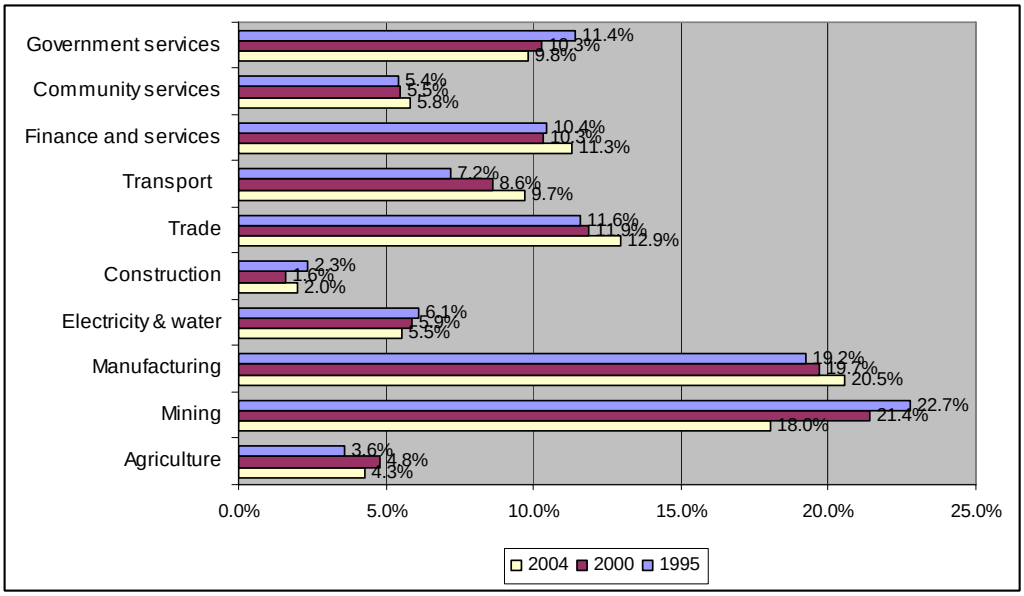
Manufacturing is currently the largest contributing sector with 20.5% of the Province's GGP in 2004. According to the Mpumalanga Business Portfolio[6], there are a number of advantages which promotes the manufacturing sector, and

[5] The primary sector of the economy involves the extraction and production of raw materials such as coal, wood and steel and includes the agriculture and mining sectors. The secondary sector involves the transformation of raw materials into goods e.g. manufacturing steel into cars and includes the construction, electricity, water and gas and manufacturing sectors. The tertiary sector involves the provision of services to consumers and businesses and therefore includes the trade, finance and business services, transportation, community services and government services sectors.

these range from abundance of natural resources, access to appropriate markets as well as access to relevant infrastructure.

The trade sector is the third largest sector in Mpumalanga and it contributed almost 13% to the provincial economy in 2004, closely followed by the financial services sector with 11.3% and government services with 9.8%.

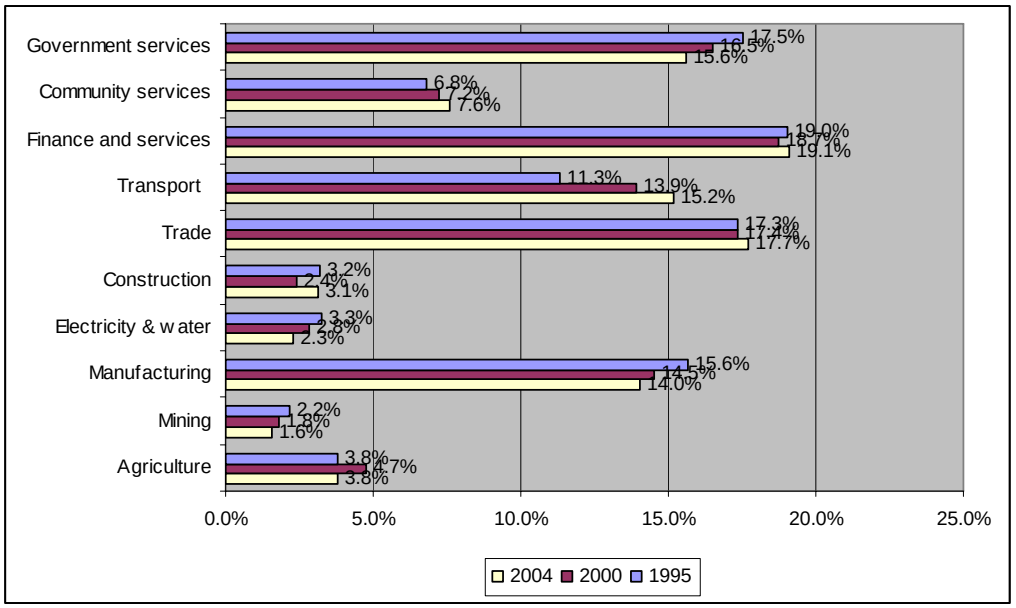
Diagram 4.1. Economic Sector Contribution to Mpumalanga GGP



Source: Quantec 2006

Diagram 4.2 provides an overview of the sectoral contributions of the various economic sector to the Mbombela GGP, and from the diagram it is clear that for Mbombela the sectors that make the largest contributions to the GDP are not the same as is the case with the Provincial GDP contributions.

Diagram 4.2. Economic Sector Contribution to Mbombela GGP



Source: Quantec 2006

[6] Development Bank of Southern Africa, 2006.

The Mbombela formal economy is strongly based on **tertiary sectors with almost 45% and the manufacturing sector with 14%**. More specifically, the financial services sector is the strongest sector with 19.1%, followed by trade with 17.7%, then government services with 15.6% and then it is transport with 15.2%.

There are a number of factors that influence the strength of these sectors in the area, and here it is essential to mentioned the Maputo Corridor that is potentially influencing the transport sector, cross border trade with regard to people coming to the area from Mozambique and Swaziland to do retail and wholesale trade, and the fact that the provincial government's offices are located in Nelspruit which forms parts of the Mbombela area.

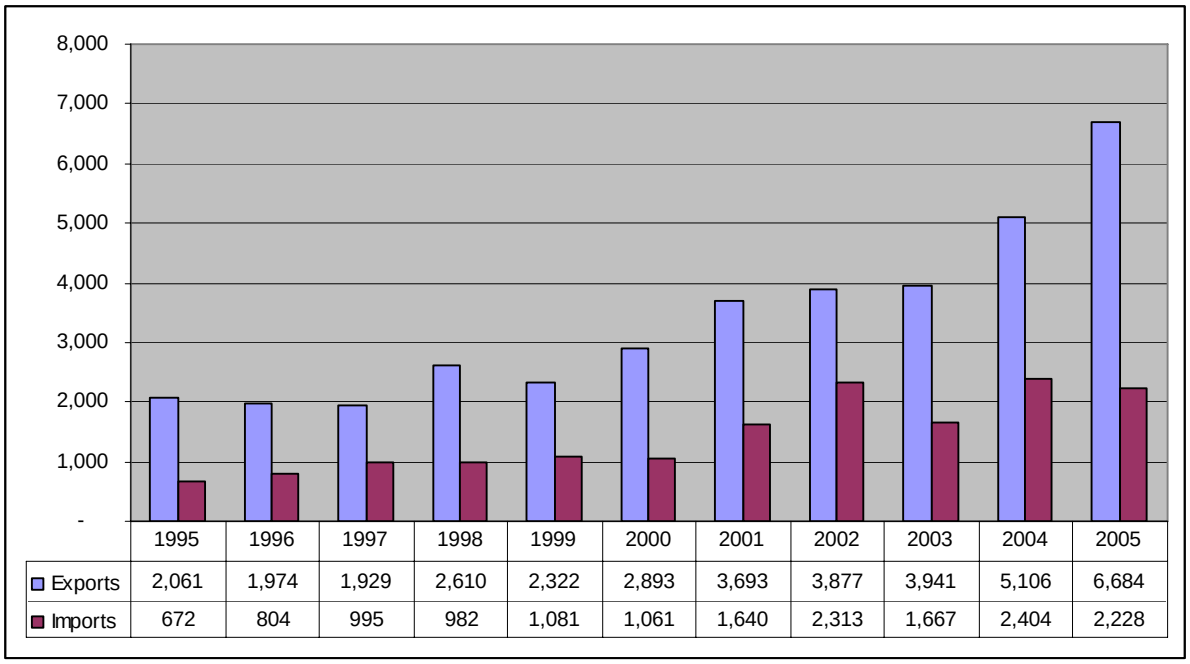
The manufacturing sector contributes 14% to the Mbombela GGP this is a decrease from the 15.6% it contributed in 1995. The agriculture sector is once again contributing the same levels as during 1995 which is 3.8%.

These are both sectors that have performed better in the past, and should thus receive some focused interventions in order to ensure that the optimum potential is developed.

4.2.3 Exports and Imports

Diagram 4.3 presents export and import values for agriculture, mining and manufacturing sectors of Mpumalanga from 1995 to 2004[7]. During this period, imports and exports grew substantially in Rand value.

Diagram 4.3: Mpumalanga Imports and Exports, 1995-2005



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Exports	2,061	1,974	1,929	2,610	2,322	2,893	3,693	3,877	3,941	5,106	6,684
Imports	672	804	995	982	1,081	1,061	1,640	2,313	1,667	2,404	2,228

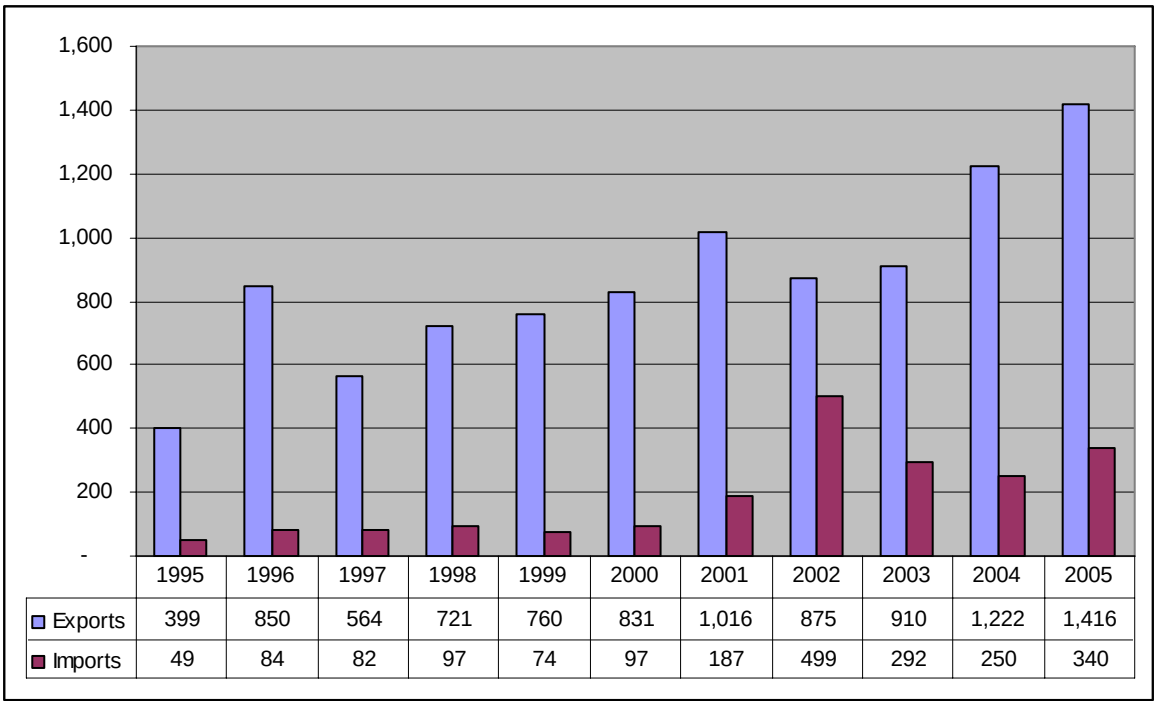
Source: Quantec 2006

The value of exports in the three sectors more than **tripled** from R2 billion in 1995 to R6.6 billion in 2005. This trend corresponds with the fact that the Mpumalanga economy entered the global economy from 1994 and has become an active player since then. It is evident from the diagram that Mpumalanga has always been an importer of goods and services, although there is a gap between exports and imports and although imports have increased over the period 1999 to 2004, it is still significantly lower than exports from the area over the same period.

[7] Export/import data for the construction and tertiary sectors is not available

It was already stated that trade data is only available on District level, so for gaining greater insight into trends regarding imports and exports for Mbombela it is necessary to look at the data for the Ehlanzeni District of which Mbombela forms part. Diagram 5.4 provides this overview.

Diagram 4.4: Ehlanzeni Imports and Exports, 1995-2005



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Exports	399	850	564	721	760	831	1,016	875	910	1,222	1,416
Imports	49	84	82	97	74	97	187	499	292	250	340

Source: Quantec 2006

In line with the threefold increase of the exports on a provincial level, from the data provided in the diagram, the exports from the Ehlanzeni district has also increase more than threefold over the period 1995 to 2005 with it increasing to R1,416 billion from R399 million in 1995.

A trend similar to that of the provincial experience with regard to imports has also been captured with regard to imports. There is a notable different in the amount of imports and exports to and from the area

4.2.4 Employment

Table 4.2 shows that the Mpumalanga economy employed roughly 553,000 people in 2004, contributing 6.7% to total South African employment. This figure is low considering the fact that Mpumalanga contributes approximately 7.2% to the total population of South Africa and is indicative of the high unemployment rate and high number of economically inactive people (i.e. under the age of 15 and over the age of 65) in the province.

Table 4.2: Mpumalanga employment, 1995-2004

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Employment	559,209	563,657	562,609	557,040	550,737	543,102	543,503	548,994	552,018	553,012
Contribution to RSA	6.8%	6.8%	6.7%	6.8%	6.8%	6.7%	6.7%	6.7%	6.6%	6.7%

Source: Quantec 2006

The number of people employed in Mpumalanga has fluctuated year on year, but remained relatively stable overall between 1995 and 2004. Despite this fact, annual employment growth in Mpumalanga has been positive three times

over the last 9 years, in 1996, 2002 and in 2004. In all three years the growth rate was less than 1%, which is not indicative of significant growth. In total an estimated 6,000 people have lost their jobs in Mpumalanga in the last 9 years, most of which were in the manufacturing and construction sector.

Looking in more detail with regard to the employment situation in the Mbombela Local Municipal area, it is clear that Mbombela represent a large number of total employment in the Mpumalanga Province. This is set out in more detail on Table 4.3.

Table 4.3: Mbombela employment, 1995-2004

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Employment	79,547	80,781	81,922	82,146	82,486	82,273	83,247	85,157	86,036	86,476
Contribution to RSA	14.32%	14.46%	14.69%	14.92%	15.18%	15.38%	15.56%	15.79%	15.88%	15.96%

Source: Quantec 2006

From the table it is clear that Mbombela has increased its share in provincial employment overall from 14% in 1995 to 16% in 2004. Employment has growth with a steady rate and was positive year on year over the period 1995 to 2004 albeit with less than 1%. There is however room for improvement and the trick is to focus on those sectors that are high in employment creation, more specifically the secondary sectors such as manufacturing.

From the assessment above it is evident that the Mpumalanga economy has grown significantly faster than the South African economy, increasing its exports while only increasing import reliance very slightly.

There are a number of growth and development opportunities in the Mpumalanga, but specifically the Mbombela economy. These opportunities should be investigated in more detail, and the following section provides greater insight into the Manufacturing sector and its various sub-sectors and the potential in each of these. This is essential to ensure that these trends are addressed in a proper manner to ensure that Mpumalanga and more specifically Mbombela **retains** its status as an economic powerhouse in the national context by further increasing its export potential and decreasing its imports.

4.3 Manufacturing Sector

It has already been illustrated that the Manufacturing sector has a very important role to play in the expansion and improvement of the Mpumalanga Provincial economy, as well as that of Mbombela. The manufacturing sector is an important sector in the province in terms of GGP, trade and employment and it is well integrated into the world economy.

A brief overview of the manufacturing sector as a whole is provided and then each of the manufacturing sub-sectors is described in more detail to better understand the contribution each makes to the growth and development of the province, district and local area.

4.3.1 Manufacturing Gross Geographic Product (GGP)

The manufacturing sector in the Mbombela contributed R1.7 billion in 2004 and contributed almost 45% to the provincial economy, which illustrates its importance to the Mpumalanga economy. Its contribution to the provincial economy has increased over the period 1999 to 1004 with a slight decrease in percentage contribution in 2005, and its contribution to the South African manufacturing sector has slightly increased over the period 1995 to 2005 with some fluctuations in 1998 to 2003.

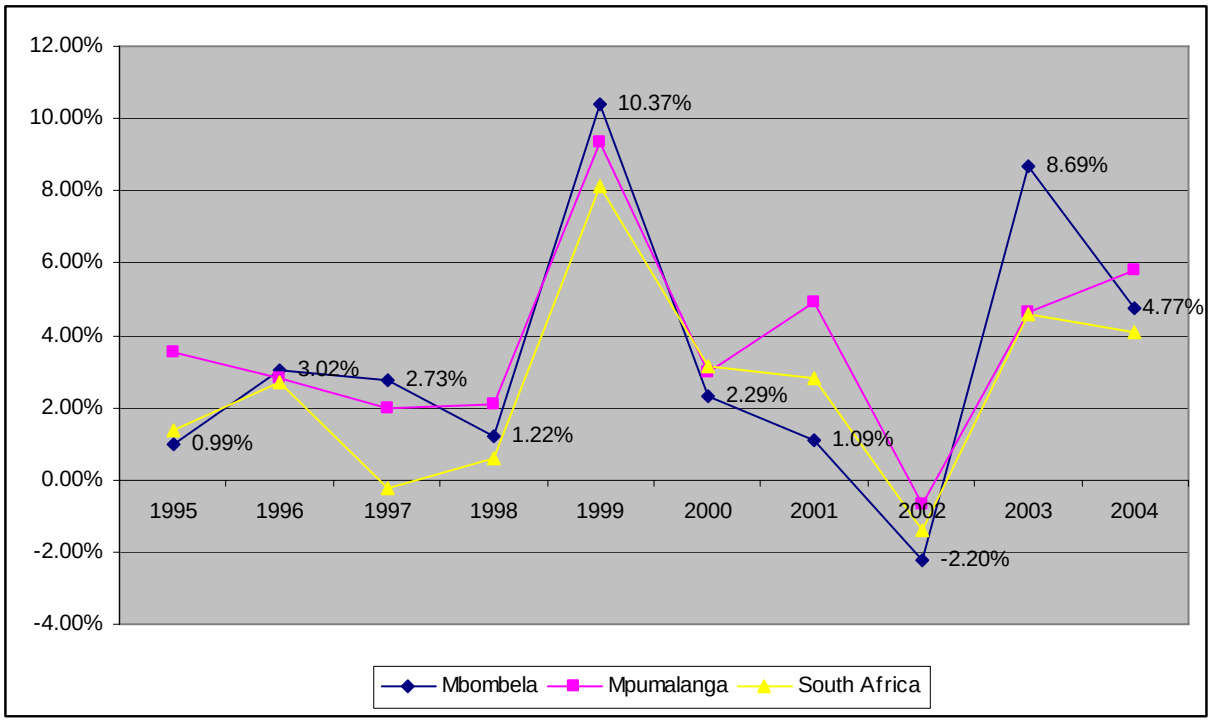
Table 4.4: Mbombela Manufacturing GGP (R' million), 1995-2004

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
GGP	1,254	1,267	1,305	1,341	1,357	1,498	1,532	1,549	1,515	1,646	1,725
Contribution to Ehlanzeni	45.05 %	44.99%	44.97%	45.43%	45.57%	45.85%	45.83%	45.85%	45.90%	46.03%	46.35 %
Contribution to Mpumalanga	13.53 %	13.19%	13.22%	13.32%	13.21%	13.33%	13.24%	12.76%	12.56%	13.05%	12.93 %
Contribution to SA	0.90%	0.90%	0.90%	0.93%	0.93%	0.95%	0.94%	0.93%	0.92%	0.96%	0.96%

Source: Quantec 2006

The sector achieved an average annual growth rate of 3.24% from 1999-2005, which is higher than the 2.55% average growth of the South African manufacturing sector over that same period. Annual manufacturing GGP growth has been less than the provincial growth rate from 1995 to 2005 at 3.75%.

Diagram 4.5: Manufacturing GGP growth rate, 1995-2004



Source: Quantec 2006

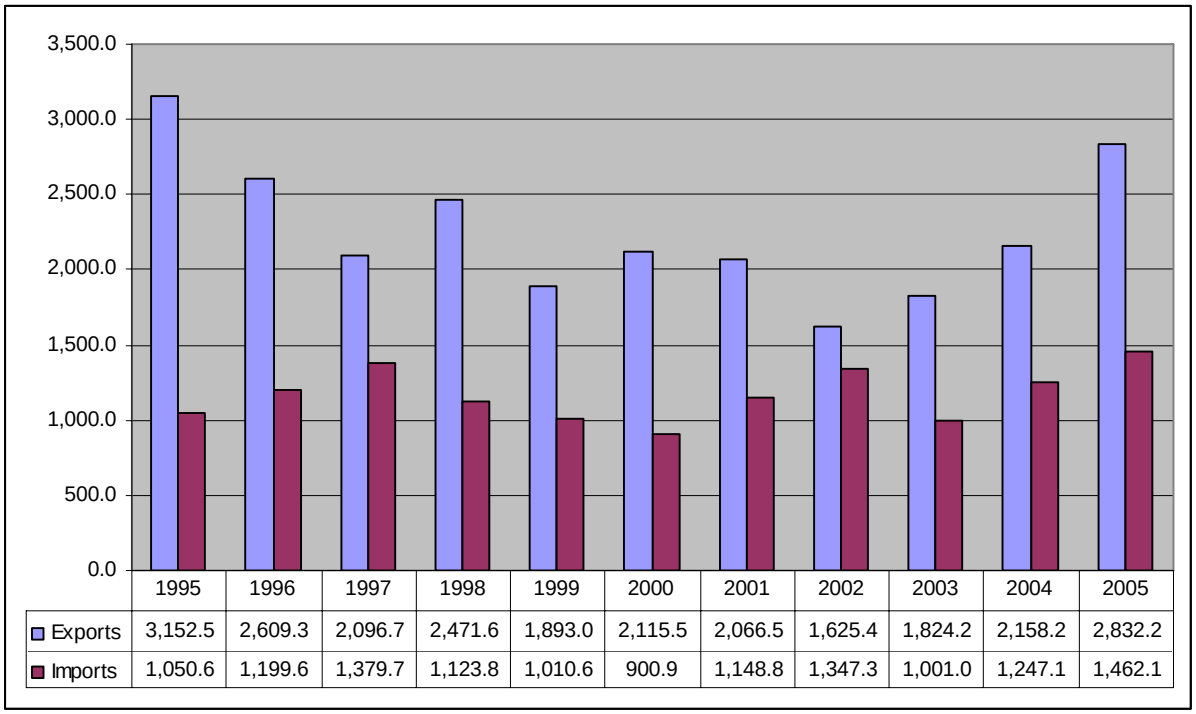
4.3.2 Imports and exports

Diagram 4.6 indicates the value of manufacturing goods imported and exported by Mpumalanga from 1995 to 2005.

The value of exports decreased by 1.07% from R3 billion to R2.8 billion in 2005, while the value of imports increased with 3.36% over the same period. It is evident that the Mpumalanga Province is an importer of manufacturing goods and services, but although the trade deficit has decreased over the period it is important to note that it has remained positive.

The Mpumalanga Province exports 35% of all its manufactured goods to Asia, more specifically Japan and 34% to Europe, followed by the United States of America with 19% and Africa with 8%. The province also imports 57% of required manufactured goods from Europe, more specifically from Germany, followed by 20% from America and 17% from Asia.

Diagram 4.6: Mpumalanga manufacturing import and export values, 1995-2005



	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Exports	3,152.5	2,609.3	2,096.7	2,471.6	1,893.0	2,115.5	2,066.5	1,625.4	1,824.2	2,158.2	2,832.2
Imports	1,050.6	1,199.6	1,379.7	1,123.8	1,010.6	900.9	1,148.8	1,347.3	1,001.0	1,247.1	1,462.1

Source: Quantec 2006

4.3.3 Employment

Table 4.5 shows employment in the manufacturing sector in the Mpumalanga Province from 1995 to 2004. The Table shows that manufacturing employment declined by 0.28% while the national employment figure increased with 10.51% over the 9 year period under review [8].

Table 4.5: Manufacturing sector employment in Mpumalanga Province, 1995-2004

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Employment	76,075	77,347	75,320	74,318	72,651	72,153	71,008	72,241	73,282	74,169
Contribution to Mpumalanga	13.70%	13.84%	13.51%	13.50%	13.37%	13.49%	13.28%	13.40%	13.53%	13.68%

Source: Quantec 2006

The manufacturing sector employed 74,000 people in 2004, contributing 13.68% to total employment in the Province. While it is the 5th highest employer after agriculture, trade, community and government services, its contribution to provincial employment has declined only slightly over the last 9 years. This means that while the Mpumalanga economy as a whole has shed jobs during this period, the manufacturing sector shed them at a slightly lower rate.

In total an estimated 2,000 people have lost their jobs in the manufacturing sector in the last 9 years; which accounts for 14% of job losses in the Mpumalanga Province as a whole.

[8] Refer to C. Edwards report (2006) for a more detailed discussion about Global Insight and StatsSA manufacturing employment figures. The Quantec data used in this report shows similar trends as the Global Insight data (i.e. decreasing employment).

4.3.4 Provincial competitive advantage analysis[9]

Table 4.6 provides an overview of the provincial competitive advantage analysis for the Mpumalanga manufacturing sector.

Table 4.6: Provincial manufacturing sector competitive advantage analysis, 2005

LQ 2005	Prov SRG	Local SRG	Carvalho	Industry Targeting Classification
0.83	Lagging	Lagging	Vulnerable	Prospects limited by external trends and declining competitiveness[10]

Findings:

- A location quotient of 0.83 means that Mpumalanga is both importing and exporting goods and services in this sector and has a competitive advantage in this sector
- A lagging Provincial SRG indicator means that the sector has declined, or grew at a slower rate, on a national level than national growth overall.
- A lagging Local SRG indicator means that the provincial manufacturing sector grew as a slower rate than the manufacturing sector at a national level.
- The manufacturing industry in Mpumalanga is classified as vulnerable by the Carvahlo Classification, which means that an important source of employment is declining in the province.
- Manufacturing in the Mpumalanga is limited by external factors such as exchange rate levels and fluctuation, the performance of international economies, oil prices and trade flows and its competitiveness have also declined.

The competitiveness assessment on a provincial level indicates that the manufacturing industry is an important contributor to the provincial economy, but is a declining sector that is strongly influenced by external factors and characterised by declining competitiveness.

Based on provincial and national trends in this section between 1996 and 2005 the prospects for employment growth (without strategic interventions) in this sector are low in the Mpumalanga Province. The following sections consider the various sub-sectors of the manufacturing industry to identify growth trends and to identify areas of potential future growth.

4.3.5 Spatial competitive advantage analysis[11]

The purpose of this section is to provide insight into the spatial distribution of the manufacturing sector throughout the Mpumalanga Province. The following Table indicates the competitive advantage analysis for the manufacturing sector by district municipality in Mpumalanga.

Table 4.7: District-wide manufacturing sector competitive advantage analysis, 2005

Area	LQ 2005	Prov. SRG	Local SRG	Carvalho	Industry Targeting Classification
Gert Sibande DM	1.32	Lagging	Lagging	Challenging	Prospects limited by external trends and declining competitiveness
Ehlanzeni DM	0.82		Leading	Transitional	Prospects limited by external trends

[9] Refer to Annexure B for a description of the competitive advantage analysis.
[10] External trends relate to any factors that are outside the control of the provincial/local economy in question. This refers to macro-economic factors such as exchange rate levels and fluctuations, interest rate fluctuations, etc. and international economic trends such as oil prices, commodity prices, the performance of other economies (notably the USA), capital and trade flows and political uncertainty (e.g. September 11).
[11] Refer to Annexure B for a description of the competitive advantage analysis.

Area	LQ 2005	Prov. SRG	Local SRG	Carvalho	Industry Targeting Classification
Enkangala DM	1.06		Leading	Transitional	Prospects limited by external trends

Source: Quantec 2006, Urban Econ calculations

Findings:

- The Gert Sibande DM has a comparative advantage in this sub-sector which indicates that it not only serves the needs beyond the local area. The prospects for this sector is however limited by external trends and declining competitiveness.
- Ehlanzeni and Enkangala have medium location quotients which mean that they are both importing and exporting goods and services within the manufacturing industry with Enkangala having the biggest competitive advantage.
- Only the Gert Sibande District Municipality has a lagging Local SRG which means that the sub-sector is at a decline or it grew at a slower rate than at provincial level.
- Ehlanzeni District and Enkangala District have leading Local SRG which means that the sub-sector in the region improved or grew at a faster rate than at provincial level.
- It is recognised that the manufacturing industry is concentrated in the Highveld of Mpumalanga around Secunda and Sasol. Two thirds of the manufacturing is in the southern area of the Highveld.
- Manufacturing in all three districts is limited by external factors such as exchange rate levels and fluctuation, the performance of international economies, oil prices and trade flows and its competitiveness have also declined.

The assessment above clearly indicates that the manufacturing sector is NOT concentrated in any district since all three districts comprises of a medium location quotient. Manufacturing is the single largest sector in Mpumalanga, it generates one quarter of the GGP of the Province (State of Environment in South Africa, 2006).

The following table indicates the competitive advantage analysis for the manufacturing sector by local municipality level in the Ehlanzeni District.

Table 4.8: Local manufacturing sector competitive advantage analysis, 2005

Area	LQ 2005	District SRG	Local SRG	Carvalho	Industry Targeting Classification
Mbombela	1.35	Leading	Lagging	Promising	High priority retention target
Nkomazi	1.98		Lagging	Yielding	High priority retention target
Umjindi	2.18		Leading	Driving	Current strength
Thaba Chweu	2,89		Leading	Driving	Current strength
Bushbuckridge	0.30		Lagging	Modest	Prospects limited by weak base & declining competitiveness
Kruger Park South	0.21		Lagging	Modest	Prospects limited by weak base & declining competitiveness

Source: Quantec 2006, Urban Econ calculations

Findings:

- Only Bushbuckridge and Kruger Park South do not have a competitive advantage in this sector, whereas Thaba Chweu currently has the biggest competitive advantage.
- A leading District SRG indicator means that the sub-sector has increased, or grew at a higher rate, on a district level than provincial growth overall.
- A lagging Local SRG indicator means that the local sub-sector grew as a slower rate than the sub-sector at a district level.

- It is clear that both Umjindi and Thaba Chweu had leading SRG's which indicates growth higher than the district average.
- Manufacturing is relatively underrepresented in Bushbuckridge and Kruger Park South and the prospects of this sector is limited by a weak base and declining competitiveness.
- This sector is regarded as a high priority retention target in Mbombela and Nkomazi which means it has the potential to grow if target, while it is seen as a current strength in Umjindi and Bushbuckridge.

The assessment above clearly indicates that the manufacturing sector is currently concentrated in Thaba Chweu and Umjindi which has very high location quotients, but there is an opportunity to expand this sector in Mbombela and Nkomazi.

Each of the sub-sectors of the manufacturing sector (as well as electricity and water and construction) is assessed in the following sections to identify potential growth opportunities in some areas.

As part of the detailed economic sector analysis, the specific subsectors of the manufaucturign sector, as listed below were investigated in-depth:

- Food, beverages and tobacco products
- Textiles, clothing and leather goods
- Wood and wood products
- Fuel, petroleum, chemical and rubber products
- Other non-metal mineral products
- Metal products, machinery and household appliances
- Electrical machinery and apparatus
- Electronic, sound/vision, medical and other appliances
- Transport equipment
- Furniture and other manufacturing.

The overview is included as Annexure X, but a synthesis of the findings is set out in the following sub-section.

4.4 Target industries

The Mpumalanga economy was valued at R60 billion in 2004 and contributed 6.33% to the South African economy in that year. The economy has been growing at an average 2.5% per annum since 1995.

The manufacturing sector is the second biggest contributor to the provincial economy, preceded by the mining. In 2004, the manufacturing sector accounted for 20.5% of the Provincial GGP and 6.7% (553,000 people) of total provincial employment. The electricity and water sector is the third smallest sector in the Province. It contributed 5.5% to the Provincial GGP in 2004 while the formal construction sector generated R3.3 billion, or 1.27% of the provincial GGP in 2004.

The manufacturing sector in the Mpumalanga Province is predominately based on the following sub-sectors, which together account for almost 88% of manufacturing GGP:

- The fuel and petroleum products sub sector (33% of the manufacturing GGP)
- Metals and metal products sub-sector (26.2% of the manufacturing GGP)
- The food and beverages sub sector (16% of the manufacturing GGP)
- Wood and wood products (12.6% of the manufacturing GGP).

A detailed analysis of the manufacturing sub sectors, is provided in Annexure X, an overview of the most relevant findings are presented in this section. This analysis assisted in identifying potential economic drivers in the secondary sector in the Province and also identified districts in the Province that have a competitive advantage in each sub-sector.

Table 4.9 summarises the spatial distribution of the secondary industry sub sectors and highlights their development potential in the Mpumalanga Province. The key **existing and future** potential high impact/growth sectors in each District based on historic trends are also summarised below.[12]

Table 4.9: Current and potential spatial development of the manufacturing sub-sector in the Mpumalanga Province

Local Municipality	Existing High Impact Sub-Sectors	Future High Growth Sub-Sectors
Mbombela	▫ Food, beverage and tobacco ▫ Textiles, clothing & leather goods ▫ Wood and wood products ▫ Fuel, petroleum, chemical and rubber ▫ Other non-metallic mineral products ▫ Metal products, machinery & household appliances ▫ Electrical machinery & apparatus ▫ Electronic, sound/vision, medical & other appliances ▫ Transport equipment ▫ Furniture and other manufacturing	▫ Wood and wood products ▫ Other non-metallic mineral products ▫ Metal products, machinery & household appliances ▫ Electrical machinery & apparatus ▫ Transport equipment ▫ Furniture and other manufacturing
Nkomazi	▫ Food, beverage and tobacco ▫ Electrical machinery & apparatus ▫ Transport equipment	▫ Other non-metallic mineral products ▫ Metal products, machinery & household appliances ▫ Electrical machinery & apparatus ▫ Transport equipment ▫ Furniture and other manufacturing
Umjindi	▫ Food, beverage and tobacco ▫ Wood and wood products ▫ Fuel, petroleum, chemical and rubber ▫ Other non-metallic mineral products ▫ Metal products, machinery & household appliances ▫ Electrical machinery & apparatus ▫ Electronic, sound/vision, medical & other appliances ▫ Transport equipment	▫ Wood and wood products ▫ Other non-metallic mineral products ▫ Metal products, machinery & household appliances ▫ Electrical machinery & apparatus ▫ Transport equipment
Thaba Chweu	▫ Wood and wood products ▫ Fuel, petroleum, chemical and rubber ▫ Metal products, machinery & household appliances ▫ Transport equipment	▫ Wood and wood products ▫ Other non-metallic mineral products ▫ Metal products, machinery & household appliances ▫ Transport equipment ▫ Furniture and other manufacturing
Bushbuckridge	▫ None	▫ Furniture and other manufacturing
Kruger Park South	▫ Electronic, sound/vision, medical & other	▫ None

[12] The results presented in Table 4.68 are based solely on the CAA analysis conducted in this Section of the report.

Local Municipality	Existing High Impact Sub-Sectors	Future High Growth Sub-Sectors
	appliances	

It is evident that Mbombela, Umjindi and Thaba Chweu have many existing competitive advantages (some are under pressure) while Bushbuckridge and Kruger Park South have very limited competitive advantages, but does have some untapped potential.

The aim of this study is however to concentrate on the feasibility of an industrial park in the vicinity of the Kruger Mpumalanga International Airport, and it is therefore the aim of this section to put forward some recommendations as to the specific sub-sectors that should be considered for inclusion in the proposed industrial development.

Based of economic performance indicators, specifically with regard to the Mbombela Local Municipality, the following findings were made:

Table 4.10: Historical and future potential of the manufacturing sub-sectors

Sector and sub-sector	GGP (R in m)	Employ.	LQ	Carvalho	Industry Targeting Classification
Food, beverages and tobacco products	R329	2,914	1.31	Evolving	Prospects limited by external trends
Textiles, clothing and leather goods	R18	666	2.00	Evolving	Prospects limited by external trends
Wood and wood products	R772	3,568	1.02	Yielding	High priority retention target
Fuel, petroleum, chemical and rubber products	R120	577	1.80	Evolving	Prospects limited by external trends
Other non-metallic mineral products	R57	632	2.02	Driving	Current strength
Metal products, machinery and household appliances	R187	1,771	1.72	Promising	High priority retention target
Electrical machinery and apparatus	R24	226	1.92	Driving	Current strength
Electronic, sound/vision, medical and other appliances	R8	96	2.07	Evolving	Prospects limited by external trends
Transport equipment	R136	369	1.61	Driving	Current strength
Furniture and other items NEC and recycling	R76	798	1.52	Driving	Current strength

More specifically it is important to focus on the development potential of the Mbombela Local Municipality in order to narrow down the focus of potential sectors and industries that could be included in the Industrial Park currently being investigated. And from this section it is clear the following sectors have specific potential:

- Wood and wood products
- Other non-metallic mineral products
- Metal products, machinery & household appliances
- Electrical machinery & apparatus
- Transport equipment
- Furniture and other manufacturing

Additional opportunities that have been identified from the agro-processing sectors, includes the following sub-sectors:

- Convenience food (functional foods, value-added, heat-and-eat foods)
- Specialty foods
- Organic and natural produce foods

The following sub-section provides information regarding the property trends and absorption rates in order to determine the specific size the proposed industrial park should ideally be.

4.5 Property trend analysis

This section provides the results of the market potential analysis for industrial space.

4.5.1 Classification

The industrial property market refers to space and buildings for all manufacturing activities, ranging from larger export industries to small manufacturing concerns.

Manufacturing activities can be located in the following three types of developments:

4.5.1.1 An Industrial Hive

An industrial hive is designed as a SMME incubator facility. This could include a grouping of several buildings within an enclosed area, as well as a building consisting of several levels (floors) occupied by different companies. The main purpose of hives is to capacitate small businesses to enable them to enter the market place and remain competitive. In the light of the above, periods of stay are limited. Business, technical and other support services are usually provided for small businesses. Public or private small business organisations generally manage hives. (Urban-Econ; 1999) and (Western Cape Services Regional Council; 1993)

4.5.1.2 A Local Industrial Park (LIP)

A LIP can be described as an industrial site, which has been subdivided into smaller units than are normally found in traditional industrial areas. These units are geared towards existing small businesses in accessible areas. A LIP is centrally managed and maintained and in some instances business support services, are provided. In general, small businesses may stay for unlimited periods within LIPs. Some of these LIPs are also known as prestige developments, which are more up market areas, with more sophisticated images, which include landscaping and relatively low building densities. (Urban-Econ; 1999)

4.5.1.3 Traditional Industrial Development

Traditional industrial developments constitute the largest number of industrial areas in the country and typically involve stands from approximately 2 000m² to a couple of hectares. Generally these types of development are situated in the traditionally zoned industrial areas of towns and cities.

4.5.2 Trends

4.5.2.1 National

There has been an improvement in the manufacturing business confidence index due to the following:

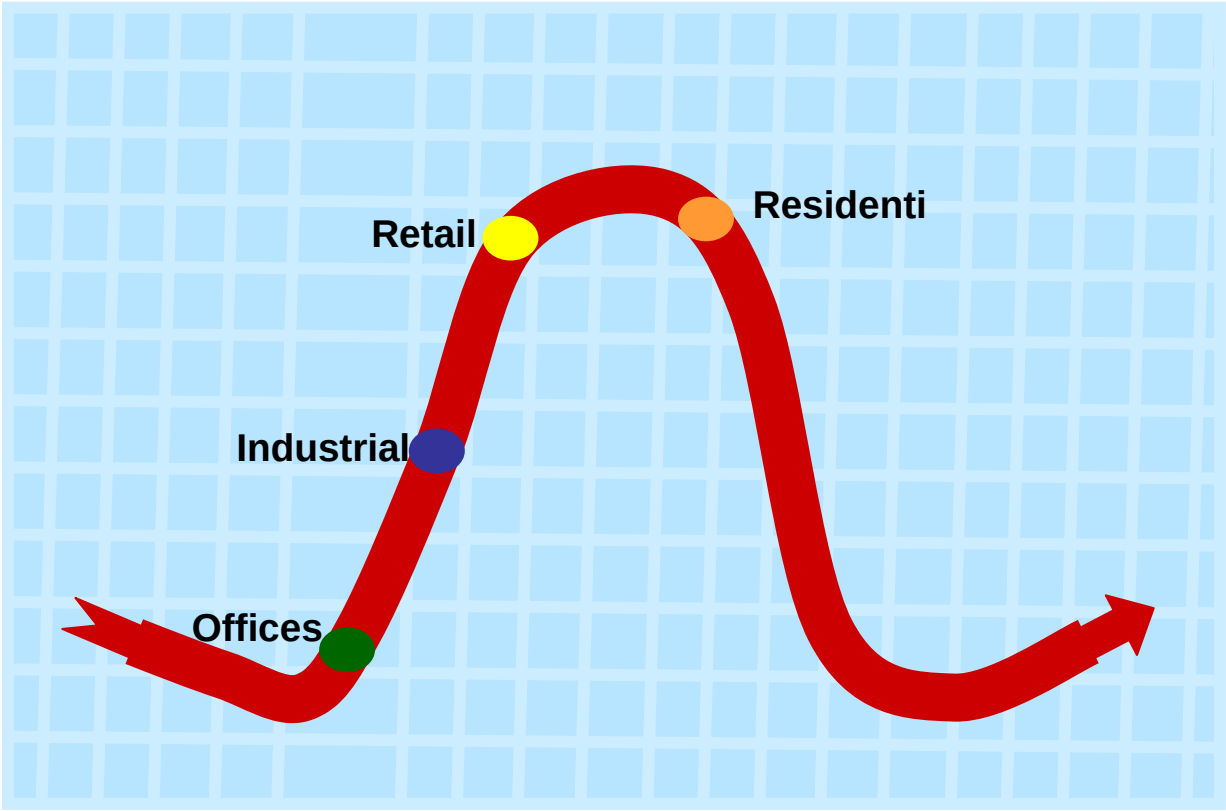
- higher domestic sales and production volumes; and
- lower finance cost environment, which is conducive for investment and capacity expansions.
- Despite these improvements, the general export performance of the manufacturing sector has remained poor.

- In general there are signs of recovery for the manufacturing sector as a whole, which could have medium to long term positive effects on the property market due to lag between the economy and real estate markets.
- Focal shift away from historically "dirty" industries towards high tech production assembly and distribution.
- National Government has instituted various initiatives to promote the growth and specialisation of the manufacturing sector at selected spatial concentrations, i.e. SDI's and IDZ's. This implies that those areas not located in these spatially demarcated areas have a comparative disadvantage.
- Increased emphasis on SMME promotion through government support and incentives.
- Prime rentals are obtained in the larger centres, i.e. Gauteng, Nelspruit, Durban, Richards Bay, Cape Peninsula and Bloemfontein (R15-R22/m²).

4.5.2.2 Market life cycle

The following figure (Diagram 4.1) illustrates the sectoral position that each market (offices; industrial; retail and residential) occupies in the real estate cycle in South Africa, in terms of level of activity versus time.

Diagram 4.7: Sectoral Positioning in the South African Real Estate Cycle



Source: Urban-Econ, 2006

Residential:
The residential market peaked in 2005 and market indicators reveal that this market is still growing, albeit at a slower pace than in 2005. Growth in metropolitan areas will continue to be fuelled by positive net migration and population growth.

Retail:
The retail market is still buoyant and is currently experiencing growth as last seen in the 1970's. This growth is expected to continue for at least another three to four years.

Offices:

Not only databases, but also brokers and other real estate professionals, have noted the lack of stock in South African commercial markets, including offices and industrial space. Composite rental and vacancy indicators suggest that these markets are at the dawn of a new growth phase.

Industrial:
Similar to the office market, the industrial market is receiving increasing inquiries for stock, in particular warehouse and distribution areas. It is expected that similar to the office market, increased levels of building activity will take place over the short to medium term.

Independent Urban-Econ studies, coupled to an extended network of leading real estate data warehouse companies, indicate that the real estate long cycle is currently in an upswing phase and will remain at buoyant levels. Market indicators suggest that this will only taper off towards 2015, which implies strong growth market conditions for most real estate sub-sectors over the medium to long term.

4.5.3 Market supply

The following table provides an overview of existing facilities in the various property markets concerned, as well as forecast additional space demand with regard to Nelspruit and White River, as well as Rocky's Drift and Riverside.

Table 4.11 indicates that the largest share of *industrial facilities* is located in Nelspruit Industry, with approximately 74% of the total industrial facilities in the selected area. Note that Manganese Metal Company (MMC) also forms part of the industrial facilities of Nelspruit Industry. Rocky's Drift Industry has the second largest share of approximately 15%.

Table 4.11: Existing Facilities in various markets (2006)

	STATUS QUO DISTRIBUTION		FUTURE GROWTH APPORTIONMENT	
Industrial Facilities	**Space Supply (m²): *2006***	**Proportional Share (%): *2006***	**Proportional Share (%): *2025***	**Space Supply (m²): *2025***
Nelspruit CBD & Ext.	16 568.00	4.4	0.0	-
Nelspruit Industry	276 600.52	74.1	5.0	17 139.71
Riverside	1 499.00	0.4	35.0	119 977.95
Rocky's Drift Industry	57 522.42	15.4	30.0	27 135.47
White River	21 156.53	5.7	30.0	27 135.47
TOTAL	***373 346.47***	***100.0***	***100.0***	***191 388.60***

5.5.3.1 *Cumulative space demand*

The table below was formulated as part of an industrial space demand study Urban-Econ undertook during 2006. This provides an overview of the total industrial space demand for Mbombela.

Table 4.12: Total cumulative space demand for Mbombela

	Cumulative Additional Industrial Space Demand (sqm GLA)		
	2010	**2015**	**2025**
Mbombela (Total)	**76 596.43**	**127 236.67**	**243 694.21**

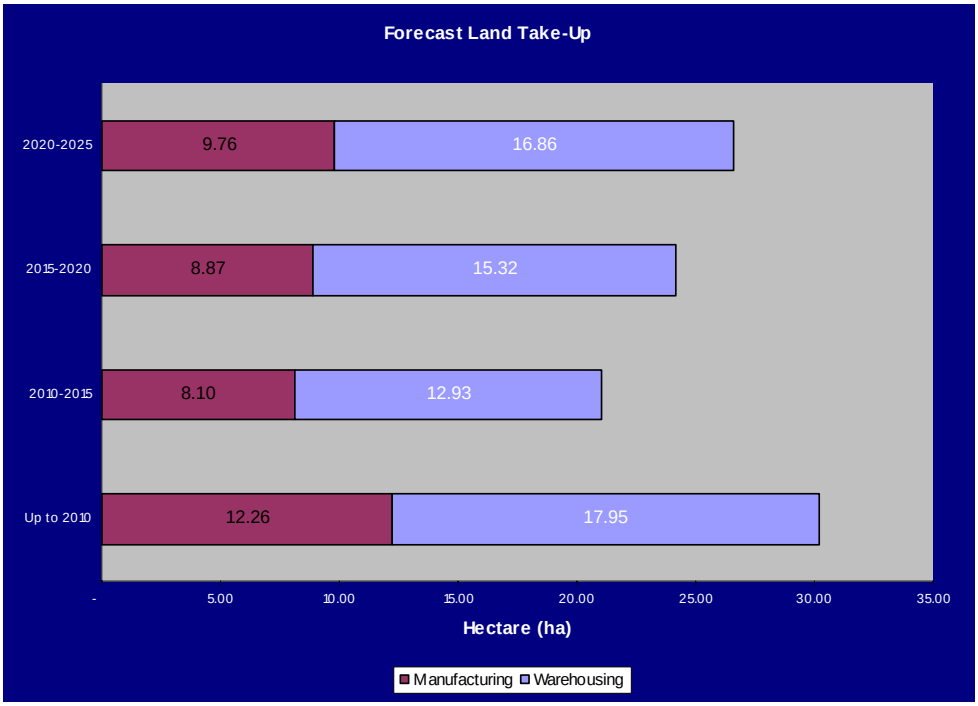
Calculations have indicated that there is a cumulative land demand for industrial space of 100 ha in Mbombela by 2025, which refers to land size, and of this demand, in both scenarios set out below; it is believed that the take up rate for warehousing and distribution will form the biggest share of the development, set out in the graph below.

In order to provide a clearer picture about the demand for industrial space, the 100 ha was converted to gross leasable space, and this is set out in the following table.

It is however essential to take note of the fact that the planned industrial park could not be expected to attract/provide for all this demand based on a number of reasons, such as location, incentives, services etc.

Industrial sector development is driven by different market indicators and it is therefore proposed that the assumption concerning space demand for the two sites under investigation do not differentiate between the two sites, and the cumulative space demand is set out in the Table below:

Diagram 4.8: Forecast Land Take-Up: MBOMBELA



It is expected that either of the two sites will be able to attract between 25% and 30% of the total space demand for industrial development as indicated for the Mbombela area, and set out below:

Table 4.13: Total cumulative space demand for two selected sites

	Cumulative Additional Industrial Space Demand (sqm GLA)	
	2010	2025
Plaston/KMIA and Karino	19,149.11	73,108.27

4.6 Conclusion

The aim of this section was to provide an understanding of the Mpumalanga economy and to indicate in more detail the specific spatial distribution of strengths in specific sub-sectors of the manufacturing sector in terms of eh local and district municipal areas.

Additionally this section indicated the space demand trends for the two sites that were considered as potential locations for the proposed industrial park in order to create an understanding of the development potential of each of these.

The contents of this section will also be investigated in more detail in the following section that investigates the specific sites in more detailed and also later in the document when the integrated development concept is discussed.

SECTION FIVE: STUDY AREA AND SPATIAL DEVELOPMENT TRENDS

The aim of this section is to provide insight into the investigations and decision-making guiding principles that were utilized in order to determine the most suitable location for the proposed industrial park. Mention will be made of the original short list of four sites, the specific evaluation criteria that was used to identify only two location options, and – then also provide an overview of the in-depth assessment of the final two sites that were considered.

5.1 Site Identification

During the KMIA Industrial Park Project Management Committee Meeting number 01/06 held on Monday 22 May 2006 a brainstorming session was held in order to identify potential sites for location of the proposed Industrial Park. As a result, three potential sites for the development of in close proximity to the KMIA were identified, namely Plaston, Karino and Rocky's Drift. At a later stage an additional site, referred to as the KMIA site was added as a potential location for the industrial park. Please Refer to Map 1 Section 1 for a spatial representation of the four potential sites. Additional maps indicating some of the most pertinent aspects related to the final two sites will be provided in the remainder of this section.

5.2 Site Evaluation Criteria

In a number of studies undertaken within the Mbombela area, various developmental directives for each of the identified potential sites had been formulated. Using this as guidelines with regard to the development of an Industrial Park the suitability of each site needed to be assessed in order to identify which of these sites will ultimately be the most suitable site that could fulfill the role as location for an Industrial Park in the vicinity of the KMIA.

Apart from these development directives, additional criteria were identified in order to ensure that all the relevant aspects of each site and its specific location is taken into account during the decision-making process. The higher the extent to which the criteria is met places that specific site in a more favorable position as the chosen location.

The following table provides an overview of the criteria identified:

Location Factor	Remarks
Visibility and exposures	Visibility and exposure to any major arterial routes which increases the access and exposes the development to high volumes of traffic.
Accessibility	Accessibility in terms of arterial and local collector roads and other modes of transport such as the rail. Site is large enough to incorporate all truck sizes with ease with minimal impact on local roads.
Functionality and complimentary	The ideal is that the proposed development will strengthen the nodal characteristic of the area it is proposed for.
Growth	It must be possible for future growth to be planned for spatially
Competition	The level of competitors should be kept at minimal levels so as to take ownership of the market. It is therefore necessary to identify the proximity to competing nodes.
Traffic Volumes	Site location should not be where traffic volumes are a problem to avoid congestion
Access to labour force	Low/moderate skilled labor force within walking distance. The availability and accessibility of affordable public transport and also the proximity of site to housing for professional workers & executives. Most

Location Factor	Remarks
	preferably, the site should be within 10km walking distance from residential communities.
Setting, amenities and quality of the urban environment	An area that is perceived as safe and secure while providing an ideal location for the development of an industrial park while also providing the labour force to easy access to a suitable residential area.
Supporting uses	Due to the nature of an industrial park development, proximity to markets as well as end users or points of export should be relatively easy in order to ensure transportation costs are kept to a minimum
Connectivity	Ideal would be an area supported by a robust and reliable power supply, another factor to consider will be if any initial clustering is already occurring i.e. related and supporting technical industries present and operational.
Overall Potential	Existence of a strong demand for an industrial park within the region
Physical and Environmental Characteristics	Flat sites lacking steep topographical features are most preferred. Distance from wetlands and other sensitive natural features should be kept. Visual impacts should be minimized by all means

Based on the evaluation of the sites according to the criteria list above, the four original sites were reduced to two sites, a combination of the Plaston and KMIA sites, referred to from here as the KMIA/Plaston site, and the Karino site.

5.3 Existing and Proposed Developments and Infrastructure

The existing and proposed developments within the KMIA Development Corridor and the Engineering and Roads Infrastructure provide the basis from which future planning for development will take place. See Map 1 in Section 1.

The existing and proposed development and infrastructure components were assessed in order to ensure that the final proposed development concept were aligned with these aspects and that it:

- Supported the existing and proposed developments
- Integrate with a cost effective engineering services and roads system.
- Support the existing Mbombela Spatial Development Strategies and Framework.
- Support an efficient transportation system.
- Protect and enhance the environment.
- Provide the necessary critical mass to ensure the sustainability of the KMIA as international port.

5.3.1 Existing and Proposed Developments

The main existing and proposed developments that will have an influence on the future planning of the area is discussed hereunder.

5.3.1.1 K'Shani Eco Estate

K'Shani consists of a game reserve with three camps and is situated on approximately 2318 ha. compose a wildlife of more than 3 000 head of wildlife, including White Rhino, Buffalo, Giraffe, Zebra and many species of buck. It also has over 300 bird species and an abundance of indigenous tree and plant life. K'Shani provides conference as well as a vast variety of tourism facilities.

K'Shani will in future be transformed into a golf course and eco estate consisting of 779 residential stands, also providing for a hotel and conference facilities, including hotel villas, restaurants, health spa, medical spa, gymnasium,

convenience store, clubhouse facilities including a pro shop, restaurants, banquet facilities, locker rooms and uses ancillary to the main use, sport facilities including golf academy, driving range, sports fields, swimming pool, tennis- and squash courts, tourism and accommodation, and agricultural.

The township establishment application has already been approved.

5.3.1.2 Karino

The Mbombela Spatial Framework provides for approximately 96 ha of Industrial/Commercial land and ha of residential land at Karino. Main activities within the node include the Citrus Co-op, the Karino station, local shops, a stone crusher and concrete products factory. A developer has already done a land assembly on merely the entire node and will approximately of 5000 residential stands be provided.

5.3.1.3 Plaston

The Mbombela Spatial Framework provides for approximately 160 ha of Industrial/Commercial land and ha of residential land. Main activities within the node include the 2 filling stations, builder supplies and some commercial and retail facilities. A township providing for potentially 1030 housing units and 15 ha of commercial/business within this node has been submitted to Mbombela Municipality.

5.3.1.4 Dwaleni

The Dwaleni Settlement comprises of approximately 1200 households and total population of 6300 people.

5.3.1.5 KMIA

The airport is situated on 568 ha and consists of the following facilities:

- A 7800 m² terminal building
- A 3.1 km runway
- 3 hanger structures

Proposed KMIA Master Plan

The airport handles approximately 180000 passengers annually, of which 70% is tourist and 30% business passengers. (2005)

Approximately 96 ha vacant land is available for development.

The proposed KMIA Masterplan (Virtual Buro 2007) shown above provides for substantial extensions to the towards the north-eastern side of the airport and also provides a industrial area, which will fill the gap between the airport and Plaston.

The master plan provides a very long-term (50 year +) view of the possible future development of the area. The plan is not based on any demand analysis for appropriate industrial facilities and will the area needed for industrial purposes be much smaller than the area proposed by this plan. The area for the extension of the airport towards the north-east needs to be reserved in order to ensure the long-term development of the airport. This area is currently privately owned.

The plan provides for three accesses onto P538, restricting the mobility function of this road. An alternative access the Kabokweni road will enhance the local accessibility to the residential areas.

5.3.2 Engineering and Roads Infrastructure

No engineering infrastructure exists for Karino and Plaston. The Existing Roads infrastructure is set out on Map 1. The KMIA provides its own water and sewerage.

5.4 Spatial Development Strategies

The aim of this section and it relevant sub-sections is to create an understanding of the various strategic policy guideline documents that have been compiled with regard to future development expected in the various planning sections of Mbombela. The relevant planning areas have been considered with regard to the potential location of the proposed industrial park.

5.4.1 Mbombela Strategic Development Framework

The Mbombela Strategic Development Framework is represented on Map 2. The KMIA activity node forms part of a system of existing and proposed development corridors and activity nodes, which acts as a framework for development to ensure a balance between the main objectives of:

- Dispersing economic development to underdeveloped areas within Mbombela, addressing the needs of the poor in terms of jobs nearer to their place of home.
- Concentrating development within existing and proposed urban development corridors and activity nodes in order ensure the productive provision of engineering and social infrastructure and protecting the natural environment as well as prime and unique agricultural land.
- Providing housing nearer to the place of employment.
- Providing a transportation system addressing the mobility needs of the people

In order to achieve the objectives the Mbombela Strategic Development Framework identified and utilised the following corridors and multi functional nodes.

Insert Map 2

5.4.1.1 The N4 Maputo Corridor

The N4, which also acts as high mobility route supporting the Maputo Corridor, also provides the main link road between Kanyamazane and Nelspruit. Realignment of the N4 to the north of Nelspruit will also provide direct accessibility to the Nelspruit White River Development Corridor and the Riverside Activity Node, specifically.

5.4.1.2 The Nelspruit – White River Development Corridor (NWRDC)

The Nelspruit–White River Development corridor is provided along the R40 route, which include the Nelspruit CBD, the Nelspruit industrial and commercial areas, the Riverside Park industrial area, the Riverside Mall, the Mpumalanga Provincial Government office complex, Rocky Drift and White River. The residential areas of Nelspruit and White River are also included.

The R40 acts as access road directly supporting land development along the road. A proposed high mobility route P66-1 is provided west thereof, which will ensure the long term mobility and accessibility of this corridor and contribute to the success of developments within the corridor.

5.4.1.3 The Mbombela Eastern Development Corridor

The Mbombela Eastern Development Corridor consists of a broad strip of urban, semi urban settlements, stretching from Hazyview in the north to Kanyamazane in the southwest. The corridor represents the majority of settlements within the Nsikazi Area. Low-income residential areas with generally low engineering and social infrastructure levels characterise this corridor.

In order to ensure the regeneration of the economy within the Mbombela Eastern Development Node the following activity nodes area provided within the corridor:

- Swalala
- Kabokweni
- Kanyamazane

5.4.1.4 The KMIA Development Corridor

The KMIA Development Corridor on Road 636 (White River – Karino) provides the opportunity of establishing employment centers on the threshold of the southern part of the Eastern Development Corridor within easy access to Kabokweni, Daantjie-Msogwaba and Kanyamazane with a direct link to the N4. Accessibility of the northern Mbombela areas to this corridor will be enhanced should the link thereof to the north be upgraded. The KMIA consists of the following development nodes:

- The Karino Activity Node providing for limited commercial/industrial and tourism activities at the intersection of the Road 636 with the N4 at Karino
- The Plaston Activity Node at the intersection of major connectivity routes viz. R812 (Rocky Drift) and R2689 (Kabokweni)
- The Kruger Mpumalanga International Airport provides domestic, national and international connectivity to the region

The KMIA Development Corridor also provides for a tourism and agriculture zone along the P636.

5.4.2 The Mbombela Spatial Development Framework

The Mbombela Spatial Development Framework defines the above nodes and zones and provides development directives for the different land use categories. See Map 3.

- Demarcation of the nodes and zones and the provision of an urban edge were done

- Through a consultation process with the National Department of Agriculture
- A slope analysis that identified areas with slopes steeper than 16% as areas that should not be developed
- The Mbombela Environmental Management Framework.

5.4.3 Transportation

The total passenger generation and flow per area for the Mbombela Eastern Mbombela Development Corridor provided by the Mbombela Integrated Transportation Plan 2006 is set out in Table 5.1. Bus and taxi passengers make up approximately 70% of the total number of passengers from these areas. The percentage distribution of passenger flow between the major employment areas and the Eastern Mbombela areas is set out in Table 5.2.

Table 5.1: Eastern Mbombela Total Passenger Generation and Flow

Area	Total passenger generation	Bus taxi passenger flow				
		Hazyview	White River	Rocky Drift	Nelspruit	Total
Nyongani	8900	500	1300	1300	3200	6300
Greater Kabokweni	15100	200	2400	300	7000	9900
Msogwaba Kanyamazane	19500	100	2000	500	11200	13800
Matsulu	3600		300		2100	2400
Total	**47100**	**800**	**6000**	**2100**	**23500**	**32400**

Source: Mbombela Integrated Transportation Plan 2006

Table 5.2: Eastern Mbombela Percentage Distribution of Passenger Generation and Flow

Area	Total passenger generation	Bus taxi passenger flow				
		Hazyview	White River	Rocky Drift	Nelspruit	Total
Nyongani	**19%**	**2%**	**4%**	**4%**	**10%**	**19%**
Greater Kabokweni	**32%**	**1%**	**7%**	**1%**	**22%**	**31%**
Msogwaba Kanyamazane	**41%**	**0%**	**6%**	**2%**	**35%**	**43%**
Matsulu	**8%**	**0%**	**1%**	**0%**	**6%**	**7%**
Total	**100%**	**2%**	**19%**	**6%**	**73%**	**100%**

From the above tables it is deducted that:

- The flows from the eastern areas give an indication of the road system used
- There is a strong correlation between the total passenger generation and the bus/ taxi passenger generation
- The Nelspruit area as is the most important destination of passengers attracting 73% of the total bus/taxi passenger flow.
- The Msogwaba / Kanyamazane to Nelspruit bus/taxi passenger flow represent the largest percentage of all areas namely 35% of the total flow. Most of these trips will utilize the N4 and Kanyamazane- Nelspruit routes.
- The Greater Kabokweni to Nelspruit bus/taxi passenger flow represents the second largest percentage of all areas namely 22% of the total flow. The Greater Kabokweni to White River and Rocky Drift bus/taxi passenger flow represents 8% of the total bus/taxi passenger flow. Most of these trips will utilise the Kabokweni-Rocky Drift-R40 and Kabokweni –White River) routes.

The existing bus taxi passenger flows within Mbombela are depicted in diagram 5.1, 5.2 and 5.3.

Insert Map 3

Diagram 5.1: Greater Kabokweni - Existing Bus Taxi Passenger Flows

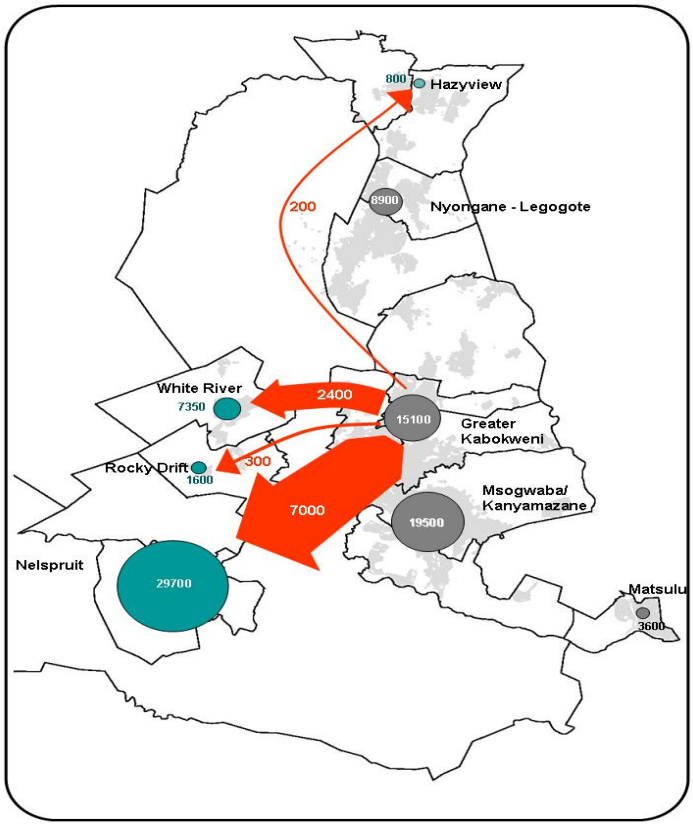


Diagram 5.2: Msogwaba / Kanyamazane - Existing Bus Taxi Passenger Flows

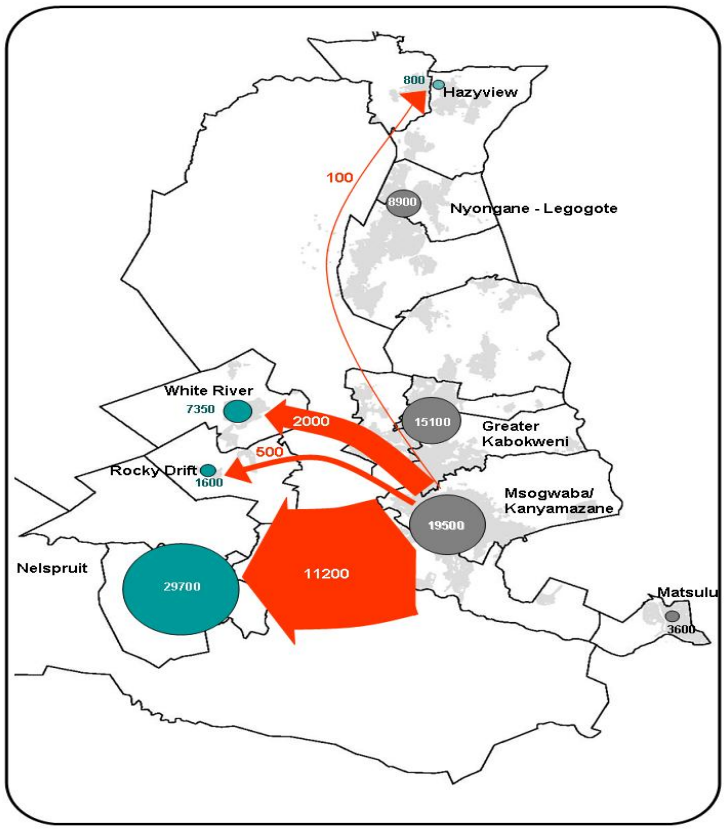
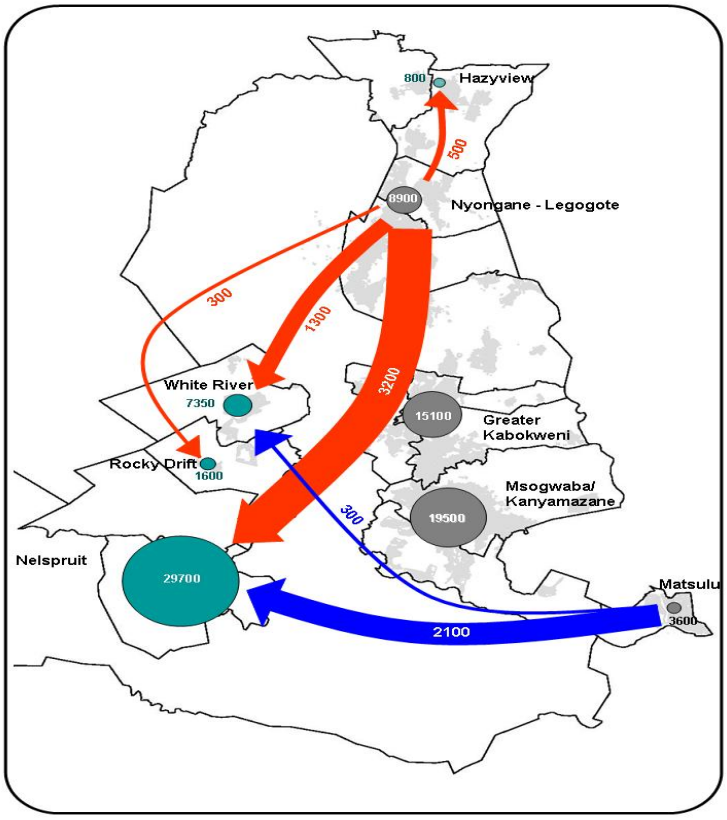


Diagram 5.3: Nyongani/ Legogote -Existing Bus Taxi Passenger Flows



Based on the above the accessibility of the two nodes to the total daily passengers that will potentially pass the two activity nodes can be determined. See table 5.3.

Table 5.3: Potential daily passengers passing Activity Nodes

Activity node	Link	Activity node	Total passengers passing
Plaston/ KMIA	Kabokweni- Rocky Drift/ White River -Nelspruit	Plaston/ KMIA	18,026
Karino	Msogwaba/kabokweni- Nelspruit	Karino	19,770

From Table 3 it is evident that the estimated total passengers passing the Karino site is slightly higher than that of the Plaston / KMIA site. It can be accepted that the existing passenger flow patterns will equally support both the Plasto/KMIA and Karino sites.

5.4.4 Environmental Development Strategies

4.4.4.1 Topography and Slope Analysis

The topography of the KMIA Development Corridor is represented by Map 4 A. The slope analysis provides for slopes flatter than 16%, which is regarded as suitable for urbanization and slopes steeper than 16%, which should be included into an open space system. See Map 4B Slope Analysis.

4.4.4.2 Agriculture Potential

An urban edge was determined in conjunction with the National Department of Agriculture and was areas considered as prime and unique agriculture preserved in the Mbombela Spatial Development Framework.

4.4.4.3 Ecological Importance Rating

The Ecological Importance Rating for the KMIA corridor is spatially represented on Map 5. The Mbombela Environmental Management Framework classifies the ecological importance of areas into the following categories:

- Protected Areas;
- Very High – C-Plan "Irreplaceable" sites;
- High – C-Plan "Highly Significant" sites;
- Medium to High – C- Plan "Important and Necessary" sites, wetlands, undeveloped ridges and natural vegetation categories;
- Medium – C-Plan "Least Concern" sites, disturbed natural vegetation categories, exotic plantations and cultivated lands; and
- Low – C-Plan "No Natural Habitat Remaining" sites, developed ridges and built up areas.

The Mbombela Environmental Management Framework sets the following conditions with regard to the different categories.

4.4.4.3.1 Protected Areas

- Governed by the National Environmental Management: Protected Areas Act, 2003(Act No. 57 of 2003).
- Require management plans that must identify allowable activities, uses and developments and allocate them to appropriate zones. They should also address policy and implementation issues, buffer zones, timeframes, staffing, performance criteria and budgets and must undergo a public consultation processes with the surrounding community (MDALA, 2006).

4.4.4.3.2 Very High Ecological Importance

- These areas should be incorporated into the formal protected areas system through the National Environmental Management: Protected Areas Act, 2003 (Act No. 57 of 2003).
- Any change of land use, development or construction will require a full EIA procedure.
- The concept of providing offset areas in exchange for biodiversity loss in these areas should not be considered.

4.4.4.3.3 High and Medium to High Ecological Importance

- Permissible land uses should be limited to those least harmful to biodiversity (i.e. conservation management, game farming, extensive livestock production and rural recreational development).
- No significant increases in the occurrence of intensive livestock production, cultivation-based agriculture and urban/industrial development will be permitted.
- Should development be unavoidable, such land use must be sufficiently dispersed (or clustered)
- Provision of compensatory offsets for biodiversity loss should only be considered at an exchange rate of at least 200% for "high" ecologically important sites and 100% for "medium to high" sites (MDALA, 2006).
- It is strongly recommended that such sites must include a landscape plan (at a maximum scale of 1:200) that limits the area that can be landscaped, specifies the type of fencing and stipulates that only the use of indigenous vegetation will be permitted.
- Where the proposed development site lies adjacent to a water body/wetland, the 1:100 year floodline must be determined and indicated on the site development plan.
- No alteration of the riparian vegetation will be permitted, as a result of the development
- An aquatic ecological study is also required with an environmental management plan detailing stormwater management and monitoring procedures for all developments adjacent to the water body / wetland.
- Water use licenses are required from the Department of Water Affairs and Forestry (DWAF) for the storage and use of water abstracted from boreholes, springs or river courses, the altering of the stream flow, banks,

Insert Map 4

Insert Map 5

- bed, characteristics and course of water bodies as well as the disposal of waste or water containing waste, as per Section 21 of the National Water Act, 1998 (Act No. 36 of 1998).
- Irrigated-crop agriculture and industries must be limited in areas identified as high risk.

4.4.4.3.4 Medium and Low Ecological Importance

- Although biodiversity issues are of least concern, management must be considered on a catchment basis, as it may provide useful ecological connectivity or ecosystem service function. Land use planners are also required to **consider socio-economic efficiency, aesthetics and the sense of place in making decisions regarding development.**

5.5 Development Strategies

5.5.1 Vision

In order to focus the development guidelines and strategies on the KMIA Development Corridor, a clear vision and associated goals have to be formulated for the establishment of an industrial park in proximity of the KMIA. The vision and goals endeavor to facilitate sustainable and equitable growth and development in the KMIA Development Corridor, and are founded on sound economic principles.

The vision of the development of an Industrial Park in the vicinity of the KMIA is:

"To enhance the role and function of an Industrial Park in the vicinity of the Kruger Mpumalanga International Airport as part of a system of competitive and supportive activity nodes providing accessible employment to the historically disadvantaged communities and the development of tourism and the manufacturing and export of goods to the optimal benefit of the local and regional economy by:

- *Integrating into a system of development nodes, which yields*
  - *maximum socio economic opportunity and choice,*
  - *greatest ease of use,*
  - *maximum efficiency,*
  - *optimal effectiveness*
- *Sustaining a healthy and balanced economy*
- *Promoting the industrial, commercial and residential sectors."*

5.5.2 Strategic Objectives

The above vision can be achieved through the following objectives:

- Planning and directing development within the different development zones within the KMIA Activity Corridor in order to achieve the optimal functional performance of activities and enhancing synergy between activities.
- Optimally utilizing existing positive developments within the KMIA Activity Corridor directing development to specific areas providing for the efficient consolidation, intensification, generation and expansion of activities.
- The optimal utilization and efficient application of existing social, economic, transportation, engineering and urban development infrastructure in order to create a sustainable basis for future development and growth.
- The provision of balance between human activities and the natural environment.
- The enhancement of external and internal accessibility within all areas of the KMIA Activity Corridor thereby providing the optimal integration, interaction and communication between activities and the major centers of employment.
- Sustainable land uses attending to the compatibility of activities.

- Protecting the riverine and natural pristine river areas.
- Develop and implement workable market based strategies that are monitored regularly.
- Engage in active facilitation of private and public investment in selected areas.

5.5.3 Development Strategies

Based on the above mission and objectives the following development strategies were adopted.

4.5.3.1 Optimally utilising and enhancing the regional mobility

Regional mobility is determined by the accessibility offered by the road and transportation infrastructure, which in future will support the sustainable development of the KMIA Industrial Activity Node.

The N4 route supported by the Maputo railway line provides the backbone to the Maputo Corridor providing direct international and regional accessibility. The regional mobility created by the N4 supported by the north south accessibility of the R40 ensures the sustainable development of the Nelspruit White River Development Corridor with Nelspruit CBD / Industrial Areas / Riverside Park as Regional Activity Node. The R40 as activity route, which will be supported in future by the P66/1 as mobility route accommodates the largest part of the economic growth within the trade, industry and office sectors within Mbombela as well the Ehlanzeni District.

Rocky Drift and White River Activity Nodes play a lesser regional function role due to the distance from the point of maximum accessibility provided by the intersection of the R40 with the N4. Increasing congestion will have a detrimental effect on mobility on the R40 axis. The enhancement of regional accessibility through the future P166/1 as well as the realignment of the N4 will however increase regional mobility and enhance the capacity of the Nelspruit White River Corridor to accommodate further growth in future.

In order to ensure long term mobility it is necessary to adopt a strategy of supporting a system of alternative activity nodes which will provide a conduit for the sustainable decentralisation of activities from the existing Nelspruit White River Corridor that will support the existing and future mobility patterns determined by the status of roads in terms of regional mobility, connectivity and accessibility.

Route R636 provides an activity corridor competing with the R40 activity corridor, stretching from the north - west in White River and linking up Plaston, KMIA and Karino activity nodes with the N4 Development Corridor. Regional connectivity to the R40 route and R538 north east of White River will be enhanced through the future upgrading of the road system, which will enhance the sub regional accessibility of the P636 to the population of northern Mbombela and Bushbuck Ridge.

The lack of an alternative route that can act as a mobility route to the R636 inhibits the function of the R636 as access route to developments disallowing more intensive developments with easy access on the route. R636 will therefore have to act as mobility route with interchanges at intervals on the route providing for access roads to specific activity nodes.

The Plaston railway line provides a possibility to increase the appropriate transport capacity for industries at Plaston / KMIA that will not use air transport. The goods line that stretches from Nelspruit via White River to Plaston Station follows a convoluted long route and does not directly link with the Maputo rail link. An alternative to directly link the airport with the east west Maputo line was investigated by the KMIA and is not regarded as feasible due to the high construction costs as a result of the topography.

The Plaston and KMIA activity nodes are 5 km apart which in a manner restricts the integration of the two nodes. The KMIA is only 10 km north of the N4 and can be regarded as within the direct functional sphere of the Maputo

Corridor. The Plaston Activity Node is situated on the Kabokweni road providing direct access to the Kabokweni and surrounding communities.

The Karino Activity Node disposes of the direct advantages of regional mobility, connectivity, accessibility and exposure due to its locality with regard to:

- The intersection of the R636 with the N4
- The existing Maputo railway line with and existing railway station
- The Kanyamazane and Luphisi roads providing direct access to the transportation routes linking the Kanyamazane and Daantjie, Msogwabe, Clau Clau and Swelishwa residential areas.

This gives it a comparative advantage to the Plaston/ KMIA activity node with regard to the above factors.

The development of all three activity nodes on the R636 is however necessary in terms of the Mbombela Development Strategy, which endeavors to enhance the provision of employment and investment opportunities within easy access to the previously disadvantaged communities.

Considering the above a strategy needs to be adopted which strengthens the functional specialization of these activity nodes as part of a system of competing and complementary nodes, providing the maximum opportunity for each node to develop to its full potential.

4.5.3.2 Generating an Urban Structure

Within the normal urban context the structuring elements of corridors, spines and nodes are utilised to generate an Urban Structure. These elements are normally applicable in dense urban concentrations where accessibility to transportation systems plays a major role to ensure mobility of the people.

The relatively low density of developments along the R636 does not support the application of all structuring elements but should the principles supporting the system of corridors and nodes underpinned by applicable transportation systems be applied in structuring the urban and rural zones.

The following structuring elements relating to corridor and nodal development are applied in order to support and clarify a possible future Urban Structure.

4.5.3.2.1 Transportation Corridor

A Transportation Corridor constitutes a strip of land with more than one transport facility, to move vehicles, people and goods from one place to another. The emphasis is on providing mobility rather than accessibility. The number of access points or interchanges is less and, even in urban areas, spaced further apart.

The N4 and Maputo Railway line accentuate the Maputo Corridor as a transportation corridor.

Development needs to be linked to a public transport system. The proposed public transport system should be able to encourage:

- Densification of transport corridors
- Optimization of modal economics and service mix

4.5.3.2.2 Activity Corridor

An Activity Corridor is defined as a linear strip or area, approximately 2km wide, connecting large activity nodes, traversing urban or inter-urban areas, surrounding a major transport facility or facilities, providing an appropriate

regional level of mobility and accessibility to adjacent areas, and should contain a high concentration of population and job opportunities.

Thus, Activity Corridors will accommodate major linear transport routes like heavy and light rail and or freeways, large shopping concentrations etc., social, cultural and sporting facilities as well as a large amount of residential accommodation. Activity Corridors normally incorporate Activity Spines, Nodes and Activity Streets.

The R636 linking White River, Karino, KMIA and Plaston and extending further north via the R40 and R538 can be regarded as a future activity corridor, which will enhance the north south communication within the Mbombela area in future providing for bus/taxi, and vehicular traffic flow, which can possibly be complemented by a future commuter railway line linking the activity nodes with the Maputo transportation corridor.

A strategy needs to be adopted to integrate housing developments as part of Karino-KMIA-Plaston Development Corridor.

4.5.3.2.3 Activity nodes

Activity nodes are centers where many activities mutually reinforce each other and where there are high concentrations of people. They are characterized by the following:

- maximum access provided by inter-modal interchanges,
- high order, health, recreation, education, commercial and residential activities and
- Major investment and increased accessibility creating conditions for sustainable growth and development.

The characteristics of urban nodes therefore make them appropriate to initially focus investment within their vicinity. The existing KMIA and proposed activity nodes reinforces the existing mainly residential development nodes to the west thereof and also provides the opportunity to add residential developments to existing activity nodes.

4.5.3.2.4 Activity Spines

The development of activity spines within the proposed activity nodes of Karino and Plaston/ KMIA needs to be promoted

4.5.3.2.5 Pedestrian System

The pedestrian system is the lowest order facility in the integrated transport system but the most important in terms of integration as they are facility types that are used by all persons, especially walking. It needs to be noted that walking is an essential part of movement in many low-income communities. For such communities, walking is not usually the preferred mode of travel, but is chosen because of affordability considerations and the lack of alternative modes.

It will therefore be important to give attention to walking distances to major transport nodes, particularly bus/taxi ranks and railway stations in the study area. Taxis operate on most classes of roads, stop almost anywhere and at any time to pick up or drop-off passengers, walking distances to the taxi mode are usually shorter than that of trains, pedestrians are thus not concentrated on major routes. However the taxi stops and ranks need to be integrated into a transportation system providing for routes and interchanges.

Long walking distances to railway stations and activity nodes within the KMIA Development Corridor need to be discouraged. On average, walking distances of approximately 800m are acceptable and facilities along pedestrian routes should be provided. The provision of pedestrian facilities along major routes leading to activity nodes should be encouraged. The following aspects also need to be attended to:

- segregation of pedestrians from motorised traffic
- off-road pedestrian routes through open spaces at mid-blocks to shorten walking distances, and

- proper location and/or design of street furniture and other infrastructure services to reduce impedance.

4.5.3.3 Utilising existing resources and providing infrastructure

The proposed water services planning, roads and waste site is represented by Map 6.

4.5.3.3.1 Water Services Planning

The future provision of water services within the KMIA corridor can strategically be divided into two main functional distribution areas:

The Karino Node

The Karino Node is situated on the banks of the Crocodile River, the major water source within Ehlanzeni. The establishment of a water purification plant can provide for a water services system that pumps the water to a reservoir providing for the Karino Node. Sewerage can be linked to the existing sewerage purification plant at Kanyamazane

The Plaston-KMIA-K'shani Node

Water services planning within the Plaston-KMIA-K'Shani node can be provided as part of an integrated bulk water services network or can be done as separate networks providing for separated developments, which can be incorporated into a broader water services scheme in future.

The Manchester Agricultural Water Scheme pumping water from the Crocodile River to the Primkop dams can be used as the future system to provide a basis for an area scheme, distributing water to a purification works and system of reservoirs providing for Plaston, the KMIA as well as K'Shani.

An existing water system providing a water purification works in close proximity south east of KMIA can however provide for the needs of an industrial park at KMIA. Sewerage can also be provided on site.

4.5.3.3.2 Roads

The Karino Node

The existing road system at Karino needs to be adapted to provide for:

- Appropriate stacking and weaving distances from the N4 to the Kanyamazane road on P636
- Split level intersections on P636, the N4 and the Kanyamazane road

The Plaston-KMIA Node

The existing road system at Plaston and KMIA needs to be adapted to provide for:

- Limited access onto P636 and split level intersections on P636 in order to maintain mobility of traffic on the P636.
- A link road providing access from the proposed industrial area at KMIA to the Kabokweni Road providing better accessibility to the historically disadvantaged communities.

4.5.3.3.3 Waste

The regional waste disposal site of Mbombela Municipality is situated directly north east of the Karino site.

4.5.3.3.4 Other Services

All necessary social services and emergency services need to be provided for within the nodes.

Insert Map 6

5.5.4 Functional Specialisation

The nature of activity mix within nodes is normally determined by the following:

- A combination of factors relating to the market demand for certain activities
- The locality, accessibility and exposure of the site
- The nature of existing facilities within the node such as the KMIA
- The incentives provided to attract specific activities

The above factors will have an influence on the future role and function of the two different nodes within the Activity Corridor. In order to ensure the sustainable development of different nodes it is necessary to identify and promote the potential role and function of the nodes within the system of existing and future nodes within Mbombela and the region.

As most of the selected sectors in terms of the assessment provided in Section 5 are not airport sensitive, the manufacturing of these items can take place in any activity node and both nodes will have to compete with other nodes with regard to attracting these enterprises. The trend in the Nelspruit and Riverside Activity Nodes is towards service industries and value/ factory shopping, which leaves little room for the manufacturing of goods. Rocky Drift will remain the main competitive node. The availability of bulk water in Rocky Drift and environmental conditions will play a major role in the selection of an industrial site by an enterprise that wants to establish within Rocky Drift.

The Karino and Plaston-KMIA nodes are discussed hereunder in terms of their future potential role and function.

Karino

The Karino Activity Node, situated on the intersection of Road 636 and the N4 gives it the necessary regional accessibility to provide for not only industrial activities but also a vast array of commercial and business activities as well as social infrastructure. The potential of this site to provide for regional goods and services will be enhanced by:

- The upgrading of R636 making this area more accessible to the northern areas of Mbombela and Bushbuck Ridge.
- The increasing trade between Nelspruit and Mozambique and Swaziland and importance of the N4 as regional route.
- The proximity to Nelspruit
- Proximity of a labour force

The expected demand of 48000 m² Industrial GLA (Urban Econ 2007) for this area will be added to through the establishment of complementary activities within the node. The proximity of the KMIA (10km) provides the opportunity to also manufacture low volume - high value goods at Karino for export purposes.

KMIA- Plaston

The international status of the airport makes it a specialised regional entity. The potential of this site to provide for regional goods and services will be enhanced by:

- The potential for airport related and dependent industries at KMIA.
- The upgrading of R636 making this area more accessible to the northern areas of Mbombela and Bushbuck Ridge.
- The locality within the direct sphere of influence of the Maputo Corridor.
- The proximity of a labour force.

The proximity of Plaston to the airport provides the opportunity to provide airport related and dependent industries at KMIA and non-dependant industries at Plaston. The two areas are however severed from its other and can not easily be integrated into a single development entity.

4.5.4.1 Maintaining and enhancing the environment

The following strategies need to be adopted in maintaining and enhancing the environment.

- The land rated as very high and high and medium to high in terms of the Ecological Importance Rating of the Mbombela Environmental Framework needs to be protected.
- Prime and unique potential agriculture land needs to be conserved. The demand for land for development needs as far as possible be provided for on lower potential agriculture land. It is accepted that the areas directly north of the airport will be under pressure to develop. There is no reason to fill up the whole area between Plaston and the KMIA with industrial townships due to limited demand. Intensive agriculture in close proximity of the airport needs to be encouraged.
- Slopes steeper than 16% needs to be excluded from developments and included into an open space system.

4.5.4.2 Utilising and enhancing local labour accessibility

The impact of the proposed industrial areas on employment creation is set out in Table 5.4 hereunder.

Table 5.4 Impact of the proposed industrial parks on employment creation

Industrial Park	Estimated Employment			
	2010		2025	
	Space Demand (sqm GLA)	Employment[1]	Space Demand (sqm GLA)	Employment[1]
Plaston/KMIA and Karino	**19,149**	**456**	**73,108**	**1,741**

Note: 1. The employment is estimated at a standard of 42 sq m per worker.

Estimated direct employment opportunities provided by the two nodes amount to approximately 456 in 2010 and 1741 in 2025 for Plaston/KMIA and Karino respectively.

The relative impact of the two nodes on the provision of employment is very small considering the total unemployment within Mbombela and the region. Both sites are considered as equally accessible to the local and regional labour market.

The strategy that needs to be adopted is the diversification of economic activities within the nodes in order to maximize the impact on job creation.

4.5.4.3 Agglomeration savings

The sustainability of an activity node (industrial area) is very much reliant on the benefits, savings or cost reductions resulting from the clustering of activities external to the enterprise that establishes in the area. The following agglomeration effects will have an influence on the success of the activity node:

- agglomeration effects associated with the agglomeration of population and the resulting infrastructure facilities, labor pool and housing.
- agglomeration effects resulting from the clustering of industrial activities giving rise to an "industrial climate" (with positive and negative effects)
- effects which result from the agglomeration of specific activities which favor specialised facilities

The agglomeration effects that will have an influence on the development of the Karino and Plaston/KMIA activity nodes are discussed hereunder.

Karino Activity Node

The following aspects support or influence the agglomeration advantages of the Karino Activity Node:

1. The Karino Station directly accessible to the activity node. The provision of an industrial park will revive the function of this station as railway/freight transportation interchange. Direct access to the station is provided via an existing one lane steel bridge.
2. The existing Citrus Co-op at the Karino Station provides a platform from which agriculture processing industries can grow
3. The proximity of a vast labour force within Kanyamazane and Msogwaba / Daantjie. The level and suitability of the skills to support the individual needs of enterprises however might have a negative effect on the development of the area and needs to be addressed.
4. The proposed development of residential units at Karino provides an integrated urban node where place of work and place of living is integrated. The construction of approximately 5000 residential units is envisaged. The provision of services to the residential units will make the provision of services to the industrial/commercial area more cost effective.
5. The provision of water and sewerage services is supported by the following;
   - 5.1 The Crocodile River provides the source of water within Karino Node. A water distribution system to provide for housing developments is already in the planning phase.
   - 5.2 Sewerage can be linked with the Kanyamazane Sewerage Treatment Works
6. Electricity can be provided by Eskom
7. A regional waste site is provided directly north of Karino
8. Accessibility and exposure of the Karino Node to the broader market is supported by;
   - 8.1 The Maputo Corridor Investment Initiatives
   - 8.2 The N4 and P636 intersection providing excellent regional and sub regional accessibility
   - 8.3 The Maputo Railway line
   - 8.4 The KMIA 10 km to the north thereof providing an export airport.

KMIA Plaston ActivityNode

The following aspects support or influence the agglomeration advantages of the KMIA / Plaston Activity Node:

1. The proximity of a vast labour force within the Greater Kabokweni. The level and suitability of the skills to support the individual needs of enterprises however might have a negative effect on the development of the area and needs to be addressed.
2. The proposed development of approximately 1000 residential units at Plaston provides housing in close proximity of the node.
3. The KMIA and Plaston nodes are 5 km apart and cannot be easily integrated into one development node.
4. The provision of water services to the KMIA Plaston Activity Node is supported by the availability of water from the Manchester Agriculture Water Scheme, which pumps water to the Primkop dams from the Crocodile River.
5. The KMIA Plaston Activity Node including Dwaleni and extensions and the K'Shani developments could be incorporated into a area water services system including a larger water supply system and sewerage works.
6. A water purification works south east of KMIA provides the potential to provide water to a KMIA industrial area
7. A sewerage plant can be provided for on the airport site
8. Electricity can be provided by Eskom
9. Accessibility and exposure of the KMIA Plaston Activity Node to the broader market is supported by:
   - 9.1 The Maputo Corridor Investment Initiatives

9.2 The N4, 10 km south thereof
9.3 The P636 linking the node with the N4 and northern areas of Mbombela and Bushbuck Ridge
9.4 The Maputo Railway line 10 km south thereof

10. Housing can be introduced into the node.

5.6 Possible Future Urban Structure

The aim of this section is to provide insight into the potential future urban structures that should be put in place in the two considered locations in order to contribute to the optimum functioning of the site and the proposed industrial park.

Karino Activity Node

The Karino Activity Node Development Framework represented by Map 7 allows for the following:

1. The provision of a split-level intersection on P636 to allow for mobility of traffic on P636. The Kanyamazane road provides an activity route with direct access to the development
2. The provision of an interchange at the N4-P636 intersection
3. The realignment of the Kanyamazane road to the north in order to provide ample stacking and weaving distances between the Kanyamazane road and the Crocodile River
4. The use of the existing access over Crocodile River to the station and Citrus Co-operative
5. The provision of a Railway / Freight interchange at the existing station and a bus/taxi interchange at the access of the industrial/ commercial area to the Kanyamazane road
6. The application of a relatively low bulk factor of 0,4 to developments in order to ensure the concept of an industrial park
7. The provision of development design guidelines in order to ensure
   7.1 Landscaping interfaces on the main roads and river front
   7.2 Architectural design

The Proposed Lay-out for the Karino Industrial Area is represented by Map 8

Plaston/KMIA Activity Node

The Plaston/KMIA Activity Node Development Framework represented by Map 9 allows for the following:

1. The provision of a well-designed link road from P636 to the airport with a split level intersection on P636 to allow for mobility of traffic on P636.
2. The provision of a link road to the Kabokweni road in order to promote accessibility to the Greater Kabokweni and provide an alternative access road to the industrial area.
3. The application of a bulk factor of 0,6 to developments. The large open spaces provided in will ensure the concept of an industrial park
4. Future industrial areas are provided on KMIA land as well as land direct north of the airport
5. The provision of development design guidelines in order to ensure
   5.1 Landscaping interfaces on the main roads
   5.2 Architectural design
6. The provision of a bus/taxi interchange as part of the industrial area
7. The potential provision of a residential area north west of Dwaleni east of the access road to Kabokweni road.

The Proposed Lay-out for the Karino Industrial Area is represented by Map 10

Insert Map 7

Insert Map 8

Insert Map 9

Insert Map 10

5.7 Final site selection recommendations

This section contains an exposition of the comparative advantages of the proposed Karino and KMIA/Plaston sites in terms of the adopted development strategies and selection of the industrial area that will optimally satisfy the implementation of these strategies.

Aspects	Karino	KMIA/Plaston	Conclusion
Regional Mobility			
▪ Connectivity ▪ Accessibility ▪ Exposure	▪ Enhanced regional connectivity, accessibility and exposure due to o The intersection of the R636 with the N4. o The existing Maputo railway line with and existing railway station o The Kanyamazane and Luphisi roads providing direct access to the Kanyamazane and Daantjie, Msogwabe, Clau Clau and Zwelishwa residential areas. o Locality 10 km from airport	▪ Connectivity with Greater Kabokweni excellent ▪ Accessibility to regional roads system good. 10 km from the N4 ▪ Directly accessible to airport ▪ Kabokweni Road provides direct access to Greater Kabokweni and the R40	▪ Karino Node possesses comparative connectivity, accessibility and exposure advantages over KMIA /Karino with regard to main roads and rail ▪ KMIA is situated at airport and has comparative advantage on export goods. ▪ Low initial expected export volumes reduces airport site selection. ▪ Higher export volumes promotes airport site.
Urban structure			
▪ Transportation Corridor ▪ Activity Corridor ▪ Activity Nodes ▪ Activity Spines ▪ Pedestrian accessibility	▪ The N4 and Maputo Railway line accentuate the Maputo Corridor as a transportation corridor ▪ Activity node supported by proposed housing ▪ Activity spine on Kanyamazane Road	▪ The R636 provides the route supporting an Activity Corridor ▪ Integration of KMIA with Plaston Node restricted by 5 km gap ▪ Activity Spine on Kabokweni Road	▪ Karino provides integrated node providing for freight as well as passenger modal interchanges ▪ KMIA/ Plaston Node provides a loose urban structure
Functional specialization			
▪ Potential Activity Mix	▪ The potential of this site to provide for regional goods and services will be enhanced by: o The upgrading of R636 making this area more accessible to the northern areas of Mbombela and Bushbuck Ridge. o The increasing trade between Nelspruit and Mozambique and Swaziland and importance of the N4 as regional route. o The proximity to Nelspruit o Proximity of a labour force ▪	▪ The potential of this site to provide for regional goods and services will be enhanced by: o The potential for airport related and dependent industries at KMIA. o The upgrading of R636 making this area more accessible to the northern areas of Mbombela and Bushbuck Ridge o The locality within the direct sphere of influence of the Maputo Corridor o The proximity of a labour force. ▪	▪ The Karino and KMIA/Plaston nodes can co-exist in an integral system of specialised activity nodes
Existing resources and infrastructure			
▪ Water Services	▪ Directly accessible to Crocodile River water	▪ New water services networks are necessary	▪ Karino has an advantage with regard to accessibility

Aspects	Karino	KMIA/Plaston	Conclusion
Planning ▪ Roads ▪ Waste ▪ Other Services	source ▪ One water reservoir can provide for the Karino Node. ▪ Water purification plant is needed ▪ Sewerage can be linked to the existing sewerage purification plant at Kanyamazane ▪ Regional waste site directly accessible ▪ Accessible to major roads. Restructuring of roads are necessary to provide for geometrical standards and accessibility	▪ Plaston-KMIA-K'Shani developments can form part of an integrated bulk water services network. ▪ KMIA node can be provided by an existing water purification works in close proximity ▪ Sewerage can be provided on site.	and availability of services
Environment			
▪ Ecological Importance Rating	▪ Directives as per the Draft Mbombela Environmental Management Framework needs to be complied with ▪ Proposed land uses need to sensitive to tourism zone west of P636 ▪ The integrity of the Crocodile River needs to be protected ▪ High potential agricultural land is excluded from the Karino Node	▪ Directives as per the Draft Mbombela Environmental Management Framework needs to be complied with ▪ Proposed land uses need to sensitive to tourism zone west of P636 ▪ High potential agricultural land will be utilized for future extensions	▪ Strict environmental conditions on both sites need to be complied with. ▪ National Department of Agriculture needs to be consulted with on KMIA site.
Labour accessibility			
▪ Impact of development on regional and local labour force	▪ The relative impact of the Karino nodes on the provision of employment is very small	▪ The relative impact of the Karino nodes on the provision of employment is very small	▪ Both sites are considered as equally accessible to the local and regional labour market
Agglomeration savings			
▪	▪ The Karino Station provides railway/freight transportation interchange. ▪ The existing Citrus Co-op supports agriculture processing industries ▪ The proximity of a vast labour force within Kanyamazane and Msogwaba / Daantjie. ▪ Place of work and place of living is integrated - 5000 residential units are envisaged ▪ The provision of services to the residential units will make the provision of services to the industrial/commercial area more cost effective. ▪ Water and sewerage services are available ▪ Electricity provided by Eskom ▪ A regional waste site is	▪ The proximity of a vast labour force within the Greater Kabokweni. ▪ The KMIA and Plaston nodes are 5 km apart and provides a loose urban structure ▪ The Manchester Agriculture Water Scheme provides an opportunity as water source ▪ A water purification works south east of KMIA is available ▪ A sewerage plant can be provided for on the airport site ▪ Electricity provided by Eskom ▪ Accessibility and exposure of the KMIA Plaston Activity Node to the broader market is good	▪ Both sites have certain comparative advantages in terms of agglomeration savings – either specifically related to provision of services or economic node development.

Aspects	Karino	KMIA/Plaston	Conclusion
	provided ▪ Accessibility and exposure of the Karino Node to the broader market is good		

5.8 Conclusion

The aim of this section was to provide a detailed overview of the development context of each of the two final sites considered for the location of the proposed industrial park. It considered aspects such as access to basic services, accessibility as well as various guidelines provided for development in a range of policy documents.

The previous sub-section tabularized the specific aspects according to which the two sites were assessed, and from the assessment it is clear that there is no differentiation between the two sites that provides an indication as to which site will be more suitable as the location for the industrial park. Each site has certain advantages but also in some instances certain disadvantages that therefore place the two sites on a level playing field in terms of development context.

It is therefore important to look at the financial feasibility and anticipated economic impact in order to determine if the proposed industrial park is feasible and which site is more suitable for the development, if any.

SECTION SIX: AIRPORT ECONOMICS & LOGISTICS ASSESSMENT

6.1 Introduction

This section summarises findings from an assessment of potential air freight cost efficiencies and potential freight movements for KMIA. The purpose of this analysis was to refine data on the airport-oriented economic base that would be supportable at an industrial park at KMIA. The findings from this section will be refined further through engineering and additional economic analysis.

The findings from the logistics assessment are disaggregated by type of freight. This memorandum only summarises findings for those goods for which there is some benefit to air shipment, such as:

- High value-to-weight ratio
- High fragility or security factors
- Just-in-Time / time-sensitive delivery requirements
- Highly perishable factor
- Compact goods / Low Bulkiness

Air freight is costly for goods that do not meet these criteria. Sadly, a general finding is that there are few existing goods produced or manufactured in the market area (Mpumalanga, Swaziland, and portions of Limpopo) that meet these criteria and that also have sufficient margins to afford air freight costs. More often, Mpumalanga (like much of southern Africa) is generating bulk goods that would benefit from much improved and more efficient *rail* service.

For the purposes of the analysis, it was assumed that air freight costs would be minimized through freight consolidation at source or in trans-shipment. As such, multiple small shippers are better placed to share freighter space and create economies of scale.

Finally, the opportunities are identified with respect to new products and services that are amenable to airport locations (part of the so-called "*airport economy*") and that can also build on existing Mpumalanga strengths. Many of these uses do not directly generate cargo for the airport, but do generate air passenger traffic and help build a base for further industrial development in the region. Passenger growth can help create demand for larger planes with more "belly" space to support air cargo shipments. Increased efficiencies and reduced costs associated with this improved capacity can, in turn, help attract additional industrial growth to KMIA and the region. This assessment is meant to identify those opportunities that are particularly airport oriented, whether they generate cargo or not.

6.2 Existing KMIA Baseline Analysis

Existing KMIA facilities and traffic data were analysed as a baseline for the logistics assessment. The airport opened in October 2002 to serve as the primary air transport hub for tourism in Mpumalanga and to replace existing commercial traffic through Nelspruit. With the name Kruger, the airport is clearly oriented to the marketing advantages generated by proximity to world-famous Kruger National Park and surrounding attractions and game reserves.

The airport occupies 568 hectares and includes a 7,800 square-metre terminal. Runways include R/W 05 4E, at 3,100 metres (by 45 metres), 56/FB/X/T with a 300 verge over-run. The runway has capacity for a Boeing 747-400 at a 94% load factor. Facilities also include general aviation airpark bays at 450 square metres, 3 hangar structures at 1,000 cubic metres, and available development area for 530,000 cubic metres. The airport lacks cargo handling facilities but does offer express freight handling through SAA Airlink and Transit Group, plus immigration, customs, and border control.

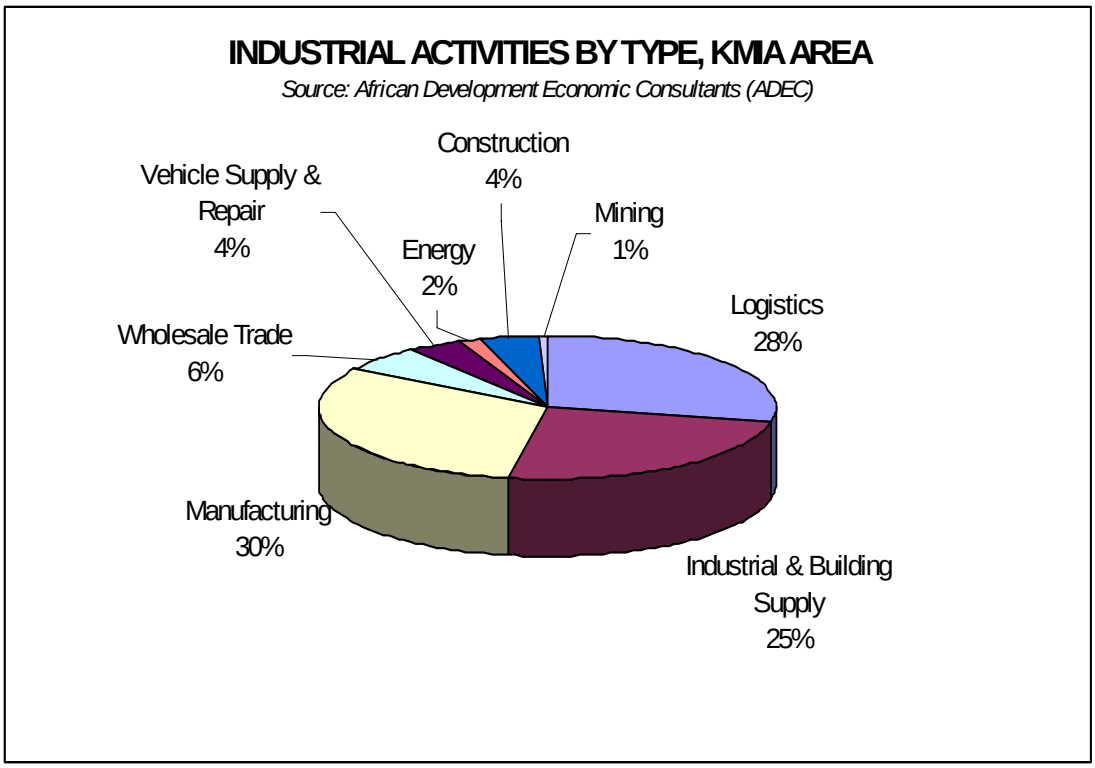
KMIA passenger loads increased by 36.7% between 2003 and 2005, or from 129,802 to 177,498. the airport has already seen significant growth in 2006, with passenger loads to date of over 157,000 by September. Airlines and airport management estimate the passenger split at 70% tourist and 30% business. Thus, the airport is still primarily a tourist-oriented hub serving Kruger National Park and associated attractions.

Most passengers are transiting from Johannesburg, Durban and Cape Town. Regional service is generated from Vilancoulus in Mozambique and international service is provided by charters from Europe, Asia, the Americas, and South Pacific.

Air cargo consists primarily of small express package delivery and courier services. Cargo weight increased by over 155% from 2004 to 2005, adding almost 55,000 kilos in one year to a total of 90,350 in 2005. Overall airport operations have also increased rapidly, from 17,113 in 2003 to 47,033 by 2005, or an increase of 175% (87% per annum). There is limited multi-modal activity at present, with some truck loading but non-existent rail transfer.

6.2.1 Airport & Air Freight Utilisation

A survey of existing area businesses found that they are generally not taking full advantage of air freight due primarily to perceptions and realities of cost. This despite the fact that MBombela is already a regional distribution centre located on one of the country's primary transportation corridors. A total inventory of 320 industrial businesses within the primary KMIA area indicates that logistics-based businesses (including warehousing, transportation, and distribution companies) account for 28%, the largest share of economic activities. Industrial and building supply businesses (agricultural and industrial equipment, baking equipment, building supplies, etc), themselves also oriented to distribution, account for 25% of the area's industrial inventory. Further, 6% of industrial activity is in wholesale trade. Thus, supply and distribution (not including vehicles) account for almost 60% of industrial activity in the area. This compares with 30% in manufacturing. As such, MBombela is more of a distribution centre than a centre for production.



Manufacturing in the Primary KMIA area is oriented to production of bulk goods including steel, metal products, wood & timber products, mining equipment, fruit, and sugar. Few of these goods generate significant demand for air cargo because they are bulky and heavy goods that have low value-to-weight and value-to-volume ratios.

Not surprisingly, the survey found that existing air cargo is heavily weighted toward inputs rather than outputs for many existing Mpumalanga businesses. Key existing inputs are machine parts & compressors, vehicle parts, earth moving equipment, IT components, software, medical supplies, hardware & fittings, toner, and office documentation. Among the key existing outputs were live animals, samples, litchis, and office documentation. Key opportunities for development of area industry to take advantage of logistical efficiencies provided by air cargo are explored below.

6.3 Opportunity 1: Perishable Goods

Among the best opportunities for increased utilization of air freight services at KMIA is through increased consolidation and cost efficiencies for perishable goods produced within the market area. Perishable goods are vulnerable to inefficiencies in the logistics chain and often, air freight becomes an attractive option when other modes fail to meet demand.

In general, this is not the case with Mpumalanga produce, which tends to move rather efficiently by truck and ocean freight even if it is destined for distant markets such as the U.K. World price structures and competition have reduced the margins on much of Mpumalanga's fresh produce such that air freight is generally a luxury that is unaffordable in most cases. At the same time, ocean ports and ships offer cold storage and facilities that help reduce spoilage significantly, further impacting on any perceived advantages of air freight.

Where air freight does offer an opportunity for market-area perishable goods is in basically three areas:

1. Mode Shift 1: Seasonal shipments. Producers find that they are most likely to use air freight during the holidays and other periods where there is a spike in demand for high-value fruits that can be packaged for gifts. There may be opportunities for expanding this value-add element, but producers have tended to move even those gift and other value-add products off-shore. Nevertheless, producers do send a small percentage of their goods by air freight on a seasonal basis and there are opportunities to shift some of this existing and potential freight away from trucks and onto freighters to JNB without modal split.

2. Mode Shift 2: Specialty Product. Certain high-value, low-volume specialty product is also shipped by truck to JNB and then air freight to the EU. Some of this product, such as litchi, could be shifted to freighters from KMIA. Other specialty product originating in Mpumalanga would include flower bulbs, ferns/plants, ginger, and others.

3. New Product Development. There are several agri-products that represent growth opportunities in Mpumalanga, such as farm-raised fish. Fresh fish are among the most amenable food items for air freight. The market is not developed sufficiently for Mpumalanga fish product to assess the cost efficiencies of air transport. However, estimates have been made based on the import of fish into Nelspruit. While there are numerous other opportunities for value added agri product (e.g., nut oils, concentrates, flavourants, etc), these are generally not distributed cost-efficiently by air freight.

Based on the logistics assessment, the following inbound and outbound potential volumes are forecasted for KMIA within the next five years.

Table 6.1: Forecasted Perishable Air Freight

POTENTIALS IN KILOS, KMIA, 2011

Category	Inbound	Outbound	Notes
Litchi	-	26,400	Export (France) through JNB
Avocadoes	-	39,600	Special/Seasonal Export (EU)
Flower/Bulbs	-	18,900	Seasonal Export (Neth/EU)
Plants	-	6,200	Export (EU, NA, Asia)
Citrus (lemon,orange)	-	32,700	Special/Seasonal Export (EU)
Fish	20,000	24,000	Farm Raised Fish
Misc (veg, ginger)	-	8,800	Estimated Seasonal Export
Sub-Total	**20,000**	**156,600**	

Source: ADEC.

Estimated potential for an additional 156,600 kilos of outbound perishable food and plant material is forecasted for KMIA by 2011. An estimated additional 20,000 kilos of fresh fish can also be delivered from Cape Town and Durban by air freight to Mpumalanga, as a minimum. Other than fish, these estimates do not include food and other perishable items for which growth in the local market may generate additional demand.

6.4 Opportunity 2: High Value / JIT Manufactured Goods

The KMIA market area is a leader in production of steel, vanadium, timber, wood pulp, sugar, cotton, chrome, coal, and other bulk goods. Nelspruit itself is also an important hub for distribution of goods and for services rendered to the regional market. However, this area is not a major node for the manufacture of industrial or consumer products, software, medical equipment, or other items that might be shipped out by air freight.

The rapidly growing demographic and economic base in the market area does require an increasing volume of inbound merchandise, some of which arrives by air freight. Most commonly, these goods are meant to meet the just-in-

time (JIT) needs of local industries and agricultural producers for machine parts, compressors, truck parts & earth moving equipment, power supplies, mechanical and electrical components, hardware, fittings, toners, films, and other inputs that are needed immediately and in small quantities that would not be efficient to ship by truck. Businesses will pay a slight premium for goods that are needed in a timely fashion. Based on this freight cost analysis, that premium works out to about 28.4% at the minimum (and assuming freight consolidation). Even so, as the market-area economy continues to expand and the need for building materials in particular increases, then demand for in-bound JIT air freight will also increase.

Similarly, the volume of in-bound computer hardware, software, and peripherals is increasing. These high-value goods are more often shipped by air freight. Finally, demand for other emergency and high-value supplies like medical equipment will also increase as the market grows.

While inbound freight appears to account for the bulk of potential manufactured product volumes for KMIA, there are several existing and potential opportunities to increase the volume of outbound product. One example is potential for shipment of low-volume, high-value fittings such as zippers that produced in the market area. A significant share of these materials are shipped by truck to JNB and then by air throughout Africa. It is assumed that KMIA could capture a share of the truck shipments and help create a seamless air freight supply chain through JNB.

Table 6.2: FORECASTED MANUFACTURED GOODS NET

AIR FREIGHT POTENTIAL IN KILOS, KMIA, 2011

Category	Inbound	Outbound	Notes
Buttons, zippers, etc	64,550	78,000	Swazi Import/Export (Africa)
Machine Supplies (1)	63,000	-	J.I.T. Supplies for Market Area
IT Hardware/Software	18,000	-	IT Supplies for Market Area
Medical Supplies	12,000	-	Medical Supplies for M.Area
Sub-Total	**157,550**	**78,000**	
Other Opportunities			Confections, Glass & Metal Fixtures, Wood Fittings, Craft Specialty Goods

Note: (1) machine parts, compressors, motor vehicle parts, tractor/earth moving equipment, power supplies, mechanical, electrical components, hardware, fittings, toners, film, etc

Source: ADEC.

Based on an analysis of the existing freight base and growth in the market area, inbound manufactured freight is forecasted to increase (net) by about 160,000 kilos by 2011. If the region's manufactured fittings and small piece goods were transferred from truck to air freight, then almost 80,000 kilos could conservatively move through KMIA with connections in JNB.

Other opportunities that build on the region's strengths (e.g., natural resources, existing production base, labour force) and are most likely to generate cost efficiencies through air transport via KMIA, would include confections, glass & metal fixtures, wood fittings, and craft and specialty goods.

6.5 Courier Freight

The volume of small packages and office documentation sent by air courier is increasing at KMIA. This trend is likely to continue as the market area's population and business base expands. The region has a growing number of courier services which service air freight. Yet, oddly, there is no freight consolidator that handles multi-modal transfers. This is clearly a weakness that can affect the efficient and cost-effective delivery of goods and services into and out of Mpumalanga.

6.6 Other Airport-Related Opportunities

ADEC has identified a number of other non-freight airport-related opportunities for further team discussion. These opportunities were identified based on successful airport marketing and development efforts in other locations and on local strengths. In general, these activities help to build on the business, resident, and tourism base that support air travel in the market area. They also strengthen the linkages between traditional infrastructure and the emerging technologies that are driving demand for new products and services. A discussion of salient findings from a sample of the surveyed airports is provided below, followed by a summary of the other airport-related opportunities that have been identified.

6.6.1 Airport Survey

A number of airports were examined worldwide to identify successful airport-related industrial development efforts that would be relevant to KMIA. Whilst there are many airports in large metropolitan markets that provide experience, their comparability to KMIA is somewhat limited. For the purposes of this summary, a sample is provided of several airports in small and large markets in various locations.

6.6.1.1 Upington, South Africa

Upington is comparable to KMIA in that it located in a somewhat isolated South African market. However, Upington serves a smaller population and business base than does KMIA. For example, Upington had a total passenger count of 33,292 (28,622 on scheduled carriers) in 2005-06. This compares with 177,498 at KMIA in 2005.

At the same time, Upington has significantly higher cargo loads than KMIA. Upington carries an average 1,350 tons per year (excluding grapes), vesus an estimated 180 tons moving in and out of KMIA. There are several important reasons for this difference. First and foremost, Upington's airfield (now almost 40 years old), has the longest runway (#17/35) in all of Africa, at 4,900 metres. This runway even exceeds Johannesburg's longest runway by 500 metres and is large enough for NASA to land the space shuttle. Because of South Africa's status under the previous regime, African countries would not allow South African planes to land for re-fueling, so the Upington runway was constructed to allow for long-haul jumbo jet flights. The airport also became an important aviation testing centre, especially for South African Air Force pilots.

While South Africa is thankfully no longer dependent on Upington for jumbo jet service, its runway continues to provide a unique opportunity for landing big jets and for training and testing. The airport is an especially important centre for microlight training and for vehicle road testing. Upington's location near Verneukpan and other sites that are well-suited to high-speed road testing has attracted car manufacturers from Germany and elsewhere.

The presence of the runway has allowed these manufacturers to ship test cars by air freight directly into Upington. As a result, there are nearly 75 to 80 tons of cars and associated automotive parts air freighted to Upington each month during the prime testing months of November to March. In general, there is an average one to two cargo freighters each bringing 30 to 40 cars into Upington per week. Volkswagon sends and receives 140 cars total in and out of Upington. The cars are palletized at the airport. Cargolux (of Luxembourg) is the most frequent carrier, but other companies like Air Atlanta, Warbird, and SA Airways also fly in for this purpose.

Many of the cars are taken in by NNJ Distributors or other companies in the area that are responsible for handling and testing. NNJ is located within the Updustria Industrial Park, located about 7 kilometres from the airport.

While automobiles clearly represent the bulk of air cargo shipment tonnage into and out of Upington, the airport also handles fish, grapes, and normal courier parcels bound for other parts of South Africa, the U.K., Spain, and elsewhere. Mining equipment is sent throughout Africa. ACSA also notes that live sheep and goats are shipped from Upington to Saudi Arabia. ACSA has designated Upington as an important cargo hub with planned development of warehousing facilities, but such development has not yet taken place.

6.6.1.2 Foz do Iguacu (Catarata), Brasil

Iguazu Falls are among the world's largest (second only to Victoria) and most dramatic. The falls are located within an international park in South America, on the border of Brazil, Argentina, and Paraguay. Foz do Iguacu ("Foz") is the main gateway to the falls in Brazil and is also the location of the Catarata (Cataracts) International Airport.

Foz (Catarata) shares many similarities with mBombela, not the least of which is its location as the gateway to an internationally renowned cross-border park. Foz is also the financial and industrial centre for the surrounding region, yet has a large under-employed labour force and huge informal economy. This region is an important producer of natural resources and energy. Finally, like mBombela, Foz has among its strengths a "combination of highway, air, and railway" corridor infrastructure that makes it an excellent location for industrial development. Foz is located in the "Bi-Ocean Central Corridor" that links this land-locked region to the Atlantic and Pacific Oceans.

Foz has four industrial parks that are being actively marketed for investment: Mini-Distrito Portal do Foz, Distrito Parque Pilar Campestre (Bairro Morumbi), Novo Distrito Industrial Morumbi, and Condominio Industrial Ecopolo Iguacu. Among the items manufactured in the area are basic textiles, metals, tires, hospital equipment, vehicle components, and seeds, among others. There is an effort to develop the fishery industry in the area and refrigerated warehousing is being developed in support of this industry. Foz has also become a centre for conventions and conferences thanks to its proximity to the falls and parks. The airport served almost 600,000 passengers in 2005, significant given the city's population of only 270,000 (800,000 in region).

Of particular interest, a public-private partnership is promoting development of Condominio Industrial Ecopolo Iguacu as an eco-industrial park that encourages sustainable development. This concept is consistent with the region's environmentally-sensitive image. The industrial park, started in June 2005, has a total 160,000 square metres, starting with 15 sites of 1,500 to 30,000 square metres. The park is marketed solely for "ecologically-correct companies with innovative profiles that possess proposals for sustainable development and encourage environmental and social responsibility," according to marketing literature.

The airport is also a home to an innovative national programme to increase air freight tonnage through "industrial airports." Infraero, operator of many of the nation's airports, has established a cargo terminal at Foz, along with other cargo-related facilities and equipment, including x-ray machines, cold storage chambers, 3-ton hydraulic cars, leveling docks, radiation gauges, towing tractors, and others. Infraero's Cargo Logistics Terminals utilise computer networking to allow for intermodal systems and freight tracking. Various fiscal incentives are also offered, including a 10-year tax abatement.

Companies must enter a bid process for the rights to locate at these airports. To date, proposals had been received for over 60% of the plots, to be developed for companies engaged in primarily metallurgy, furniture manufacturing, recycling, confection production, and small equipment manufacturing. In 2005, Foz airport already handled 768 tons of cargo freight.

6.6.1.3 Asheville, North Carolina (USA)

Asheville is a city in the impoverished Appalachian Mountain region of North Carolina. Incomes in the city and surrounding rural region have traditionally lagged behind other parts of the state and the country, while unemployment is typically high.

Asheville has several industrial parks, but has seen an economic renaissance of late based more on the development of arts, culture, tourism, and "knowledge"-based industries. The beautiful and natural mountain setting, coupled with a strong promotion of arts and culture, have helped attract companies that rank lifestyle high among site selection criteria. Airport access has also played an important role in recruiting these companies. Knowledge-based companies are an important part of the lifestyle-driven mix and the city has also focused on recruiting companies engaged in:

- Medical care
- Corporate back office / call centres
- Film making
- Order Fulfillment & Internet-related activity
- Environmental technologies
- Software development
- Tourism
- Arts & Handicrafts
- Engineering & Professional services

The city has focused in particular on environmental industries that "create, develop, adapt, and apply products, systems, and services to monitor, eliminate, control, treat, and prevent pollution and conserve & restore natural resources," according to state documents.

Many of these products and services are dependent on air travel and air cargo services. Analytical instruments, pollution control equipment, and other sensitive and expensive mechanisms are best transported by air freight. Other local air freight includes electronic equipment, apparel, medical supplies, light consumer goods, computer components, software, packages, and airplane parts.

6.6.1.4 Nairobi, Kenya

Nairobi is the capital and largest city in Kenya, as well as the regional commercial and industrial hub for all of east Africa. As such, Nairobi is not directly comparable to mBombela in either scale or role in the regional economy. Nevertheless, Kenyatta Airport does provide an example of a growing cargo hub within Africa.

Nairobi has a substantial industrial base, with large companies manufacturing automobiles, food products, beverages, construction materials, cigarettes, textiles, clothing, glass, furniture, and other goods. Tourism is also an important industry in the area, with Nairobi National Park located on the outskirts of the city.

Kenyatta Airport has a dedicated air cargo handling facility with capacity for 200,000 tons per year. Special facilities are also available for processing of fish and produce. The airport's on-site cargo area has 8,000 square metres of warehouse space. There is refrigerated & freezer storage, animal quarantine, livestock handling facility, decompression chambers, radiated and dangerous goods handling, fresh produce export area, aircraft maintenance facilities, etc. There is also a new cargo terminal recently completed at the airport (photo courtesy Steel Structures, Ltd.).

Air freight totals an estimated 20,875 tons per year. Outbound freight has increased at a rate of about 5.0% per year since 1995. Freight shipments through the airport are increasing partly as a result of implementation of the Althi River Export Processing Zone (EPZ), which was created for the economic benefit of the Moroko / Kitengela area. Declared en EPZ in 1990, the 339-hectare zone had attracted 93 hectares of development by 1997. The zone has been marketed in part due to its proximity to the airport, as well as suitable land; and access to two major highways, the Nairobi-Mombassa Railway, and the city. Benefits of the EPZ include financial incentives such as reduced tariffs, but also pre-built shell space, public services (fire station, health clinic), customs office, security and police, plus 500 units of low-cost housing nearby for workers. Also critical was the development of the Daewoo Vocational Training Institute on site.

Tenants in the EPZ and specifically within pre-built shell buildings in Kenyatta Airport Industrial Park include:

- Garment assembly
- Electronics manufacturing
- Handicraft manufacturing
- Food processing & packaging
- Plastics moulding
- Gemstone processing
- Paper conversion and
- Furniture manufacturing, among others.

These industries are particularly suited to the airport location because in general they offer a relatively high value-to-weight ratio (as in the case of electronics, handicraft, and gemstones) or include perishable goods (produce and other selected food products). Certain piece goods are imported and assembled on site mainly due to the financial advantages offered by the EPZ. Leases in the spec buildings are on offer for the relatively high price of US$30.10 per square metre, plus a US$15.00 annual service charge. Office space generally rents for about the same price, plus a 15% operating service charge.

In addition to the speculative buildings, companies have purchased serviced lots (generally one hectare each, sub-dividable) with access roads, storm drainage, telephone, sewer, and power services. As a result, there are 41 build-to-suit buildings within the park. The serviced lots rent for US$5,000 per hectare per annum, plus a 15% service charge or are available for long-term (60-year) lease for US$100,000 per hectare.

6.6.1.5 Siem Reap (Angkor International Airport), Cambodia

Angkor Wat was among the first cultural sites designated by UNESCO as a World Heritage Site. Located in an isolated and war-torn jungle region of Cambodia, Angkor Wat has nevertheless become a successful tourist destination. Siem Reap, the main city and transportation hub located near Angkor Wat, has especially benefited from increased tourism to this site. Currently, the city is experiencing a construction boom as new hotels and resorts are developed to meet growing demand.

Angkor International Airport

Siem Reap shares several important correlations with KMIA. First, the city is a primary access point for a globally-recognised tourist site that is maintained in its natural state. Second, Siem Reap's airport is located in a relatively isolated region and has attracted more tourist traffic than cargo or business travel. In particular, the airport terminal has been designed to appeal to tourist travelers, with a traditional Cambodian architectural vernacular (similar to KMIA's African vernacular). Third, the region is growing economically and the airport has been developed to meet the need for economic growth. Finally, the population of the Siem Reap region shares some similarities to Mpumalanga, in that there is a large impoverished class and under-developed workforce.

The development of the airport diverges from KMIA in that the primary traffic today is international travelers. The airport's 12,000-square metre international terminal has capacity for 1.5 million passengers, and there is also a 700-square metre domestic terminal. (However, the runway length is similar to and even shorter than KMIA, at 2,550 metres). The airport handled 1,039,118 passengers in 2005 (up from 572,664 in 2002), significantly more than KMIA. Unlike Kruger, Angkor Wat lacks safe, alternative international visitor transportation access other than the Siem Reap airport.

As tourism has expanded to Siem Reap, so has the labour force. This in turn has attracted increased industrial development in an area that lacked such activity in the past, including:

- textiles and sewing machine manufacturing
- water purification and filtration equipment

A new cargo warehouse is being financed by the IFC and developed at Siem Reap to handle increasing demand for cargo services. The provincial government has also received a grant from OECD to determine the potential for further processing of fruit and vegetables produced in Siem Reap province. Proximity to the airport is an important consideration for the study.

However, much of the economic development focus in Siem Reap relates less to industrial activity and more to strengthening the city's world class status as a tourist destination and services hub. Siem Reap has developed a strong banking and financial sector, thanks to the influx of foreign money but also internal investment. The city also attracts a significant number of conferences and conventions, which partly accounts for its rapid increase in airport passengers. The city is developing a Cambodian Folk, Custom, and Cultural Village on 20 hectares near Angkor Wat, and is developing its art and craft industries through Artisans d'Angkor, a network of almost 1,000 artisans making craft throughout Siem Reap Province.

6.6.2 Key Additional KMIA Opportunities

The airport survey confirmed the findings of the baseline logistics assessment regarding the use of air cargo for certain goods and the clustering of certain types of JIT and perishable production at airports. In particular, these cargo products tend to include selected perishable food items (primarily fruits and fish) and related packaging, plus seeds, gemstones, art & handicraft, textiles/clothing (mainly if there are import/export incentives), motor vehicle & airplane parts, medical equipment, environmental & other sensitive testing instruments, and live animals, aside from regular courier packages.

In addition, the survey also identified certain activities that, while not necessarily cargo generating, do tend to cluster near airports or benefit from air travel and related services. These activities were analysed against the competitive advantages and location of KMIA to determine where there are synergies for development. Among the most promising activities are the following:

- Travel and tour transportation services. The airport is a transport hub and can also form the nexus of multi-modal transportation services. Travel and tour operations often tend to cluster at airports and other transport nodes and unlike other services, are less dependent on access to the local market. For KMIA, there is the opportunity to expand the tourism services offered and further develop the industry through vertical and horizontal integration. KMIA has marketing advantages relating to its proximity to Kruger National Park, Blyde River Canyon, and other natural tourism amenities as well as private game reserves and attractions in Mozambique, Limpopo, and Swaziland. Tour packaging and origination concepts can be further developed that would not only increase tourism passenger flow through the airport but also enhance "belly" space in passenger jets available for cargo.

- Telemarketing, ticket booking, & back office customer services. MBombela has a growing financial services industry and is increasingly a hub for a variety of services. Further development of the local service industry base, particularly in *finance, travel, and health care*, will generate demand for back office uses. These uses tend to generate significant air courier activity that benefit from an airport location and proximity to air courier services. Travel-related back office uses could be established that would generate synergies with travel and tour transportation activity as discussed above. Corporate uses also generate demand for back office customer support services, which could be sourced to companies in Johannesburg, or internationally.

- File translation services. Companies in the U.S., Europe, and increasingly, Asia are sending back office activities such as file translation (conversion between written and electronic or between electronic media) to low-cost locations. Clearly, South Africa must compete with India and other less-developed countries for this activity. However, few countries offer exceptional air service and cargo facilities for handling sensitive documents, software, and electronic equipment for just-in-time delivery. Johannesburg and other large cities are competitive for this activity due to their exceptional air service, relatively moderate wages, available workforce and first-world infrastructure & internet services. However, building space could be offered at much lower rents or prices in Mpumalanga, specifically at KMIA.

- Order fulfillment, Internet & web-based services. KMIA can offer similar competitive advantages for other types of order fulfillment, internet, and web-based services. Primarily, a combination of good air service, dependable power supply & infrastructure, available workforce, and cheap rents are attractive for both small and large web-based order fulfillment uses.

- Environmental product testing & development. Although eco-industrial development has had mixed results worldwide, some airports are encouraging development of environmental industries because the associated products and services tend to be more aviation dependent due to value, JIT, sensitivity, and travel requirements. Development of new environmental products that require testing would be especially attracted to airport proximity. Product testing in general has proven to be airport-oriented, as noted for Upington and in other airport locations where new product is flown in and out on a regular basis for the purposes of testing and (in some cases) showcasing. By specializing in environmental product testing and development, Mpumalanga may solidify its marketing image whilst reiterating a commitment to sustainable development.

- Environmental engineering, association, & management services. Whilst demand for engineering and management services is generally driven by growth in the local market, there is also the opportunity to expand the clustering effect for environmental products and services associated with testing and specialized management.

- Convention and meeting services. Clearly airports play a critical role in the development of the convention industry. Good air access is typically ranked among the top five reasons for conference, convention, and meeting site selection among associations. The potential for this market has not been tested through this analysis. However, the airport can play an important role in marketing for further development of this industry based on the experience of other airports and on KMIA's marketing image associated with Kruger and other major visitor attractions.

6.6.3 The "Airport Economy"

The "airport economy" can be defined as the set of economic activities that benefit from the airport's role in reducing transport costs, improving logistical efficiencies, and increasing market share. In general, the functioning of the airport economy is maximized when the airport becomes a ***driver*** for economic activity and not just a node for transport.

Development and maximization of the so-called "airport economy" does not just happen. Experience of other airports worldwide suggests that it depends on pro-active measures to enhance the airport's products, services, and marketing synergies. Pro-active efforts are typically made to encourage certain types of development and to recruit specific

industries that would benefit from an airport-oriented location. In some cases, industrial parks and specific facilities and incentives are utilized as tools to attract businesses to the airport or nearby.

However, in many cases, development of the airport's market depends not on direct adjacency to airport facilities but rather, on the overall marketing of the airport and its region for business and on the capacity of the airport to deliver a broad range of services.

6.7 Preliminary Spatial Requirements

These marketing approaches and services will be developed further in the course of this study. However, the spatial requirements for the airport-related activities are summarised below to help guide the development of the airport industrial park concept.

Perishables (fruit, flowers)

- Cold storage warehousing
- Trucking access
- Freight consolidation & logistics services
- Possible packaging facility

Manufactured Goods (supplies, fittings)

- Warehousing
- Trucking access
- Freight consolidation & logistics services
- Manufacturing facilities for confections, fixtures, wood fittings, and specialty craft goods
- Secured storage, security systems

Courier

- Courier terminal, parking

Airport-Related Activities

- Column-free back office with ISDN and/or WiFi access, electrical back-up systems, individual work units, and nominal fit & finish
- Column-free speculative flex facilities with ample docking, truck, and telecomm access.
- Secure storage and security systems
- Class A office environment, eco-waste services, sustainable building practices, extensive landscaping and appropriate site selection.
- Visitor office
- Bus & tour van parking
- Intermodal passenger transfer facility

On-Site Airport Activities

- Theme destination restaurant (in addition to/instead of terminal airport). (note, at Nairobi, restaurants have been integrated with the office space).
- Tourist services
- Charter companies, airline offices, rental car offices
- Bank/exchange
- Art gallery, gift shops
- Courier services, customs agent, freight forwarding
- Public parking, hotel, filing station, etc.

6.8 Concept Implications

The KMIA airport strengths and opportunities should be used as the basis for developing an overall marketing concept. ADEC introduced some initial concepts for discussion in the previous presentation. These concepts would serve to build on the tourism and agriculture orientation of the area's economic base; present a stand-out approach to green building and environmental sensitivity that would compliment the airport design and natural surroundings; and facilitate the use of telecommunications and high-speed internet infrastructure to offer a competitive 21st century advantage in what is otherwise a remote industrial location.

SECTION SEVEN: INTEGRATED DEVELOPMENT CONCEPT

The aim of this section is to integrate the relevant findings into an integrated concept that provides development guidelines for the proposed industrial park development. The rest of the section therefore provides a synthesis of these guidelines that were used to determine the development cost and financial feasibility set out in the next section.

7.1 Development guidelines

1. The economic development potential of the manufacturing sector and its sub-sectors undertaken by Urban-Econ entailed investigation industries that are not airport sensitive, although in some instances these industries do make use of air transport in varying degrees, showed that there is indeed demand for industrial development within Mbombela, specifically with regard to the following sectors:
    a. Wood and wood products
        i. Manufacture of timber products for construction, eg trusses, doors, windows, flooring, skirting boards. These would be aimed at local and neighbouring markets.
        ii. Manufacture of pallets (there is a major shortage of pallet supply and demand is likely to increase in the near future)
        iii. Manufacture of poles (especially for mine support)
        iv. Manufacture of a range of flat-pack furniture, possibly using solid woods as well as board. This would require a large investment and substantial incentives. In addition, design skills are critical, and these would have to be attracted (even if on a contract basis, or outsourced) and developed in the longer term.
    b. Other non-metallic mineral products
        i. No specific research has been done – but with regard to the amount of residential development that is anticipated as a result of the construction of the Mbombela stadium and related developments at the Mataffin Precinct, the following products could be considered:
            1. pottery,
            2. china,
            3. earthenware
            4. glass.
            5. It furthermore incorporates building products such as cement, clay piping, tiles, and products made of concrete, gypsum, asbestos, plaster, slate and abrasives
    c. Metal products, machinery and household appliances
        i. Tubes, pipes and hollow profiles
        ii. Pipe fittings
        iii. Tanks, casks, boxes, and containers
        iv. Stranded steel wire
        v. Fencing wire
        vi. Iron or steel cloth, grill, fencing and expanded metal
        vii. Screws, bolts, nuts, rivets, washers, etc
        viii. Sewing, knitting needles, etc, hand use, iron or steel
        ix. Springs and leaves for springs, of iron or steel
        x. Table, kitchen, household items of iron or steel
        xi. Tool making
    d. Electrical machinery
        i. insulated wire and cable

ii. other products are currently being imported and these could be identified for production locally, these include:
    1. Electrical apparatus for switching etc, nov 1000 v
    2. Electrical storage batteries, including separators, parts
    3. Electrical trans, stats conv & induct, adp pwr supp, pt
    4. Electric motors and generators
    5. Insulated wire, cable etc; optic sheath fiber cables
    6. Electrical machinery etc with ind functions NESOI, pts
    7. Electric ignition etc equipment; generators; parts
    8. Electric filament or discharge lamps, parts
    9. Parts for electrical apparatus etc of head 8535, 8536 and 8537
    10. Boards, panels etc elec switch and n/c appar etc
    11. Electrical apparatus for switching etc, on 1000 v

e. Transport equipment
    i. No information available on the specific products to be targeted
f. Furniture
    i. Kit furniture is a possibility

2. The work undertaken by ADEC provided an overview of some industries located in Mbombela/Mpumalanga that are using air transport provided by OR Tambo International Airport and which could potentially be replaced by services provided by KMIA:
    a. Perishable
        i. Litchi
        ii. Avocado
        iii. Flowers/bulbs
        iv. Plants
        v. Citrus
        vi. fish
    b. Non-perishable
        i. Buttons/zippers etc
        ii. Machine supplies
        iii. IT Hardware and software
        iv. Medical supplies
    c. Courier freight
    d. Other airport related opportunities
3. A combination of the industrial and airport related development will increase the feasibility and viability of the proposed industrial park.
4. proposed sites and ownership
    a. The KMIA site is surrounded by agricultural land – providing land for growth. Ownership of all the land surrounding the airport is not with the airport or the community trust but with Private Owners and further investigations about getting the land for the development should be done.
    b. Plaston is also made up by a number of land owners and therefore it is difficult to determine the most suitable land to use
    c. Ultimately the decision of land to acquire will be determined by the specific location of the industrial park in relation to the airport and the manner in which the tourists and environmental impact could be kept at a minimum
5. The KMIA Master Plan must be taken into consideration during the initial planning stages in order to ensure that there is no conflicting ideals in the placement of the development in relation to the airports' growth plan

The following development guidelines constitute the development concept for the development of a feasible industrial area associated with the airport:

1. The proposed development of a feasible industrial area associated with KMIA must be structured as an INDUSTRIAL PARK with the emphasis on being **environmentally and tourist friendly** – the KMIA's main reason for existence is the tourism market and it is therefore important to structure the development in such a manner that the visual and environmentally pleasing setting of the KMIA is protected.
2. The development concept proposes an integrated industrial park which makes provision for the **integration of clean/non-noxious industries with airport related industries and services**. This will be reflected in both the layout of the township (town planning) as well as the structures of the buildings. The buildings provided for the different uses should be within the same architectural ambiance in order to enhance the idea of a clean and tourist friendly area.
3. The idealism of agglomeration advantage should be incorporated into the concept.
4. The development concept proposes the creation of linkages with the **existing rail system's Plaston branch** to increase the appropriate transport capacity for industries that will not use air transport. This will be set out in the concept of modal interchange and communications drawn up by the logistics engineers as one of the outstanding deliverables – mentioned in Section 1.3.
5. **Appropriate infrastructure** should be provided– this includes transport linkages and other required services. Such as electricity, sewerage and water
6. The development concept proposes the development of an Industrial Park of 19ha in 2010 to 73ha in 2025 consisting of the following and related industries:
    a. Food, beverages and tobacco
    b. Wood and paper; publishing and printing
    c. Textiles, clothing and leather goods
    d. Furniture and other manufacturing
    e. Petroleum products, chemicals, rubber and plastic
    f. Other non-metal mineral products
    g. Metals, metal products, machinery and equipment
    h. Radio, TV, instruments, watches and clocks
    i. Electrical machinery and apparatus
    j. Transport equipment
    k. Food processing
    l. Other agro-processing industries
7. The development concept should be **developed in phases**. Historically trends have shown on numerous occasions that the tendency to develop an industrial park in one phase could be potentially detrimental and it is more feasible to plan the development tin phases to accommodate traditional take-up rates in such developments.
8. The development concept must be sensitive to the **Master Plan** as well as the **Aviation Strategy** being formulated for the KMIA with regard to the placement of air transport related services.

7.2 Conclusion

The next few sections provides detailed assessments of the proposed industrial park at both of the short-listed sites in order to aid in the decision-making process by linking the two alternatives to economic and financial impact and feasibility assessments.

SECTION EIGHT: FINANCIAL FEASIBILITY & ECONOMIC COST-BENEFIT ANALYSES

8.1 Introduction

This section summarises findings from a financial feasibility analysis as well as an economic cost-benefit assessment for the proposed industrial park. The financial analyses help determine the viability and sustainability of the park but also instruct on an appropriate development financial structure and business management model. These findings, together with the output of the macro-economic impact model discussed in the following section, help guide the development and management plan for the proposed park.

In order to run a financial model, a number of assumptions had to be made with respect to the development and operating structure for the park. These assumptions are discussed first, followed by a summary of the key inputs to the financial model. Several scenarios have been tested for each of the two prospective sites. These scenarios are described and the outcomes are provided. The key implications of these financial scenarios are also discussed in the context of development of the two prospective sites.

In addition to the financial feasibility model, an economic cost-benefit model was run that adjusts for the external benefits of the development cost using "shadow" pricing. This model was applied using the direct shadow pricing factors generated by the Development Bank of Southern Africa (DBSA). The impact and implications of shadow pricing are also discussed in this section.

8.2 Basic Development & Financing Structure

The financial model was designed working under the basic working assumption that government's role is to help *leverage* private investment, and not to control the development and operation of the park. It was also assumed that every effort would be made to avoid subsidization of the park's development wherever possible. However, it was also recognized from the beginning that public involvement in the development of certain bulk supply infrastructure was necessary in order to support the development not only of this industrial park but also other projects that are planned in the general area surrounding KMIA. Private contribution to the development of that regional bulk infrastructure should be determined later in coordination between local & provincial government and the other private development interests in this area.

As a result of these assumptions, the financial model focuses on the financial feasibility of development of the park itself, rather than forcing the park carry the entire cost of bulk infrastructure that will actually serve a much larger development area.

8.2.1 Provincial Government Role

The model assumes that bulk external (off-site) infrastructure (e.g., bulk water/sewer supply and upgrading of roads in the area) would be financed through a Provincial infrastructure Grant or DBSA Fixed Loan. Maintenance of the regional roads would be carried by the appropriate public agency that owns such roads. Similarly, rail infrastructure is treated the same as other bulk infrastructure in that the cost should not be carried by the industrial park itself.

The model also assumes development of a speculative industrial building on the site as a marketing tool to attract a potential user. Because the ultimate objectives of the park relate to economic development goals of Provincial Government, then it has been assumed that Province would help encourage more rapid investment through the

financing of this building. While Mpumalanga would carry the up-front cost of the building, such costs would be recouped through its sale to a direct user. The marketing strategy contained in this report details an approach for the use of this building as part of a package of incentives.

8.2.2 Experienced Private Developer / Manager

It is assumed and recommended that an experienced private developer have primary responsibility for the financing and building of internal (on-site) infrastructure at the park. Ideally, this internal infrastructure would be financed completely by the private sector. However, it was recognized from the beginning that some incentive may be necessary to attract a developer/investor. As a result, the cost of financing has been drawn down slightly below-market rates from the start.

The developer would be responsible for building the speculative building, but would gain a developer's fee for that service. The building, as noted previously, would be financed by Province as part of a incentive package for attracting potential users.

The private developer would, in partnership with investors, contribute cash equity to the development of the project. At the Plaston/KMIA site, land is already owned by KMIA which can be contributed as equity in the project.

8.3 Industrial Park Operating Structure

The overriding assumption is that an experienced private developer / manager will be best equipped to operate the industrial park. This assumption is built into the park operating model as follows.

8.3.1 Developer Responsibilities

The private developer / manager would have primary responsibility for land sales and marketing of the park, although Provincial Government would also play an important role in regional marketing and in the development of incentives to attract users to the park. The developer would also have primary responsibility for management of the industrial park, including all staffing, maintenance, and overall operations through build out.

8.3.2 Income Generation

Income to the developer would be generated through the sale of finished stands. Sale of one or more speculative buildings would generate revenue back to Provincial Government, but the developer would garner a developer's fee. It is not assumed that either the developer or government would develop buildings for users throughout the build-out period except where necessary to attract users. Thus, financing of most building infrastructure would be the responsibility of the individual users.

8.3.3 Operating Costs

Among the operating costs included in the financial model are typical industrial park operating expenses (e.g., maintenance, security, etc). In addition, the model has assumed a large and sustained marketing budget because of the need to establish the market within a so far untested industrial suburb. The project would also carry debt service with the assumption that private financing would be required for purchase of land (for Karino, at least) and internal infrastructure. The project would also carry management and development fees, taxes, and other costs.

8.4 Key Model Inputs

A number of inputs were included in the financial model that were generated based on the demand analyses, planning and engineering cost considerations, and other aspects of development. Several of the key inputs are discussed below.

8.4.1 Demand Factors

Previous sections have detailed the findings from a number of analyses that were undertaken to establish the market demand for the industrial park at KMIA. These analyses tested the overall competitive advantages for attracting target industrial sectors; established the industrial property demand within the Mbombela market; and determined which industries are most likely to benefit from the use of KMIA for in-bound or out-bound cargo transport.

Specific target industries for further industrial development were identified based on these analyses. Furthermore, these analyses translated demand into airport cargo tonnage as well as take-up of building space for industrial uses at an industrial park. Site analyses (as described earlier in this report) as well as the demand analyses determined that the take-up rates would differ between the two sites (Plaston/KMIA versus Karino) due to the stated differences in marketability relating to exposure, accessibility, and other factors.

However, for the purposes of the financial modeling, Mpumalanga Government and the DBSA have determined that only one take up rate should be utilized across both properties. Thus, the financial model does not account for any differences in the marketability of these two sites based on client direction. This simplifies the comparison between the two sites, where the financial differences relate to only a few apparent factors (discussed later in this section), but not to marketability or market demand.

8.4.2 Engineering Costs

Engineering costs were determined both for external (off-site) and internal (on-site) infrastructure development. External infrastructure costs include road connections, water package plant, sewer outflow contribution, waste treatment plant, and power service. Separately, engineering costs were also estimated for rail infrastructure, including rail sidings and short line "spurs."

Internal infrastructure costs include internal roads and stormwater, water reticulation, sewer network, on-site power reticulation, and others. Costs associated with "soft" infrastructure (e.g., landscaping, etc) were also estimated as part of the modeling based on norms and standards. The cost for the speculative industrial building was estimated on a blended basis using separate cost estimates for manufacturing and warehousing structures. The most competitive building format will probably include a blend of warehousing and manufacturing space (and possibly some office). Overall infrastructure costs are summarized below for each site.

WATER NETWORK:	KARINO	KMIA/PLASTON
110mm diam. Class 9 u PVC water pipe	R 168,000.00	R 132,000.00
160mm diam. Class 9 u PVC water pipe	R 42,000.00	R 120,000.00
Fire Hydrants	R 22,500.00	R 40,000.00
Scour, isolating and Air Valves	R 27,000.00	R 18,000.00
Stand connections:	R 18,000.00	R 32,000.00
Contingencies 10%	R 27,750.00	R 34,200.00
Preliminary & General 12%	R 33,300.00	R 42,750.00
Professional Fees, Supervision & Disbursements: Allow a percentage of 14% of Construction Cost	R 47,400.00	R 58,650.00
TOTAL COST FOR WATER NETWORK:	**R 385,950.00**	**R 477,600.00**
SEWER NETWORK:	**KARINO**	**KMIA/PLASTON**

160mm diam. Heavy duty Sewer Pipe	R 306,000.00	R 369,000.00
Manhole chambers	R 120,000.00	R 144,000.00
Stand Connections	R 12,000.00	R 21,600.00
Contingencies 10 %	R 43,800.00	R 53,460.00
Preliminary & General 12 %	R 52,560.00	R 66,825.00
Professional Fees, Supervision & Disbursements: Allow a percentage of 14% of Construction Cost	R 74,800.00	R 91,685.00
TOTAL COST FOR SEWER NETWORK:	**R 609,160.00**	**R 746,570.00**
ROAD AND STORMWATER	**KARINO**	**KMIA/PLASTON**
Asphalt surfaced road , 8m x 1440m , 11 520 m^2 x R 120.00	R 1,382,400.00	R 1,456,000.00
Non Mountable Concrete curbs	R 230,400.00	R 224,000.00
Stormwater pipe 600mm Ø 75D Concrete	R 210,000.00	R 217,500.00
Stormwater pipe 900mm Ø 75D Concrete	R 270,000.00	R 420,000.00
Manholes / Junction Boxes	R 18,000.00	R 27,000.00
Stormwater inlet	R 36,000.00	R 48,000.00
Subsoil drainage system	R 24,000.00	R 24,000.00
Pipe sleeves Road crossings	R 16,000.00	R 16,000.00
Road markings, signs, miscellaneous works	R 72,000.00	R 70,000.00
Contingencies 10 %	R 225,880.00	R 250,250.00
Preliminary & General 12 %	R 271,056.00	R 312,812.50
Professional Fees, Supervision & Disbursements: Allow a percentage of 14 % of Construction Cost	R 385,800.00	R 429,178.75
TOTAL COST FOR ROADS AND STORMWATER:	**R 3,141,536.00**	**R 3,494,741.25**

ELECTRICITY SYSTEM:	**KARINO**	**KMIA/PLASTON**
185mm x 3 core XLPE	R 1,440,000.00	R 1,400,000.00
Mini subs (5MVA)	R 2,000,000.00	R 3,000,000.00
16x 4 core cable	R 216,000.00	R 210,000.00
Street lights	R 224,000.00	R 224,000.00
Contingencies 10%	R 388,000.00	R 483,400.00
Preliminary & General 10 %	R 388,000.00	R 483,400.00
Professional Fees, Supervision & Disbursements: Allow a percentage of 12 % of Construction Cost	R 558,720.00	R 696,096.00
TOTAL COST FOR ELECTRICITY SYSTEM:	**R 5,214,720.00**	**R 6,496,896.00**
INTERNAL SERVICES:	**KARINO**	**KMIA/PLASTON**
TOTAL COST OF INTERNAL SERVICES (VAT Excl.):	**R 9,351,366.00**	**R 11,215,807.25**
EXTERNAL SERVICES:	**KARINO**	**KMIA/PLASTON**
Bulk Water Supply	R 900,000.00	R 950,000.00

Sanitation Facilities	R 550,000.00	R 790,000.00
Road Infrastructure	R 943,300.00	R 1,672,500.00
Electricity	R 1,550,000.00	R 750,000.00
TOTAL COST OF EXTERNAL SERVICE	**R 3,943,300.00**	**R 4,162,500.00**
SPECULATIVE BUILDING:	**KARINO**	**KMIA/PLASTON**
Manufacturing	R 8,148,900.00	R 8,148,900.00
Warehousing	R 13,401,630.00	R 13,401,630.00
TOTAL COST OF SPECULATIVE BUILDING	**R 21,550,530.00**	**R 21,550,530.00**
TOTAL COST OF PROPOSED DEVELOPMENT	**KARINO**	**KMIA/PLASTON**
	R 34,845,196.00	**R 36,928,837.25**

Source: PD Naidoo & Associates

In addition, rail infrastructure costs are estimated as follows:

RAIL INFRASTRUCTURE	**KARINO**	**KMIA/PLASTON**
Rail Siding – New	R0	R12,500,000
Rail Siding – Upgrading	R7,000,000	R0
Rail Line Spur	R0	R100,000,000+
TOTAL COST OF RAIL INFRASTRUCTURE	**KARINO**	**KMIA/PLASTON**
	R 7,000,000	**R 112,500,000+**

Source: NKP Consultants, Middelburg

Certain infrastructure improvements are not envisioned in the short term, and the engineers report that interim investment (such as in a package plant) is sufficient to provide the necessary services until later phases of the park. The financial analysis focuses on the first phase, 17-year build out.

The rail costs are exorbitant for extension of a spur to the KMIA/Plaston site. For the purposes of this analysis, it was assumed that on-site rail service was not critical to meeting the needs of the industries targeted for the park. As such, the financial analysis does not factor in the cost of a spur or sidings, although upgrading of the existing siding at Karino may be warranted over the long term if that site is selected. More detailed information on the engineering analysis is included in an engineering report (available in Appendix XX).

8.4.3 Land Pricing

Development costs will include land acquisition (in the case of Karino) whilst land can be utilized as a form of equity at the KMIA/Plaston site. Conversely, finished stands will be sold at the industrial park to generate revenue in support of its development, regardless of site location. As a result, the raw land costs and finished stand prices are an important input to the financial analysis. For the purposes of this financial assessment, market-rate un-serviced land prices within the Plaston area were used as a benchmark for the acquisition and equity values. It is likely that speculation in the KMIA area is already bidding up prices for raw land in anticipation not only of this industrial development but also of overall infrastructure improvements that would add development value for projects throughout this area.

Similarly, finished stand prices within nearby industrial areas were analysed and a competitive prices established based on averages, working under the assumption that additional industrial land resources will not be released to create a competitive industrial pricing scenario.

8.4.4 Other Types of Inputs

Other inputs researched and collected for the purposes of this analysis include interest, inflation rates, tax rates, commissions, and other factorials.

8.5 Scenario I: Modest Public Financing

The financial analysis included a development pro forma, a cash flow analysis, and an assessment of the internal rate of return on investment (IRR). The financial analysis was first conducted under the assumption that all internal (on-site) infrastructure costs would be carried by the development with no outside financing. Working under this assumption, the development of an industrial park would not be financially viable for a private developer at either site (Karino or KMIA/Plaston). The reasons relate to three key factors: 1) the cost of the internal infrastructure, 2) the low revenue stream generated by the sale of finished stands at the take-up rate projected based on the demand analysis; and 3) the property rates burden on the development that is carried up front but dissipates over time with the sale of the stands.

Almost R20.0 million in private financing would be required for the Karino site, whilst R14.6 million would be required for the KMIA/Plaston site. The KMIA/Plaston site would generate a -R7.5 million total return whilst the Karino site would generate a -10.5 million return. The KMIA/Plaston site would have net present value (NPV) of –R4.3 million in Year 3, whilst Karino would generate an NPV of –R8.6 million in Year 3. Even though certain inputs are held constant between the two sites (such as the take up rate), there are also differences in infrastructure costs that create a divergence in the financial return. There is a land acquisition cost associated with the Karino site, where as land at the KMIA/Plaston site would form part of the equity in the project. The overall findings for both sites in Scenario I are summarized below.

SCENARIO I: NON-SUBSIDY FINANCIAL MODEL

	PLASTON SITE (KMIA)	KARINO SITE (N4)
Return on Investment	**N/A (0)**	**N/A (0)**
Total Return	R -7,509,919	R -10,529,031
Total Equity	R 5,680,000	R 2,500,000
Land	R 3,180,000	R -
Investor	R 2,500,000	R 2,500,000
NOI- Year 3	R 3,458,060	R 3,458,060
Net Cash Flow – Year 3	R 1,608,499	R 1,012,110
Cap Rate	10.5%	10.5%
NPV – Year 3	**R -4,390,538**	**R -8,556,391**

Private Financing/DBSA-Internal Infrastructure	R	14,580,000	R	19,480,000
Subsidy Share		0%		0%
Subsidy Amount		-		-
Public Financing/DBSA	R	15,000,000	R	15,000,000
(External Infrastructure)				
Rail Siding	*R*	*12,500,000*	*R*	*7,000,000*
Rail Line Spur (Tent)	*R*	*100,000,000*	*R*	-

8.6 Scenario II: Major Public Financing

Sensitivity analysis was conducted on the financial model to determine the requirements for approaching a financially viable project with private sector involvement. The Scenario II model assumes a viable financial return of 20% and then solves for the public subsidy amount required to achieve this return at both sites. The subsidy is used to finance a portion of the internal infrastructure. The results of this analysis are summarized below for both sites.

SCENARIO II: SUBSIDY FINANCIAL MODEL

	PLASTON SITE (KMIA)	**KARINO SITE (N4)**
Return on Investment	**20%**	**20%**
Total Return	R 7,274,397	R 11,094,751
Total Equity	R 5,680,000	R 2,500,000
Land	R 3,180,000	R -
Investor	R 2,500,000	R 2,500,000
Property Tax Forgiven (Year1)	R 4,210,089	R 4,210,089
NOI- Year 3	R 3,458,060	R 3,458,060
Net Cash Flow – Year 3	R 2,630,880	R 2,533,510
Cap Rate	10.5%	10.5%
NPV – Year 3	**R 3,168,766**	**R 2,692,573**
Private Financing/DBSA-Internal Infrastructure	R 6,180,000	R 6,980,000

Subsidy Share	37%	48%
Subsidy Amount	R 7,189,000	R 10,689,000
Public Financing/DBSA	R 15,000,000	R 15,000,000
(External Infrastructure)		
Rail Siding	*R 12,500,000*	*R 7,000,000*
Rail Line Spur (Tent)	*R 100,000,000*	*R -*

The sensitivity analysis determined that **37%** of the internal infrastructure cost or **R7.2 million would need to be publicly financed in order for an industrial park at KMIA/Plaston to be financially viable for a developer**. This analysis also found that an internal infrastructure subsidy of **48%** or **R10.7 million would be required to make the Karino site financially viable for the developer**. The NPV would be R3.2 million in Year 3 for the KMIA/Plaston Site and R2.7 million in Year 3 for the Karino Site. In either case, it is assumed that R15.0 million in public financing would be provided for all external infrastructure plus rail as necessary.

This analysis also assumes that property rates would be forgiven on the undeveloped portion of the property that is carried by the developer. The maximum of forgiven tax would total R4.2 million in Year One for either property (again, assuming the same take-up rate on land). However, the existing land at either site is not generating significant property tax revenue to local government. So, a temporary exemption would have limited net impact on Mbombela's tax revenue stream.

8.7 Economic Cost-Benefit Analysis

An economic cost-benefit analysis was also incorporated into the financial model in order to account for the economic net benefit from certain outputs/inputs for the project. This analysis utilized the standard "shadow pricing" factors generated by the DBSA for this purpose. The shadow pricing factors are generated on an industrial sector basis with the result that costs are reduced in economic terms for certain activities associated with the development. No subsidy is associated with the project at either location. The basic findings are summarized below:

	KMIA/Plaston	**Karino**
All internal & external infrastructure		
IRR	-0.51%	1.40%
NPV	*-R12.4 Million*	*-R9.6 Million*
All internal infrastructure		
IRR	1.09%	3.29%
NPV	*-R8.3 Million*	*-R5.8 Million*

In general, the DBSA is looking for an economic cost benefit in the range of up to 8.0% where infrastructure may be financed.

8.8 Summary & Site Implications

This financial analysis assumes from the beginning that external bulk infrastructure costs would not be carried by the private development alone but would be financed by the public sector. In doing so, the public sector would be

leveraging new tax paying investors throughout the area. At the least, the cost of bulk infrastructure would be distributed and recovered from among all of the projects and property tax payers in the area over time.

However, the financial analysis found that the industrial park development would still be infeasible for a private investor unless at least a portion of the internal infrastructure is publicly financed and property tax relief is provided at both sites. An infrastructure subsidy of R7.2 million and tax relief of R4.2 million (in Year 1) would be required to achieve financial viability at the KMIA/Plaston site. An infrastructure subsidy of R10.7 million and similar R4.2 million in tax relief would be required at the Karino site. Karino would generate a net economic cost-benefit of 3.29% for all internal infrastructure, whilst KMIA/Plaston would generate an economic cost-benefit of 1.09%.

In general, the two sites perform similarly with the exception of the land acquisition issue. At Karino, the developer would have to purchase land for development. This acquisition cost will have a negative impact on the financial viability of the project. This impact is likely to grow as speculation increases in this market and existing property owners become more emboldened to require more compensation for their existing farms.

More importantly, there would be a serious impact on the timing of development at Karino due to the negotiation processes associated with assembly of this property for development. Land rights issues and negotiations with existing owners could require significantly more time than would be required to offer the existing KMIA-owned land as equity for development.

Since site access and exposure is no longer factored into the model, Karino no longer offers any advantages in terms of demand that would translate into faster take up or higher land values over the KMIA/Plaston site. Land take up is projected to be relatively slow, which impacts on both site's ability to generate a profit for the developer. Marketing costs, in turn, must be higher in order to offer a more pro-active marketing strategy, spec buildings, and incentives to attract potential user tenants. Amenity improvements have not been costed but these may be required to attract certain non-industrial and airport-related uses (as recommended in the airport logistics and economics assessment). Such investments may burden the up-front capital costing but could translate into higher take-up rates and land values.

Since rail access is not a major driver for demand at the industrial park and the benefit of extending a rail spur to KMIA/Plaston is far outweighed by the excessive cost, rail is not included in the bulk infrastructure assessment. Other bulk infrastructure expenditures are relatively similar between the two sites, or can be ameliorated through interim supply projects.

Thus again, much of the difference between the sites comes down to the site assembly, acquisition cost, and timing of development. **From an acquisition cost and timing perspective, the KMIA/Plaston site offers measurable advantages over Karino**.

SECTION NINE: ECONOMIC IMPACT ANALYSIS

The aim of this chapter is to provide insight into the result that were generated by the impact modeling exercise that was undertaken and discussed in detail in the previous chapter. This chapter deals with the different impact assessments that were undertaken in order to ensure that all the potential benefits that could be anticipated as a result of the proposed industrial park both at the Karino and the Plaston/KMIA sites, is identified and were possible, measured.

The economic impact assessment is based on the costs associated with the engineering services (both internally and externally) that are required at each of the sites, as well as the estimated cost of construction of the specific units to house the industries. These were set out in the previous section.

9.1 IMPACT ASSESSMENT DEFINED

Economic Impact Analysis is a tool that is applied to local, regional and national economies to measure the effect of an exogenous change to that economic system. Such an exogenous change can be a result of numerous factors, usually resulting from the opening, closing, expansion or contraction of a facility, project or program that involves capital and operational investment. For the purpose of this project, the economic impacts will be estimated using an Input-Output (I/O) modelling technique.

Input-Output analysis represents a way of systematically quantifying the mutual interrelationships amongst the various sectors of a complex economic system, and the impact of an exogenous change to this system. Essentially the Input-Output Table is nothing more than an extension of the National Accounts of a country, i.e. desegregating it into the various sectors of the economy.

The important economic indicators of direct, indirect and induced[13] economic impact that this model measures are listed below:

- **New business sales:** refers to the value of all inter- and intra-sectoral business sales generated in the economy as a consequence of the introduction of an exogenous change in the economy. Explained more simply, new business sales equates to additional business turnover as a result of the introduction of an exogenous change in the economy.
- **Total employment generation:** reflects the number of jobs created or lost as a result of the exogenous change in the economy. A job is defined as one person employed for one year.
- **Change in Gross Domestic Product:** This measure essentially reflects the sum of wage income and corporate profit generated in the study area as a result of an exogenous change in the economy.
- **Key sectors to benefit:** the exogenous change in the economy will impact different sectors in different ways, with some sectors benefiting more than others.

[13] Direct economic impacts: are the changes in local business activity occurring as a direct consequence of public or private business decision, or public programmes and policies. Indirect economic impacts: are calculated from the activities of the suppliers of goods and services to the local business activities directly affect by the exogenous change. Induced economic impacts: are the impacts on goods and services demanded from the expenditure needs of households as a result on the increased employment and/or salaries associated with the exogenous change.

9.2 IMPACT ASSESSMENT OF THE CONSTRUCTION OF INTERNAL AND EXTERNAL SERVICES AND THE BUILDINGS ASSOCIATED WITH THE PROPOSED INDUSTRIAL PARK

The following table provides an overview of the total impact of respectively R35 million at Karino and the R37 million investment required at Plaston/KMIA invested in internal and external bulk services and buildings as part of the proposed industrial park development could be anticipated to have on the Mbombela economy.

Table 9.1: Anticipated total cumulative impact in terms of internal and external services and buildings due to capital investment in construction (constant 2005 values).

Variable	Unit	Karino	Plaston/KMIA
Investment	R	R 34,845,196.00	R 36,928,837.25
New Business Sales	R	R 96,535,000	R 102,307,000
Additional GVA created	R	R 33,396,900	R 35,394,200
Additional job creation (1 person employed for 1 year)	Number	293.7	311.3

SECTION TEN: RECOMMENDATIONS

The aim of this report was to provide an assessment of the feasibility of a proposed industrial park in the vicinity of the KMIA as a potential way in which to enhance the current role and function of this airport. Based on the detailed investigations that were undertaken during this assessment, most of the relevant findings are set out in this report, and therefore not repeated in this final section, the following points are noted and recommendations made:

1. Economic development potential:

The sectoral investigation of the local economy indicated that there is latent development potential for the development of an industrial park between the sizes of 19ha in 2010 to 73ha in 2025 consisting of the following and related industries:

a. Food, beverages and tobacco
b. Wood and paper; publishing and printing
c. Textiles, clothing and leather goods
d. Furniture and other manufacturing
e. Petroleum products, chemicals, rubber and plastic
f. Other non-metal mineral products
g. Metals, metal products, machinery and equipment
h. Radio, TV, instruments, watches and clocks
i. Electrical machinery and apparatus
j. Transport equipment
k. Food processing
l. Other agro-processing industries.

Implication

There is latent economic development in the area and could ensure future growth and development of the economy and the region and therefore also social benefits to the community in terms of increased job creation potential.

2. Site assessment and development context:

In section 5, an assessment of the Karino and Plaston/KMIA sites are provided and from the assessment it is clear that there is no appreciable differentiation between the two sites that provides an indication as to which site will be more suitable as the location for the industrial park. Each site has certain advantages but also in some instances certain disadvantages that therefore place the two sites on a level playing field in terms of development context.

Implication

It must however be emphasized that the future agglomeration advantages of KMIA will ensure that the KMIA/Plaston site hold the most benefit as a location for the proposed industrial park development. Karino is regarded as the gateway to the Maputo Corridor and it is anticipated that the road linking Plaston/KMIA with Karino will establish a corridor development which would create an opportunity for the two economic nodes to grow toward each other, thereby increasing the benefit for the community.

It is imperative that all the aspects addressed in the various development strategies that were assessed are discussed with the Mbombela Local Municipality to ensure that these issues are incorporated into the final IDP to ensure budget allocation and project implementation.

3. Bulk engineering costs

Engineering costs were determined both for external (off-site) and internal (on-site) infrastructure development. External infrastructure costs include road connections, water package plant, sewer outflow contribution, waste

treatment plant, and power service. The assessment indicated that development at Karino will amount to R35 million and at Plaston/KMIA to R37 million.

Implication

The Department of Trade and Industry formulated a special infrastructure subsidy, and it is essential to apply for this subsidy in order to decrease the costs associated with the proposed infrastructure development.

4. Financial feasibility and economic cost benefit analysis

In general, the two sites perform similarly with the exception of the land acquisition issue. At Karino, the developer would have to purchase land for development. This acquisition cost will have a negative impact on the financial viability of the project. This impact is likely to grow as speculation increases in this market and existing property owners become more emboldened to require more compensation for their existing farms.

However, the financial analysis found that the industrial park development would still be infeasible for a private investor unless at least a portion of the internal infrastructure is publicly financed and property tax relief is provided at both sites. An infrastructure subsidy of R7.2 million and tax relief of R4.2 million (in Year 1) would be required to achieve financial viability at the KMIA/Plaston site. An infrastructure subsidy of R10.7 million and similar R4.2 million in tax relief would be required at the Karino site. Karino would generate a net economic cost-benefit of 3.29% for all internal infrastructure, whilst KMIA/Plaston would generate an economic cost-benefit of 1.09%.

More importantly, there would be a serious impact on the timing of development at Karino due to the negotiation processes associated with assembly of this property for development. Land rights issues and negotiations with existing owners could require significantly more time than would be required to offer the existing KMIA-owned land as equity for development.

Thus, much of the difference between the sites comes down to the site assembly, acquisition cost, and timing of development. **From an acquisition cost and timing perspective, the KMIA/Plaston site offers measurable advantages over Karino**.

Implication

It is important to note that the public subsidies that are required for the development of the proposed industrial park are justified by the social benefit that will flow from this project.

5. Economic impact assessment

Based on the economic impact associated with the proposed developments at Karino and Plaston/KMIA once again the difference is not of a noticeable difference.

The benefits of the required investment are extremely important for the region due to the location of the proposed development to a labour force and also for the creation of sustainable job opportunities.

6. Final recommendation

Before a final decision can be made regarding the location of the industrial park it is necessary to determine if the proposed development adheres to the criteria of a industrial development zone (IDZ) or that of a special economic area. Based on the findings of that assessment the relevant agency that the development can be done inconjuction with, can be identified.

The final decision is therefore a policy decision and can be made once the relevant agency and development partner have been identified.