Limpopo Department of Roads & Transport

Limpopo Airlift Strategy
Situation Analysis report
October 2010

Grant Thornton

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To: Limpopo Dept of Roads & Transport
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Attention: Ms. Elmien Koedyk

14 October 2010

Dear Sirs

Revised Draft Situation Analysis report in respect of the development of an airlift strategy for the Limpopo province

We have pleasure in presenting our revised draft situation analysis report in respect of the above study.

We trust that this report addresses your requirements, and we will gladly provide any further information you may require. Please feel free to contact Marga van der Merwe for further information:

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Yours sincerely

Christelle Grohmann

Director

For Grant Thornton Strategic Solutions

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1. Introduction

1.1 Background

The Limpopo Department of Roads and Transport (**"the Client"**) appointed Grant Thornton, together with Arcus Gibb (**"the service provider"**), to develop an airlift strategy for the Limpopo province that must address both freight and passenger airlift within the context of the regulatory environment. The focus of the strategy in the short term should be on passenger traffic.

There are airports in the province that are currently not functioning – i.e. Thohoyandou and Giyani – while the Gateway International Airport in Polokwane[1] is not functioning to its full potential. Lephalale currently does not have an airport, though there is some demand for landing facilities – evident through requests to close a road in the area to act as a landing strip.

The Client has some questions around:

- The role that tourism can play in driving passenger numbers;
- How Gateway Airport should be positioned from a provincial perspective;
- What the roles of smaller airports in the province are, including private and public airports;
- What the potential would be of developing a new airport in Lephalale; and
- What the role of the Department of Roads and Transport should be with regards to airlift in the province.

Other studies of the Client that are ongoing and will impact on this Airlift Strategy include the Limpopo Transport Master Plan (which forms part of the National Transport Master Plan), a freight study (that includes rail, road and air) as well as a rail freight study that is being conducted in conjunction with Transnet.

[1] This airport belongs to the Polokwane municipality.

1.2 The objectives of the study

The two key objectives of the airlift strategy are to:

- Develop a strategy / model whereby air transport in the Limpopo province can be developed and expanded in such a way that the existing airports are utilised to capacity and demand for air transport (from both a freight and passenger perspective) is being met; and

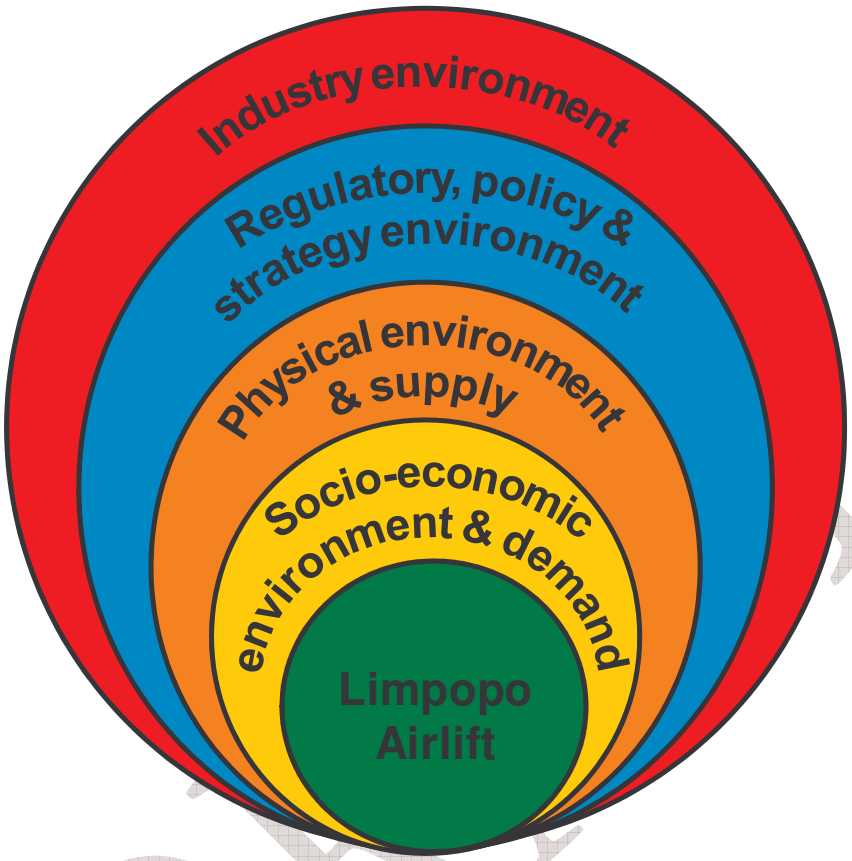
- Define the role that the Department of Roads and Transport and other stakeholders should play within the realm of air transport in the province.

1.3 Approach

Aviation forms part of the distribution channel of a variety of economic activities (e.g. tourism, farming) and as such the Limpopo airlift strategy should consider the entire distribution channel, and not merely the aviation component itself. It is the destination (in this case the Limpopo province) and economy of that destination, not the airports, that creates demand for passengers and freight that needs to be flown.

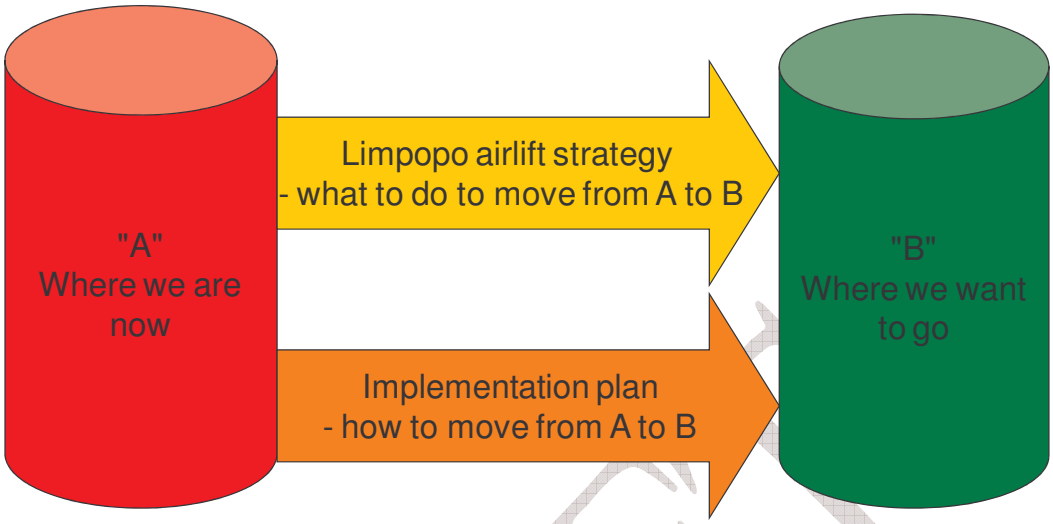
The Limpopo airlift strategy is essentially intended to breach the gap between the supply (of airports, airline capacity (for cargo and passengers), freight facilities, etc.) and demand (of freight and passenger services), but within the context of the industry and regulatory environment – as illustrated by **Figure 1.1** below.

Figure 1.1: Limpopo airlift strategy in context



The purpose of the airlift strategy is to be both visionary and practical, by outlining what the ideal situation would be, and by providing the practical approach (i.e. how and what to do) to reach the ideal situation given the current situation, as illustrated by **Figure 1.2**. In addition, it needs to be realistic, i.e. understanding clearly what is the reality on the ground iro the above spheres (**Figure 1.1**) and then developing a vision for taking it where the people of Limpopo would like it to be.

Figure 1.2: Purpose of the Limpopo airlift strategy and implementation plan



Our approach to the study therefore has three key components, i.e.:

- Understanding the context (situation analysis) – what is the reality on the ground;
- Defining 'where we want to go' (the ideal situation) and developing the strategy; and
- Outlining the actions and resources required to implement the strategy.

This report pertains to element 1 of the above approach – ie understanding the context for aviation in Limpopo.

1.4 Defining airlift and aviation within the context of this study

Aviation is defined[2] as "the activities surrounding mechanical flight and the aircraft industry. Aircraft, include fixed wing (airplane) and rotary wing (helicopter) types, as well as lighter than air craft such as balloons and airships. Aviation can be broadly divided into three areas:

- Commercial Aviation
- General Aviation
- Military Aviation."

The Limpopo airlift strategy concentrates on commercial aviation, with particular reference to freight and passenger aviation, and also includes reference to general aviation. Military aviation has been excluded from the study unless it has an impact on commercial freight or passenger aviation.

[2] As defined by www.wordiq.com

1.5 Limitations of the study

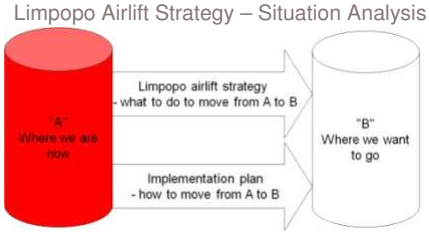
Meaningful data for passenger and freight flows in and out of Limpopo (by geographic location within the province) is difficult to obtain, and as such, this report is unable to provide a specific analysis of the current and potential passenger and freight flows by local municipality. Where available, anecdotal information is provided as a proxy for more detailed information, and a variety of assumptions are made to determine the potential of the various locations in the province from a commercial aviation perspective.

1.6 Terminology

The following acronyms are used throughout this document:

ACI	Airports Council International
ACOC	Airline Cargo Operators Committee
ACSA	Airports Company South Africa
AOPA	Aircraft Owners and Pilots Association
ASGISA	Accelerated and Shared Growth Initiative for South Africa
ASLC	Air Services Lincensing Council
ATNS	Air Traffic and Navigation Services
BPO	Business Process Outsourcing
CAA / SACAA	South African Civil Aviation Authority
CAGR	Compound Annual Growth Rate
DEAT	Department of Environmental Affairs & Tourism
DoT	National Department of Transport
FTK	Freight Tonnes Kilometres
GA	General aviation
GAAL	Gateway Airport Authority Limited
GDP	Gross Domestic Product
GNSS	Global Navigation Satellite System
IASC	International Air Services Council
IATA	International Air Transport Association
ICAO	International Civil Aviation Organisation
IDP	Integrated Development Plan
IDZ	Industrial Development Zone
ITP	Integrated Transport Plan
LED	Local Economic Development
LEGDP	Limpopo Employment, Growth and Development Plan

NATMAP	National Transport Master Plan
NEPAD	New Partnership for Africa's Development
NFLS	National Freight Logistics Strategy
NSDP	National Spatial Development Perspective
ORTIA	OR Tambo International Airport
PGDS	Provincial Growth and Development Strategy
PIA	Polokwane International Airport
RDP	Reconstruction and Development Programme
RPK	Revenue Passenger Kilometres
SAA	South African Airways
SAT	South African Tourism
SATRA	South African Telecommunications Regulatory Authority
SME	Small and Medium Enterprises
SMME	Small, Medium and Micro Enterprises
SOE	State-owned enterprise
Stats SA	Statistics South Africa
TFCA	Transfrontier Conservation Area
The Client	Limpopo Dept of Roads and Transport
The Service Provider	Grant Thornton and Arcus Gibb
UNWTO	United Nations World Tourism Organisation
USA	United States of America
VFR	Visiting Friends and Relatives
VHF	Very High Frequency
World Cup	2010 Fifa World Cup
WTTC	World Travel and Tourism Council
YTD	Year to date



2. Aviation industry environment

2.1 Relevance of this Section to the Study

This section provides an overview of recent trends within the air-transport industries and airports around the world, and in Africa and South Africa. Aviation in Limpopo cannot operate in isolation, and the global, African and national aviation industry context – both from a freight and passenger perspective – has an impact on aviation development within the province. We therefore need to understand this context within which the aviation strategy for Limpopo will be developed.

2.2 Global aviation trends

2.2.1 Financial highlights

According to the International Air Transport Association (**"IATA"**) (which represents approximately 20% of the worlds airlines who carry 94% of the world's scheduled international air traffic) Airlines Financial Monitor (March – April 2010), airlines share prices rose by 15% in the first four months of 2010 compared to the same period in 2010. This is despite the disruptions caused by the recent volcanic ash cloud in Europe. Asian airlines fared the best.

Figure 2.1 provides the revenues and expenses of airlines from 2001. IATA forecasts airline revenues of US$522 billion in 2010.

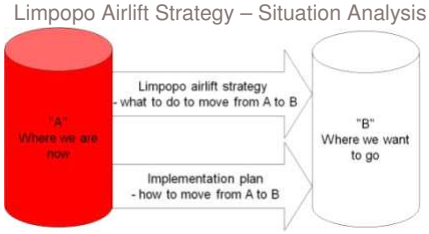
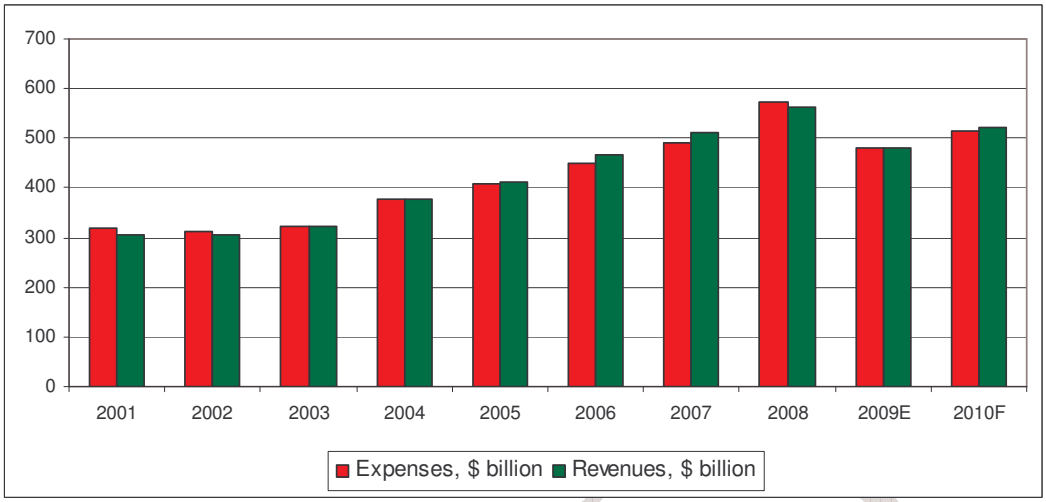


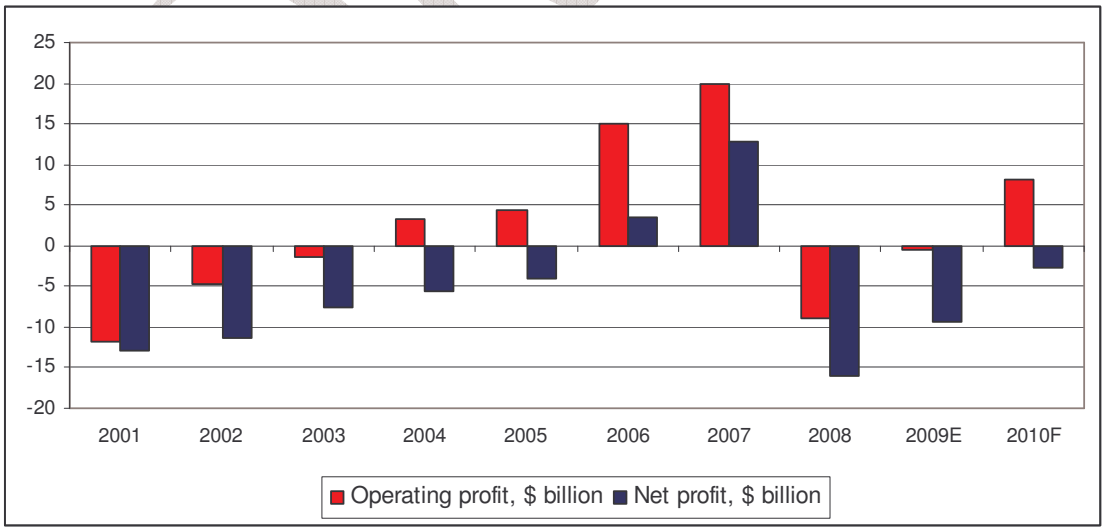
Figure 2.1: Airline revenues and expenses



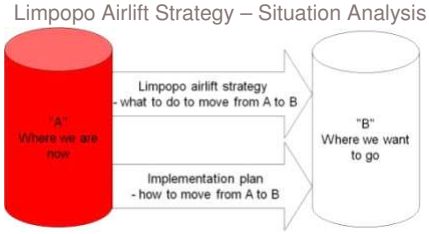
Source: IATA

Initial reports indicate that operational profits of US airlines rose by a smaller percentage in the first quarter of 2010 than in the last quarter of 2009 (0,8% compared to 1,8%). The smaller growth in quarter 1 of 2010 can mainly be attributed to higher fuel prices. It is estimated that global airlines lost US$9,4 billion in 2009, and IATA expects that losses would be reduced to about US$2,8 billion in 2010 (**Figure 2.2**). African airlines are expected to improve from a US$0,2 billion loss in 2009 to a loss of about US$0,1 billion in 2010. Airlines in Latin America and Asia are expected to perform the best in 2010.

Figure 2.2: Historical and forecasted operational and net profits



Source: IATA

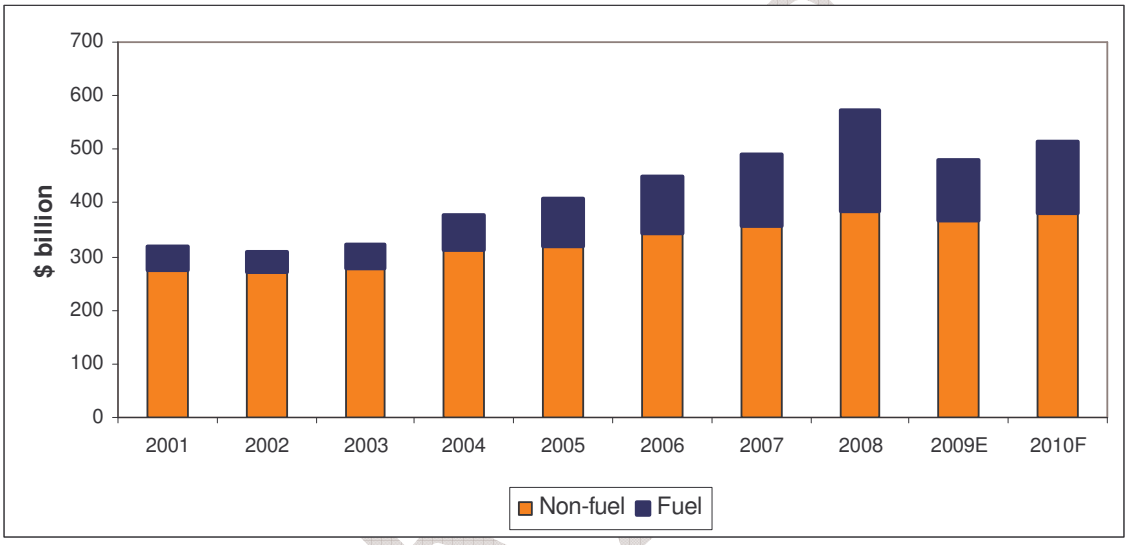


2.2.2 Fuel

In April 2010 the fuel price increased by US$10 per barrel, which brings the average fuel price for the first four months of 2010 to US$78 per barrel. If these levels continue, IATA expects fuel prices to average US$84 per barrel in 2010.

Fuel is expected to comprise just over 25% of the expenses of airlines in 2010 (**Figure 2.3**). This is higher than the 23,5% in 2009, but lower than the 33% and 27,3% of 2008 and 2007 respectively. Also refer to Section 2.2.7.

Figure 2.3: Fuel as a portion of airline expenses



Source: IATA

2.2.3 Passenger and freight demand

In the first quarter of 2010, passenger travel increased by 9% and air freight increased by 26% (**Figure 2.4**). It is expected that the impact of the volcanic ash cloud in April could be as high as a 4% reduction in volumes in April. However, the increase in capacity for passenger travel and cargo is much lower than the increase in demand. Passenger capacity increased in March by 2% compared to a 10% increase in demand in the same month, while cargo capacity increased by 5% compared to the 28% increase in demand in the same month. IATA forecasts an overall 5% increase in capacity in 2010.

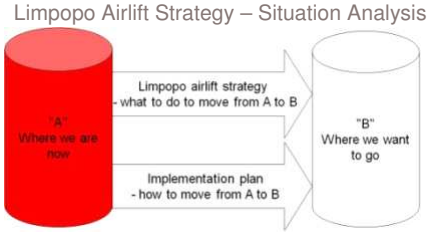
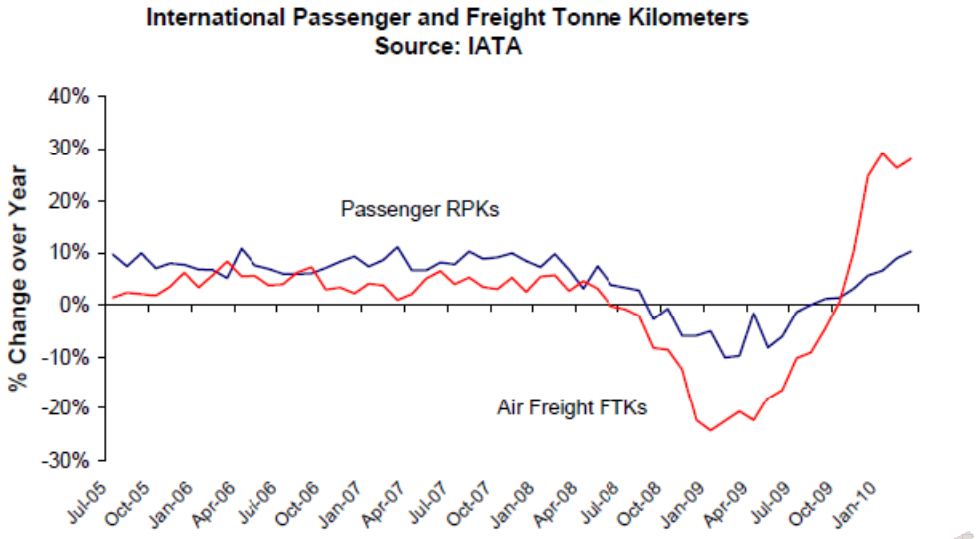


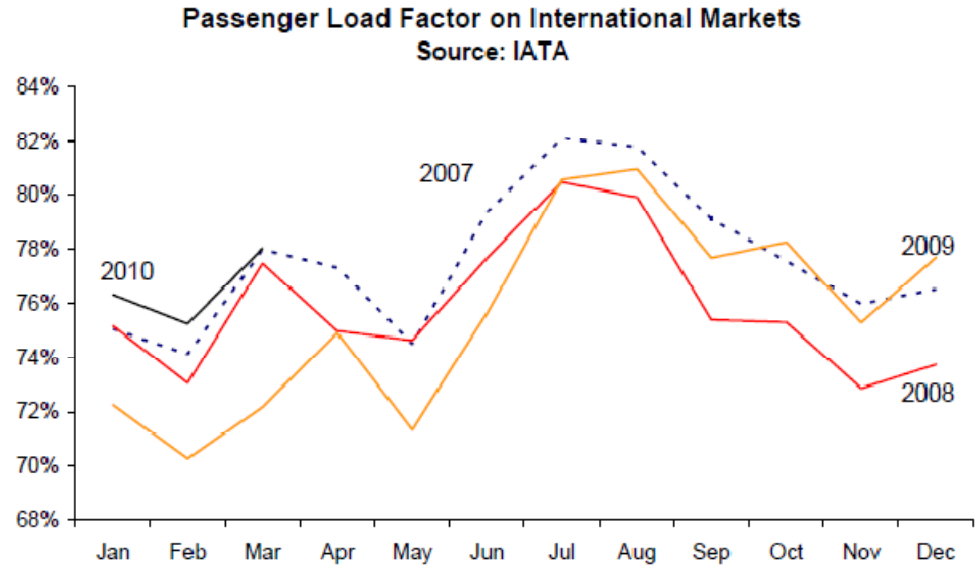
Figure 2.4: Change in Passenger and Air Freight Demand (Jul '05 – Mar '10)



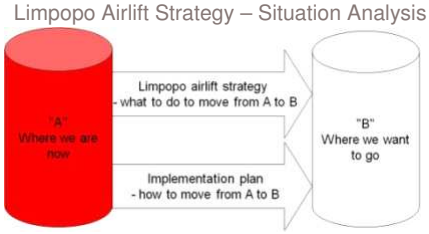
Source: IATA / RPKs=Revenue Passenger Kilometers, FTKs=Freight Tonnes Kilometers

In the first three months of 2010 passenger load factors are higher than in previous years, mainly attributable to the decreased capacity on international markets (**Figure 2.5**). It is expected that higher load factors will be maintained, as the expected increase in capacity is not expected to surpass the increased demand.

Figure 2.5: Passenger Load Factors

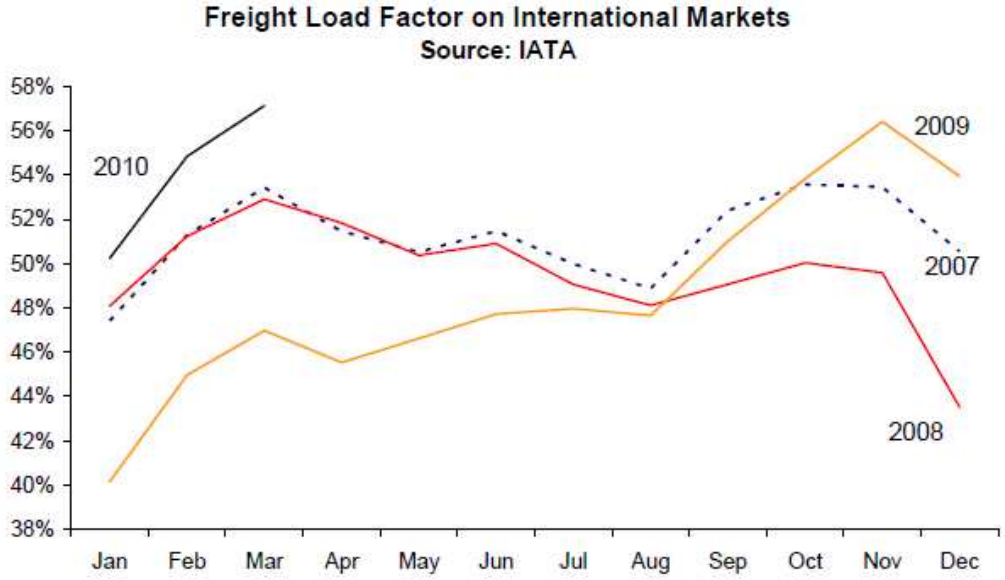


Source: IATA



Freight load factors also increased sharply in the first three months of 2010, indicating a more efficient use of freight capacity (**Figure 2.6**).

Figure 2.6: Freight Load Factors



Source: IATA

Though fares have increased – economy fares have increased by 10% and premium fares have increased by 15% from the lows in 2009 – in recent months, they are on average still only half of what the achieved fares were in early 2008.

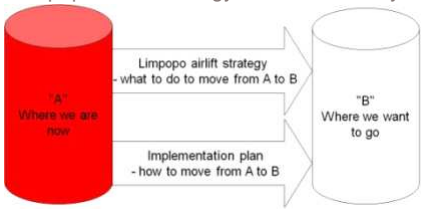


Figure 2.7: Change in International Air Travel Fares

Source: IATA

Fleet expansion is expected to continue, with approximately 1 400 new aircraft to be delivered in 2010. Only about 400 aircraft are expected to go into retirement, which means that the total fleet will be increased by about 4%.

Figure 2.8 provides the key data by region for March 2010 as compared to March 2009, as well as the Year-to-Date (**"YTD"**) comparison for the first quarter of 2010 to the first quarter of 2009. Africa achieved the lowest load factors – for both passengers and freight – of all the regions, and it is the only region to achieve lower than 70% passenger load factors. The freight load factor in Africa in the first 3 months of 2010 is lower than 30%, which is almost fourteen percentage points lower than Latin America, which is the next lowest.

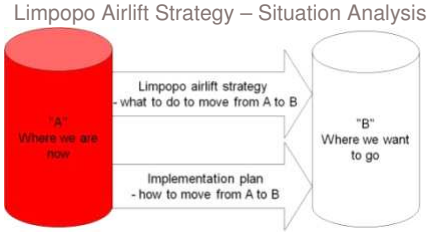


Figure 2.8: Passenger and Freight markets

International passenger and freight markets in March

Year on Year Comparison	Mar 10 vs. Mar 09						YTD 10 vs. YTD 09					
	RPK	*ASK*	*PLF*	*FTK*	*AFTK*	*FLF*	*RPK*	*ASK*	*PLF*	*FTK*	*AFTK*	*FLF*
Africa	13.6%	11.0%	67.4	45.8%	8.9%	32.1%	10.4%	8.2%	67.0	34.6%	7.4%	27.0%
Asia/Pacific	12.6%	1.3%	79.1	34.1%	12.5%	68.6%	10.5%	0.3%	78.6	35.9%	11.1%	65.6%
Europe	6.0%	-0.8%	78.1	11.7%	-5.2%	55.2%	4.3%	-0.6%	75.7	10.3%	-6.6%	52.6%
Latin America	4.6%	-0.7%	73.3	47.9%	24.6%	43.4%	8.2%	1.4%	77.0	40.3%	22.2%	40.7%
Middle East	25.9%	14.8%	76.2	35.5%	15.0%	50.0%	25.0%	15.8%	75.1	34.0%	17.0%	46.9%
North America	7.8%	0.6%	81.6	32.2%	-1.1%	47.5%	5.0%	-1.5%	78.4	31.6%	-3.0%	44.9%
Industry	10.3%	2.0%	78.0	28.1%	5.3%	57.1%	8.6%	1.6%	76.6	27.8%	4.0%	54.1%

RPK: Revenue-Passenger-Kilometres; ASK: Available-Seat-Kilometres; PLF: Passenger-Load-Factor; FTK: Freight-Tonne-Kilometres; AFTK: Available Freight Tonne Kilometres; FLF: Freight Load Factor;
All Figures are expressed in % change Year on Year except PLF and FLF which are the load factors for the specific month.

Source: IATA

In 2009, Africa achieved 66,7% passenger and 24% freight load factors, which was significantly lower than the 75,7% passenger and 48,6% freight load factors achieved by the industry. In 2009, compared to 2008, passenger revenue kilometers declined by 2% (global industry declined by 2,5%) while the available seat kilometers increased by 1,5% (global industry declined by 2,1%). The freight tonne kilometers in Africa declined by 9,2% in 2009 compared to 2008 (industry declined by 10,1%) while the available freight tonne kilometers increased by 2% (industry declined by 8,3%).

IATA expects that the economic recovery will largely drive the recovery of the airline industry in 2010, but that there will be faster growth in Asia, Latin-America and the Middle East than in the rest of the world (**Figure 2.9**).

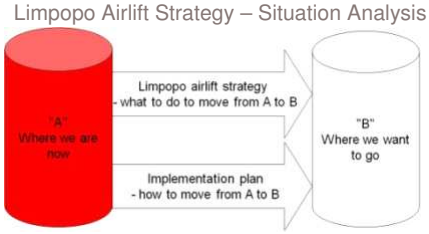
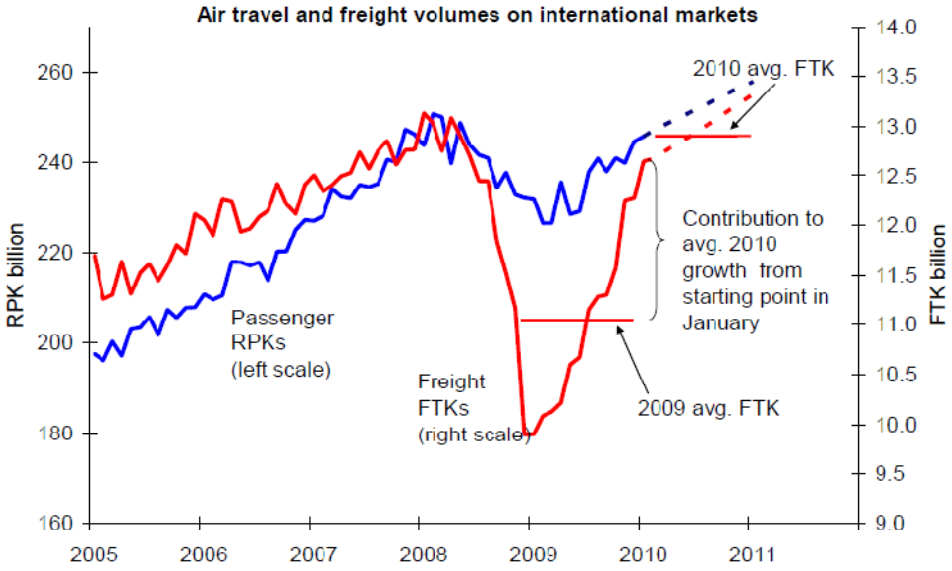


Figure 2.9: Actual and forecasted levels of Passenger and Freight movements



Source: IATA

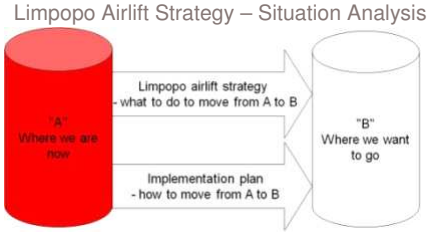
Traffic is forecasted to grow by about 7,3% in 2010 – mainly driven by double-digit growth in Asia, Latin America and the Middle East. African traffic is expected to grow by 7,4% in 2010. Capacity is expected to increase by 4%, with African capacity expected to increase by 7,8%.

2.2.4 Global Airport Traffic

The Airports Council International (**"ACI"**) reports on the number of movements and traffic through airports around the world. According to the March 2010 update, ACI reports the busiest ten airports in respect of aircraft movements (i.e. take-offs and landings) in 2009 as indicated in **Table 2.1**. Only two of the airports in the top ten are outside of the USA. Only Beijing recorded an increase in aircraft movements from 2008 to 2009.

Table 2.1: Busiest 10 Airports in the World by number of aircraft movements (2009)

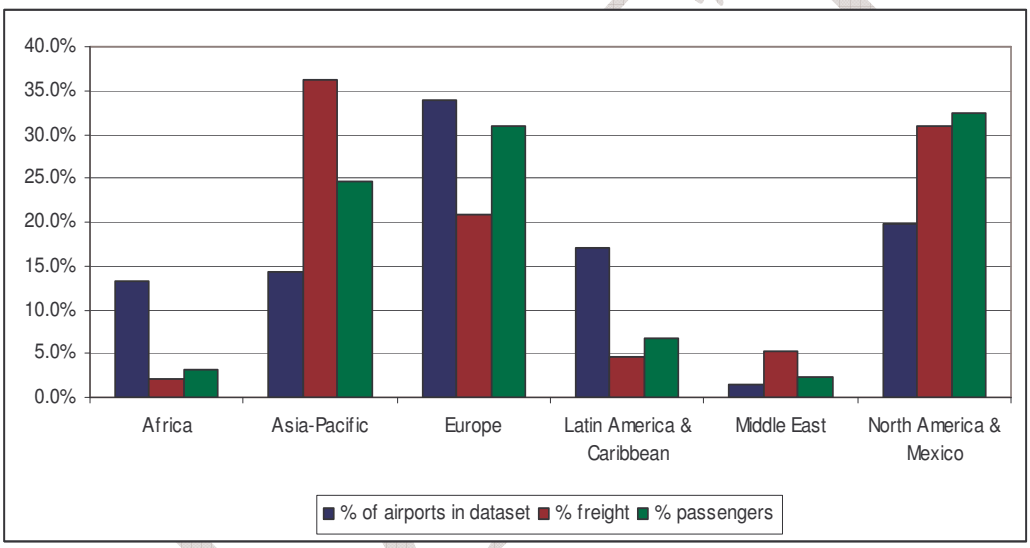
Rank	Airport	Number of movements	% change from 2008
1	Atlanta, USA	970 235	(0.8)
2	Chicago, USA	827 679	(6.1)
3	Dallas / Fort Worth, USA	638 782	(2.5)
4	Denver, USA	606 006	(2.2)
5	Houston, USA	578 150	(5.8)
6	Los Angeles, USA	545 210	(12.4)
7	Paris, France	525 314	(6.2)
8	Las Vegas, USA	511 064	(11.7)
9	Charlotte, USA	509 358	(5.0)
10	Beijing, China	488 495	13.6



In December 2009, the busiest airports in respect of international passenger traffic were London (4,93 million international passengers), Hong Kong (4,08 million) and Paris (4,05 million). The busiest freight airports in this month were Hong Kong (330 000 metric tonnes of freight), Incheon (Korea, 210 748 metric tonnes) and Shangai (China, 175 037 metric tonnes).

In 2009[3], airports handled 4,4 billion passengers and 71,3 million metric tonnes of freight. Europe represents the largest proportion of airports in the dataset (34%), though the region only handles 21% of freight and 31% of passenger traffic. The Asia-Pacific region handles the largest proportion of freight, while the North America / Mexico region handles the largest proportion of passenger traffic (**Figure 2.10**). Though African airports represent 13,4% of all airports in the dataset, it represents only 2,1% of all freight traffic and 3,1% of all passenger traffic.

Figure 2.10: Proportion of Passenger and Freight Traffic by Region



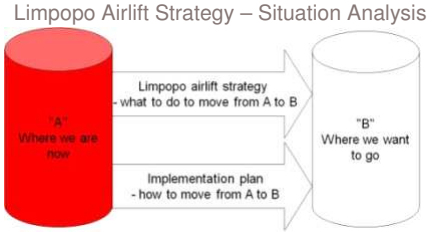
Source: ACI

2.2.5 Airline industry developments

The airline industry has undergone major structural transformation over the years and continues to adjust to a dynamic marketplace. Mergers and acquisitions and the privatisation of government-owned airlines are also responsible for the transformation of the airline industry, and the current focus from an airline strategy and planning perspective is alliances.

Airlines in many parts of the world have pursued the advantages brought by **mergers, acquisitions or operational integration** under a single holding company. The common motive of this trend is the need to remain competitive. A merger with a competitor may serve to hold and develop market

[3] Based on the 12-month data for 906 airports around the world.



presence, gain access to new markets, achieve cost savings and shield themselves against competition through the reduction of capacity on the overlapping routes, thereby increasing revenue.

Privatization of government-owned airlines has been one of the pre-eminent transformations in air transport. The motives for privatization have been highly diverse, ranging from purely economic considerations, to try to improve operating efficiency and competitiveness, to a more pragmatic desire to reduce the heavy financial burden for governments for financing capital investment in new equipment.

For the past three decades, it is reported that about 135 countries announced privatization plans or expressed their intentions for the privatization of more than 200 government-owned airlines. During this period, 134 of these targeted airlines have achieved privatization aims to some extent. Air France, KLM, Alitalia, Turkish Airlines and Sudan Airways are examples of airlines that have reduced government ownership in their airlines since 2004.

Airline alliances are an evolving global phenomenon, which is the consequence of airlines' response to, inter alia:

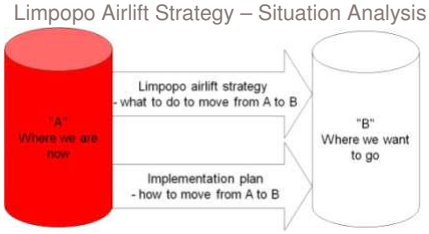
- Perceived regulatory contraints (e.g. bilateral restrictions on market access);
- A need to reduce costs;
- Economic incentives to restructure into larger networks as markets become more competitive.

Currently there are more than 600 alliance agreements in the world, which contain a variety of elements, such as codesharing, blocked space, frequent flyer programmes, etc.

The fast expansion of **no-frills, low-cost airlines** has spread to most parts of the world. It is currently the fastest growing segment of the air transport market and it is likely to remain this way for the foreseeable future.

These airlines are increasing their range from short-haul routes to long-haul routes and have contributed to a great decline in ticket prices over the past 3 decades. Low-cost/no-frills airlines are providing reduced services with reduced ticket costs and are changing the face of the airline industry. These have amounted to a reduction in travel costs and are increasing the scope of choice that tourists have in their travelling decisions and introducing new air travellers to the market and increasing air travel frequency amongst existing air travellers.

Low-cost titans include airlines such as RyanAir, EasyJet and Virgin Blue. RyanAir is Europe's largest no-frills airline and one of the world's most profitable. The airline handled more than 65 million passengers in 2009 – more than triple the number of passengers handled in 2002. The world leader in no-frills air travel is currently Southwest, a Texas-based carrier that currently carries more passengers



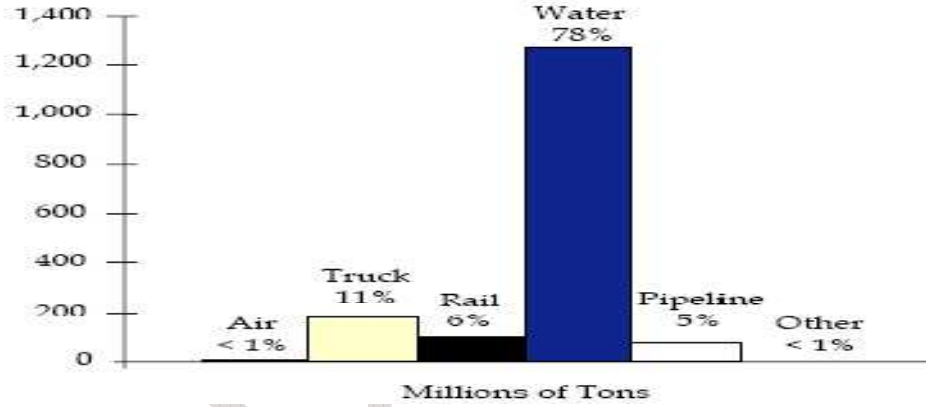
than any other U.S airline and is second largest in the world. The airline has an unbroken profit record spanning 34 years, due in large measure to innovations employed to reduce operating costs.

One of the keys to success in this market is asset utilisation. Aircraft are emptied of passengers as speedily as possible before they are filled up for the return flight. In Europe, low-fare airlines tend to make use of the smaller airports that are hungry to attract revenue and traffic.

2.2.6 Air freight trends

Air freight is a key part of the airline industry and of the wider global economy. It accounts for around 35% of global merchandise trade by value, equivalent to $4.2 trillion of the $12 trillion value of trade in 2006 (IATA, 2007)[4]. Even though air freight accounts for around 35% of international merchandise trade by value, it accounts for less than 1% in terms of volume as shown in **Figure 2.11** below. International air freight within Asia and exported from Asia to other regions accounts for around 45% of total international freight. According to Senguttuvan (2006) more than 40.0 per cent of the global trade is carried by air transport with more than 60 million tonnes of goods being carried yearly throughout the globe. According to IATA total freight volumes peaked at 41,8 million tonnes in 2007. Current 2010 volumes are expected to remain at 10% below the peak volumes.

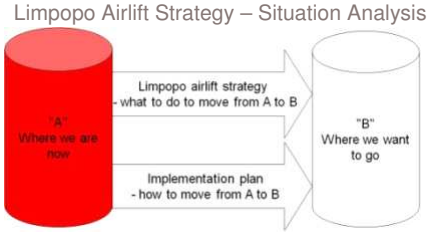
Figure 2.11: Proportion of Airfreight to Total Trade Volume



The air freight sector provides estimated total annual revenues of almost US$ 55 billion, equivalent to 12% of the airline industry's total revenue.

International air freight growth has historically been closely correlated with world trade growth. World trade growth is forecast to be around 7-8% per annum until 2011. However, the magnitude of its impact upon air freight demand appears to have weakened since 2004. Air freight demand still moves

[4] Various sources reflect different statistics about the air freight industry. Therefore comparisons may differ.

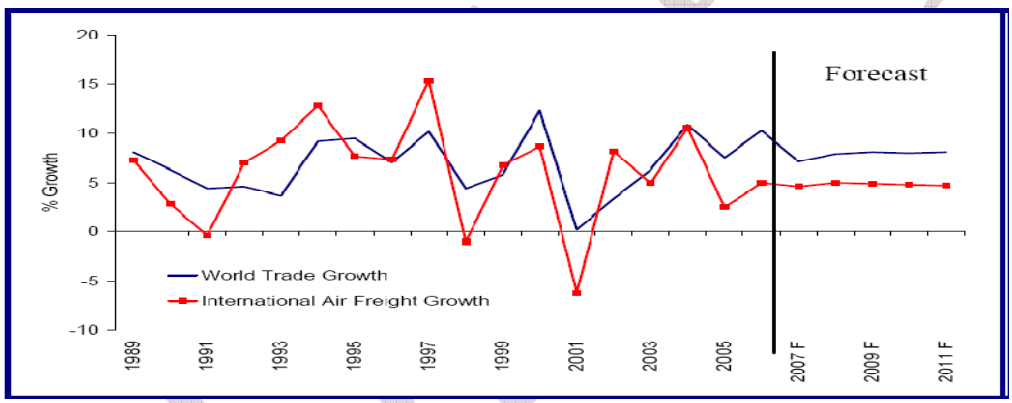


in a similar pattern to global trade, but is forecast to grow at a lower rate, of around 5% per annum in coming years (see **Figure 2.12** below).

The total value of all global trade imports and exports was some $25 trillion dollars in 2007. (source:http://thenumbersguru.blogspot.com/2008/07/value-of-global-trade-all-imports-and.html)The global air freight market grew by 0.1% in 2008 to reach a value of $100 billion. (source: http://www.alacrastore.com/storecontent/datamonitor-premium-profiles/OHIG0112).In 2013, the global air freight market is forecast to have a value of $119.5 billion. In 2008 the global air freight market accounted for a volume of 133.3 billion FTK. (Freight Ton Kilometres). This is expected to rise to 149.1 billion FTK in 2013.

Based on the above statistics air freight constitutes 40% of world trade. This statistic is supported by Michael Drucker (FedEx Chief Operating Officer) who said that 'Aircraft carry around 2 per cent of international trade by volume, but around 40 per cent by value'. This value does not differ markedly from IATA's estimates that 35% of the value of world trade is transported by air.

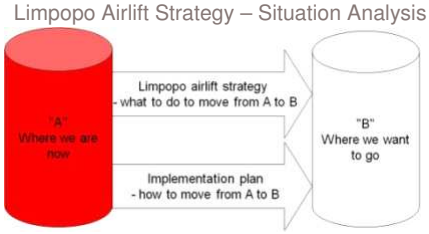
Figure 2.12: Correlation between World Trade Growth and Air Freight Growth



Source: Boeing World Air Cargo Forecast (2008-2009)

The lower demand for air freight services is largely attributed to the following factors:

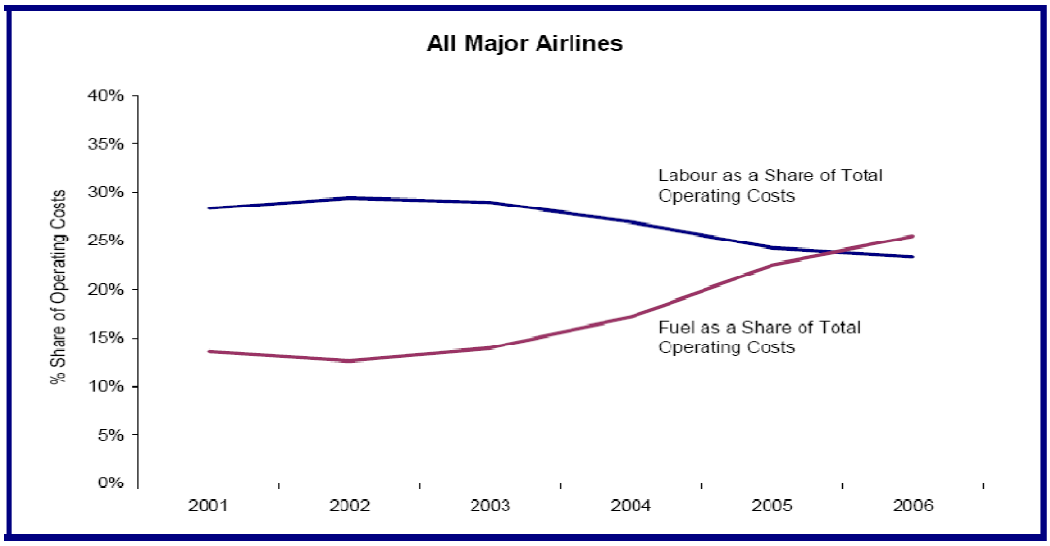
- High / Rising jet fuel prices;
- Weak economic growth;
- Turmoil in financial markets;
- Strong competition from other modes;
- Structural changes such as lighter manufacturing components in electronics;
- Growth among new entrant airlines.



Of specific importance are high jet fuel prices. Between 1994 and the first quarter 2008, the price of jet fuel increased by 600%. Airlines have in recent years faced both rising crude oil costs and a higher refining margin for jet fuel. Capacity constraints at refineries have resulted in increased jet fuel prices at a faster rate. Fuel accounts form a larger proportion of operating costs for air freight than for passenger travel. As such, air freight has faced even greater pressure on profitability due to high oil prices.

It is difficult to isolate statistics for cargo operations only, but taking into account all airline operations, fuel is now the largest operating cost item, as reflected in **Figure 2.13** below.

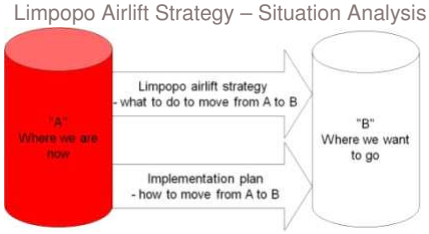
Figure 2.13: Fuel and Labour Cost as a share of operating costs of airlines



From **Figure 2.13** it is evident that though fuel's share of costs has risen in recent years, improvements in labour productivity have helped to reduce the share of labour costs. However, these trends could change in the short to medium term. Most economic forecasts predict oil prices to ease, while the risk of skill shortages in some important parts of the airline sector (e.g. pilots) could lead to upward pressure on labour costs. In response to rising fuel prices, airlines have accelerated the retirement of older, less fuel efficient airplanes, replacing them with more modern aircraft.

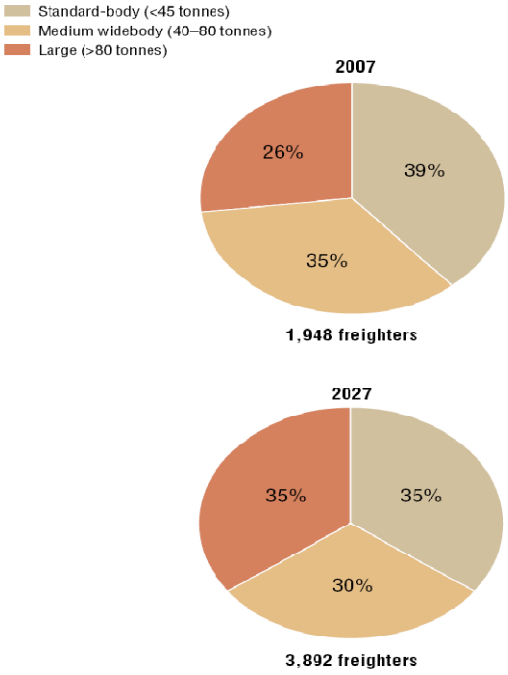
In response to the ongoing rise in jet fuel prices, airlines as well as freighter operators have accelerated fleet renewal activities, most notably in the large wide body sector. The drive to lower overall unit costs has helped increase the wide body freighter fleet from fewer than 250 in 1994 to over 1000 at the end of 2007.

Over 20 years, the number of aeroplanes in the freighter fleet is forecast to nearly double, from, 1 948 airplanes in 2007 to 3 892 airplanes in 2027. Medium wide body and large freighter aircraft will lead



fleet additions, growing from an overall share of 61% to 65% as traffic continues to build on long-haul, international trade lanes. The tendency towards larger freight fleet is illustrated in **Figure 2.14** below.

Figure 2.14: Shift towards larger Air Freighters



Source: Boeing World Air Cargo Forecast (2008-2009)

It is important to recognise the fact that, despite the challenges that impact negatively on air freight growth, opportunities for profitable growth still exist. The introduction of medium body and large freighter aircraft can open up new geographical and product markets for air freight that could impact positively on the freight revenue potential of airlines and freight forwarders.

According to an Airbus presentation on mMarket Trends in the Air Freight Industry the role of passenger related freight (i.e "belly freight") is expected to decline from 41% in 2003 to 34% in terms of Freight Tonne Kilometres traveled (see **Figure 2.15** below). In terms of actual weight, the picture is different as in the South African context between 80 and 90% of freight by volume is passenger related.

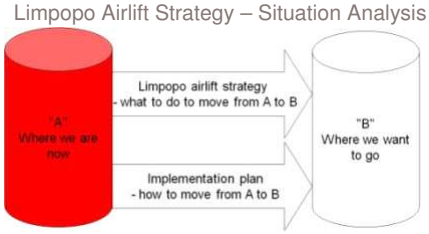
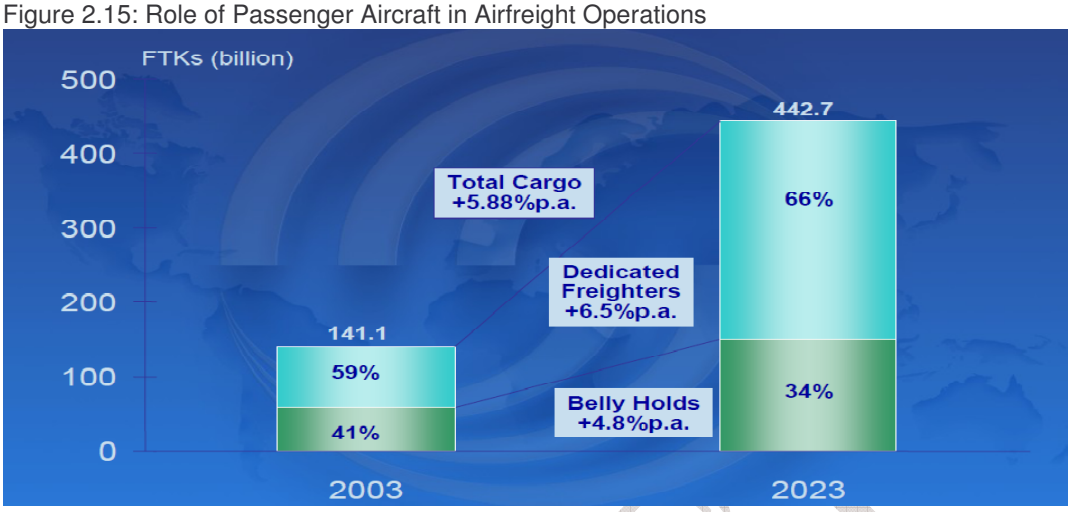


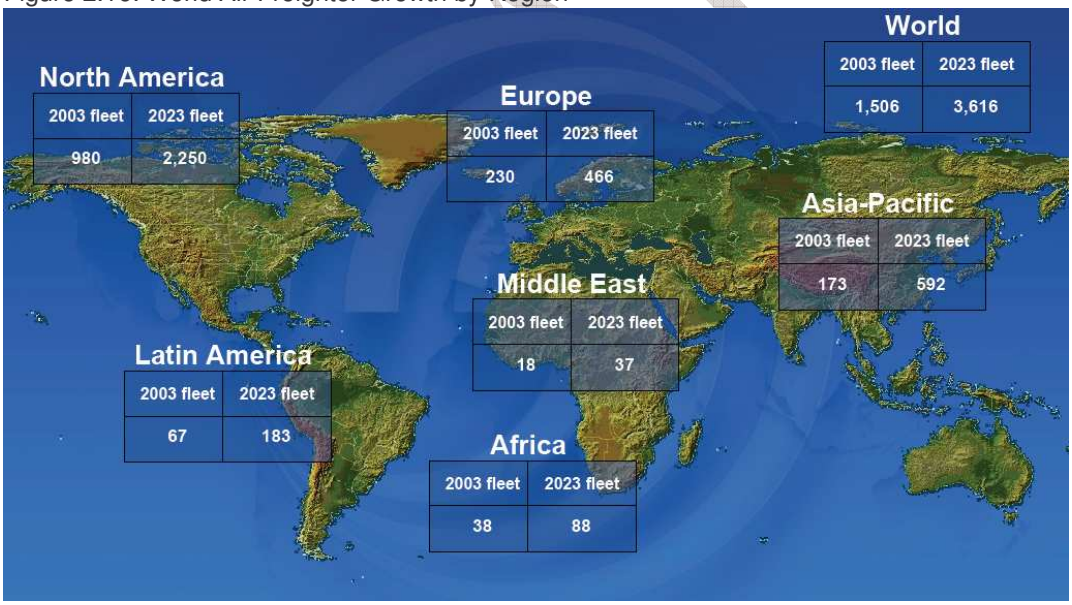
Figure 2.15: Role of Passenger Aircraft in Airfreight Operations



Source: Airbus

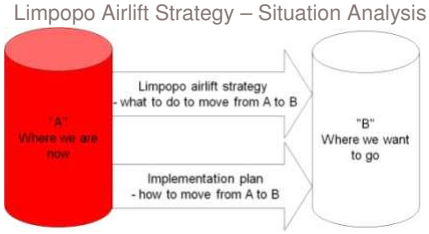
Figure 2.16 below reflects the anticipated air freighter fleets in the world by 2023.

Figure 2.16: World Air Freighter Growth by Region



Source: Airbus

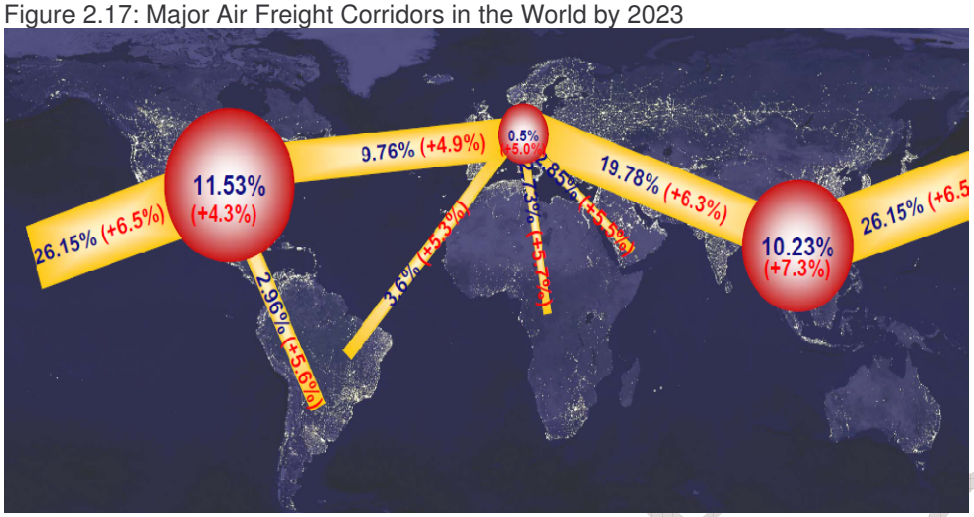
The figure shows that the world air freighter fleet is expected to double from the 2003 levels of 1 506 aircraft to 3 616 by 2023.



2.2.7 Future Global Airfreight Markets

Figure 2.17 reflects the major air freight corridors in the world.

Figure 2.17: Major Air Freight Corridors in the World by 2023



Source: Airbus Global Forecasts, 2004

The major movements, measured in Freight Tonne Kilometres are on the East-West axis between North America and China via Europe. According to the Airbus forecasts almost 60% of Freight Tonne Kilometres will be flown on this axis by 2023. In terms of this figure the Africa market is small at less than 3% (2.73%). Airbus further estimated that 80% of long range intercontinental freight will be from hub to hub.

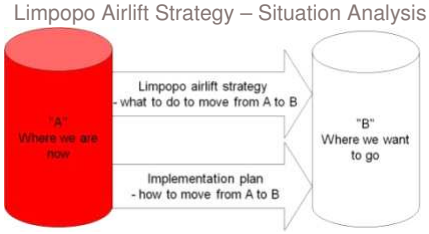
The figure shows that there is currently no East-West axis for the Southern Hemisphere. Products are shipped to major hubs in the Northern Hemisphere from where it is being transshipped to destinations. This situation may present an opportunity for the Southern hemisphere to establish its own East-West air freight axis.

Implications for Limpopo airlift strategy:

Though OR Tambo International Airport currently functions as the cargo hub for sub-Saharan Africa, it is not envisaged as a significant freight hub in the context of the Airbus forecasts for 2023. There may therefore be an opportunity for Polokwane to become this hub with the right investment in infrastructure.

2.2.8 Air Freight in Developing Countries

There are a number of factors limiting the volume of airfreight in developing countries. The principal constraint is the lack of balanced loads. Industrialised regions such as China's east coast are more likely



to have significant volumes of two-way activity with inbound shipments of inputs for production helping to balance outbound loads comprised at least partially of finished products from those same inputs.

For countries that do not have significant industrial production, the lack of consumer demand limits the potential for inbound air cargo to balance the outbound loads. International carriers attempt to mitigate the negative effects of directional imbalances by scheduling multiple stops to build volumes, rather than applying a strict round-trip routing. Because developing countries are often major producers of perishable cargo (particularly off-season fruits and vegetables), seasonality is an important factor in limiting year-round scheduled service. High shipping rates (costs) also result from a variety of additional operational risks. Other factors affecting demand for air transport include network factors, such as the role of airports as a domestic hub with linkages to local airports and as a gateway with linkages to international hub airports.

2.2.9 Tourism and Trends in Global Travel impacting on air travel

The tourism industry is a major driver of global air travel, with roughly 50% of all international travel being done by air.

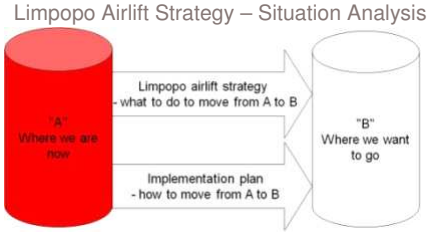
The World Tourism Organisation (**"UNWTO"**) reports a total of 880 million tourist arrivals in 2009, down by 4,3% from the 919 million arrivals in 2008. All regions except Africa posted a decline in arrivals. However, the UNWTO expects a 3-4% increase in tourist arrivals in 2010 as the economic situation around the world recovers and pent-up demand makes its way into the market.

A couple of travel trends impact directly on the air travel market, i.e.:

- There seems to be increasing domestic and short-haul travel and less long-haul travel mainly due to the economic crisis and to some extent also as a result of global safety and security concerns;
- More people prefer to travel independently and fewer opt for organised tours;
- Shorter booking lead times (i.e. travellers booking closer to their travel date) and more self-planning for trips;
- Growth of the low cost airline industry, particularly in Europe and Africa;
- The growing maturity of tourists who are increasingly seeking a differentiated tourism experience such as cultural tourism, ecotourism, adventure tourism etc.

2.2.10 Benefits of aviation

A report by Oxford Economics – "Aviation, the real world-wide web" (2009) – concludes the following in respect of aviation:



- Aviation forms the backbone of many modern economies, and it is suggested that aviation supports approximately 8% of the global economy, with 2,5 billion passengers and 50 million tonnes of freight being flown every year;

- The aviation industry is valued at approximately US$ 425 billion, which – if considered as the economy of a country – would rank it as the 21st largest economy in the world;

- The industry supports about 5,5 million direct and 15 million direct & indirect jobs around the world;

- Aviation provides fast and efficient access to markets and suppliers for companies over longer distances. Particularly for perishable products, this provides access to markets that would not be accessible without air transport;

- Increased freedom of movement of passengers and freight allows for increased international investment and economic growth;

- Through increased economies of scale, increased competition, intensified innovation and access to a wider pool of employees, aviation results in increased efficiencies in economies;

- Aviation provides accessible global travel opportunities;

- Maintains social networks between migrant workers stationed in developed economies and their families in the developing economies they originate from;

- Increased awareness about sensitive eco-systems is spread by enabling eco-tourism through aviation;

- Cross-cultural exchanges are more easily facilitated by aviation, and as a result, the benefits of these exchanges are amplified.

2.3 Aviation in Africa

2.3.1 Airlines

The International Civil Aviation Organisation (**"ICAO"**) reports in its Regional Report on Africa and the Indian Ocean Islands that Revenues of African airlines have increased from US$6,8 billion in 2000 to US$11,4 billion in 2007, which represents around 2,2% of the global airline revenues.

Though airlines around the world recorded both operational and net profits in 2006 and 2007, African airlines continued to make net losses (**Figure 2.18**).

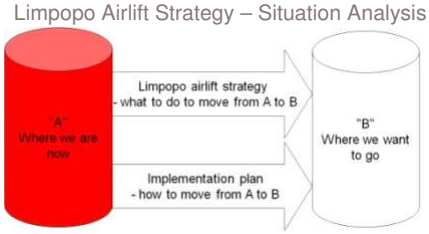
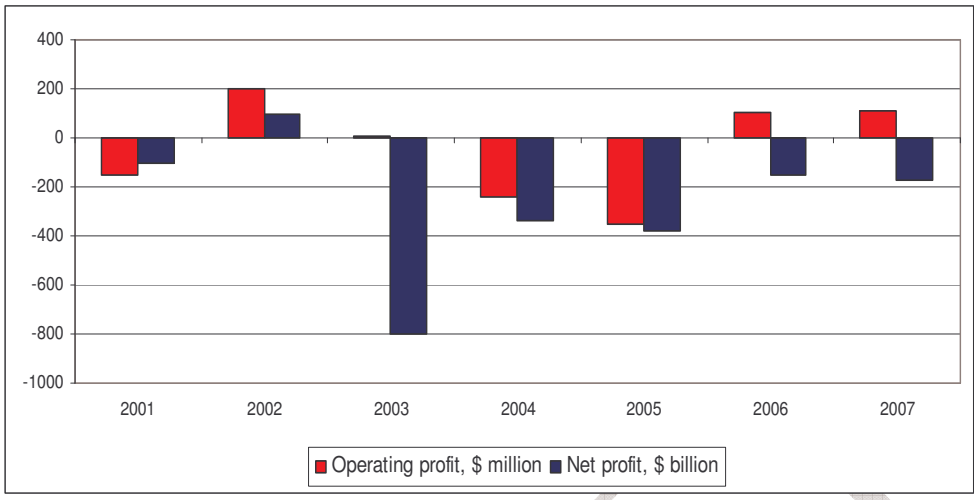


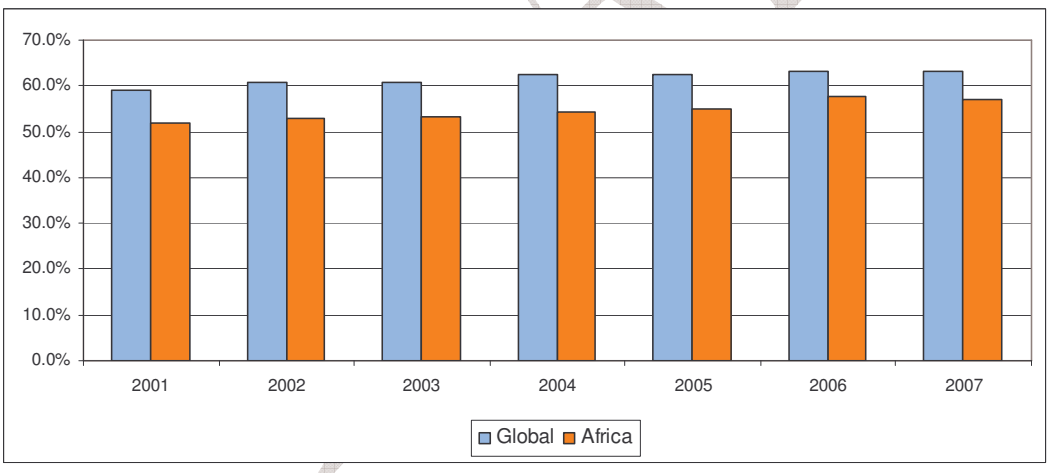
Figure 2.18: Operational and net profits of African airlines



Source: ICAO

From 2001 to 2007[5] the overall load factors on African airlines were much lower than the global average (**Figure 2.19**).

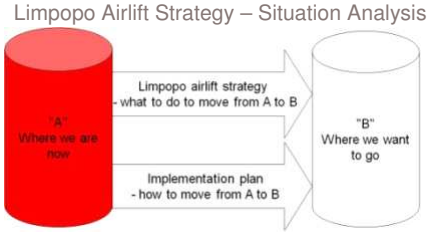
Figure 2.19: Load factors – Africa vs the global average



Source: ICAO

Air transport plays a key role in the economic and physical integration of the continent. It is one of the driving forces behind regional integration and development.

[5] No data could be found for Africa for the years after 2007.



It contributes significantly to:

- Mitigating the popular transport problems faced by landlocked countries;
- Enhancing free movement of people, labour and cross border investments;
- Connecting Africa to global markets;
- Boosting tourism; and
- Alleviating the cost of doing business.

Despite its critical role on the continent, the airline industry in Africa still faces a number of major challenges, i.e.:

- Low level of demand for air travel in Africa

African airlines have a very small share of international airline traffic. The airline industry in Africa is particularly vulnerable to external factors such as the events of September 11, the war in Iraq and SARS.

- Undercapitalisation

African airlines are generally undercapitalised i.e. there is not enough shareholder capital in the companies. Expansion and past losses are financed by loans instead of equity capital injected by governments or any private shareholders. African airlines face financial constraints particularly in acquiring additional aircraft to strengthen their fleet.

- Privatisation

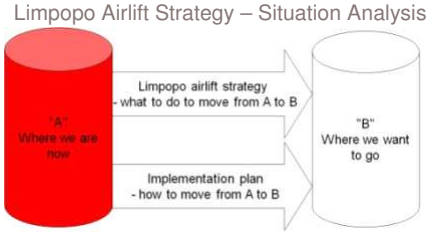
Privatisation is considered essential, but it is very difficult for African airlines to privatise when they are making losses. In many cases the chances of reaching profitability depend very much on the internal operations of the airlines and the need to increase the capital base.

- Over-Expanded networks

Several African airlines are over expanded. They have networks that are too large for them to support in terms of economic viability.

- The imbalance between African and European Carriers

A large imbalance exists between African and European carriers and is largely a result of the very weak marketing powers of the African carriers outside Africa. African carriers are unable to compete effectively with European or other carriers.



Airline ticket fares for travelling within Africa remain high. The safety of African airlines also needs to be significantly improved and the technical and human capabilities require strengthening.

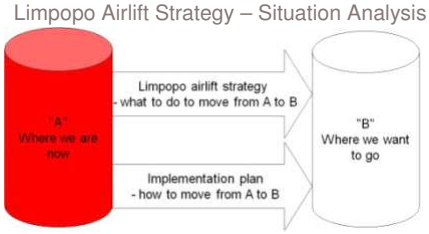
2.3.2 Airlines in SADC

A number of airlines operate in the SADC region, though some of the government-owned airlines have run into trouble in recent years. Zambian Airways ceased all operations in January 2009, while Air Tanzania's operations were suspended in 2008.

- The South African carriers serve a number of routes within the SADC region, while most of the other countries have a single national airline serving only a few routes outside of its own country.
- Air Namibia operate within Namibia itself, but also offer flights to Frankfurt, Cape Town, Johannesburg, Maun, Victoria Falls, Lusaka and Accra.
- Air Botswana offer flights within Botswana, and also have links with Harare, Lusaka and Johannesburg.
- Air Zimbabwe offers a domestic service and links to Johannesburg, Lusaka, Kuala Lumpur, London, Kinshasa, Lubumbashi, Gaborone, Lilongwe and Beijing.
- LAM (Air Mozambique) offers flights to various destinations within Mozambique, as well as to Johannesburg, Luanda, Lisbon and Nairobi.
- Air Malawi operates within Malawi, and also offer links to Johannesburg, Dar es Salaam, Lusaka and Harare.
- Precision Air is a domestic Tanzanain operator that also has links with Entebbe, Mombasa and Nairobi.
- Zambezi airlines – this Zambian carrier offers a domestic service, as well as linkages with Johannesburg and Dar es Salaam.
- Proflight is a domestic Zambian carrier that serves the tourism market in Zambia with a fleet of small aircraft.
- TAAG – the Angolan carrier provides links with Brazzavile, Cape Town, Johannesburg, Douala, Dubai, Harare, Kinshasa, Lisbon, Lusaka, Rio de Janeiro, Sao Paulo, Sao Tome and Windhoek.

2.3.3 Air Freight

Europe is the primary destination for African air cargo accounting for about 2/3 of the total freight carried. The African exports are mainly counter-seasonal cut flowers and other perishables to Europe,



but with relatively little return cargo. **Table 2.2** shows the percentage of the main African commodities carried by air.

Table 2.2: Percentage of African Commodities transported by air

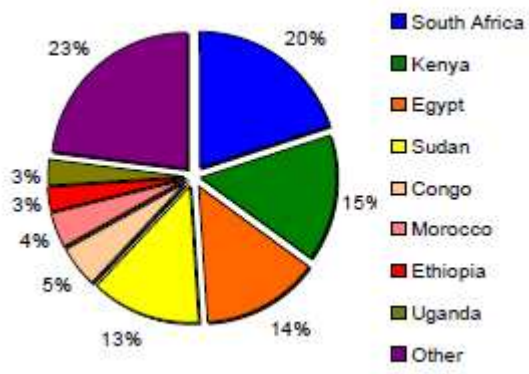
From	European Union	Africa
To	Africa	European Union
Capital equipment	22%	11%
Intermediate goods	21%	7%
Transport equipment	13%	
Refrigerated goods		50%
Primary foods		6%
Computers	7%	
Consumer goods	6%	
Other (unclassified)	31%	26%

Source: Merge Global

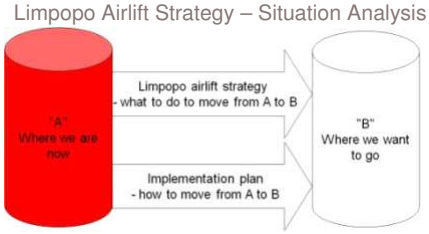
Accurate and detailed air freight statistics are difficult to obtain, especially regarding the commodities. It means that a significant proportion of commodities are classified under 'Other'. In the case of the African trade it varies between 26% and 31% according to **Table 2.1**. More than half of the shipments from Africa to the EU are cut flowers and other refrigerated goods. The Netherlands is a major recipient and Kenya a major exporter of cut flowers. Manufactured goods are shipped primarily from South Africa, which accounts for almost 1/3 of the northbound (i.e from Africa to the EU) air cargo (World Bank Group). The southbound (from EU to Africa) trade, which has been the fastest growing, is primarily capital equipment, intermediate products and transport equipment. Together, these account for over half the shipments.

Figure 2.20 shows the distribution of African airfreight on airports.

Figure 2.20: African Air Freight at Airports (tons loaded and unloaded)



Source: ACI



Three countries – Kenya, South Africa and Egypt – handle about half of the air cargo in Africa, according to **Figure 2.20**. Africa has only three airports with significant cargo operations, i.e. Johannesburg, Nairobi and Lagos (Nigeria). Johannesburg benefits from a strong local economy and a distance that makes air transport compulsory for most perishables exports to Europe. Nairobi has a relatively strong domestic demand for imports shipped by air as well as exports of cut flowers. It has leveraged this scale to become one of Africa's gateways. Nigeria benefits from the demand associated with its oil industry and other natural resources as well as relatively higher consumer demand. Cargo carriers have demonstrated an interest in serving this market despite problems with infrastructure and corruption. Other countries with significant potential for agricultural exports by air, for example Uganda and Ghana, have difficulties with landside access and transport services, especially cold chains.

South African Airways (SAA), Kenya Airways and Ethiopian Airways provide high quality air cargo services, often in collaboration with major international operators.

2.4 South African aviation trends

South Africa has six major airports and a number of smaller ones situated in different provinces. OR Tambo International Airport (**"ORTIA"**), as the most important airport in South Africa plays a vital role in the local, as well as the national economy as a result of its passenger and cargo activities. Most of South Africa's commercial airports (including ORTIA) are managed by the Airports Company of South Africa (**"ACSA"**).

2.4.1 Passenger and aircraft traffic

Iin 2007, ACSA airports handled almost 36 million passengers, of which the majority were destined for destinations within South Africa (**Figure 2.21**). The effects of the global economic situation are evident in the decline in passenger numbers in 2008 and 2009. In 2009 only 1 million more passengers were handled than in 2006. Passengers on international flights comprise about 25-27% of all passengers handled by South African passengers. ORTIA, Cape Town and Durban handled more than 90% of ACSA's passengers in 2009.

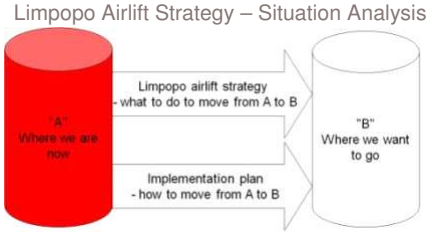
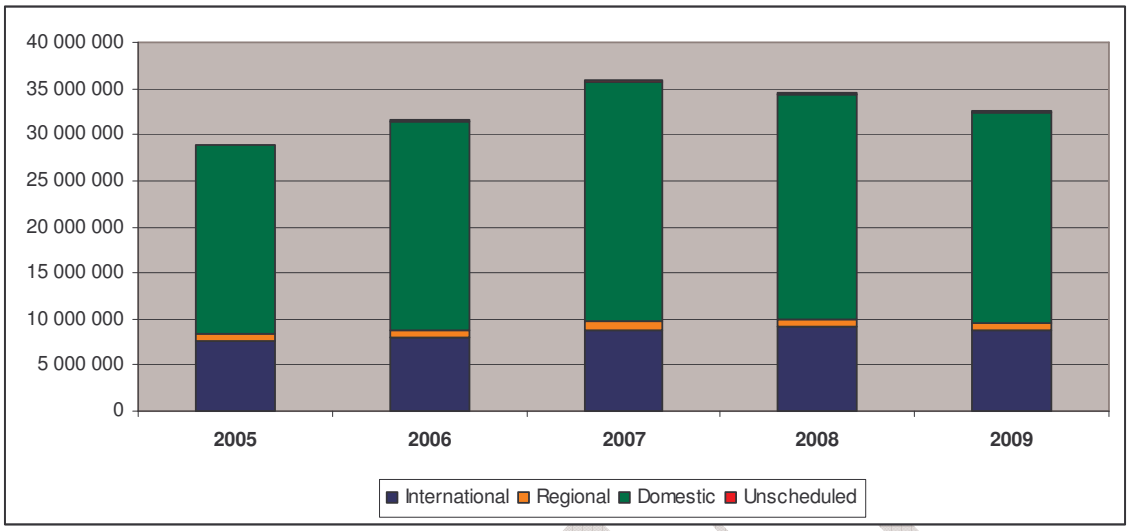


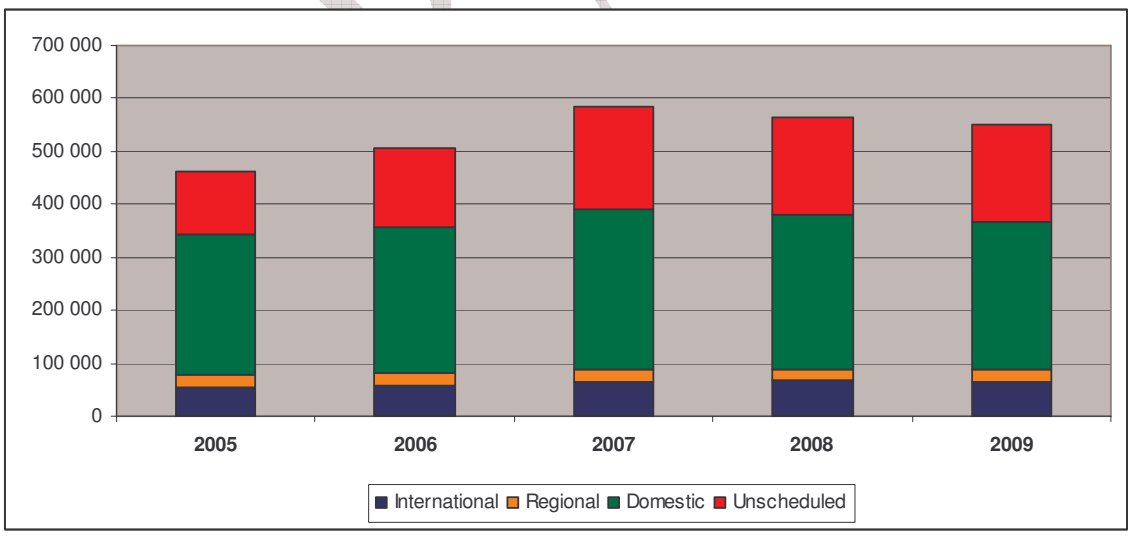
Figure 2.21: Number of passengers handled by ACSA airports, by type



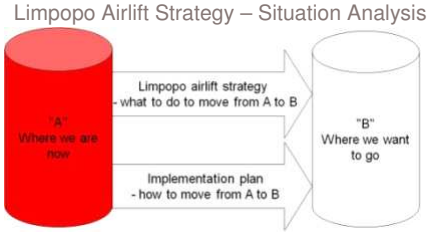
Source: ACSA

As illustrated by **Figure 2.22**, in terms of aircraft movements, unscheduled (i.e. private and charter) aircraft movements comprise a much larger proportion of traffic at ACSA airports than unscheduled passengers. Unscheduled flights accounted for 0,5% of all passengers, but 33,2% of all aircraft movements in 2009.

Figure 2.22: Number of aircraft movements handled by ACSA airports, by type



Source: ACSA



Comparing the YTD May passenger figures (**Figure 2.23**) there is a slight increase in 2010 compared to 2009, though the number of passengers handled in all ACSA airports is still lower than in the same period in 2008 and 2007.

Figure 2.23: Number of passengers handled by ACSA airports, YTD May

Source: ACSA

2.4.2 Air freight trends

South Africa has registered total exports of $96 billion in 2008, of which 84.1% was merchandise exports. The major exports were gold, diamonds and machinery. The prime export destinations for South Africa are the US, Japan, the UK and China. The country's exports are likely to rise to $135 billion in 2013 registering an annual average growth of 7.1% between 2008 and 2013.

Figure 2.24 shows the shares of major logistics components of logistics values for 2008 and estimated for 2013.

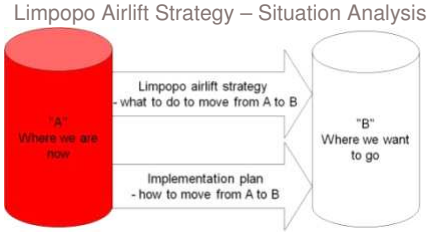
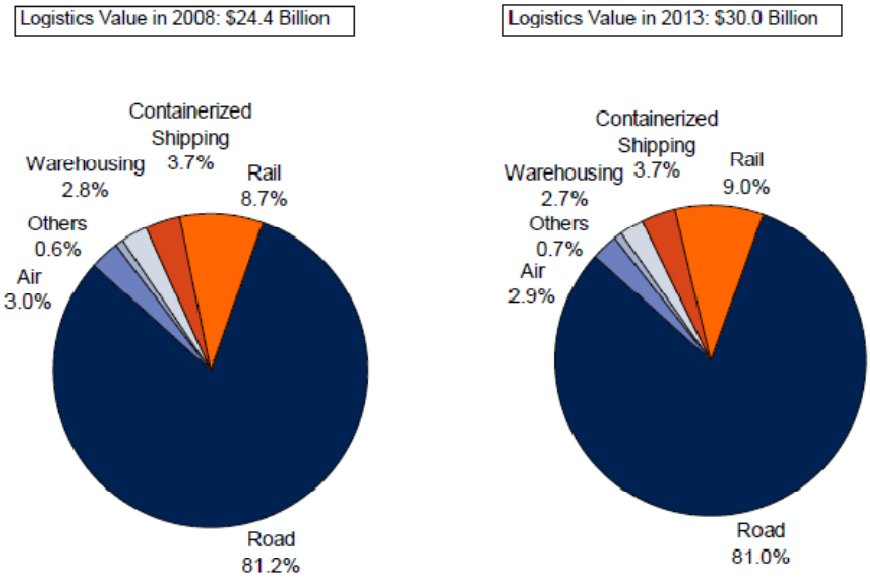


Figure 2.24: Major Logistics Components Shares (Value)



Source: Datamonitor

The figure shows that in terms of logistics value, air transport has a share of only 3%. Logistics costs are dominated by road transport.

Figure 2.25 shows the volume of freight that air carries in South Africa.

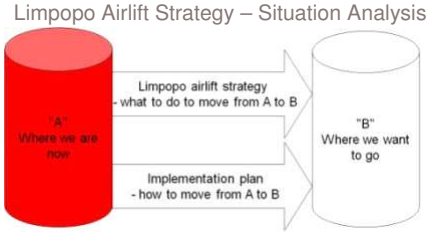
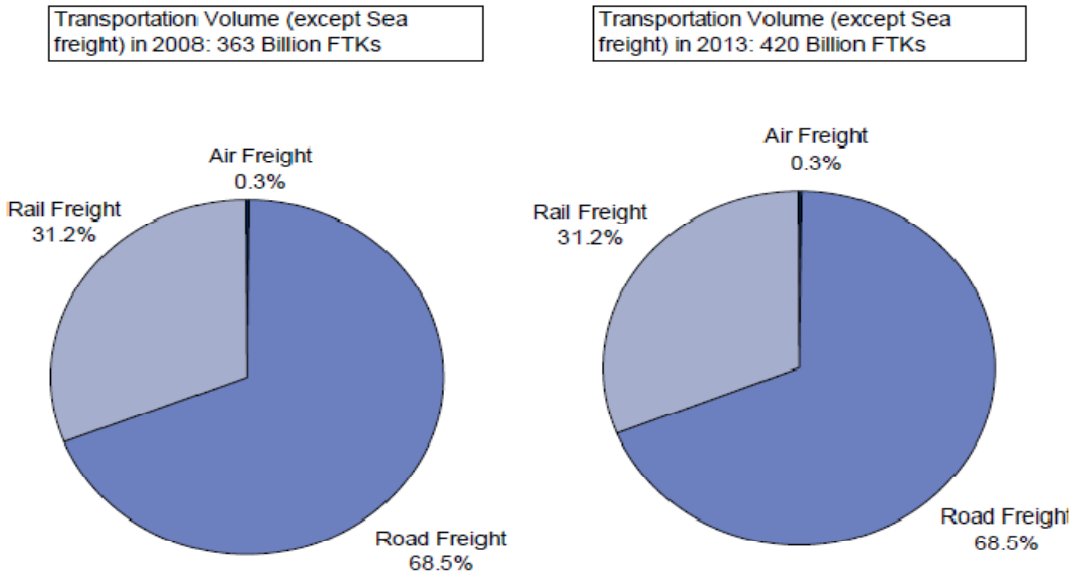


Figure 2.25: Major Logistics Components Shares (Volume)



Source: Datamonitor

Road Freight volume constituted 68.5% share of the South African transportation volume followed by Rail Freight and Air Freight with shares of 31.2% and 0.3% respectively in 2008. The shares of all the modes are expected to stay stable till 2013.

Figure 2.26 shows the value and growth rate of the South African Air Freight market for the period 2008 to 2013.

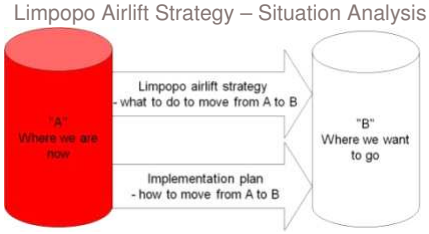
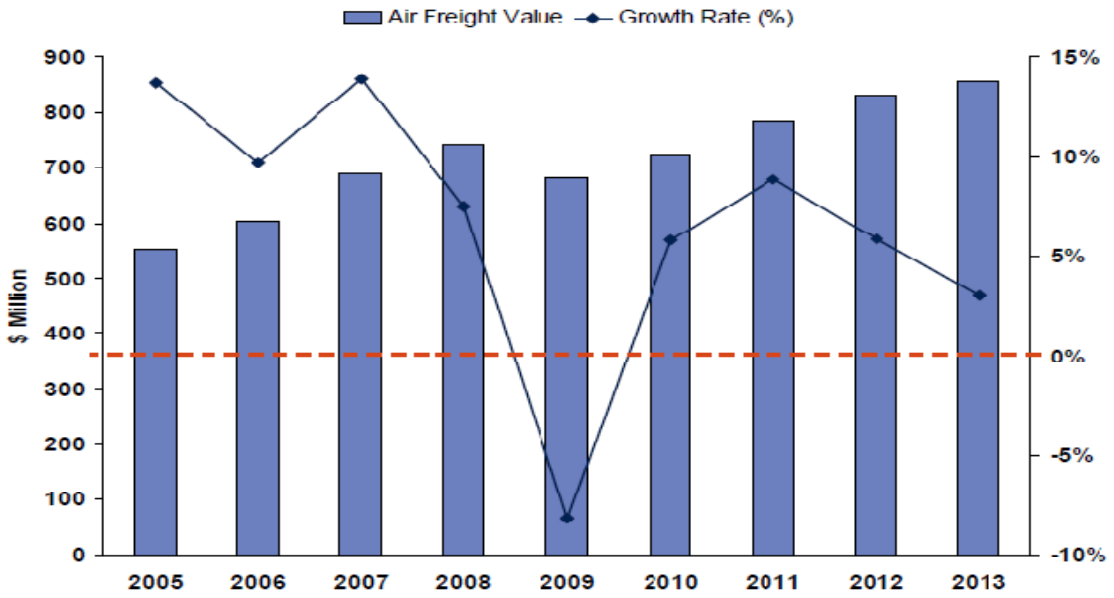


Figure 2.26: South African Air Freight Market

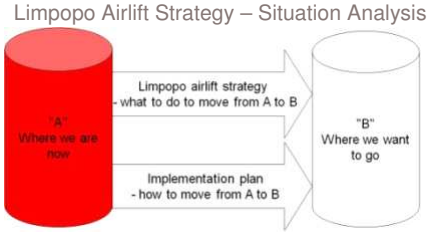


Source: DataMonitor

The South African Air Freight market was valued at $742.2m in 2008. The market has declined significantly in 2009 by 8.1%, primarily affected by the increased jet fuel prices along with weak trade activity. The market has registered a strong CAGR of 11.2% between 2004 and 2008 and is expected to register a lower CAGR of 2.9% from 2008 to 2013.

ORTIA is a rapidly growing cargo hub and has increased its freight throughput from 270 000 tonnes of cargo in 2003 to 366 000 tonnes in 2007. In comparison, Cape Town International Airport, the next largest freight airport in South Africa, handled only about 48 000 tonnes in 2007.

Currently in South Africa, between 80 and 90% of freight is moved by passenger aircraft (according to the State of Logistics Survey) and the remainder is moved by both scheduled and unscheduled freighters. In contrast, in other countries the split between belly freight (i.e. freight moved in passenger aircraft) and dedicated freighter aircraft is roughly 50:50. The main reason for the high percentage of belly freight in South Africa is the lack of dedicated facilities for freight aircraft, and this ratio is expected to remain high. It is assumed that the lack of dedicated freight facilities could also be attributed to a lack of sufficient demand / market in both directions for dedicated freight. The key disadvantage of the over-reliance on passenger aircraft for the provision of airfreight services is that it leads to poor predictability of available capacity for general air freight. This is because passengers and their baggage take preference over freight. During busy passenger periods general freight – which often constitutes perishables or urgent, high value cargo – may be "bumped" or left behind, which reduces the value proposition to customers.



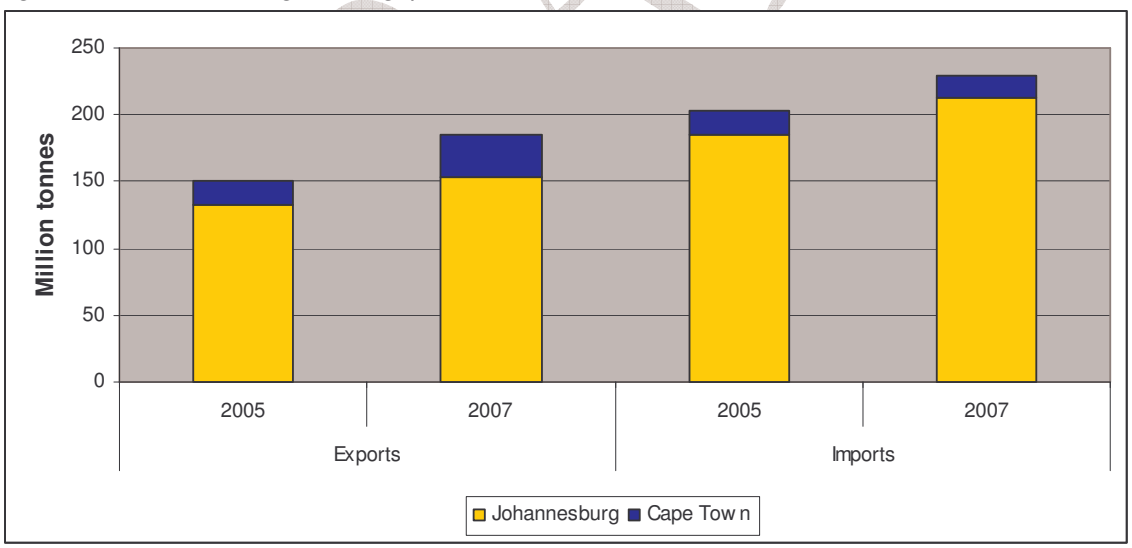
The airfreight export market is dominated by perishables and high value exports such as diamonds, mostly originating from South Africa. Imports include high value items such electronic goods and specialist components. Increasing imports and exports of high value specialist components such as goods for the automotive sector is starting to dominate this market.

International operators are often able to charge less than local operators for services to and from Europe as they exploit a "paid for" return leg to reduce the export cost from South Africa.

The airfreight market within and between South Africa and international markets is characterized by different competitive conditions. Domestic freight is largely confined to movements of scheduled passenger services and is dominated by mail and courier customers. Freight moved into Africa tends to be strongly north bound and is dominated by mining, communication, oil and military customers. Freight operators registered in other African countries tend to have lower cost structures than South African freight operators. This is due to the weaker enforcement of safely regulations in these countries and high levies imposed on South Africa and other foreign operators by certain African countries. Poor enforcement of regulations (safety, security, etc.) within South Africa and in other parts of Africa allows non-compliant operators to undercut compliant operators.

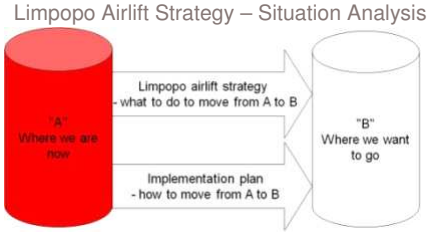
The total imports and exports are reflected in **Figure 2.27** below.

Figure 2.27: Total Air Cargo Throughput, 2005 and 2007



*Source: Airline Cargo Operators Committee (**"ACOC"**)*

In 2007 imports and exports handled at OR Tambo and Cape Town International Airports amounted to just more than 400 000 tonnes. OR Tambo handled nearly 90% of the imports and exports flowing through these two airports. The cargo throughput at these two airports increased by 16,5% from 2005 to 2007. Imports at the two airports amounted to 45% of total 2007 throughput. OR Tambo exports



amounted to 154 000 tonnes in 2007 (or 42% of total air cargo handled at the airport) whereas Cape Town handled only about 31 000 tons. In the case of Cape Town, exports were almost double that of imports in 2007, with 31 000 tons of export cargo handled and 17 000 tons of import cargo handled at the airport.

2.4.3 Scheduled Airlines

South Africa currently has over 40 international scheduled airlines flying to the country on a regular basis and 7 domestic scheduled airlines: South African Airways (SAA), Airlink, SA Express (subsidiary of SAA), British Airways (subsidiary of Comair), Kulula.com (subsidiary of Comair), 1time Airlines and Mango (subsidiary of SAA). SAA is currently the country's leading airline, carrying approximately 6.9 million passengers in the 2008/2009 financial year. The low-cost carriers have been increasing their market share steadily while eroding SAA's market share in recent years.

In South Africa, it is reported that growth in scheduled air travel has been in the region of 70% over the past five years, due largely to the proliferation of low-cost airlines following the deregulation of the industry in the early nineties. In those days, state airline SAA monopolised domestic air travel and two airlines that attempted to challenge their dominance - Flitestar and Sun Air - subsequently collapsed, amid accusations of anti-competitive behaviour by SAA. The emergence of newer competitors - kulula.com, Nationwide and 1time – saw SAA's domestic market share decline to around 50%. Although the price-war in the domestic air travel market has got South Africans airborne in growing numbers, at such low fares, most carriers are feeling the pain. While competitors agree that the entry of SAA's no-frills carrier, Mango, to the low-cost end of the market in 2007 boosted passenger volumes overall, it has reduced profitability.

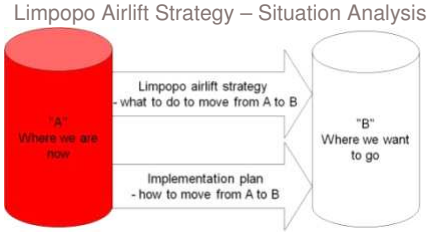
2.5 Airline Operational Models

With the operating margins being very tight in the airline industry (see **Section 2.2.1**), airlines consider the profitability of a route in a very serious light, and would only in very rare occasions consider a new route where they are not assured of it becoming profitable in the short term.

The airline industry typically follows one of two approaches to airline profitability analysis- flight (or route) profitability and network profitability with the overarching goal to maximize overall profitability.

Flight (or route) profitability analysis only looks at segments profitability independent of interconnecting flights. Network profitability analysis, on the other hand, looks at those passengers that are connecting beyond each flight (route) and assesses the financial contribution of each flight to the overall network.

An airline would look at both revenue and expenses. Revenue would include direct revenue and ancillary revenue tied to some extent to a particular flight. Expenses are allocated to the flight they belong to and would include direct fixed and variable costs, and indirect fixed costs.



Airport expenses are considered non pass-through expenses that include two types: variable expenses such as landing fees and ground handling, and fixed expenses such as overhead and rent. Expenses are allocated specifically for each airport at the segment level. Some sources indicate that airports managed expenses represent 8-9% of the direct expenses. Any 10% increase in allocated airports-managed expenses affects the domestic margin by 0,7 points.

A number of factors are considered by an airline before it decides to operate a new route, and not only the potential demand. However, the first consideration is whether there is sufficient demand for the route to ensure high load factors. The low-cost carriers in particular require at least an 80% load factor in order for a route to be profitable, and with most of them needing about 110 passengers per flight on a twice-daily bases, that means that there should be at least 220 passengers flying in and 220 passengers flying out per day (just more than 80 000 per annum in each direction) to make it viable for a low-cost carrier to fly a particular route.

Once the airline has established that there is sufficient demand, then other factors for determining the potential profitability of a new route are taken into consideration. **The final decision to operate a new route is a very complex one and does not only depend on a single factor.** These factors are depicted in **Figure 2.28** and described in more detail below:

- The **distance to be flown** – longer distances tend to be more profitable (especially for larger aircraft) because:
  - Overall there are fewer take-offs and landings, which adds to the cost of maintaining the aircraft;
  - The aircraft uses less fuel when cruising at altitude, which is often not possible on short distance flights where the aircraft has to start its descent when or sometimes before it reaches cruising altitude;
- The **size of the aircraft** in its fleet, with larger aircraft generally being more cost-effective to operate per passenger, though some airlines – like Airlink – have mainly smaller aircraft in their fleet;
- The **size of their fleet and current routing** of aircraft – as airlines prefer to keep their aircraft in the air for most of the day and they generally do not have 'spare' aircraft standing around, they carefully work out the schedule of a particular aircraft to ensure that it will be optimally used on a daily basis. With the introduction of a new route, aircraft schedules have to be revised, or a new aircraft has to be purchased, which is expensive;
- The **cost of setting up operations** (i.e. ticket desks, check-in facilities, ground handling staff, etc.) at both ends of the route – if there are too few flights landing at a particular destination, the staff and facilities at that particular airport are not used productively. As such, airlines prefer to have at least a once-daily, but preferably a twice-daily service on a particular route. Also for this reason, airlines prefer a hub-and-spoke system where they have operational capacity in one location, and then just have to add new operational capacity at one end of a new route;
- **Seasonality** on the route – a low level of seasonality ensures more productive all-year use of their aircraft;

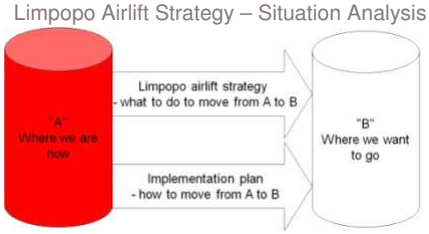
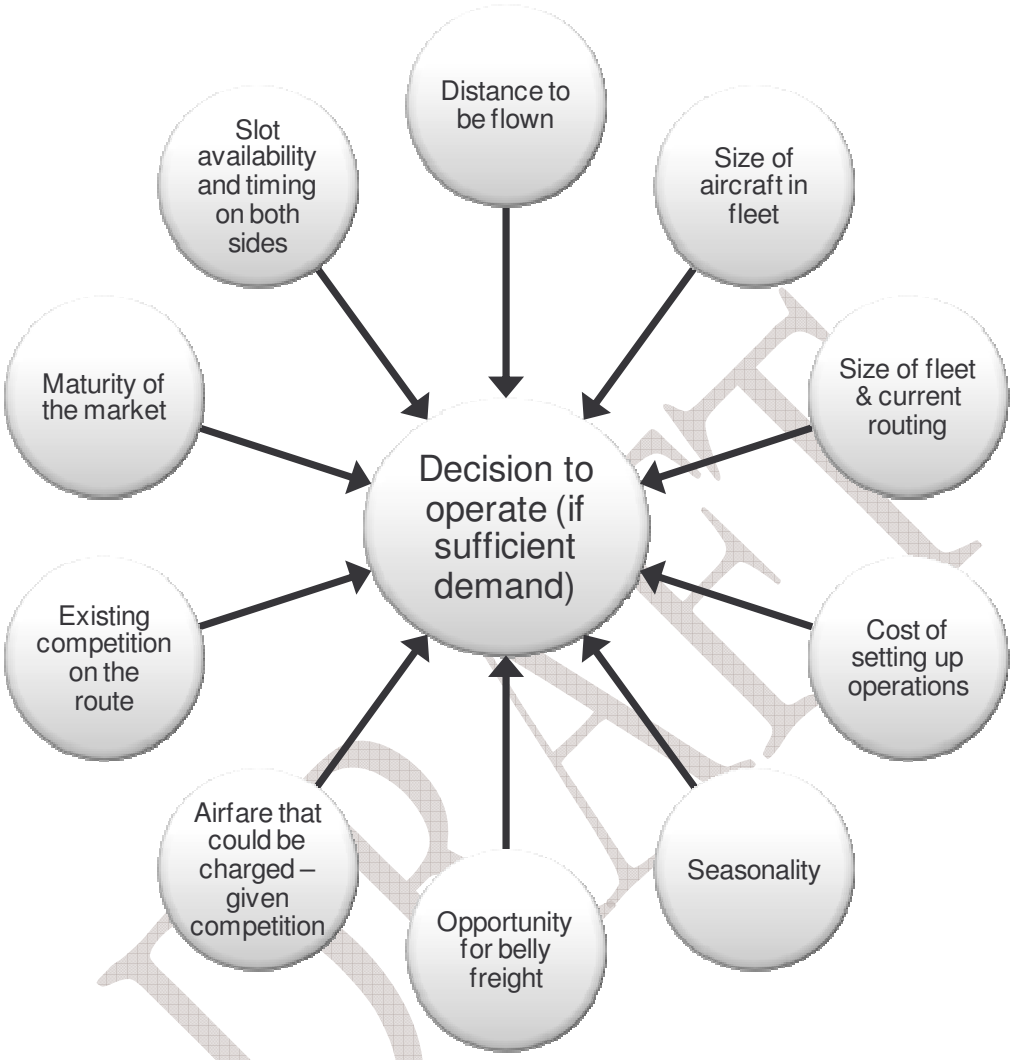
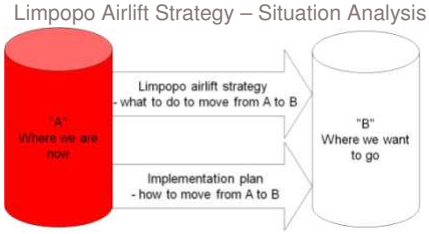


Figure 2.28: Factors impacting airline decision to operate a new route



Source: Grant Thornton

- From a freight perspective, airlines prefer **belly-freight** (i.e. transported in a passenger aircraft), as opposed to dedicated freighter options, as this makes use of existing ground handling operations and is more productive;
- Existing **fares** on the route by competitive airlines, or the potential air fare that could be charged – the higher the potential fare, the more profitable the route could be;
- Existing **competition** on the route – if another airline is well-established as an operator on a particular route, it may be difficult or costly to gain market share on the route;
- **Maturity of the market** – a mature flying market will be more likely to accept and switch to a new operator on a particular route, while a less mature market is likely to view a new operator with some suspicion;



- The **availability of slots** at the appropriate times – business travellers ideally prefer early morning and late afternoon/early evening flights, and for a hub airport like ORTIA, most of the destinations being serviced from this airport need slot allocations around the same times, which limit the availability of slots at ORTIA, though this may not necessarily be a problem at the other end of the route. Linked to this issue is the length of time an aircraft would have to spend on the ground while waiting for its allocated departure slot;

None of the above factors are considered in isolation, and therefore the decision to add a new route is a very complex one for airlines.

Implications for Limpopo airlift strategy:

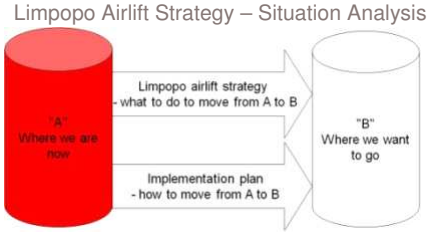
Unless Limpopo can ensure profitability for the airlines in a variety of ways, it may be difficult to convince airlines to establish new routes to and from the province.

2.6 General Aviation

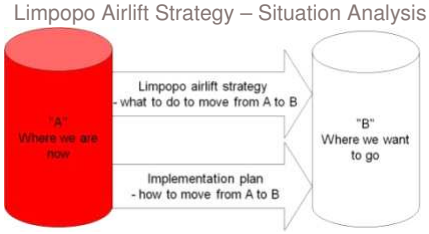
General aviation (**"GA"**) commonly refers to that part of the aviation industry that engages in activity other than scheduled commercial airline activity. This may include charter operators, aero medical operators, agricultural aviation businesses, aviation-based fire-fighting services, training and aerial work such as aerial photography and surveying. It also includes private, business, recreational and sports aviation activity and supporting businesses such as maintenance providers and aircraft manufacturers. However, GA can potentially serve a broad spectrum of economic sectors and has very broad uses (see **Table 2.3** below for a detailed list of general aviation uses).

Table 2.3: General aviation uses

Economic Sector	General aviation uses	
Personal use	• 'Family car' that flies	• Hobby
Business Aviation	Companies use airplanes to visit their factories and suppliers, make sales calls, transport employees between different facilities, and for hundreds of other business reasons.	
Packages/Small Freight	Small airplanes bring packages and letters from hundreds of outlying cities and towns to the express shipper's hub. Small planes also allow for greater flexibility in delivery.	
Health & Medicine	• Medevac • Patient Transport	• Flying Doctors • Organ Transport
Entertainment & News	• Airshows • Film Industry & Television • Air museums	•
Pilot Training	90% of new airline pilots are trained by private flight schools located at GA airports. Even the National Air Forces use civilian flight schools. In most countries National Air Force pilot candidates begin their military flight training by undergoing Introductory Flight Training (IFT) flying traditional small general aviation training aircraft at civilian flight schools.	



Economic Sector	General aviation uses	
Law Enforcement	• Airborne patrol & pursuit • Border patrol • Evidence gathering • Rapid response teams	• Search & rescue • Outdoor event Management • Airborne Tracking of stolen cars
Farming	• Aerial planting • Aerial fertilizer application • Crop dusting	• Product distribution (freight) • Land & water management • Animal rescue • Animal food drops • Weather Forecasting
Recreation	• Sightseeing Flights • Thrill Rides • Aerial Combat Simulation • Hot Air Balloon Rides	• Hang Gliding • Soaring • Parachute Jumping • Skysurfing
Boaters & Fishermen	• Fish Spotting • Surveying & Charting • Search & Rescue • Emergency Medevac • Law Enforcement • Aerial Pond Stocking • Anti-Poaching Enforcement	• Population Surveys • Pollution Prevention & Control • Remote Access to Ponds & Lakes • Ocean Rescue • Weather Forecasting
Disaster Relief	• Forecasting & Surveying • First Responders • Support Personnel	• Emergency Supplies • Damage Assessment • Evacuation
Forestry	• Aerial Harvesting of Mature Trees • Minimizes Clear Cutting • Minimizes Logging Roads • Surveying & Land Management • Aerial Planting	• Crop Management • Pest Control • Firefighting • Controlled Burns • Environmentally Friendly Harvesting
Traffic Control & Safety	• Traffic Reporting • Traffic Management & Flow Control	• Aggressive Driver Surveillance • Medevac
Firefighting	• Smoke Jumpers • Water Bombing • Forecasting & Surveying • First Responders • Support Personnel	• Emergency Supplies • Damage Assessment • High Altitude & Rooftop Rescues • Evacuation
Energy & Mining	• Remote Access to Drilling Platforms & Sites • Remote Access to Mining Sites • Powerline Construction, Patrols & Maintenance • Pipeline Construction, Patrols & Maintenance • Security	• Geophysical Surveying • Environmental Protection & Response • Emergency Response Teams • Crews, Equipment, Supplies • Medevac
Environmental Protection	• Surveying & Surveillance of Soil Erosion, Silting, Pollution • Atmospheric Sampling & Research	• Damage Assessment • Evidence Gathering • Coastal Border Patrol • Weather Forecasting
National and Local Government	• Law Enforcement • Border Patrol • Environmental Protection • Weather Forecasting	• Transportation • Search & Rescue • Land Use Surveys & Planning
Construction	• Access to Remote Sites • Site Surveying & Planning • Delivery of Supplies • Antenna Installations	• HVAC Unit Installations • Elevated Concrete Pouring • Environmental Monitoring • Tower & Powerline Installations



Economic Sector	General aviation uses	
Advertising/ Marketing	• Banner Towing • Skywriting	• Airships & Blimps • Balloons
Wildlife Management	• Territory Surveys • Range Tracking • Population Counts	• Relocation • Evacuation • Anti-poaching Patrols
Hikers & Sportsman	• Remote Access to Wilderness Areas • Search & Rescue	• Medevac • Wildlife Management Programs
Tele-communications	• Cell Phone Tower Installation • Radio Tower Installation & Maintenance • Antenna Installation & Maintenance	• Cable Installation & Maintenance • Long Duration & High Altitude Communications Relay Platform
Banking	• Overnight Return of Cancelled Checks • Surveying & Monitoring of Financed Projects • Transportation for Meetings	• Access to Businesses in Remote Locations • Movement of Staff Between Bank Facilities Spread throughout Large Regions
Aerial Photography	• Artwork for All to Enjoy • Documentary Photographs for Business & Industry • Infrared Images for Law Enforcement	• Photographs Used to Monitor Environmental Conditions • Photographs of Ancient Archaeological Ruins

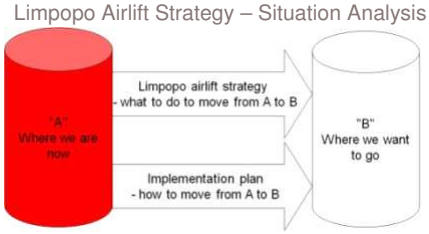
Source: *Aircraft Owners and Pilots Association (AOPA) (2005)*

GA aircraft come in all shapes, sizes, and prices. Many used airplanes bought and sold in the today cost no more than an SUV, and some cost as little as a used car. From ultralights to helicopters to private planes to corporate jets, there's a different kind of aircraft for every type of flying, as well every size budget.

GA today touches nearly every aspect of our daily lives and thus becomes an integral part of not only the economy but also the society that it serves. GA benefits the users of transportation services and the economy at large. It increases the efficiency and productivity of businesses by reducing the travel time that would be required to drive or to use more congested commercial airports; provides public health services, such as transporting patients and medical equipment; provides public safety services, such as monitoring floods or fires; eases congestion at commercial airports; provides an important transportation link to small communities that are not served by the airlines; and provides training for the majority of all new pilots.

GA has the following advantages:

- In some instances (dependent on route similarity and aircraft type used), shorter door to door travel time than large commercial airports
- Better scheduling flexibility
- Better security



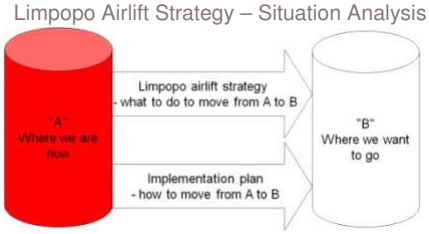
2.6.1 GA Airports

The international trend is for major cities worldwide to operate secondary (municipal or private) GA airports. This is common not only in Europe and North America, but examples can also be found in Africa, notably Windhoek (Eros Airport), Harare (Charles Prince Airport) and Nairobi (Wilson Airport). In South Africa there are a number of secondary airports in the Gauteng area, such as Grand Central Airport at Midrand and Wonderboom in Pretoria. Charter flights are increasing in popularity worldwide, and a growing trend in the US is for very light jets (VLJs) to act as air taxis with a maximum of six seats. These aircraft are attracting business traffic as they reduce time spent in queues at major airports.

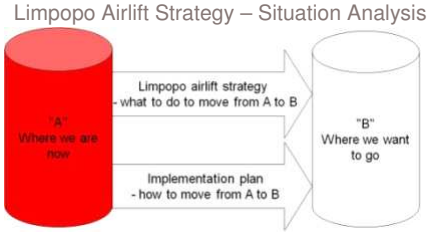
Table 2.4 provides a summary of the facilities, service providers and fees at 3 South African GA airports, i.e. Wonderboom (owned by the City of Tshwane), Tempe (owned by the Mangaung local municipality) and Virginia (owned by the Ethekwini metro municipality). These airports are all under the jurisdiction of local government.

Table 2.4: GA airports in South Africa

	Wonderboom	Virginia	Tempe
Location	Pretoria	Durban	Bloemfontein
Operating hours	Admin - 07:30 to 16:00 (Mon to Fri) (closed on public holidays) Rescue & Fire Fighting Services - 05:00 to 20:00 (Mon to Sun) Fuel Bay - 07:00 to 17:00 (Mon to Sun) Air traffic control tower: 07:00 to 19:00 (Mon to Sat) 07:00 to 18:00 (Sun)	Official operating hours for the Airport is from 07h00 to 19h00	Office hours and fuel availability: 08:00 – 18:00
Owned by	City of Tshwane metro municipality	Ethekwini metro municipality	Mangaung local municipality (hangars are privately owned, but rent space from municipality)
Managed by	City of Tshwane metro municipality	Ethekwini metro municipality	Westline Aviation (one of the training schools)
Airspace	Controlled	Controlled	Uncontrolled (Class F)
Runway	Runway 11/29 1 828 m x 30 m (runway lighting) 06/24 1280 m x 22 m	Runway 05/23 925 m x 22 m (runway lighting)	Runway 01/19 is 1300m x10m (runway lighting) and runway 10/28 is 1200mx15m
Elevation	4 095 feet	20 feet	4 526 feet
Host to:	49 companies, including SAPS 39 companies are aviation-related	30 companies – of which 21 are aviation-related	SAPS Airwing with one fixed wing aircraft and 1 helicopter 5 companies / clubs
Fuel	Jet A1, Avgas & lubricants	Two companies sell fuel at Virginia	Avgas and Jet A1
Air Traffic Control	ATNS provides air traffic control at Wonderboom airport	Sourced from DIA, and the control tower is manned by two air traffic controllers at any one time.	Air traffic control is self-regulated



	Wonderboom	Virginia	Tempe
Facilities	Terminal building Hangar space Restaurant and hotel	1 terminal building with 40 offices, a control tower and a restaurant/bar, 2 fuel bays and maintenance quarters. 2 admin buildings for Comair / Sheltam Limited vehicle parking facilities	Admin buildings of flight schools Hangar space
Hangar space	30 to 40 private hangars Land is leased from the City for a 30-year period, with the option to renew City also owns a number of hangars at the airport In total there are 60 to 70 hangars	16 hangars (a total area of about 16 650m²) ranging from in excellent condition (nearly brand new) to in poor condition. The majority of the operators own the hangars but lease the land on which it stands from eThekwini Municipality.	About 33 hangars, of which 1 belongs to SAPS and 3 to aircraft maintenance operations
Training schools	9 training companies of which 2 are helicopter training companies	5 training companies, of which two are helicopter training companies	2 PPL Flight Training Schools - Westline Aviation (9 aircraft, 3 helicopters) - Midwest aviation (1 aircraft) 1 microlight & light sport aircraft training school
Aircraft Maintenance operation	12 companies in operation	5 companies in operation	Two in operation
Aircraft sales and manufacturing	12 companies	Two companies	N/A
Emergency & medical services	Helicopter available Fire station on site	A fire station.	Helicopter available
Charter companies	8 charter companies operate from Wonderboom airport	10 charter companies have representation at Virginia	N/A
Other	Hotel Restaurant Skydiving club Avionics and aircraft electronics companies Car rental Aerial photography Helicopter heavy lifting company	A squash court and swimming pool Pilot's association Crop spraying	Skydiving club operates from the airport
# of aircraft stored at airport	Unknown	(September 2006), there were 135 aircraft based at Virginia Airport helicopters still represent a small proportion of total aircraft	At least 100, including microlights and light sport aircraft
Landing fees	From R25,13 (ex VAT) to R4 226,58 (ex VAT) for normal flights From R11,80 (ex VAT) to R752,58 (ex VAT) for training flights	From R18,82 (ex VAT) to R252,42 (ex VAT) for operators based at Virginia From R22,81 (ex VAT) to R257,02 (ex VAT) for operators not based at Virginia (2000)	Aircraft owners using the airport to store their planes pay an annual fee No information available on landing fees
Approach fees	From R28,64 (ex VAT) to R889,21 (ex VAT) for normal flights From R11,80 (ex VAT) to R133,68 (ex VAT) for training flights (max training aircraft weight 90 tonnes)	N/A	N/A
Departure fees	R23,73 (ex VAT) per passenger	R21,05 (ex VAT) per passenger (2000)	N/A



	Wonderboom	Virginia	Tempe
Parking fees	From R20,92 (ex VAT) to R588,90 (ex VAT) per night	From R13,23 (ex VAT) to R102,96 (ex VAT) per 24 hours (2000)	N/A

2.6.2 GA Trends

Over the past four to six years the expansion of the global economy has reshaped the general aviation industry by creating new market opportunities and there are more than 320 000 general aviation aircraft worldwide, of which about 228 000 are registered in the USA (General Aviation Manufacturers Association, 2009).

However, the global economic crisis had a severe impact on the general aviation manufacturing industry in 2009, with 42,6% fewer aircraft being delivered than in 2008. Billings in 2009 declined by 21,4% from record levels in the previous year. The indications are, though, that the industry started recovering towards the end of 2009, and the outlook for 2010 is more positive.

The Aircraft Owners and Pilots Association (**"AOPA"**) – representing non-commercial aircraft owners and pilots – was formed in the USA in 1939, with the first International Council of Aircraft Owners and Pilots Association was formed in 1962, with South Africa being one of the first four members (others were the USA, Canada and Australia). AOPA currently has 414 000 members, and is the largest aviation association in the world. In South Africa, the local AOPA represents its 2 000 members country-wide (in other words the general aviation industry) in discussions with the authorities and other aviation stakeholders on issues such as flying restrictions, safety and legislation and regulations.

In South Africa, just over 9 100 aircraft (including homebuilt, certified and airline aircraft) are registered, of which the majority are registered in Gauteng. Apart from the Northern Cape, Limpopo has the smallest number of aircraft registered of all the provinces (5,2% of all registered aircraft in South Africa) (**Figure 2.29**).

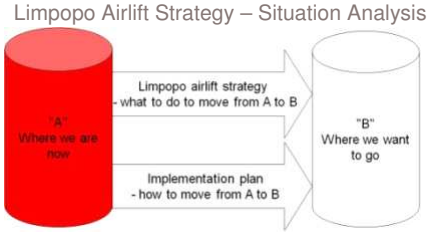
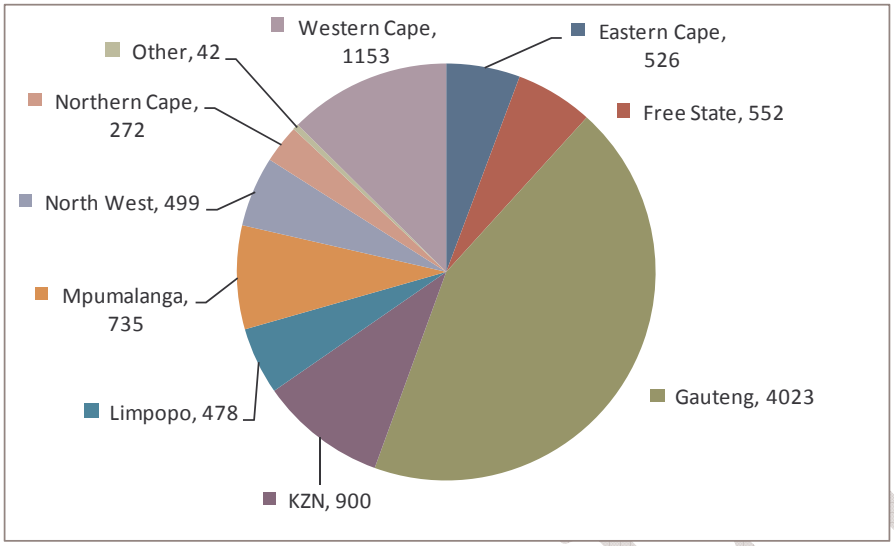


Figure 2.29: Number of Aircraft registered in South Africa, by province



Source: South African Aircraft Register, Avdex, 2010

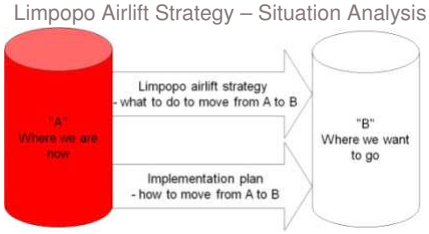
Though the actual number of registered aircraft in the country is relatively low, general aviation activity in South Africa has increased over the years. There are even some tour operators offering tours with small aircraft to various destinations around South Africa and in the rest of Southern Africa – some of which are specifically targeted at arranging trips for pilots from elsewhere in the world.

2.6.3 GA requirements

In order to facilitate general aviation, airfields and airports need to comply with a number of requirements, as outlined in **Table 2.5**. The Limpopo airports offering scheduled services mostly comply with the requirements, though most other airfields / airports do not.

Table 2.5: General aviation requirements

Requirement	Performance of Limpopo airfields and airports
Availability of fuel - avgas is required for most aircraft, while some microlights and light sport aircraft make use of 95 octane unleaded fuel	Avgas is only available at Polokwane International Airport and Tzaneen airfield
Safe and secure landing strip / runway that is fenced off to avoid people and animals straying onto the runway or landing strip	Apart from Polokwane International Airport and the military airfields in the province, few airfields and airports have safe landing strips (also refer to Section 5 for specific references to airports)
Well-maintained runway	Most of the airfields in Limpopo are not maintained properly, and have cracks with grass growing on the runway, which could possibly be disastrous for an aircraft attempting to land. This is a particular concern for the Musina airport
Security for parked aircraft to provide aircraft owners with peace of mind while they enjoy their stay at a destination	In the more rural areas of Limpopo the safety of parked aircraft is a major problem.
Availability of designated parking space with tie-downs (particularly for smaller aircraft)	This is not always available, which increases the risk for aircraft owners in the case of poor weather conditions and high winds

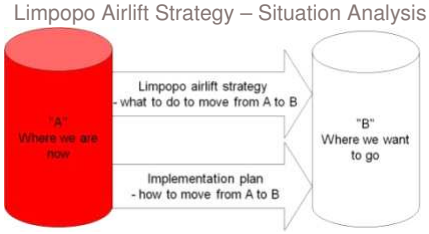


Requirement	Performance of Limpopo airfields and airports
Friendly and efficient air traffic control that ensures the safety of all aircraft within their airspace, but that also not cause unnecessary delays that increase the cost for the pilot (e.g. keeping a pilot in circuit for longer than necessary and thereby increasing its fuel usage)	The air traffic controllers at Polokwane International airport is reported to sometimes not comply with this requirement
Customs and immigration services to be available at more airports / airfields in Limpopo	Polokwane International Airport is considered as being "out of the way" and pilots would prefer to have more choice with regard to clearing customs / immigration in the province (e.g. if a pilot wish to fly from Wonderboom to Kasane in Botswana, a direct flight path would cross mean crossing Lephalale, and to clear customs at Polokwane would result in a longer overall flight time and increased cost – such a pilot would then rather clear customs at Lanseria in Gauteng)
Friendly and efficient customs and immigration staff	Some pilots have experienced rude and arrogant behaviour from customs and immigration officials at Polokwane International Airport, which results in them avoiding the airport if they can
Reasonable landing and other fees - though pilots would prefer not to pay landing fees, they accept that these are necessary to ensure services at an airport, but require reasonable fees that are charged based on the size of the aircraft landing	Most municipal airports do not charge landing or other fees, or charge nominal fees. The fees at private airports such as Eastgate and Kruger Gateway are considered as somewhat expensive, though most pilots enjoy the convenient locations of these airports and therefore do not mind the fees.
Airfields / airports within close proximity to tourism attractions such as the Kruger National Park	At present the northern part of the Kruger National Park is inaccessible as there are no nearby suitable airfields, and SANParks does not give permission to private pilots to land at their airstrip within the northern section of the park.
Affordable hangar space available to rent or space available to build hangars	There are hangars available at Polokwane International Airport, though similar space at Kruger Gateway is limited. At Eastgate, hangar space is limited because of the SA Air Force's ownership of the land. The situation at municipal airports is unknown.
For training purposes, airspace should be available relatively close to the airport for trainee pilots	Apart from the two military bases in Louis Trichardt and Hoedspruit, most of Limpopo's airspace is uncontrolled and available for training
For aircraft maintenance operations, there is a need for sufficient space to park aircraft that are being serviced	At present this is not an issue, though the situation may have to be revisited as developments occur
Car rental and/or taxi services - pilots need to be able to access their end destination from the airport / airfield they land at	Car rental is available at the three airports handling scheduled air services, but there is limited availability of such services elsewhere in the province
Kiosk offering drinks and snacks (optional)	This is only available at the airports provided scheduled services

2.7 Conclusion and relevance for aviation in Limpopo

2.7.1 Major trends to highlight

The global aviation industry is extremely competitive, and commercial airlines operate on very thin profit margins. Their profitability is significantly impacted upon by fluctuations in the fuel price, which makes them vulnerable for sudden increases in fuel prices if these increases cannot be passed on to passengers. Therefore airlines usually only consider routes that would be profitable for them – which is a complex decision influenced by a number of factors.



However, as a result of a number of benefits, the global aviation industry has grown significantly over the years, and is expected to continue growing into the future. Despite this, the aviation industry in Africa remains relatively small and hampered by a number of factors – one of which is a limited demand for air travel (mainly as a result of the high cost of air travel).

In the context of global freight transportation volumes, aviation currently plays a relatively small role, though this is expected to increase in years to come. However, in terms of value, air freight comprises a larger proportion of global freight, which is an indication of the fact that higher value items tend to be shipped via air transport.

In South Africa, aviation traffic has increased over the years – to a large extent due to the increase in passenger numbers as a result of the introduction of low-cost carriers – and though the global economic crisis has also taken its toll, latest figures indicate that passenger numbers are on the increase again.

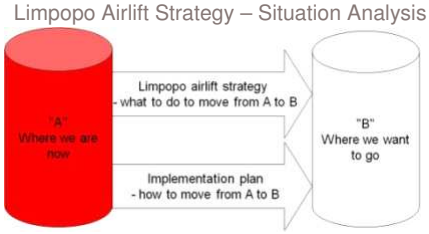
OR Tambo International is the busiest airport in the country and has established itself as a cargo hub. More than 80% of cargo is shipped as belly-freight in passenger aircraft, and more freight is imported by air than what is exported by air.

Domestic aviation patterns have changed over the last 10 years with the introduction of low-cost carriers that resulted in flying becoming more accessible on the more popular routes.

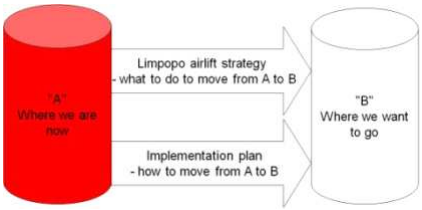
2.7.2 Relevant for Limpopo Airlift

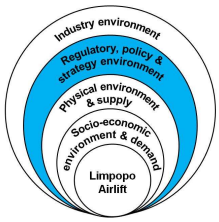
For the Limpopo province's aviation industry, the implications of the global and South African trends in aviation are as follows:

- Continued growth bodes well for aviation in the longer term;
- Unless routes between airports in Limpopo and other destinations have the possibility of being profitable – in other words with sufficient demand and taking into consideration a variety of other factors – airlines will not consider them;
- With the majority of air freight into and from South Africa being moved through ORTIA – mainly as belly freight in passenger aircraft – a significant intervention will be required to move existing air freight from ORTIA;
- In a global context, OR Tambo is not regarded as a significant cargo hub, and therefore – with the right investment in infrastructure, Polokwane may be able to establish itself as a cargo hub in sub-Saharan Africa;
- Balanced loads (between inbound and outbound) freight is important from an air freight perspective;
- Currently, there are relatively low levels of air cargo within the African continent, and most of it is handled in South Africa, Kenya and Egypt, which does not bode well for the development of air cargo routes within Africa;



- General aviation could be considered as a potential form of tourism into the province, with linkages to neighbouring countries, dependent on their requirements being met at a variety of airports within the province.





3. Regulatory Environment and Policy Framework

3.1 Relevance of this Section to the Study

In order to appreciate the dynamics of Air Transport, it is vital to first come to terms with the regulatory environment within which air transport operations are conducted. In this section we provide a brief overview of the regulatory environment and policy framework from a global, African and South African perspective.

3.2 Global regulatory environment for aviation

The global air transport industry is moving in a direction that seeks to create a more enabling environment for a visible, efficient and sustainable air transport system. This ongoing process began with the enactment of the Chicago Convention of 1944 which led to changes to the traditional operation and regulation of international air transport.

It continues to serve as the basic document governing the relationship between states on the exchange of commercial air traffic rights, although it was adopted at a time when almost all airlines were national flag carriers and the carriage of cargo by air was just beginning. The basic principle of the Chicago Convention was that treaties allowing airlines to fly between countries would be bilateral in nature, negotiated between governments, and that airlines would generally only be allowed to fly either from or to their home country.

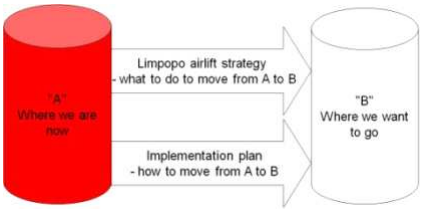
From this Convention, eight "Freedoms" to be incorporated in bilateral agreements were evolved as follows:

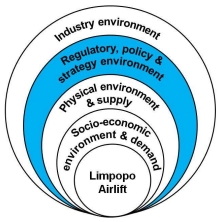
1 An airline may overfly one country to reach another.

2 An airline may land in another country for a technical stopover (fuel, maintenance, crew change) but not to pick up or drop off traffic.

3 An airline, registered in country X, may drop off traffic from country X into country Y.

4 An airline, registered in country X, may carry traffic back to country X from country Y.





5 An airline, registered in country X, may collect traffic in country Y and fly on to country Z, so long as the flight either originates or terminates in country X.

6 An airline, registered in country X, may carry traffic to a gateway – a point in country X – and then abroad. The traffic has neither its origin nor ultimate destination in country X.

7 An airline, registered in country X, may operate entirely outside of country X in carrying traffic between two other countries.

8 An airline, registered in country X, may carry traffic between any two points in the same foreign country – known as *cabotage*.

Deregulation began in the United States in 1976 and was quickly followed by European liberalisation. Since then, the Asia Pacific, North, South and Central America as well as the Caribbean have all embarked on liberalisation programmes.

Following the deregulation of the airline industry, international carriers created strategic alliances in response to the increase in bilateral agreements which are often very restrictive. Bilateral agreements refer to a regulatory system in which two nations abide by an agreed set of rules. Unlike a multilateral agreement a bilateral agreement results in each country having to negotiate separate agreements with numerous other countries. Bilateral agreements specify the routes which may be operated by the airlines of the two contracting countries. Each country is given the right to designate the airline/s which may operate the routes in the bilateral.

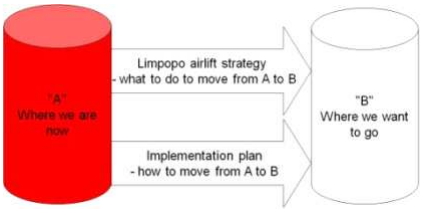
The Chicago Convention created the International Civil Aviation Organisation (**"ICAO"**) and enshrined the principles of air space sovereignty, equal opportunities, non-discrimination and the right of countries to designate national airlines to operate air services.

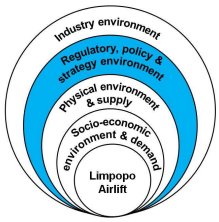
3.2.1 International Civil Aviation Organisation

ICAO, established in terms of the Convention on International Civil Aviation (the Chicago Convention, 1944), forms the cornerstone of civil aviation at international as well as at national level. The aims and objectives of ICAO are to develop the principles and techniques of international civil air navigation and to foster the planning and development of international air transport.

ICAO has a sovereign body, the Assembly, and a governing body, the Council. The Assembly is convened on a regular basis by Council. Each of the 187 Contracting States is entitled to one vote and decisions are taken by a majority of the votes cast. In addition to Council, ICAO has the following Committees:

- Air Navigation Commission
- Committee on Joint Support of Air Navigation Services
- Air Transport Committee
- Finance Committee
- Legal Committee





- Committee on Unlawful Interference to Civil Aviation
- Personnel Committee

South Africa as signatory to the Chicago Convention as well as a founding member of ICAO has distinct obligations in relation to international standards and recommended practices to fulfil and which have been embodied in the national legislation governing civil aviation.

3.3 African regulatory environment for aviation

In July 2000 the conference of the African Heads of state and government and the Organisation of African Unity adopted the decision on market access of air transport in Africa. The full implementation of this decision initially approved in November 1999 by the African ministers responsible for civil aviation and known as the Yamoussoukro decision is expected to progressively eliminate all non physical barriers in the industry including those linked the granting of traffic rights, tariffs and the number frequencies and capacity of air services. Unfortunately the Yamoussoukro decision has not yet been fully implemented in Africa and looks unlikely to move ahead in the short term despite efforts by ICAO to influence its implementation.

Implication for Limpopo aviation strategy:

The limited implementation of the Yamoussoukro decision and any existing bilateral air service agreements with other SADC countries may limit the Limpopo province's ability to establish scheduled air linkages within the region. It means that Limpopo cannot themselves agree routes with other countries but have to negotiate through the international responsible entity, making these agreements time consuming and cumbersome and making it difficult to react to short term opportunities.

3.3.1 SADC Protocol on Transport, Communications and Meteorology

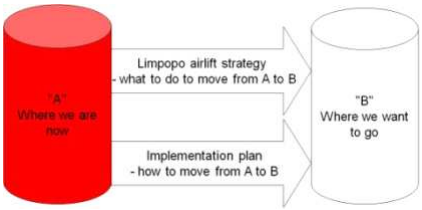
Within the above protocol, Chapter 9 deals with civil aviation. The objectives of the SADC member states are to aim for:

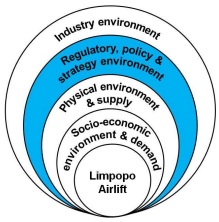
- The provision of safe, reliable and efficient services related to air transport in line with ICAO standards in order to improve service levels and cost-efficiency with the aim of improving the socio-economic development of the SADC region; and
- To improve co-operation in respect of air transport in the region in order to overcome the challenges posed by small national markets, the small size of some regional airlines, market restrictions and global competitiveness.

3.4 South African Aviation-related institutions

3.4.1 National Department of Transport

The establishment of an effective institutional arrangement at state department level is critical to ensure that proper effect can be given to the implementation to all civil aviation matters as

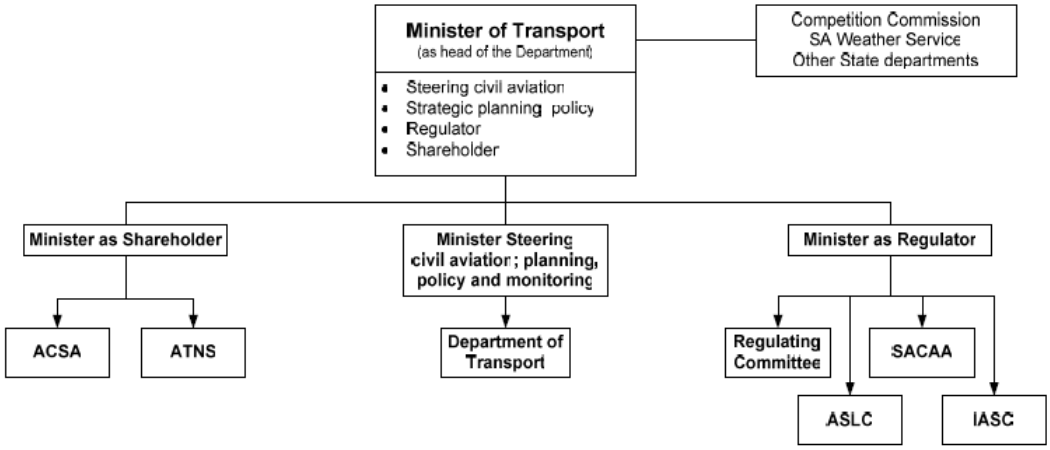




contemplated in the Constitution. The National Department of Transport (**"DoT"**) has been entrusted with that role.

Figure 3.1 below gives a diagrammatic perspective of the roles and responsibilities of the respective role players in the current institutional arrangement.

Figure 3.1: The Role of DoT in Civil Aviation



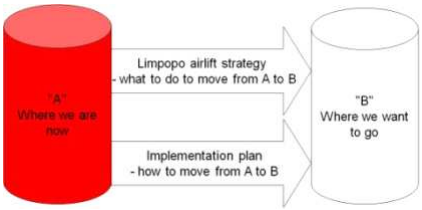
The Minister is responsible and accountable for all transport matters at national level, including civil aviation. This includes:

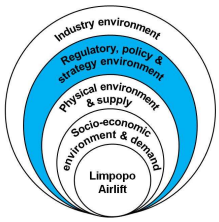
- Developing and steering civil aviation in line with the Government's stated national objectives and strategy;
- Formulating policy to guide civil aviation towards achieving objectives;
- Planning the strategic development of civil aviation;
- Ensuring that the enabling legal instruments are in place to give effect to policy;
- Regulating aviation safety and security;
- Regulating economic and social/environmental matters in relation to air transport and aircraft operations;
- Being the shareholder of the State-owned enterprises, ACSA and the Air Traffic and Navigation Services (**"ATNS"**) Company;
- Administering the civil aviation functions within the DOT; and
- Liaising internationally.

The Minister as Regulator:

The Government has established the following legal entities as independent regulators to assume responsibility for aviation-specific activities:

- The South African Civil Aviation Authority (**"SACAA" or "CAA"**), a financially self-sustaining government agency operating on the basis of the "user-pays principle".





- The International Air Services Council (**"IASC"**), the economic regulator, appointed by the Minister and financially dependent on DoT funds.
- The Air Services Licensing Council (**"ASLC"**), appointed by the Minister and financially dependant on DoT funds.
- The Regulating Committee, an economic regulator appointed by the Minister and financially dependent on DoT funds.

The Minister as Shareholder

The Minister has a shareholding function in the following:

- The Air Traffic and Navigation Services Company, a commercialised, financially autonomous State-owned enterprise.
- The Airports Company of South Africa, a commercialised, partially privatised, financially autonomous and mainly State-owned enterprise with responsibility for operating the nine State airports which the DoT previously managed.

3.4.2 South African Civil Aviation Authority

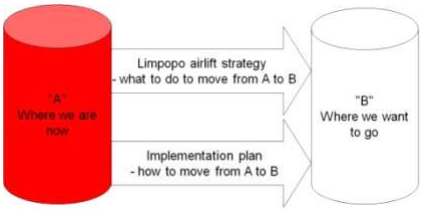
The CAA is established as a juristic person in terms of the South African Civil Aviation Authority Act, 1998 (Act No.40 of 1998). As the regulator of civil aviation safety and security the objectives of the CAA are to control, regulate, oversee and promote the functioning of the civil aviation industry in South Africa, to oversee the functioning and development of the civil aviation industry with particular emphasis on safety and security. In order to give effect to its objectives the CAA is mandated in terms of the following Acts:

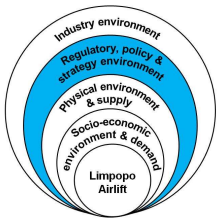
- Aviation Act,1962 (Act No. 74 of 1962)
- Civil Aviation Act, 1972 (Act No. 10 of 1972)
- Convention on the International Recognition of Rights in Aircraft, 1992 (Act No. 59 of 1993).

The Authority is governed by a Board of Directors consisting of not more than 8 persons (including the CEO) appointed by the Minister of Transport and is representative of the aviation industry, management and business expertise.

The CAA has the responsibility of the following areas of oversight:

- **Airport oversight**, which involves the certification of airports and heli-port and monitoring civil and electrical engineering matters in relation to infrastructure on and around airports such as lighting, navigational aids, their repair and maintenance. Development in the vicinity of airports is monitored, including the construction of "obstacles" – objects tall enough to pose a hazard to flying operations such as cellular masts, cranes and buildings. Another important area of airport oversight including monitoring processes and procedures for rescue and fire-fighting services, screening of passengers and baggage, access control in terms of fencing and lighting as well as the





handling, packaging and documentation of hazardous substances. Administration of the aeronautical Very High Frequency (**"VHF"**) spectrum in undertaken on behalf of the South African Telecommunications Regulatory Authority (**"SATRA"**) as part of the oversight of airports.

- **Aircraft oversight** deals with all certification activities in relation to aircraft products and parts. This includes the issuing and renewing of airworthiness certificates, approvals and renewals for aircraft maintenance, design and manufacturing, processing and testing organisations. In addition, aircraft oversight covers the approvals, noise certification and maintenance and repairs of aircraft.

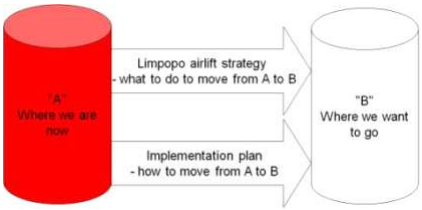
- The Area of **Personnel** involves oversight in relation to examining, licensing and training of aviation personnel. All relevant organisations and services are monitored to ensure that personnel and standards meet international standards.

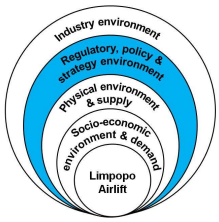
- **Oversight of Operations** is carried out in terms of monitoring information contained in the operations manuals of every operator to ensure compliance with relevant legislation. Oversight is performed through regular and ad hoc inspections, including route surveillance checks on operators to ensure compliance with the required standards. Flight simulator checks and certification, cabin safety and flight engineer surveillance are performed at least once per annum. In addition, security programmes and processes of operators in relation to their handling of passengers, baggage and dangerous goods are monitored.

- **Airspace oversight** ensures the effective management and provision of air traffic services through the allocation of airspace by the statutory body, the National Airspace Committee. This area of oversight also ensures that air traffic service providers maintain required standards and equipment. This area of oversight is also responsible for the development of procedures for air navigation services and operations (PANS-Ops), designing, testing and certifying instrument flight procedures and the preparation of aeronautical charts. The nature of these activities is such that there is regular contact with organisations such as ICAO and AFCAC. Accordingly Airspace Oversight also has an international relations coordination function.

- **Accidents and incidents investigation**, while technically not an area of oversight, is a key activity of the CAA carried out on behalf of Government. Investigations are conducted to determine the cause and to recommend measures to prevent recurrence. In addition, the monitoring of trends regarding aircraft accidents and incidents and the identification of potential problem areas, possible safety efficiencies and proposing safety recommendations to the regulatory body are other key functions

- The **Flight Inspection department** does not fall under a specific area of oversight. Its function is to calibrate the radio navigational aids used by aircraft to ensure accuracy and reliability. Many of these tests are performed on the ground but to ensure that the radio signals are interpreted accurately by aircraft receivers, it is also necessary to perform airborne tests on the ground equipment. The navigational aids are inspected at regular intervals in accordance with international requirements. The CAA inspects all radio navigational aids in South Africa as well as some within Africa.





The CAA is funded by a combination of user fees, a levy placed on industry participants and government funding for services, which the CAA performs on its behalf. These services include the investigation of aircraft accidents and serious incidents. User fees are based on the recovery of the costs to the Agency of providing the relevant service.

From a regulatory point of view it is of significance to note that the CAA is directly and intimately involvement in all safety and security related matters concerning civil aviation infrastructure. This involvement commences with the planning phase and includes the full life cycle of infrastructure; its design, construction, commissioning, operation, maintenance, expansions and eventual withdrawal from operation. The CAA's mandate covers all aviation infrastructure in the territory of South Africa, including all aircraft registered in South Africa whether operating locally or abroad, regardless of ownership and control over these assets.

3.4.3 Air Services Licensing Council

The Air Services Licensing Council is established as a juristic person in terms of the Air Services Licensing Act, 1990 (Act No.115 of 1990). As the regulator of domestic air services the ASCL is mandated in terms of the Act to control, regulate, monitor and promote the functioning of domestic air transport services in South Africa based only on the principles of safety and reliability. The Council consists of not more than five persons and members are appointed by the Minister and must have appropriate knowledge and experience regarding civil aviation, law, finance, transportation or engineering and shall not be in the employ of the civil service. The Council relies on the Department of Transport to provide the supporting administrative work in connection with the performance of the functions or the exercise of the powers of the Council.

Functions

The Council is responsible for the award of domestic air services licenses based on the assessment of applications for a domestic air service licence (or the amendment of an existing licence) in a public hearing where other interested parties are afforded the opportunity to challenge or support the application. The assessment is based on safety and reliability criteria.

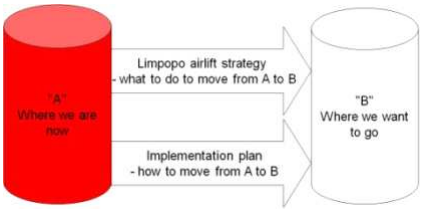
Council is also charged with the responsibility to monitor the performance of an air service licensee or alternatively to hear and decide upon complaints received from other interested parties regarding the performance of a licensed operator while conducting the proceedings in an open public hearing.

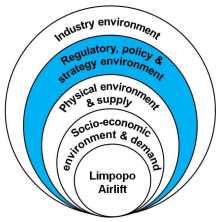
Infrastructure

While the activities of the ASLC do not have any direct impact on the development and functioning of the aviation infrastructure, some of its decisions may have consequences for airports and air navigation services when e.g. a new entrant is allowed in the market and need to be accommodated along with other airlines, or conversely if an air service is suspended or even cancelled, it will have an impact on airport utilisation and subsequently loss of potential income.

3.4.4 International Air Services Council

The International Air Services Licensing Council is established as a juristic person in terms of the International Air Services Council Act, 1993 (Act No.60 of 1993). As the regulator of international air services the IASC is mandated in terms of the Act to control, regulate, monitor and promote the





functioning of international air transport services to and from South Africa based only the principles of safety, reliability and economic considerations and the existence of a system of bilateral air service agreements. The Council consists of not more than five persons and the members are appointed by the Minister and must have appropriate knowledge and experience regarding civil aviation, law, finance, transportation, engineering or economics and shall, apart from the chairman, not be in the employ of the civil service. The appointments are subject to consultations with representatives from consumers of international air services, organised commerce and industry as well as the tourism industry. The Council relies on the Department of Transport to provide the supporting administrative work in connection with the performance of the functions or the exercise of the powers of the Council.

Functions

The functions conferred upon the IASC shall be conducted in terms of the following objectives:

- Promote trade and tourism;
- Promote competition between airlines operating international services;
- Not to discriminate against certain operators in favour of others;
- Promote local aviation industry; and
- Promote the interests and needs of users of air services.

The Council is responsible for the award of international air services licenses based on the assessment of applications for an international air service licence (or the amendment of an existing licence) in a public hearing where other interested parties are afforded the opportunity to challenge or support the application. The assessment is based on safety and reliability criteria, the objectives listed above and the conditions that may be contained in the appropriate bilateral air service agreement with a foreign State.

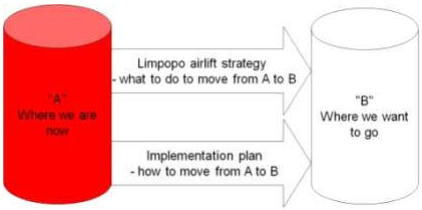
Council is also charged with the responsibility to monitor the performance of an air service licensee or alternatively to hear and decide upon complaints received from other interested parties regarding the performance of a licensed operator while conducting the proceedings in an open public hearing.

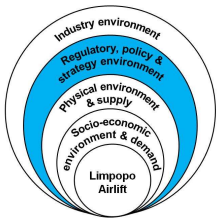
Infrastructure

Similar to the licensing of domestic air services, the IASC does not have any direct impact on airports or air navigation services, but its decisions may have implications already described. In addition, the bilateral air services agreements, inter alia, make provision for the designation of a specific international airport or airports as the point of entry or destination for air carriers from the foreign State party to put down or pick up passengers and air freight. As such, this arrangement will greatly benefit selected international airports.

Implication for Limpopo aviation strategy:

Any new domestic air services will have to apply to the ASLC, while any new international air services will have to apply to the IASC. Further, the CAA has jurisdiction in respect of its airport and other oversight and regulatory functions in the Limpopo province.





3.5 South African Aviation legislation

At present there is a variety of legislation in place that regulates the aviation industry in South Africa. New legislation in the form of the draft Civil Aviation Bill has been drawn up by DoT, but at present the Aviation Act (No 74 of 1962) is still in place.

A brief overview of the various pieces of legislation that are in place, as well as the draft Civil Aviation Bill of 2008 is provided below. The Airports Company Act of 1993 is not directly applicable to the Limpopo province, as none of the airports in the province belong to or is managed by ACSA. However, the other acts summarised below are all applicable.

3.5.1 Aviation Act of 1962

This act has been updated in the Government Gazette of 9 January 2009, and has the following aim:

"To consolidate the laws enabling effect to be given to certain International Aviation Conventions and making provision for the control, regulation and encouragement of flying within the Republic of South Africa and for other matters incidental thereto."

The Aviation Act deals with, amongst others:

- The power to carry out the Chicago Convention (on International Civil Aviation) and the International Air Services Transit Agreement
- The functions of the Minister in connection with the provisions of the Act
- The acquisition of land or rights in connection with licensed aerodromes
- Investigation of accidents
- Technical standards for civil aviation
- Etc.

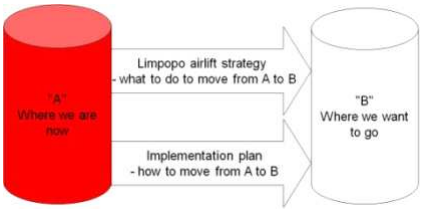
3.5.2 Draft Civil Aviation Bill – 2008

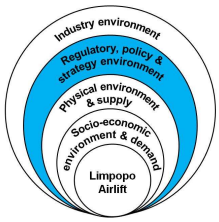
The intention of the new Civil Aviation Bill (draft published by DoT in April 2008) is to consolidate and repeal the following Acts:

- Act 74 of 1962, Aviation Act
- Act 10 of 1972, Civil Aviation Offences Act
- Act 40 of 1998, South African Civil Aviation Authority Act
- Act 41 of 1998, South African Civil Aviation Authority Levies Act

The preamble to the bill indicates that it aims to:

- "… repeal, consolidate and amend the aviation laws enabling effect to be given to certain International Aviation Conventions and making provision for the control and regulation of aviation within the Republic of South Africa,





- to provide for the establishment of a South African Civil Aviation Authority with safety and security oversight functions,

- to provide for the establishment of an independent Aviation Investigation Agency in compliance with international Conventions,

- to give effect to the Convention on Offences and certain other acts committed on board Aircraft; the Convention for the Suppression of Unlawful Seizure of Aircraft; and the Convention for the Suppression of Unlawful Acts against the Safety of Civil Aviation;

- to provide for additional measures directed at the more effective control of the safety and security of aircraft, airports and the like;

- and for other matters incidental thereto."

3.5.3 Air Services Licensing Act of 1990

The Air Services Licensing Act of 1990 provides for the introduction of an independent licensing council to grant licences for and control domestic air transport services and related issues. In other words, the Act came into being to regulate entry to the domestic market.

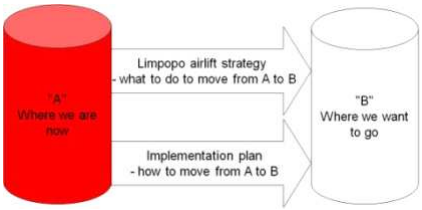
In terms of the Act no one is allowed to operate a service without first obtaining the relevant licence to do so. New applicants must stipulate the following important points on their licence applications:

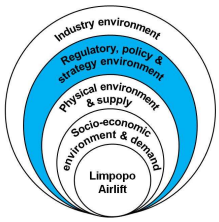
- The class of service that will be provided;
- The type and category of aircraft that will be used in operations.

The practical implementation of this Act was assigned to the ASLC, which is a legal entity in its own right in order to provide for a carrier-neutral licensing system.

A licence will be granted by the ASLC if the applicant can prove that:

- The planned service will be conducted in a safe and reliable manner;
- The class of licence, type of service and category of aircraft that will be used corresponds with that stipulated in the licence;
- He/she is a South African citizen and, if not, that a least 75% of the voting power of the applicant is held by South African citizens;
- He/she will be in charge of the air service;
- The aircraft used in operations will be a South African registered aircraft.





3.5.4 Air Traffic and Navigation Services Company Act of 1993

The Airports Company Act of 1993 provides for the establishment of a company, namely the Air Traffic and Navigation Service Company, in which the South African government (through the Minister of Transport) holds the majority shares. The ATNS recover the costs of its operations through user charging.

The objectives of the ATNS are the acquisition, establishment, development, provision, maintenance, management, control and/or operation of air navigation infrastructure, air traffic services or air navigation services.

The ATNS Service Unit is responsible for all matters pertaining to air traffic and air navigation services at Polokwane International Airport.

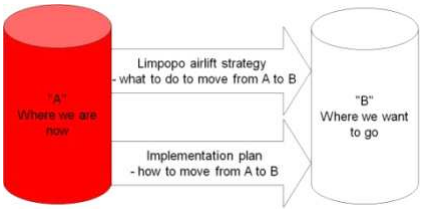
3.6 South African Air Services Agreements with other countries

South Africa has updated its bilateral agreements in respect of air transport or air services with about 40 countries since 1994. These are listed in **Table 3.1** below, together with the date upon which the agreement came into force.

The National Airlift Strategy of 2006 indicates that South Africa has agreements with 104 countries around the world, of which 25 specifies a single airline per country, while 79 of the agreements provide for the designation of multiple airlines by each party. In 2005, 46 of these agreements were dormant, i.e. no air services were being offered between South Africa and those countries. The reason for this may be that the routes between South Africa and these countries are not viable for the airlines of the respective countries.

At present (as at August 2010), South Africa has concluded bilateral air service agreements with 110 countries, of which 52 are currently dormant. The total capacity available at present is 686 weekly frequencies. Thirteen of the agreements include unlimited capacity.

The number of weekly frequencies between South Africa and Brazil doubled from 14 in 2008 to 28 in 2010, while 14 weekly flights are currently offered between South Africa and Latin America compared to no flights prior to 2010. Capacity also increased on routes to the UK and the Netherlands, and nine African countries now apply the Yamoussoukro Declaration, while in 2008 only two countries did. Capacity between India and South Africa doubled from 2008 to 2010, while capacity between South Africa and Australia increased by more than 100%. The number of flights available between South Africa and the Middle East increased by more than 50% from 2008 to 2010.



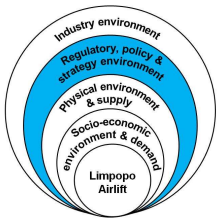
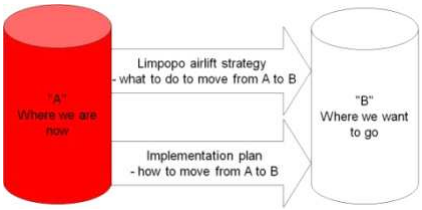
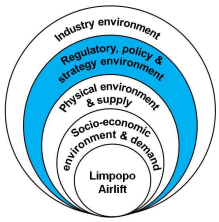


Table 3.1: Countries with whom South Africa concluded air services agreements since 1994

Country	Effective date of agreement
Luxembourg	17 Feb 1994
Morocco	18 Feb 1994
Japan	10 Nov 1994
Ireland	10 Nov 1994
Gabon	27 Feb 1995
Rep of Korea	7 Jul 1995
Australia	18 Jul 1995
Austria	1 Sep 1995
Netherlands	30 May 1996
USA (in addition to Air Transport agreement also a Memorandum of Understanding concerning Charter Air Transport)	23 Jul 1996
Senegal	30 Jul 1996
Ethiopia	14 May 1997
Tunisia	2 Jul 1997
Egypt	26 Aug 1997
New Zealand	17 Oct 1997
Indonesia	20 Nov 1997
Turkey	23 Jan 1998
Macau	4 Apr 1998
Algeria	28 Apr 1998
Qatar	27 Jun 1998
India	5 Dec 1998
People's Republic of China	2 Feb 1999
Pakistan	9 Mar 1999
Yemen	27 Feb 2000
Hong Kong	18 Mar 2000
Saudi Arabia	28 May 2000
Germany	2 Sep 2000
Cuba	27 Mar 2001
Greece	23 May 2001
United Arab Emirates	27 Aug 2001
Brazil	27 Aug 2001
Iran	26 Oct 2001
Mozambique	10 May 2002
Norway	20 Aug 2002
Denmark	20 Sep 2002
Sweden	26 Sep 2002
Mali	11 Nov 2002
Russian Federation (Memorandum of Understanding on Airworthiness, Flight Safety, Aircraft Accident Investigation between the South African Civil Aviation Authority (CAA) and the Interstate Aviation Committee (IAC))	21 Nov 2002
Belgium	1 Apr 2003
Libya	9 Mar 2005
Switzerland (Memorandum of Understanding on Air Services)	12 Jul 2005

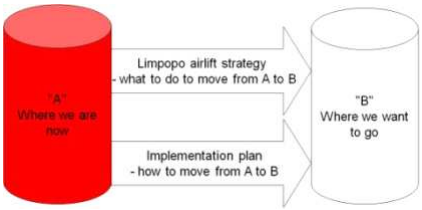


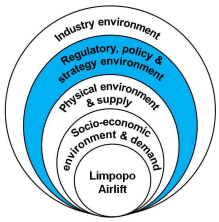


3.7 Conclusion and relevance for aviation in Limpopo

Aviation legislation and regulatory oversight in South Africa is controlled at national level, within the context of international agreements. Limpopo is subject to this, and therefore has little control over many aspects of aviation and the development of new routes. It also means that negotiations to establish new routes between Limpopo and destinations outside of South Africa will be cumbersome and lengthy.

However, in recent years the implementation of the airlift strategy and increased commitment and support by African countries for the Yamoussoukro Declaration has opened opportunities for new routes.





4. Government policies, plans and strategies impacting on aviation in Limpopo

4.1 Relevance of this section for the study

This section provides a brief overview of the policies, plans and strategies that may impact aviation in Limpopo.

4.2 African Initiatives with an impact on aviation

4.2.1 The New Partnership for Africa's Development

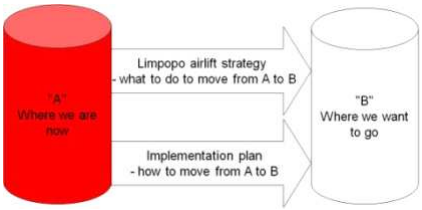
Against the backdrop of Africa's high levels of poverty, persistent political conflicts and underdeveloped infrastructure, African leaders came together to design a more effective African initiative, one that would be responsive to the pressing needs of the African people. Talks have resulted in the formation of the New Partnership for Africa's Development (**"NEPAD"**) in October 2001, which aims to:

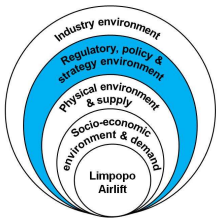
- Promote regional integration in the African continent in order to generate economies of scale;
- Bridge the infrastructure gap to promote regional integration in Africa.

In assessing the role of the transport sector in the African renaissance it became evident that Africa lags behind in all levels of transport infrastructure and systems. This tendency has had a crippling effect on Africa's trade competitiveness and its ability to participate in the world economy.

Transport inefficiencies of Africa (according to NEPAD) exist in all modes of transport (road, rail, maritime and air). The air transport inefficiencies are summarised as follows:

- Limited inter-state connections;
- High operating costs and tariffs;
- Poor state of airport infrastructure;
- Poorly maintained aircraft;
- Low demand;
- Intense government involvement in air transport operations;
- Limited pool of trained staff;
- Scarce financial resources.





When taking the above into account, it appears that NEPAD faces many challenges in addressing the poor-socio economic performance of Africa. Since the development of regional infrastructure is critical for sustaining regional economic development and trade, a transport infrastructure plan has been developed by NEPAD to close Africa's gap in transport by means of the following interventions:

- Reducing the costs and improving the quality of services;
- Increasing both public and private financial investment in transport infrastructure;
- Improving the maintenance of transport infrastructure assets;
- Removing formal and informal barriers to the movement of goods and people;
- Supporting regional cooperation and the integration of markets for transport services.

Implications for Limpopo aviation strategy:

NEPAD promotes the creation of an efficient transport infrastructure for the African continent. Its transport infrastructure plan promotes the removal of barriers to entry in an attempt to stimulate competition, and thereby forging a stronger air transport industry. These principles should be applied in the Limpopo aviation strategy. It also promotes increased regional connections

4.3 General National Policies and Initiatives with an impact on aviation

4.3.1 National Spatial Development Perspective ("NSDP")

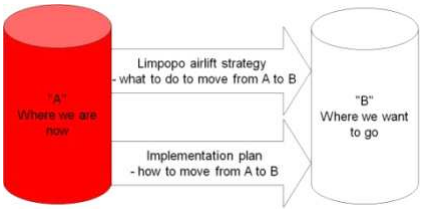
National spatial guidelines or perspectives are increasingly being recognised as critical tools for bringing about coordinated government action and alignment to meet social, economic and environmental objectives.

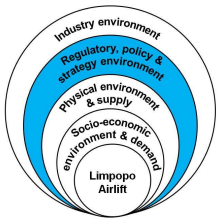
The ultimate purpose of the NSDP in the South African setting is to fundamentally reconfigure apartheid spatial relations and to implement spatial priorities that meet the constitutional imperative of providing basic services to all whilst also alleviating poverty and inequality.

In January 2003 the NSDP was approved by cabinet as an indicative tool for development planning in government. As such it provides:

- A set of principles and mechanisms for guiding infrastructure investment and development decisions;

- A description of the spatial manifestations of the main social, economic and environmental trends that should form the basis for shared understanding of the national space economy;





- An interpretation of the spatial realities and the implications for government intervention.

In order to contribute to the broader growth and development policy objectives of government, the NSDP puts forward a set of five normative principles:

- Rapid economic growth that is sustained and inclusive is a pre-requisite for the achievement of other policy objectives;
- Government has a constitutional obligation to provide basic services to all citizens (e.g. water) wherever they reside;
- Government spending on fixed investment should be focused on localities of economic growth and/or economic potential in order to gear up private-sector investment, to stimulate sustainable economic activities;
- Efforts to address past and current social inequalities should focus on people, not places;
- In order to overcome the spatial distortions of apartheid, future settlement and economic development opportunities should be channelled into activity corridors and nodes that are adjacent to or that link the main growth centres.

The NSDP was updated in 2006 to clarify / incorporate issues that emerged during the iterative process within the three spheres of government.

Implications for Limpopo aviation strategy:

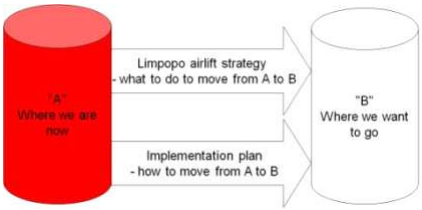
The NSDP principles provide a framework for aviation development planning in Limpopo, and it also provides guidance for prioritisation of the various strategic imperatives. It supports our approach of airlift development driven by economic development or demand.

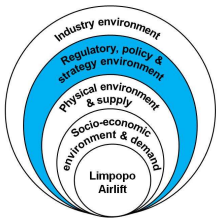
4.3.2 Accelerated and Shared Growth Initiative – South Africa ("ASGISA") (2006)

The Accelerated and Shared Growth Initiative for South Africa originated from a commitment made by the ANC in its 2004 election manifesto to halve unemployment and poverty by 2014. This is not a government programme, it is a national initiative supported by key groups in the economy – business, labour, state-owned enterprises (**"SOEs"**), government economic agencies, entrepreneurs and all spheres of government.

The ASGISA identified six binding constraints, emerging from analysis and consultation and these are as follows:

- The relative volatility of the currency;





- The cost, efficiency and capacity of the national logistics system;
- Shortages of suitably skilled labour, and the spatial distortions of apartheid affecting low-skilled labour costs;
- Barriers to entry, limits to competition and limited new investment opportunities;
- The regulatory environment and the burden on small and medium enterprises ("**SMEs"**);
- Deficiencies in state organisation, capacity and leadership.

Interventions were identified in six categories, ie.:

- Macro-Economic Issues
- Infrastructure Investment
- Education and Skills Development
- Industrial and Sector Strategies – with a focus on business process outsourcing, tourism and biofuels
- Second Economy Initiatives
- Governance and State Capacity

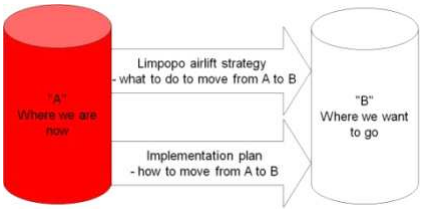
Implications for Limpopo aviation strategy:

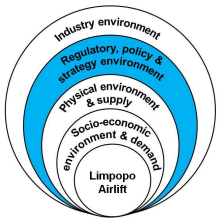
The development of aviation in Limpopo must be in support of ASGISA, which talks to logistics and infrastructure investment and industrial and sector strategies which would be supported by airlift (that creates access to markets). Limpopo's aviation development may support ASGISA through the development of logistics infrastructure in the form of freight capacity at Polokwane, skills related to aviation and aircraft servicing and manufacture, as well as by stimulating tourism.

4.3.3 Medium-term Strategic Framework

The priorities identified in government's medium-term strategic framework stems from the priorities identified in the ANC election manifesto of 2009. These priorities are:

- Speeding up growth and transforming the economy to create decent work and sustainable livelihoods;
- A massive programme to build economic and social infrastructure;
- A comprehensive rural development strategy linked to land and agrarian reform and food security;
- To strengthen the skills and human resource base;
- To improve the health profile of all South Africans;
- To intensify the fight against crime and corruption;
- To build cohesive, caring and sustainable communities;





- Pursuing African advancement and enhanced international cooperation;
- Sustainable Resource Management and use;
- Building a developmental state including improvement of public services and strengthening democratic institutions.

Implications for Limpopo aviation strategy:

Given the above priorities of national government, Limpopo's aviation strategy should strive to align itself in particular to the development of rural areas, and the development of economic infrastructure. Potential linkages with SADC countries may assist in strengthening the advancement of Africa.

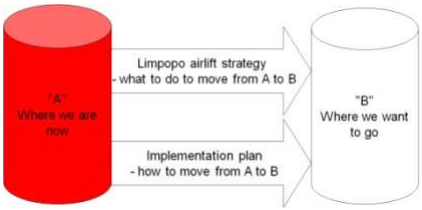
4.4 National Policies and Initiatives related to Air Transport and Aviation

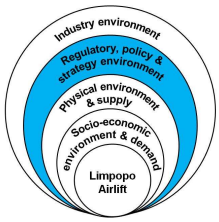
4.4.1 White Paper on National Policy on Airports and Airspace Management (1998)

Far reaching changes in South Africa in general and in civil aviation in particular since the late 1980s led to the formulation and publication of a White Paper on National Policy on Airports and Airspace Management in 1998 that in turn supports the policy goals and objectives of the White Paper on National Transport Policy.

Major changes in the aviation field include the following:

- The coming into existence of a new Constitution, namely the Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996), in terms of which certain specific functions affecting the provision and operation of airports have been allocated to provincial and local government.
- The deregulation and **liberalisation** of the domestic and international air transport markets.
- The increase in the numbers of passengers, international tourists and airline operators.
- The commercialisation of the former State airports and air traffic and navigation services through the establishment of State-owned companies.
- Major technological innovations in the area of air navigation, for example, the move away from land-based, to satellite-based navigation systems (internationally referred to as Global Navigation Satellite System (**"GNSS"**), and the implications thereof for airspace utilisation and management.
- South Africa's re-entry into the regional and international aviation community, which implies certain rights and obligations (e.g. membership of international organisations and entering into treaties).
- Comprehensive updating and redrafting of civil aviation regulations.
- The restructuring of the Chief Directorate: Civil Aviation Authority into a civil aviation safety agency dealing with aviation safety matters in an independent and more financially self-sufficient manner.





Important aspects proposed in the White Paper on National Policy on Airports and Airspace Management includes the following:

- Developments in the aviation field should at all times consider the goals and objectives of the Reconstruction and Development Programme (**"RDP"**), promote good labour relations, create opportunities for small, medium and micro enterprises (**"SMMEs"**) and meet user needs..
- The principle of **user charging** should apply at national and international airports.
- ACSA should assume responsibility for the management of the former State airports.
- ATNS should assume responsibility for the management and provision of air traffic and navigation services.
- Roles and responsibilities pertaining to aviation matters should be divided between the different government levels.
- Airport developments should occur in an integrated fashion.

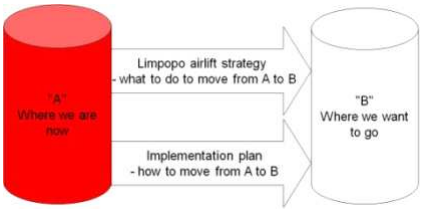
The White Paper on National Policy on Airports and Airspace Management supports the establishment of safe and efficient airports. It also advocates that all airport developments should be conducted in an integrated manner and planned in collaboration with other elements of the transport system, but also in response to the economy and other needs.

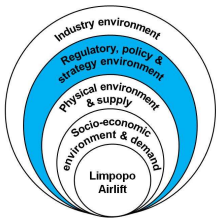
Implications for Limpopo aviation strategy:

This White Paper supports the establishment of safe and efficient airports, and it also advocates that all airport developments be conducted in an integrated manner and planned in collaboration with other elements of the transport system. Some of the principles – such as promoting the establishment of a competitive, safe and secure civil aviation environment that enables the provision of air services in a reliable and efficient manner – still apply, even though the document is more than 10 years old. These principles must also be applied in the Limpopo aviation strategy, i.e. the province can only have development that adheres to the regulations.

4.4.2 National Airlift Strategy (Final, 2006)

The National Airlift Strategy was developed based on aviation policy directives and as a specific response to ASGISA. The Strategy also addresses issues raised by the Department of





Environmental Affairs and Tourism[6] (**"DEAT"**) and South African Tourism (**"SAT"**), whilst also responding to the air freight requirements as envisaged in the National Freight Logistics Strategy.

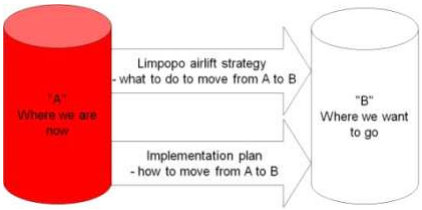
The Strategy focuses mainly on the air transport needs of the trade and tourism sectors and does not necessarily address the requirements of all Government Departments. The Strategy is aimed at:

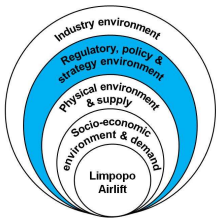
- Locating the South African Civil Aviation Industry's growth within government's overall policy framework with specific focus on government initiatives such as ASGISA;
- Contributing towards sustainable economic growth and job creation with emphasis on the ASGISA initiative;
- Ensuring the sustainable growth of the South African Civil Aviation Industry, with emphasis on introduction of new entrants to the market, and expansion of existing markets;
- Creating an enabling framework which allows both consumers and service providers reasonable flexibility and choice;
- Enhancing the prospects for South Africa as a preferred air travel destination;
- Aligning air transport with other national strategies through the common criteria of the "National Interest" through interdepartmental participation with specific reference to the National Foreign Policy, National Tourism Strategy, National Trade and Industry Strategy as well as general infrastructure requirements of South Africa;
- Improving institutional coordination and alignment between all relevant stakeholders, as per the Tourism Sector Plan;
- Address airline competition and pricing to reduce total cost of travel to South Africa.

The Airlift strategy identifies the following international markets to be monitored on an ongoing basis in support of tourism and trade:

Primary/core Markets	Tactical & Investment markets	Watch-list
Kenya	Botswana	Ghana
Nigeria	Lesotho	Senegal
USA	Swaziland	New Zealand
United Kingdom	Tanzania	Belgium
Australia	India	Ireland
France	Angola	Italy
Germany	Mauritius	Sweden
The Netherlands	Mozambique	Switzerland
	Zambia	
Strategic hubs	Zimbabwe	
Egypt	Canada	
Senegal	China	
UAE	Hong Kong	
Malaysia	Japan	
Singapore	Brazil	

[6] Since July 2009, the Department of Environmental Affairs and Tourism no longer exists. The National Department of Tourism is newly established and is responsible for tourism in South Africa.





Primary/core Markets	Tactical & Investment markets	Watch-list
Kenya	Botswana	Ghana
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USA	Swaziland	New Zealand
United Kingdom	Tanzania	Belgium
Australia	India	Ireland
France	Angola	Italy
Germany	Mauritius	Sweden
The Netherlands	Mozambique	Switzerland

Implications for Limpopo aviation strategy:

The National Airlift strategy has a strong emphasis on international passenger travel (tourism), and any international routes considered for Limpopo should be chosen from the primary and investment markets listed above. In terms of the National Airlift strategy, the recommendation on domestic airlift is to maintain the current deregulated tarrif environment within the realm of competition legislation, and therefore care should be taken to encourage competition on Limpopo routes.

4.5 National Policies and Initiatives related to General Transport and Freight

4.5.1 National Transport Master Plan ("NATMAP")

The South African Government gave a directive to the Department of Transport to prepare an integrated transport infrastructure plan. This led to a decision to by the Department of Transport to prepare a land use/multi-modal transportation systems framework. NATMAP has a planning and implementation period spanning from the base-year of 2005 to the horizon-year of 2050. Planning and implementation will be scheduled over five year cycles throughout the 45 year period.

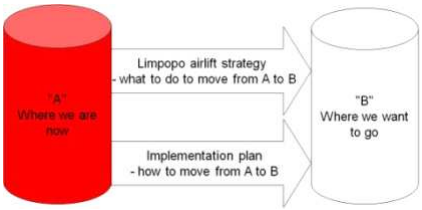
The national plan for transport guides planning, implementation, operations and management for all modes of transport in all different spheres of government.

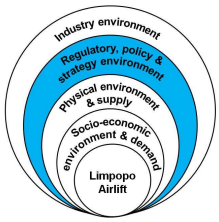
The purpose of the master plan is to:

- Facilitate the long-term and sustainable socio-economic growth,
- Promote comprehensive integrated development planning,
- Act as the infrastructure implementation/action plan of macro-scale projects for the whole country.

The master plan is not a study or a strategic document neither is it a policy paper. The master plan is prepared ultimately to become a physical development plan that will define a framework upon which future state-of-the-art multi-modal transportation systems planning, implementation, maintenance, operations, investments, and monitoring decisions are made.

The focus of the NATMAP is on major/national networks, primary provincial transportation routes and access routes to land uses of national importance. This means that the level of interaction for





the NATMAP will be limited at a macro scale. Planning at local government level through the ITP's and IDP's will continue in the current form.

The National Transport Master Plan 2005-2050 objective is to develop a dynamic; long term; and sustainable Land Use/Multi-Modal Transport Systems Framework for the development of networks infrastructure facilities; interchange termini facilities and service delivery that shall be:

- Demand responsive to national/provincial/district and /or any socio-economic growth strategy, and/or any sectoral integrated spatial development plan;
- A coordinated implementation schedule and/or action agenda for the whole country; and/or specific national and provincial spatial development corridors and regions.

Implications for Limpopo aviation strategy:

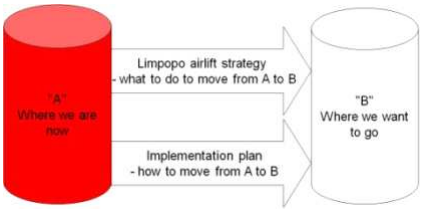
Although NATMAP deals with all modes of transport, including air transport, very little is stated in the Limpopo Phase 1 report on air freight transport. Similarly, passenger air transport forms a very small component of the overall passenger transport picture in Limpopo. Nevertheless, an airlift strategy for Limpopo should support the objectives of NATMAP as stated above.

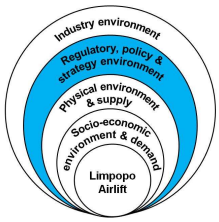
4.5.2 National Freight Logistics Strategy ("NFLS")

The need to define new partnerships between public and private sectors in transport operations, investment financing and asset management, imposes the need for a review of the respective roles of public and private sectors, and specifically calls for a clarification of the mandate of the public sector in helping to develop an efficient transport logistics system.

The main functions for the public sector within the transport sector are as follows:

- To regulate the freight system to ensure economic efficiency;
- To own and provide financing for strategic or common user infrastructure components in either the Infrastructure Utilities or SOEs, and to pave the way for increased private financing of facilities;
- To promote better physical and operational integration of seaports, airports and land transport networks;
- To ensure appropriate safety conditions in transport activities and to exercise effective supervision of environmental and security elements of the freight system;
- To contribute to the trade facilitation process at all borders and interfaces, and thus to help ports and land transport entities (whether public or private) to act as creative partners in international trade development.





The following are functions identified for private sector in the transport sector:

- To provide superstructure and / or operations investment;
- To provide operational management within appropriate regulatory environment, free from unnecessary public sector activity crowd-out;
- To promote operational integration and efficiency, in order to foster economic growth and development;
- To invest in infrastructure from both a debt and equity perspective.

In the context of the critical role that the freight system plays in building and maintaining the South African economy, the problem statement that this strategy responds to is:

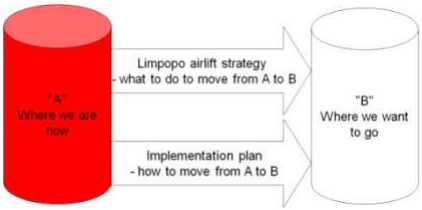
"The freight system in South Africa is fraught with inefficiencies at system and firm levels. There are infrastructure shortfalls and mismatches; the institutional structure of the freight sector is inappropriate, and there is lack of integrated planning. Information gaps and asymmetries abound; the skills base is deficient, and the regulatory frameworks are incapable of resolving problems in the industry."

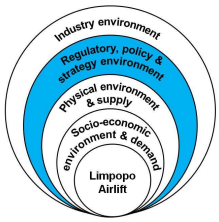
This strategy therefore seeks to address a number of issues that undermine the competitive advantage that South Africa enjoys, thereby rendering the country less competitive and relevant in world markets. These issues are:

- Low levels of investment in certain infrastructural and operational equipment, such as rail rolling stock and port-operating equipment;
- Rigid management practices formed by supply driven strategies;
- A rigid costing approach that is not customised or activity-based.

The main challenge facing transport performance is the fact that funding and financing of transport infrastructure, network development and maintenance is not constant and responsive to transport demand and infrastructure utilisation over the long-term.

Government's vision is a transport sector that contributes to sustainable socio-economic growth and development. The Government sees a transport system that promotes access by rural producers of goods and services to international and national markets whilst promoting and maintaining supply chains focused on the first economy and on export and high value. Transport should contribute to South Africa's socio-economic development in the short, medium and long-term, through significantly reducing logistics costs which will then reduce the cost of living and of doing business and as a result increasing system capacity. Improved transport logistics are also vital in eradicating systemic and operational bottlenecks in the country and more widely on the African continent. These impediments to continental economic and transport integration need to be





addressed by 2015 if we are to comply with the strategic requirements of the Presidency and multi-lateral obligations.

A fundamental change in current practice is needed: Government has to play a role in integrating planning, delivery and assessment in the freight system. The Department of Transport needs to integrate freight system planning and implementation across the public and private sectors, and provide a context for resolving gaps between forecast planning and implementation of the freight system. Appropriate governance and integration structures and processes need to be developed and implemented to ensure that existing planning and / or delivery misalignments are resolved, as well as ensuring that the future planning and delivery is better integrated.

Implication for Limpopo aviation strategy:

The Limpopo aviation strategy needs to consider the NFLS aim to improve public-private partnerships in transport, including the respective roles of the public and the private sector. In addition, it should recognise the need for ongoing investment in the maintenance of transport systems.

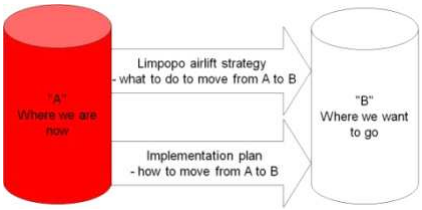
4.6 National Policies and Initiatives related to Tourism

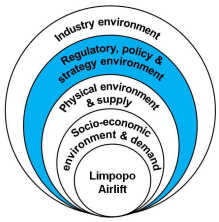
4.6.1 White Paper on the Development and Promotion of Tourism in South Africa (1996)

The White Paper on the Development and Promotion of Tourism in South Africa (1996) ("the White Paper") provided the policy for tourism development in the country after the first democratic elections in 1994.

The White Paper identified the following areas as important for the development of policies and actions to stimulate tourism growth, i.e.:

- Safety and security
- Education and training
- Financing tourism and access to finance
- Investment incentives
- Foreign investment
- Environmental management
- Product development
- Cultural resource management
- **Transportation - air and ground**
- Infrastructure
- Marketing and promotion
- Product quality and standards
- Regional cooperation





- Youth development

Implication for Limpopo aviation strategy:

Aviation is an enabler of tourism, and therefore passenger aviation strategies should directly support tourism development strategies for the province.

4.6.2 National Tourism Strategy (2010)

For the first time in the history of South Africa, a national tourism strategy was developed towards the end of 2009. The strategy was launched to the public at the end of May 2010, and outlines the vision, mission and goals for tourism over the next 5 years.

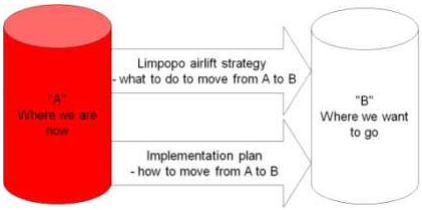
The vision for tourism in South Africa is:

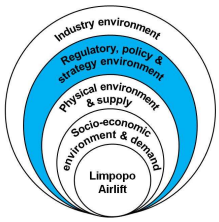
"Boldly growing responsible tourism together to deliver memorable experiences for all tourists and sustainable benefits for all South Africans."

The six-pack of objectives is:

- To grow the travel and tourism sector's absolute contribution to GDP by more than average GDP growth
- To achieve transformation within the travel and tourism sector
- To provide excellent people development and decent work within the travel and tourism sector
- To entrench a culture of travel amongst South Africans
- To deliver a world-class visitor experience
- To address the issue of geographic, seasonal and rural spread

International and domestic airlift were identified as two of the strategic thrusts for which high-level action plans were developed. There is a particular concern about the accessibility of rural areas that may be addressed through affordable and accessible airlift.





Implication for Limpopo aviation strategy:

As a result of the access provided to rural areas in Limpopo through the development of aviation in Limpopo, there will be support for aviation development in the province from a National Tourism development perspective. The requirement for affordable, accessible airlift should be a consideration in the development of aviation in Limpopo.

4.7 Provincial Studies, Strategies and Initiatives

4.7.1 Limpopo Provincial Growth and Development Strategy ("PGDS")

In order to ensure that natural resources are put to best use, Limpopo Provincial Government developed a Provincial Growth and Development Strategy in 2004, which is meant to set the pace and tone for growth and development in the province. The PGDS is underpinned by the Reconstruction and Development Programme, the National Spatial Development Plan, and all provincial documents that have a bearing impact on growth and development in Limpopo.

As part of the process to implement the PGDS, seven economic clusters were identified to realize the following economic cluster objectives, as outlined in the PGDS:

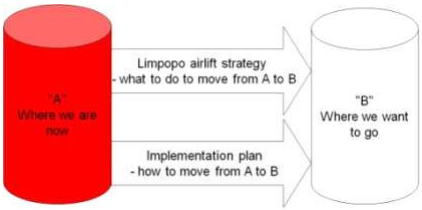
- Improving the quality of life of the population in Limpopo Province;
- Growing the economy of the province;
- Improving the institutional efficiency and effectiveness of the government;
- Addressing priorities that cut across the above-mentioned objectives (e.g. poverty reduction);
- Attaining regional integration.

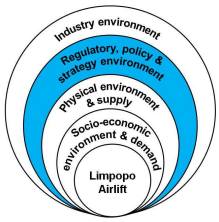
The following industrial clusters were identified to accomplish the realisation of the above-mentioned provincial objectives:

- Logistics (Capricorn district);
- Forestry (Mopani and Vhembe districts);
- Platinum (Greater Sekhukhune and Waterberg districts);
- Petro-chemical (Waterberg district);
- Horticulture (Vhembe and Mopani districts);
- Red and White Meat (all districts);
- Tourism (all districts).

Implications for Limpopo aviation strategy:

The aviation industry in Limpopo will support the economic growth of the province, and can also assist with regional integration. In addition, the logistics cluster is highly dependent on airlift to facilitate movement of cargo. Both the horticultural and meat clusters can benefit from having air freight links directly into the province, and improved (and affordable) passenger air access into the province will benefit the tourism industry.





4.7.2 Limpopo Employment, Growth and Development Plan (2009-2014) ("LEGDP")

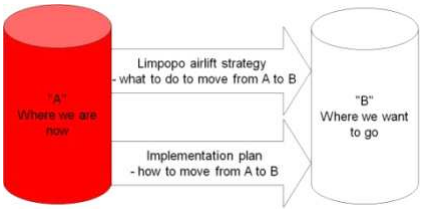
The LEGDP was developed in order to take the province onto a new growth path in an attempt to address the unemployment challenge by 2014.

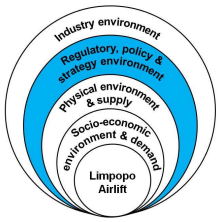
The following interventions are proposed:

Intervention	Key Interventions proposed with implications for aviation
Industrial Development programme	Mining is a key economic sector for the province, and beneficiation initiatives, together with supplier parks, are proposed for this industry.
Enterprise development: SMME & Co-operatives	SMME development initiatives proposed for: Agro-processing Mining & minerals Coal & energy ICT Tourism Defense & related industries Freight & logistics
Regional economic development & integration	Corridors, economic development hubs, export processing zones and IDZ Regional industrial development fund
Public infrastructure investment programme	Improving the utilisation of Gateway airport through partnerships with agriculture and tourism Rebranding Gateway airport Construction of intermodal cargo hub Construction of Lephalale airport Property development in terms of an aero-city concept in Polokwane
Water resource & demand management	
Agriculture & rural development programme	Improvement of production and profitability of small-scale commercial farming
Education & skills development	Developing skills to support the growth of the Province's economy
Health care development programme	Aviation may support the development of medical tourism in the province, though linkages between private medical facilities in Gauteng and game lodges in Limpopo for rest and recuperation
Safety and security	
Environmental and natural resources development programme	
The green economy & creation of green jobs	Investments in renewable energy can be facilitated by the development of aviation in the province
Corporate governance	
ICT and Innovation enabled industries	The development of the ICT sector will benefit from improved air linkages between the Limpopo province and the rest of the world

4.7.3 Analysis of Industrial Clusters as a Vehicle for Economic Development in Limpopo (2009)

In response to the industrial clusters identified in the PGDS as an important vehicle to achieve sustainable growth and development in Limpopo, the Limpopo Provincial Government initiated a study in 2008 to determine the feasibility of the seven industrial clusters (refer to section 4.7.1 above).





The logistics cluster is of specific importance to this project since it intends to enhance inter and intra provincial freight movements. According to the findings of the Logistics Cluster Feasibility Report, the following interventions are required to lower logistics costs:

- Establishment of an Industrial Development Zone (**"IDZ"**) in Polokwane that would focus consolidation / distribution activities. An airport with international status is an ideal location for an IDZ, especially if it serves as a logistics (transport) hub;
- Establishment of supply parks in Lephalale and Steelpoort (mainly mining equipment);
- Establishment of warehouses in the vicinity of Marble Hall, Letaba and Makhado (mainly agricultural produce);
- Establishment of a truck stop in Musina.

Of specific importance is the establishment of an IDZ in Polokwane that could act as a focal area of economic development, supported by a well-planned township, industrial area and training facility.

Implications for Limpopo aviation strategy:

Although the majority of freight movements in and through Limpopo are road and rail based, mining equipment and certain agri- and horticultural commodities (e.g. perishable commodities destined for overseas markets) might be suitable for conveyance by air. Distance(s) to Limpopo airports and the associated costs (e.g. transport) involved with the movement of commodities to the airport(s) would determine the suitability of air as a viable transport option.

4.7.4 Limpopo Freight Data Bank

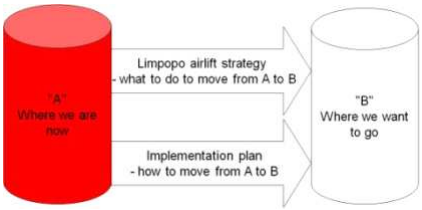
The purpose of the Freight Data Bank is to document statistics on rail freight, pipeline, ports and air cargo as sourced from the responsible parastatal agencies, and to calculate the road freight transport tonnages moving on the main road corridors in the province.

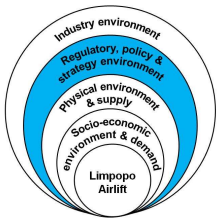
Until the inception of the Limpopo Freight Data Bank no road freight statistics were recorded in South Africa and, this information in respect of Limpopo is thus unique to this databank. The relevant databank sections describe the statistics per mode, as well as give an introductory description of the operations per mode. In addition, the Freight Data Bank provides a general summary of the main industries and their locations in the province.

At present there is very little aviation-specific freight data available within the data bank.

Implications for Limpopo aviation strategy:

The availability of freight transport statistics serve as a valuable tool in mapping freight corridors, enhancing regional integration and determining capacity requirements / constraints. These statistics will guide the development of the freight aspects of the Limpopo aviation strategy.





4.7.5 Study of the Agricultural Industry in Limpopo (2002/3)

An intensive study was conducted on the agricultural industry in the Limpopo province by the School of Agriculture, Rural Development and Forestry of the University of Venda for Science and Technology. Though the findings of the study are somewhat outdated, it provides an overview of the type of agriculture that is being practiced and can be practiced in the Limpopo province, which can provide an indication of the type of produce that may be relevant for air freight. The study includes an analysis of livestock, as well as horticultural and field crop production. It further provides an analysis of the agro-processing industry in the province, and provides policy recommendations.

4.7.6 Limpopo Dept of Roads & Transport Strategic Plan (2010/11 – 2014/15)

The Limpopo Department of Roads and Transport recently published its 5-year strategic plan from 2010 to 2015. The Department has a vision of quality transport infrastructure and services in the province, and aims to deliver this through 5 programmes, i.e.:

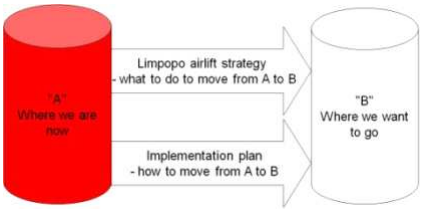
- Administration
- Roads infrastructure
- Public and freight transport (including air transport)
- Traffic management
- Community based programme

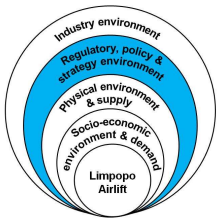
The key focus areas identified for the next 5 years are:

- Improved road infrastructure
- Efficient road traffic services
- Integrated, accessible and affordable public transport services
- The facilitiation of a reliable freight logistics system
- The development of international gateways through the implementation of the airlift strategy (which shows political support for the airlift/aviation strategy) and the improvement of services at Polokwane International Airport

Implications for Limpopo aviation strategy:

Aviation / airlift is only a component of the plans of the Department and needs to support and fit in with other plans of the Department.





4.7.7 Gateway Airport Authority Limited Strategic Plan (2010/11 – 2014/15)

The Gateway Airport Authority Limited (**"GAAL"**) completed a 5-year strategic plan from 2010 to 2015. The Authority's vision is:

"To be a growth-driven, self-sustaining and socially responsible enterprise with a global reach that is striving for service excellence."

GAAL has set the following objectives for itself:

- To increase revenue
- To manage stakeholders and promote regional integration
- To continually strive to provide world-class airport facilities
- To promote job creation and skills development
- To enhance corporate governance and compliance

The actions planned by GAAL for the next 5 years that have an implication for the aviation strategy include the following:

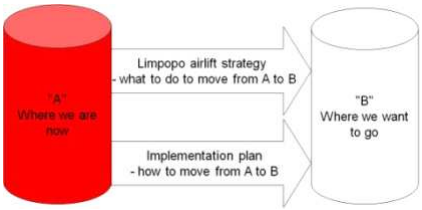
- To implement a cargo hub at Polokwane International Airport (**"PIA"**) by the fourth quarter of 2011;
- To increase the number of airline operators flying into PIA
- To facilitate the development of a supplier park for SMMEs
- To investigate the feasibility of an office park development, as well as state of the art hangar facilities at PIA
- To implement an aviation training academy at PIA
- To establish an aviation museum
- To host regular air shows

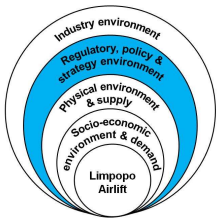
Implications for Limpopo aviation strategy:

Given the importance of the Polokwane International Airport in the LEGDP, and the strategic plan of the airport will be supported by the province. The planning of such major strategies will impact the airlift strategy of the province.

4.7.8 Revised 5-year Provincial Tourism Growth Strategy (2009 – 2014)

The tourism growth strategy for Limpopo was revised in line with the National Tourism Sector strategy, and the overall strategic objective is to position Limpopo as **the preferred ecotourism destination** in Southern Africa.





There are six activity clusters that will be targeted for tourism development within the context of Limpopo as an ecotourism destination, i.e.:

- Family & recreation cluster;
- Special interest cluster;
- Golf and game cluster;
- Mega-conservation cluster;
- Safari & game industry cluster; and
- "MICE[7]" and infrastructure cluster.

The clusters are incorporated into nodal or destination and icon developments within the province, and a variety of investment projects has been identified to strengthen the development of tourism in the province. The domestic (South African) market is important for Limpopo, as is the SADC market.

Implications for Limpopo aviation strategy:

One of the identified projects in the tourism growth strategy is to increase airlift between Limpopo (Polokwane specifically) and its neighbouring countries, which would suggest that such routes would be supported by provincial marketing efforts.

4.8 Studies by Local Government

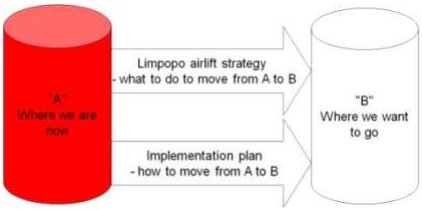
Various Intergrated Development Plans (**"IDPs"**) were reviewed to reveal that most municipalities view mining, agriculture and tourism as their key economic sectors. In some areas mining are more important (Waterberg and Sekhukhune districts), while in others tourism is more important (e.g. Mopani district).

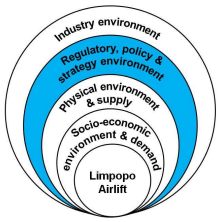
None of the plans and strategies specifically mentions aviation and airports as a development imperative.

Implications for Limpopo aviation strategy:

The tourism industry is more focused on passenger transport, while agriculture provides an opportunity for freight transport, and mining could make use of either freight or passenger aviation.

[7] i.e. meetings, incentives, conferences and events, or business tourism as it is also known as.

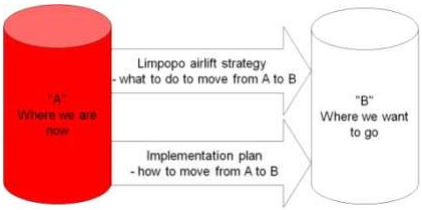


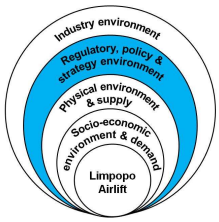


4.9 Conclusion and relevance for aviation in Limpopo

The table below provides a summary of the implications that each of the initiatives, strategies and policies may have on aviation in Limpopo.

Policy, strategy or initiative	Implications for aviation in Limpopo
NEPAD	NEPAD promotes the creation of an efficient transport infrastructure for the African continent. Its transport infrastructure plan promotes the removal of barriers to entry in an attempt to stimulate competition, and thereby forging a stronger air transport industry. These principles should be applied in the Limpopo aviation strategy. It also promotes increased regional connections
National Spatial Development Perspective	The NSDP principles provide a framework for aviation development planning in Limpopo, and it also provides guidance for prioritisation of the various strategic imperatives. It supports our approach of airlift development driven by economic development or demand.
ASGISA	The development of aviation in Limpopo must be in support of ASGISA, which talks to logistics and infrastructure investment and industrial and sector strategies which would be supported by airlift (that creates access to markets). Limpopo's aviation development may support ASGISA through the development of logistics infrastructure in the form of freight capacity at Polokwane, skills related to aviation and aircraft servicing and manufacture, as well as by stimulating tourism.
Medium-term Strategic Framework	Given the above priorities of national government, Limpopo's aviation strategy should strive to align itself in particular to the development of rural areas, and the development of economic infrastructure. Potential linkages with SADC countries may assist in strengthening the advancement of Africa.
White Paper on National Policy on Airports and Airspace management	This White Paper supports the establishment of safe and efficient airports, and it also advocates that all airport developments be conducted in an integrated manner and planned in collaboration with other elements of the transport system. Some of the principles – such as promoting the establishment of a competitive, safe and secure civil aviation environment that enables the provision of air services in a reliable and efficient manner – still apply, even though the document is more than 10 years old. These principles must also be applied in the Limpopo aviation strategy, i.e. the province can only have development that adheres to the regulations.
National Airlift Strategy	The National Airlift strategy has a strong emphasis on international passenger travel (tourism), and any international routes considered for Limpopo should be chosen from the primary and investment markets listed above. In terms of the National Airlift strategy, the recommendation on domestic airlift is to maintain the current deregulated tarrif environment within the realm of competition legislation, and therefore care should be taken to encourage competition on Limpopo routes.
National Transport Master Plan	Although NATMAP deals with all modes of transport, including air transport, very little is stated in the Limpopo Phase 1 report on air freight transport. Similarly, passenger air transport forms a very small component of the overall passenger transport picture in Limpopo. Nevertheless, an airlift strategy for Limpopo should support the objectives of NATMAP as stated above.
National Freight Logistics Strategy	The Limpopo aviation strategy needs to consider the NFLS aim to improve public-private partnerships in transport, including the respective roles of the public and the private sector. In addition, it should recognise the need for ongoing investment in the maintenance of transport systems.
White Paper on the Development & Promotion of Tourism in South Africa	Aviation is an enabler of tourism, and therefore passenger aviation strategies should directly support tourism development strategies for the province.

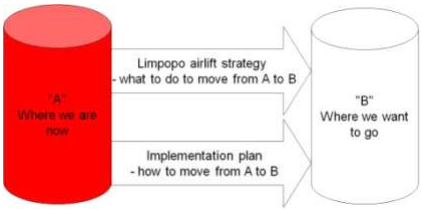


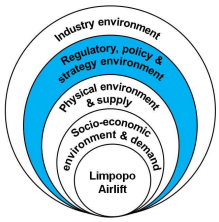


Policy, strategy or initiative	Implications for aviation in Limpopo
National Tourism Strategy	As a result of the access provided to rural areas in Limpopo through the development of aviation in Limpopo, there will be support for aviation development in the province from a National Tourism development perspective. The requirement for affordable, accessible airlift should be a consideration in the development of aviation in Limpopo.
Limpopo PGDS	The aviation industry in Limpopo will support the economic growth of the province, and can also assist with regional integration. In addition, the logistics cluster is highly dependent on airlift to facilitate movement of cargo. Both the horticultural and meat clusters can benefit from having air freight links directly into the province, and improved (and affordable) passenger air access into the province will benefit the tourism industry.
Limpopo Employment, Growth and Development Strategy	A variety of initiatives are proposed within this strategy, of which Gateway Airport and a proposed airport at Lephalale are specifically mentioned
Analysis of industrial clusters as a vehicle for economic development in Limpopo	Although the majority of freight movements in and through Limpopo are road and rail based, mining equipment and certain agri- and horticultural commodities (e.g. perishable commodities destined for overseas markets) might be suitable for conveyance by air. Distance(s) to Limpopo airports and the associated costs (e.g. transport) involved with the movement of commodities to the airport(s) would determine the suitability of air as a viable transport option.
Limpopo freight data bank	The availability of freight transport statistics serve as a valuable tool in mapping freight corridors, enhancing regional integration and determining capacity requirements / constraints. These statistics will guide the development of the freight aspects of the Limpopo aviation strategy.
Limpopo Department of Roads & Transport strategic plan	Aviation / airlift is only one component of the plans of the Department and needs to support and fit in with other plans.
Gateway Airport strategic plan	Given the importance of the Polokwane International Airport in the LEGDP, and the strategic plan of the airport will be supported by the province. The planning of such major strategies will impact the airlift strategy of the province.
5-year Tourism Growth Strategy	One of the identified projects in the tourism growth strategy is to increase airlift between Limpopo (Polokwane specifically) and its neighbouring countries, which would suggest that such routes would be supported by provincial marketing efforts.
Studies by local government	The tourism industry is more focused on passenger transport, while agriculture provides an opportunity for freight transport, and mining could make use of either freight or passenger aviation.

To geographically illustrate the political priorities within Limpopo, a political priority map was developed – comprised of three components, i.e. the national government imperative for rural development, the priorities outlines in the LEGDP specifically stating the certain aviation-related initiatives, and the priorities of the Limpopo Department of Roads and Transport (including GAAL). The assumption is that if there is political will for the implementation of a project in a particular municipality, it is more likely that initiatives to stimulate passenger and freight demand will be supported by government.

For each of the above components, the municipalities are awarded a score out of 5, which is then averaged across the three components to determine the final score for the political priority of the municipality (illustrated by **Figure 4.1**).



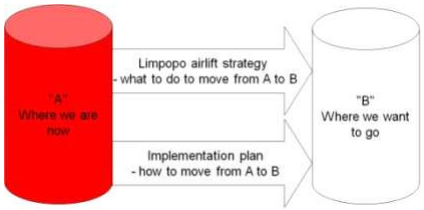


With regards to the national government imperative for rural development, municipalities that are more rural were given higher scores, while the more urban municipalities were given lower scores.

The only two municipalities that received a score in the LEGDP priorities are Lephalale and Polokwane, as these two airports are specifically mentioned as initiatives in the LEGDP.

The above two municipalities are also a priority for the Department of Roads and Transport and GAAL, and in addition, Thohoyandou in the Thulamela municipality, Giyani and Tubatse have priority within the Department over other locations.

From a political perspective, Polokwane and Lephalale have the highest priority in respect of aviation, followed by Giyani and Thohoyandou.



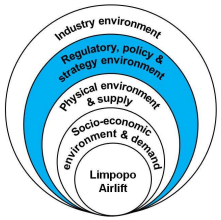
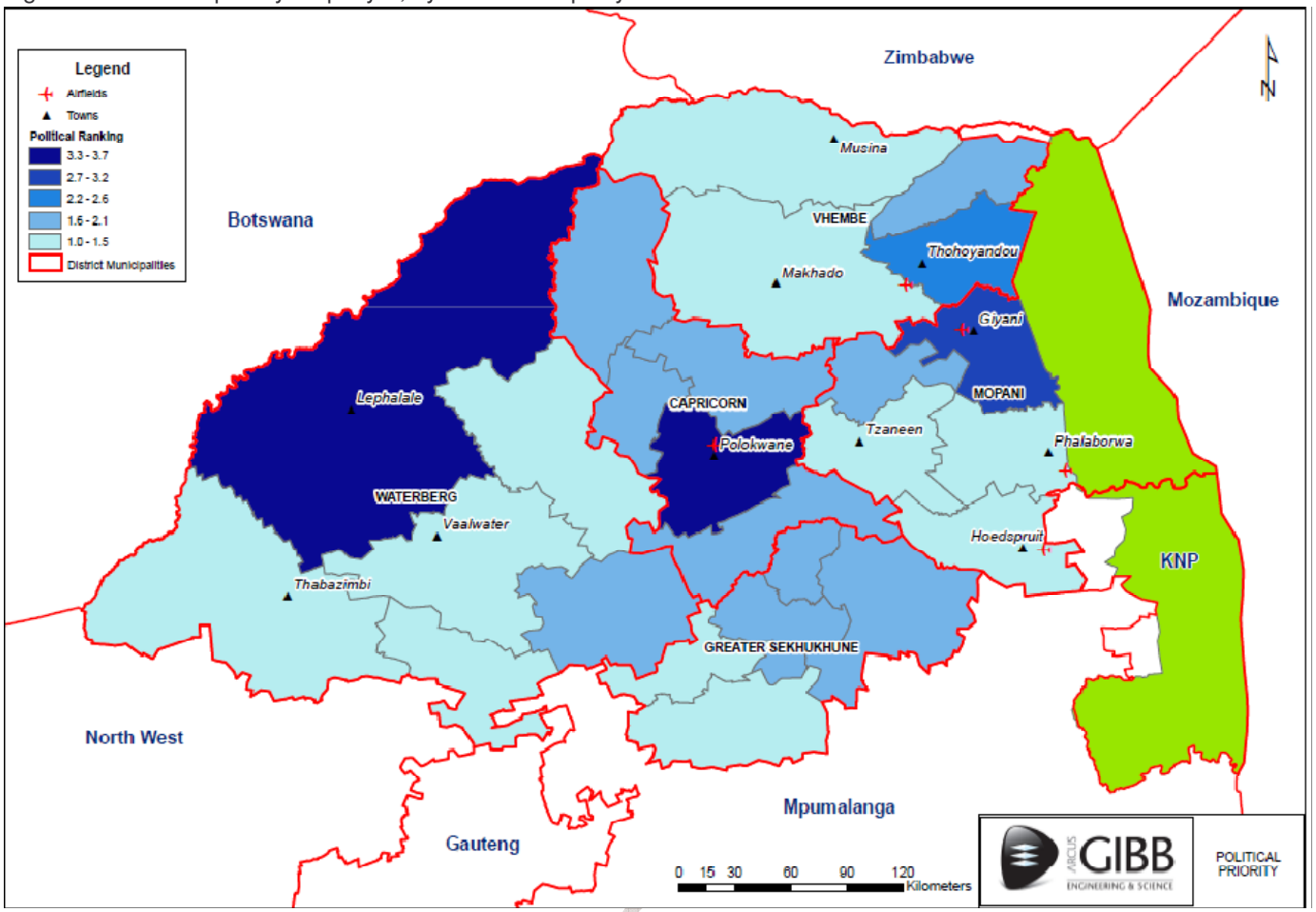


Figure 4.1: Political priority map layer, by local municipality



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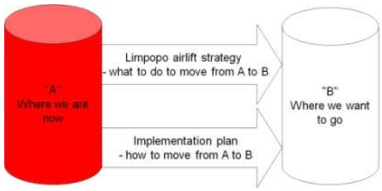
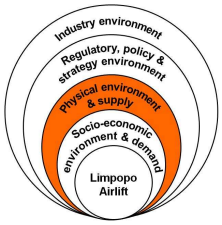




5. Physical environment and supply for aviation in Limpopo

5.1 Relevance of this section to the study

This section provides a brief overview of the airfields and airports available in Limpopo, as well as the physical condition of the facilities available at the various airports.

5.2 Airfields in Limpopo

According to Easyplan[8], there are approximately 950 airfields in South Africa (including major airports, municipal airports and private airfields), of which about 160 are in the Limpopo province – representing just over 17% of all airfields. The distribution of these airfields across Limpopo is shown in **Figure 5.1**.

5.3 Summary of Airports in Limpopo

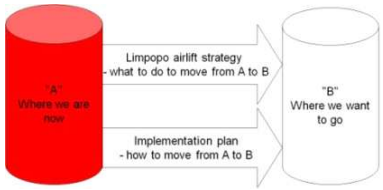
Table 5.1 below provides a summary of the physical facilities available at Polokwane airport, Kruger Gateway Airport (in Phalaborwa), Eastgate airport (near Hoedspruit), Thohoyandou airport, Giyani airport and Lephalale airport.

Polokwane airport is currently in very good condition as a result of the preparations for the Soccer World Cup, with upgraded emergency services and a new terminal building. Based on the GAAL strategic plan (**Section 4.7.7**), there are also a variety of plans in the pipeline for the future development of the airport at Polokwane. A new Board was appointed for GAAL early in 2010, and it is expected that a new CEO will soon be appointed to drive the implementation of the strategic plan. It is expected that operations at Polokwane will expand as various elements of the strategic plan are implemented.

Thohoyandou and Giyani airports are in a state of disrepair, and will need significant investment to improve the facilities at these two airports to an extent that they can be used for scheduled services.

The Kruger Gateway and the Eastgate Airports are both private airports that handle scheduled flights. These airports are maintained to a standard that is acceptable to the clients they serve, though the facilities and services available at these airports are limited. There are no immediate plans for expansion at either of these two airports.

[8] A computer programme used for flight planning by many non-commercial pilots.



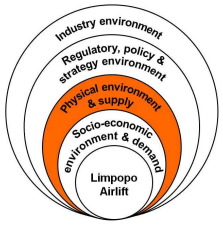
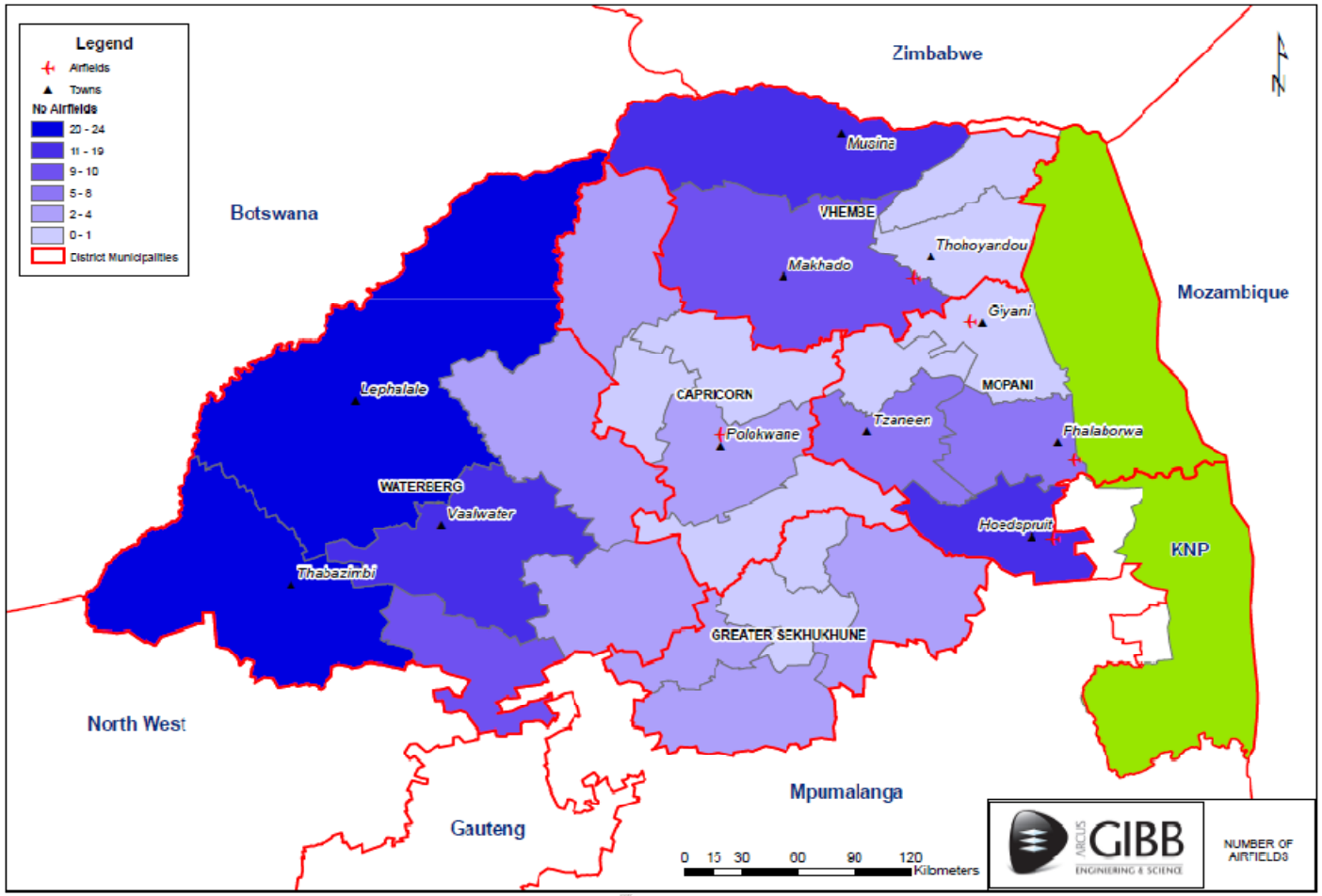
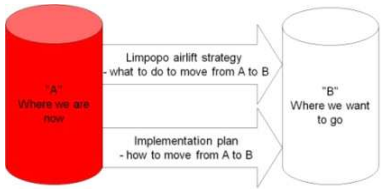


Figure 5.1: Number of airfields in Limpopo, by local municipality



Source: Easyplan



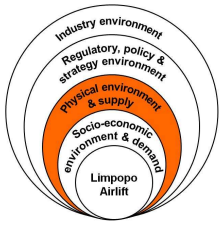
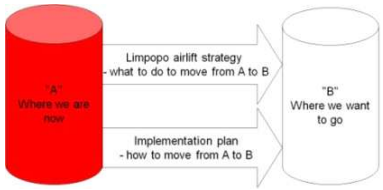
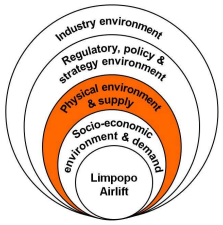


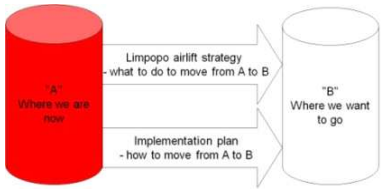
Table 5.1: Overview of selected airports

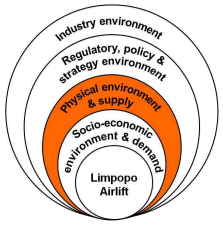
	Polokwane International Airport	Eastgate Airport	Phalaborwa Airport	Giyani Airport	Thohoyandou Airport	Lephalale Airport
Location	North of Polokwane	Hoedspruit Airforce base east of Hoedspruit	East of Phalaborwa	Nortwest of Giyani	Southwest of Thohoyandou	South of Lephalale
GPS co-ordinates	29.45639 E 23.84972 S	31.05028 E 24.35472 S	31.15500 E 23.93611 S	30.65000 E 23.28333 S	30.38250 E 23.07806 S	27.68877 E 23.72667 S
Runway orientation	Main runway: 05 / 23 Second runway: 01 / 19	Main runway: 18 / 36 Second runway: 09 / 27	01 / 19	16 / 34	10 / 28	09 / 27
Estimated runway size	05 / 23: 2 320 x 45 m 01 / 19 2 560 x 45 m	18 / 36: 4 000 x 50 m 09 / 27: 2 200 x 35 m	1 369 x 18 m	1 800 x 22 m	1 790 x 29 m	2 200 x 30 m
Elevation	4 076 feet	1 738 feet	1 432 feet	1 575 feet	2 018 feet	2 793 feet
ICAO designation	FAPP	FAHS	FAPH	n/a	FATH	n/a
Operational hours	06:00 – 20:00	Mon – Fri: 07:00 – 15:30 Sat, Sun, Public holidays: 11:00 – 15:00	From when first scheduled flight arrive to when last scheduled flight departs	Daylight only Staff gets prior notification as to when an aircraft is due to land. Often staff has to chase cows from the runway prior to the plane landing.	Daylight only	Mainly daylight, though Eskom has bought their own lighting which they use to facilitate night landings and take-offs
Signage and access	The airport is well signposted and access to the airport and runway is well-controlled according to international standards laid down by ICAO	Well signposted from both southern and northern approach roads Access to airport and runway is well-controlled	Signage to the airport through the town of Phalaborwa is good, while access to the airport and the runway is well-controlled	Signage for directions to the airport is very poor. Fencing is in a state of disrepair that permits access to the facility by animals, children, etc.	The signage indicating directions to the airport is very poor. Access to the airport and runway appears to be well controlled.	Access to the air strip is not controlled
Condition of the airport building	New airport buildings were established in preparation for the World Cup, and are in excellent condition	The airport building is well-maintained and looked after	The airport building is well-maintained and looked after	The airport building is in a state of disrepair due to a lack of maintenance. There is no running water and no telephone.	The airport building is not in a satisfactory condition, and there are clear indications of roof leaks.	There is a small administration building that is in relatively good condition



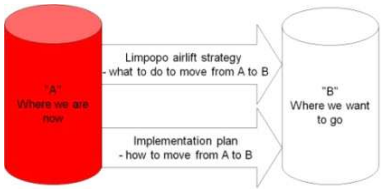


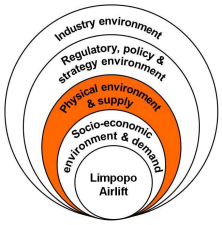
	Polokwane International Airport	Eastgate Airport	Phalaborwa Airport	Giyani Airport	Thohoyandou Airport	Lephalale Airport
Apron, taxiway and runway condition	The apron, taxiway and runway are in good condition	The apron, taxiway and runway are in very good condition and they are maintained by the air force	The apron, taxiway and runway are in good condition	The apron, taxiway and runway exhibit significant block cracks with minor water ponding on the taxiway. Generally significant amounts of cow dung was observed on the apron, taxiway as well as on the runway surface. Surface marking has faded almost completely.	The apron is constructed of concrete slabs and appears to be in good condition, though in need of minor jointing material maintenance between the apron and the taxiway. The taxiway is in good condition apart from a localized area showing block cracking. The runway is in satisfactory condition and paint markings are reasonably visible	The apron, taxiway and runway are not in poor condition, but some cracking does occur and the runway will need resurfacing in the near future
Runway and apron lights	In working order	In good working condition as they are also used by the air force for night operations. Not available for use by commercial planes	Yes – in working order	None of the runway and apron lights are in working order.	Apron and runway lights are not in working order.	None
Navigational aids	Instrument landing system available Radar available	VOR beacon NDB beacon Radar		None	Navigational beacons not in working order	None
Safety equipment	State-of-the-art fire-fighting equipment is available at the airport, and it is designated a Category 7 fire service according to ICAO standards. Medical facilities are also available on-site	Military standard equipment available	Fire engine available	None	A formal fire station is available but no fire-engine is available. The door leading onto the apron hangs skew and does not work.	None
Aircraft repair & maintenance services	None	None	None for large aircraft Limited for smaller aircraft	None	None	None
Refuelling services	Avgas and Air BP available	Jet A1 and Avgas available on request	None	None	None	None





	Polokwane International Airport	Eastgate Airport	Phalaborwa Airport	Giyani Airport	Thohoyandou Airport	Lephalale Airport
Ground handling services	The airport can handle B737 -200 to B737 – 800 and A320 aircraft	The airport can handle a variety of aircraft	The airport handles the Jetstream 41 planes of Airlink	None	None	None
Passenger handling facilities	Yes – both domestic and international	Yes	Yes	None	Luggage handling equipment is present but non-functional. Ticket handling used to be in place but is no longer in practice.	None
Freight handling facilities	None at present	None	None	None. Freight offloading by local retailers is handled by their own staff	None	None
Current usage	Airlink offers scheduled services from Johannesburg, and a variety of private and charter aircraft make use of the facilities	SA Express provides a twice-daily scheduled service from Johannesburg, and the airport is also used by a variety of private and charter planes	Airlink offers scheduled services from Johannesburg and the mines and private pilots also make use of the airport on a regular basis	The airport is used infrequently – mainly at month-end by local retailers (e.g. SPAR, PnA, Build-it, etc.) for the supply of new stock and to pay staff salaries.	The airport is used by 15 SAI Military base for the transfer of Military personnel. Otherwise the airport is used infrequently – with an estimated 40 unscheduled flights per annum.	Local flying clubs, Eskom and the mines make use of the landing strip
Meteorological services	Yes – from ATC	Yes – from ATC	None	None	A qualified Meteorologist technician is on site	None
Limitations for expansion	The airport is a sufficient distance out of town to allow for some expansion	The property is owned by the military, and any expansions is subject to their approval	Proximity to Phalaborwa to the west and the Kruger National Park to the east limits the potential expansion of the airport	There is no immediate development surrounding the airport apart from agricultural activities, which allows for possible expansion	Residential and military developments around the airport could impose restrictions on the extent of potential development of the airport.	Unknown





5.4 Geographic representation of physical airport facilities

To geographically illustrate the physical airport facilities within Limpopo, a physical map was developed. The physical facilities map layer is comprised of four components, i.e. the scale of passenger handling facilities available (bigger airports scored higher), the condition of passenger facilities, the condition of the landing strip, and the potential for improvement.

For each of the above components, the municipalities are awarded a score out of 5, which is then averaged across the four components to determine the final score for the physical facilities of the municipality (illustrated by **Figure 5.2**). Only local municipalities with airports have been considered for this rating, and all other municipalities were awarded a zero score.

From a physical facilities perspectice – taking into consideration both existing and future potential – Polokwane and Maruleng are best suited to deal with passenger aviation, while Giyani and Thohoyandou are least suited to handle passenger aviation of the municipalities that have airports.

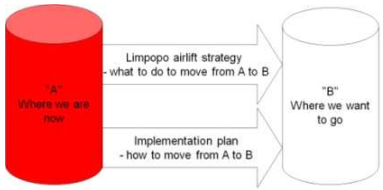
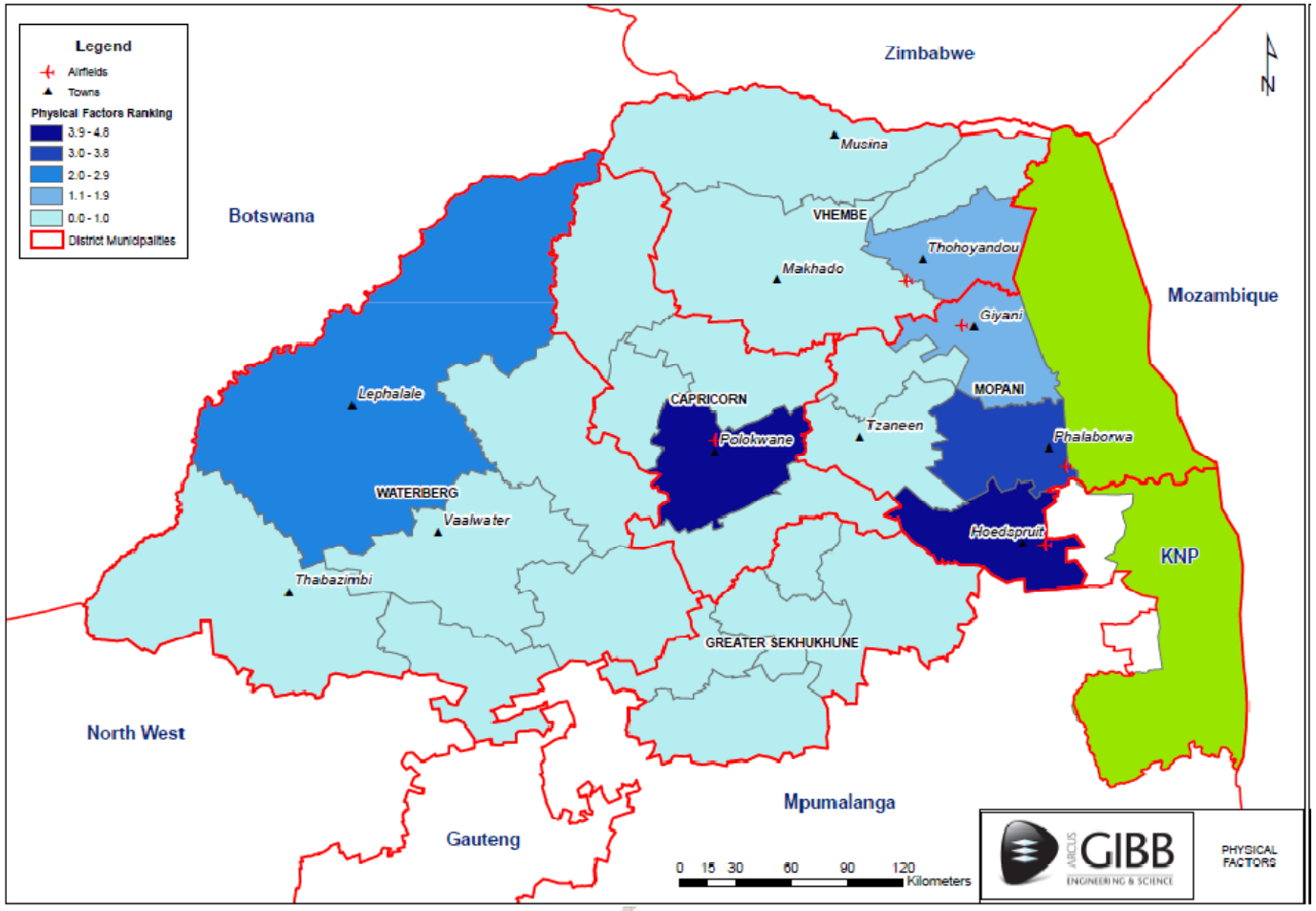


Figure 5.2: Physical map layer, by local municipality



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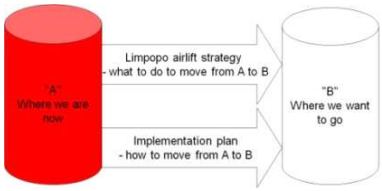
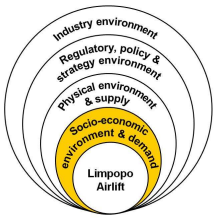




6. Socio-economic environment and demand for aviation in Limpopo

6.1 Relevance of this section to the study

This section provides the core information of the commercial aviation situation in Limpopo, with an overview of the freight and passenger demand situation in the context of the socio-economic environment within the Limpopo province.

The first portion of the section is dedicated to freight, followed by the information pertaining to passenger aviation.

6.2 Existing Scheduled Passenger Aviation in Limpopo

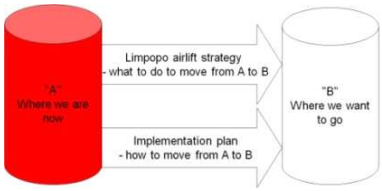
Currently, there are 3 airports in Limpopo that offer scheduled passenger services, i.e. Polokwane, Phalaborwa and Hoedspruit.

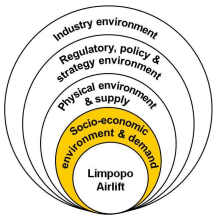
Table 6.1 provides an overview of the services:

Table 6.1: Existing scheduled passenger flights available in Limpopo

Airport	Operator	Route	Frequency	Size aircraft	Estimated scheduled passengers handled (2009)
Polokwane International Airport	Airlink	Johannesburg - Polokwane	4 flights a day (Mon – Fri) 3 flights a day (Sun) 2 flights a day (Sat)	29 or 37 seater	45 000
Kruger Gateway Airport (Phalaborwa)	Airlink	Johannesburg - Phalaborwa	2 flighs a day (Sun – Fri) 1 flight a day (Sat)	29 seater	20 000
Eastgate Airport (Hoedspruit)	SA Express	Johannesburg - Hoedspruit	2 flights a day	50 seater	48 000

Based on the estimated number of passengers handled, and the available capacity on the three routes it is estimated that flights on the Johannesburg-Polokwane route operate roughly at a 60% utilisation rate, while the Johannesburg-Phalaborwa route operates on a 53% utilisation rate. The Johannesburg-Hoedspruit route performs better at about 66% utilisation.





Given that low-cost carriers are generally only interested in routes that offer an 80% plus utilisation rates, it is understandable that the Limpopo routes are not currently of interest to these carriers.

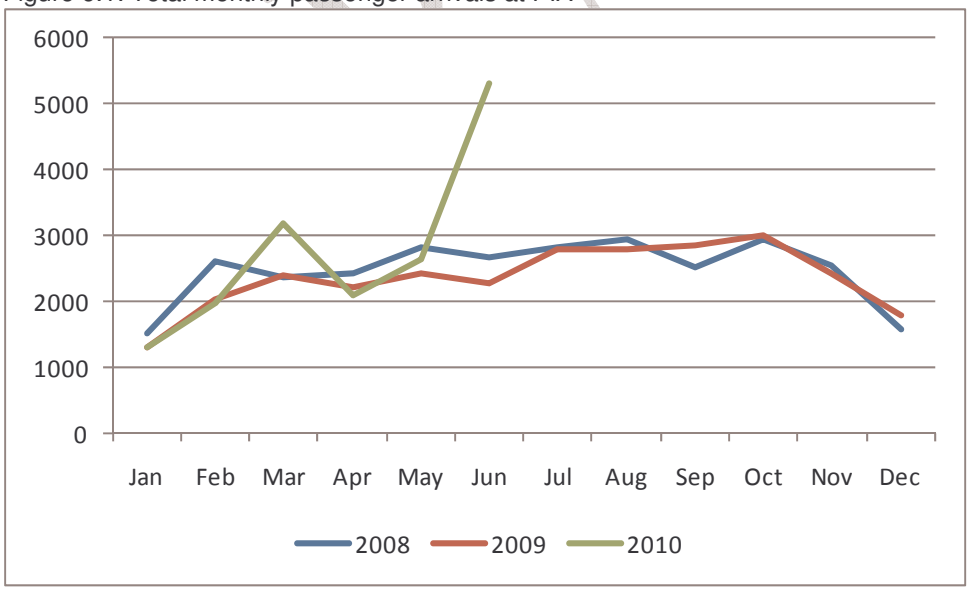
6.2.1 Polokwane International Airport

Both scheduled and non-scheduled aircraft and passenger movement statistics are kept by GAAL for PIA. Scheduled services usually comprise just more than 80% of passenger movements, though such services only comprise about 35% of aircraft movements. In 2009, the airport handled a total of about 55 000 passengers, of which about 51% were arriving passengers and 49% were departing passengers. Most of these passengers travel to and from Polokwane for business purposes, and more than 90% of passengers are South African.

Figure 6.1 provides the monthly passenger arrival figures for PIA – including both scheduled and non-scheduled movements. The sharp increase in June 2010 is as a result of the Soccer World Cup.

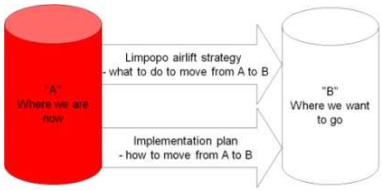
During most of 2009, monthly arrivals were lower than in 2008, with only the latter part of the year showing some signs of improvement. Overall, passenger arrivals declined by 4,7% from 2008 to 2009, while passenger departures declined by 12,6%. In the first six months of 2010, passenger arrivals increased by 2,8% compared to the same period in 2009 while passenger departures increased by 19,4%. The first 6 months of 2009 showed an 11,6% decline in passenger arrivals compared to the same period in 2008 while passenger departures declined by 25%. This indicates that the 2010 passenger levels are still lower than the 2008 numbers.

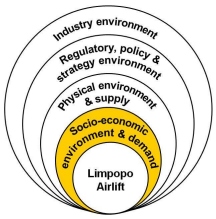
Figure 6.1: Total monthly passenger arrivals at PIA



Source: GAAL

From 2008 to 2009, the number of scheduled flights from Johannesburg to Polokwane declined by 2%. In the first 6 months of 2010 the number of scheduled flights declined by 24% compared to the





same period in 2009, on top of a 3,9% decline in the first 6 months of 2009 compared to the same period in 2008. The decline in the number of flights is an indication that the airline expects demand to drop further in 2010, despite the increase around the World Cup.

6.2.2 Phalaborwa Airport

We were unable to obtain passenger and aircraft movement statistics for Phalaborwa airport, but based on current flights into Phalaborwa, flight capacity and estimated load factors based on our experience with the destination, we estimate that approximately 10 000 passengers arrive at Phalaborwa per annum and that the airport handle approximately 18 000 – 20 000 passengers in total. Many of these passengers travel to Phalaborwa on business to the mines, though there is also a leisure component in the form of visitors to the Kruger National Park and the Hans Merensky Golf estate in particular. The majority of business travellers are South African, though most of the leisure visitors are foreign.

The number of scheduled services available from Johannesburg to Phalaborwa has remained the same in the last 4 years, apart from an extra flight that was added on a Sunday morning.

6.2.3 Eastgate Airport (Hoedspruit)

This private airport operating at the Hoedspruit Military base handles similar number of passengers than Polokwane per annum, though we were unable to obtain specific data. According to the management, the route has become more popular in recent times, with load factors as high as 75% in some months. Anecdotal evidence also suggests that in recent months, SA Express has been making use of bigger aircraft on this route.

The majority of arrivals at Eastgate airport are leisure travellers on a visit to the private game reserves and Kruger National Park, and more than 70% of these travellers are estimated to be foreign.

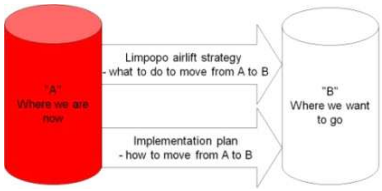
In the past, SA Express used to offer a direct service from Cape Town to Hoedspruit, but this route was closed down because it was not profitable for the airline. However, tour operators and lodge owners suggest that the fares were too expensive.

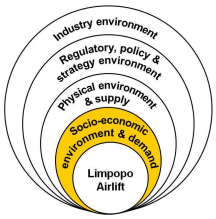
In addition to the two scheduled flights per day, the airport handles between 80 – 120 unscheduled flights per month. Many of these unscheduled flights are charters that ferry passengers to the variety of game lodges in the area.

Eastgate does not offer customs and immigration services, though the management of the airport indicate that many of the charter operators and private pilots request this in order to combine a stay in the game lodges around Hoedspruit with a visit to the Mozambican beaches or Victoria Falls. Currently, most of them clear customs and immigration at Kruger Mpumalanga International Airport, as they perceive this airport to be in close vicinity to Hoedspruit.

6.2.4 Air Fares

Air fares for a return flight from Johannesburg to Polokwane range (at current rates) from about R2 400 to R3 200 per person, of which about R900 is taxes and fuel surcharges. Given that the





Johannesburg to Polokwane return trip is about 660 km, the cost of flying is R3,59 – R4,86 per kilometre.

For flights from Johannesburg to Phalaborwa, current air fares range from R2 400 to R3 780 (with about R900 taxes and fuel surcharges), which at a distance of 492 km from Johannesburg equates to a flight cost per kilometre of R2,44 – R3,84.

Flights to Hoedspruit are the lowest of all flights to Limpopo destinations, currently ranging from R1 870 to R2 840 (with about R750 taxes and fuel surcharges), which at a distance of 421 km from Johannesburg equates to a flight cost per kilometre of R2,22 – R3,37.

To put the above fares in context, travellers are able to get fares from Johannesburg to Cape Town, which is 1 400 km from Johannesburg (i.e. a 2 800 km return trip), from R1 460 to R4 720, which calculates to about R0,52 – R1,69 per kilometre (**Table 6.2**).

Table 6.2: Comparative fares for routes in Southern Africa*

From Johannesburg to:	Distance - return trip (km)	Min fare	Max fare	Min fare / km	Max fare / km
Cape Town	2800	R 1,460	R 4,720	R 0.52	R 1.69
Durban	1176	R 860	R 3,310	R 0.73	R 2.81
East London	1964	R 1,470	R 3,400	R 0.75	R 1.73
Richard's Bay	1200	R 1,590	R 3,230	R 1.33	R 2.69
Victoria Falls	2634	R 3,727	R 5,097	R 1.41	R 1.94
Harare	2280	R 3,597	R 4,287	R 1.58	R 1.88
Kimberley	944	R 1,550	R 3,210	R 1.64	R 3.40
Pietermaritzburg	1006	R 1,900	R 3,080	R 1.89	R 3.06
Hoedspruit	**842**	**R 1,870**	**R 2,840**	**R 2.22**	**R 3.37**
Phalaborwa	**984**	**R 2,400**	**R 3,780**	**R 2.44**	**R 3.84**
Kruger Mpumalanga International	710	R 1,782	R 2,967	R 2.51	R 4.18
Bloemfontein	796	R 2,181	R 2,694	R 2.74	R 3.38
Polokwane	**660**	**R 2,370**	**R 3,210**	**R 3.59**	**R 4.86**
Gaborone	726	R 3,100	R 3,326	R 4.27	R 4.58

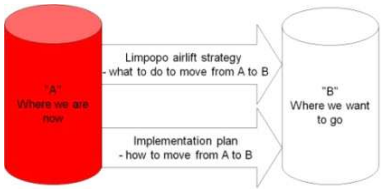
* fares were obtained from the websites of SAA, SA Express and Airlink

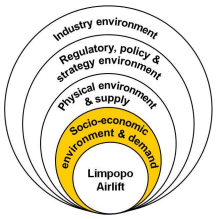
Implication for Limpopo aviation strategy:

Current relatively high air fares may be a deterrent to increased demand for passenger travel.

6.3 Drivers for passenger aviation demand

Passenger aviation demand is driven by a number of factors. Firstly, there should be an opportunity for two-way traffic to make aviation viable – with visitors wanting to come into the province by air,





and residents wanting to leave the province by air. Secondly, there are various reasons why people travel, and their reason for travel may influence the mode of travel they make use of. In addition to the reason for travel, there are other factors that may influence a traveller's decision on his/her mode of transport.

6.3.1 Visitors and residents

As it requires both inbound and outbound traffic to ensure viability for an airline to fly to a destination, demand is required from both visitors from outside the destination and the residents of the destination itself.

In 2009, just more than 1,1 million foreign visitors came to the Limpopo province, of which 87% were from Zimbabwe (almost 900 000 visitors). It is unknown as to what the distribution of the visitors is across the province, though – based on Statistics SA (**"Stats SA"**) arrival figures by border post, it is assumed that most of the 900 000 Zimbabwean visitors enter the province via the Beit Bridge border post by road and some also continue by road to Gauteng.

In respect of domestic visitors, 1,9 million domestic trips were undertaken to Limpopo, of which 600 000 were taken by Limpopo residents. In other words, 1,2 million trips to Limpopo originated from outside the province. Given the large proportion of VFR visits, and the fact that many Limpopo residents now live in Gauteng, it is assumed that the majority of visits originate from Gauteng.

Implication for Limpopo aviation strategy:

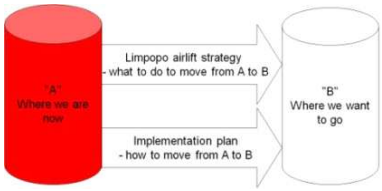
Based on current market demand for visitors to Limpopo, Gauteng and Zimbabwe could potentially provide opportunities for aviation linkages.

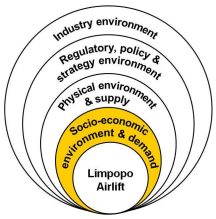
With regards to the residents of Limpopo and their ability to make use of passenger aviation, we first considered whether the residents earn an income or not, and as such will be able to afford to travel by air. **Table 6.3** provides an indication of the number of municipalities where more than 50% of its residents earn an income at all. The Waterberg district has the highest number of residents earning an income.

Table 6.3: Number of Municipalities where more than 50% of residents earn income

District municipality	Total # of local municipalities within the district	Number of municipalities where more than 50% of residents earn an income	% of district's population that earn an income
Waterberg	6	5	52,5%
Capricorn	5	1	40,7%
Vhembe	4	1	47,0%
Mopani	5	1	41,5%
Greater Sekhukhune	5	0	32,1%

Source: Stats SA, Grant Thornton analysis





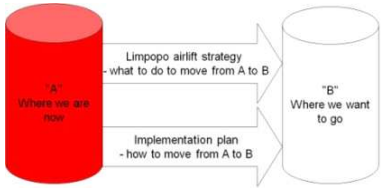
However, merely earning a basic income does not enable residents to afford air travel. We have therefore considered the number of people that – according to the 2007 Stats SA Community Survey – have a monthly income of R25 600 or more. **Figure 6.2** indicates these residents by geographic location. From this map it is evident that the highest concentration of higher-income residents is located in the Polokwane local municipality, followed by the Thabazimbi local municipality.

Despite being an area with very few higher-income earners, the Maruleng municipality (Hoedspruit) manages to sustain both inbound and outbound passenger air traffic. This is mainly due to the fact that there is sufficient leisure tourism attraction potential to generate demand for both legs with arriving and departing passengers.

Implications for the Limpopo aviation strategy:

Polokwane is the location that has the best potential for aviation demand from local residents. Even so, the absolute number of people that would be able to afford air travel is limited.

An area with limited demand potential from its local population could be sustained if there is sufficient movement in and out of the destination as a result of tourism. That supposes you do not lose passengers to other transport modes or areas outside of Limpopo, ie it means the tourists has to fly in and out, otherwise the demand is not even.



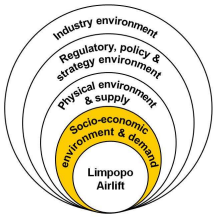
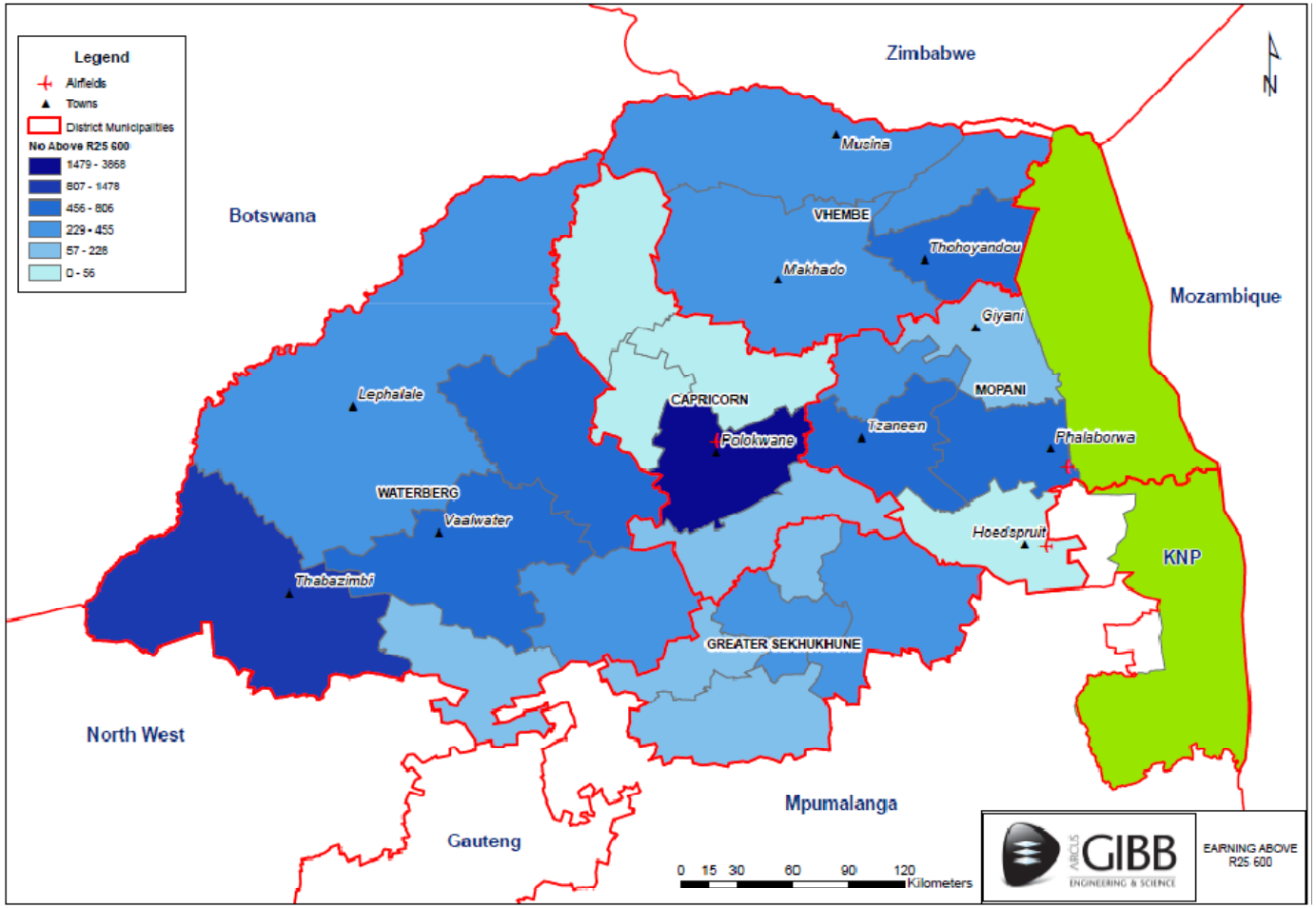
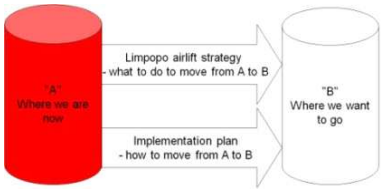
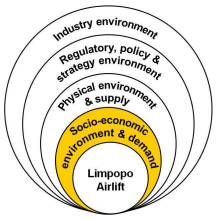


Figure 6.2: Number of residents earning more than R25 600 per month, by local municipality



Source: Stats SA, Grant Thornton analysis



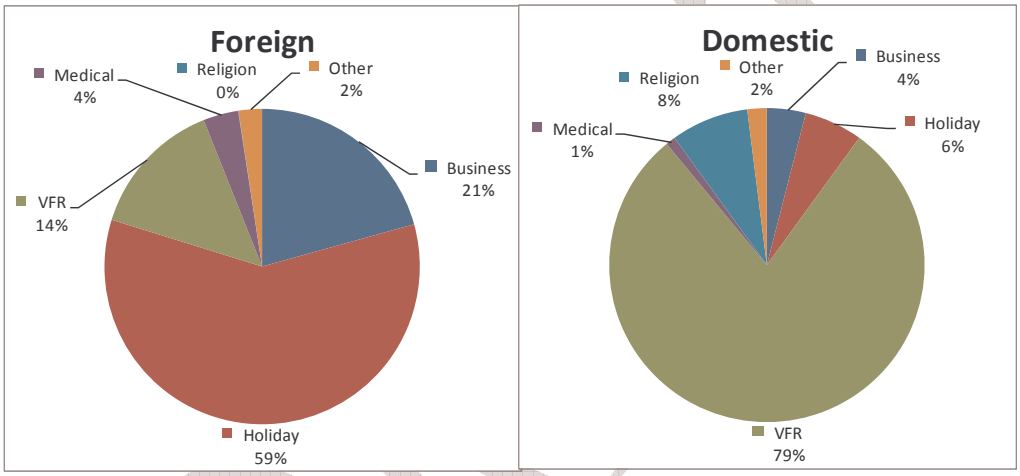


6.3.2 Purpose of visit

Demand for passenger aviation is driven by the purpose for which people travel. Potential travellers may travel for a variety of purposes, including business, leisure/holiday, to visit friends and relatives (**"VFR"**), medical reasons, work, religion and other purposes. **Figure 6.3** provides the purpose of visit breakdown for foreign and domestic visitors to the province. Domestic visitors mainly come to Limpopo to visit their friends and relatives, while foreign visitors mainly come to the province for leisure/holiday purposes.

Business and leisure visitors are more likely to make use of air travel, as these types of travelers generally spend more money while travelling. In the case of business travel, the company often pays for the trip. Leisure visitors may opt for air travel as it is faster and more convenient when they have limited time on a holiday trip.

Figure 6.3: Purpose of visit for foreign and domestic visitors to Limpopo (2009)



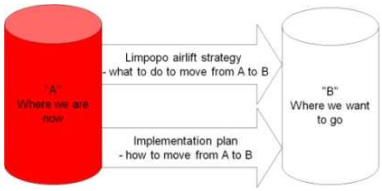
Source: SAT

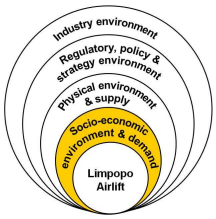
Implication for Limpopo aviation strategy:

Current domestic business and leisure visitor numbers are relatively small, while the proportion of foreign visitors coming for business and leisure is bigger, which may provide an opportunity for international linkages – depending on the source markets. It should be kept in mind, though, that foreign visitors can also visit the Limpopo province from elsewhere within South Africa.

6.3.3 Factors influencing choice of mode of transport

Travellers have the option to travel by road, rail or air, and their decision on the mode of transport is influenced by factors such as the cost of the trip, distance to be travelled, convenience, access to the particular mode of transport, etc. Often travellers consider a combination of these factors to derive their final decision on mode of transport.





For example, travellers between Gauteng and Polokwane may often opt to drive, as the road is in very good condition and the travelling time – taking into consideration check-in times at the airport and traffic to the airport – is often somewhat less. In addition, as illustrated in **Section 7.2.4**, the relative cost of flying is more expensive than driving.

For travellers further north or east from Polokwane it may become more convenient to fly, as the increased distances result in longer travelling times by road. However, at current air fares, many still choose to drive. Travelling distance and time by road between Gauteng and the Bela-Bela / Modimolle area makes driving more convenient.

Figures 6.4 and 6.5 provides maps with the travelling distances from Gauteng (with Midrand as it's central point) in a 2- and 3-hour radius, and from Polokwane in a 1- and 2-hour radius. We believe that travellers from Gauteng may consider flying instead of driving when the drive takes longer than 3 hours, and therefore destinations like Lephalale, Hoedspruit, Phalaborwa, Makhado and Musina could be considered as destinations for flights between Gauteng and Limpopo. Within Limpopo, flights may be considered from Polokwane to the destinations further than a 2-hour drive from the capital, such as Lephalale, Phalaborwa and Musina.

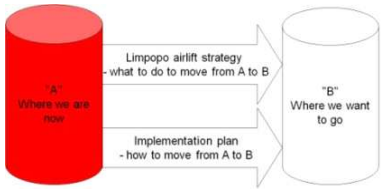
Also, there are currently only 3 airports offering scheduled services, and from some locations there is no access to aviation travel options. The mining and energy operations around Lephalale make use of their own aircraft at present in order to ferry their staff and contractors to the sites because there is no airport with scheduled services available.

There are currently no linkages between destinations within the province, which means that if a person wants to fly from Hoedspruit to Polokwane for example, he/she will have to fly to Johannesburg first and then catch another flight from Johannesburg to Polokwane. Often the flight departure times would not be convenient, and as a result it would be easier to drive.

In economic terms, airfares are almost perfectly elastic, as indicated in discussions with 1Time airline. They found that a 50% reduction in their prices resulted in an almost 50% increase in passenger numbers on existing routes (it is assumed that there was an existing market ready to be tapped, i.e. travellers were making use of a different mode of transport up until such time as air travel became affordable). Given the high current airfares on routes into Limpopo, it is possible that a reduction in price may result in an increased demand.

6.4 Tourism

Tourism is defined as "The activities of persons travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes not related to the exercise of an activity remunerated from within the place visited" (SAT, 2008). It therefore includes a number of traditional economic sectors, such as transport, wholesale, retail and hotels, etc. In essence therefore, most passenger aviation forms part of the tourism industry (excluding air travel for the purposes of going to another place to work).



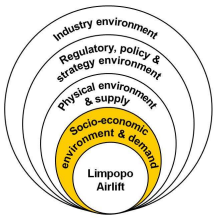
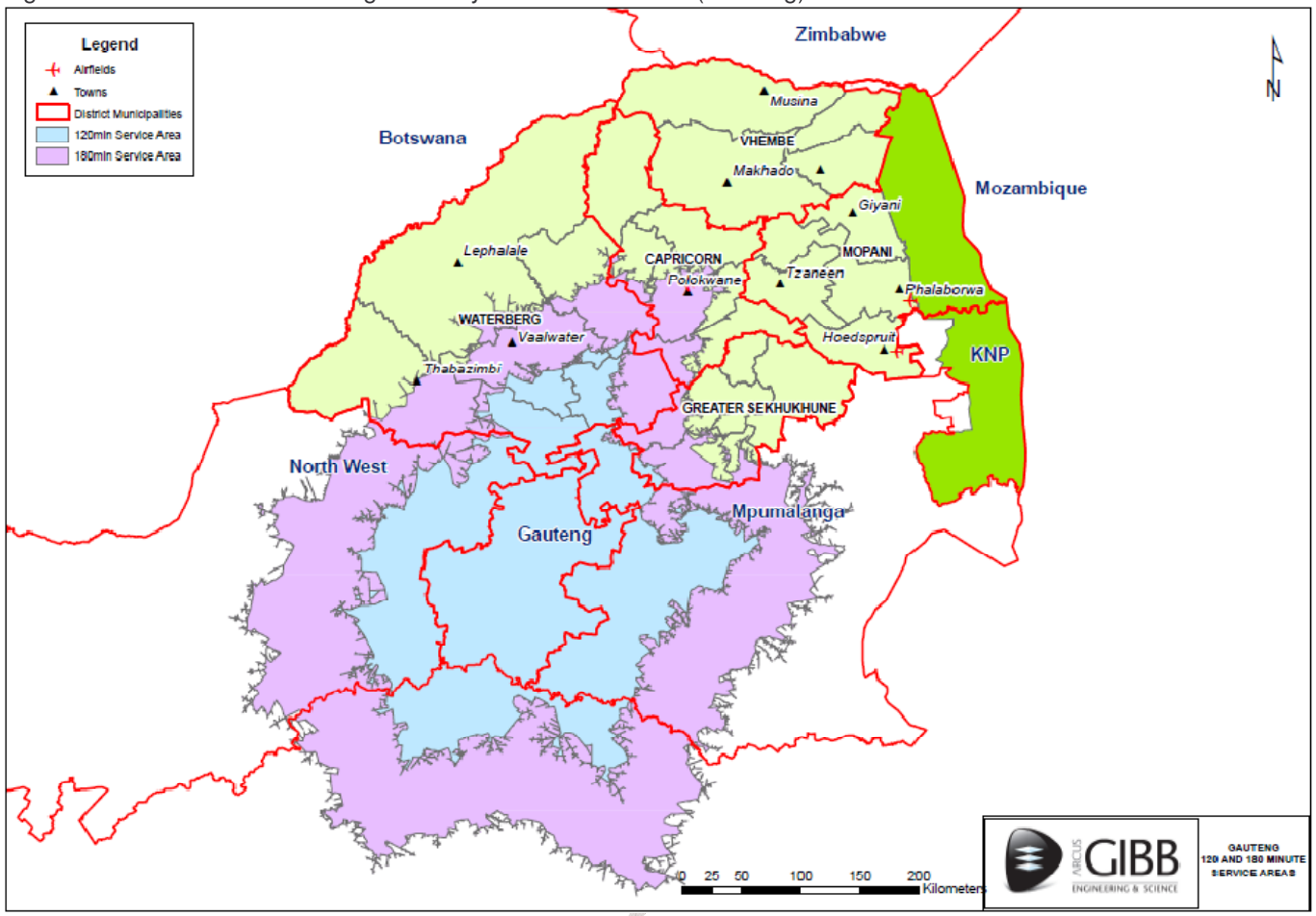


Figure 6.4: 2- and 3-hour travelling radius by road from Midrand (Gauteng)



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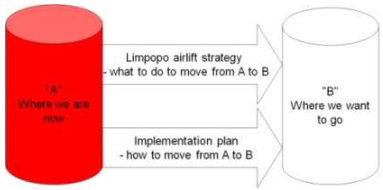


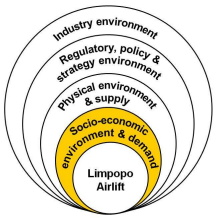
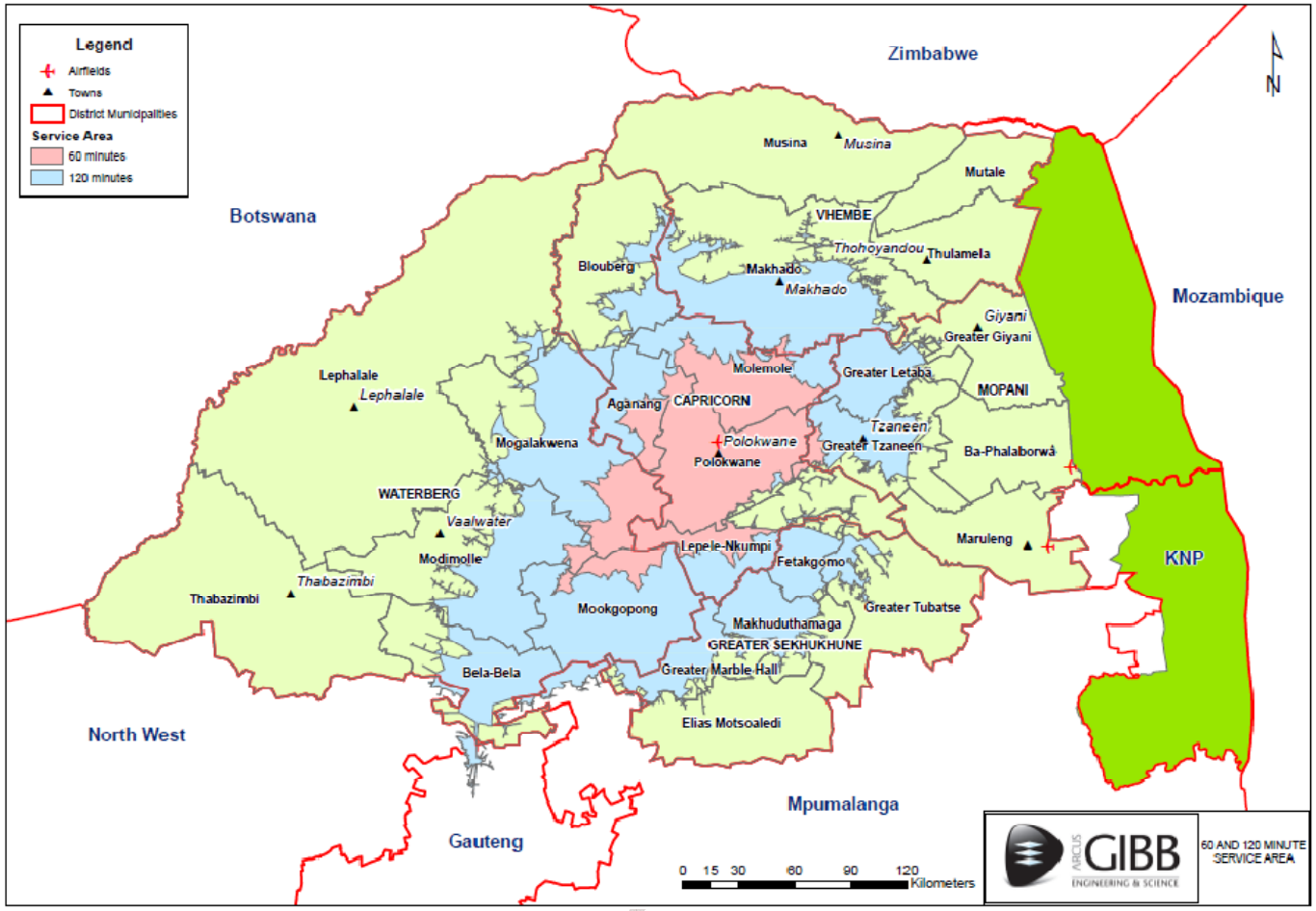


Figure 6.5: 1- and 2-hour travelling radius by road from Polokwane (Limpopo)



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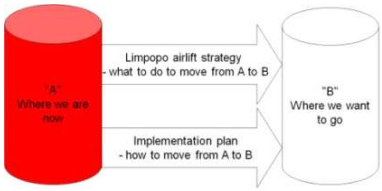
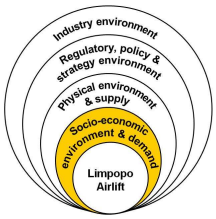




Below we provide a broad description of Limpopo's tourism potential in terms of the reasons for travel, and the potential for passenger air travel within each of these.

6.5 The Economy of Limpopo as a driver for business travel aviation demand

Business travel is the result of economic activity, and as such, the demand for passenger aviation from business travellers is the result of the economic activity of the province.

The Limpopo government has identified mining, agriculture and tourism as key economic sectors for the province, with seven industrial clusters identified in the PGDS (**Section 4.7.1**) that will be targeted to ensure economic growth and job creation for the province.

6.5.1 Mining

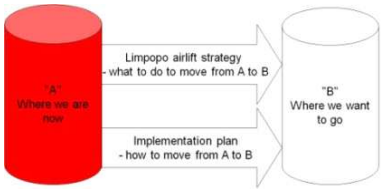
Mining is the largest contributor to the Limpopo province's economy, and has increased its contribution to the provincial economy from 18% in 1995 to 25% in 2006 based on data obtained from Stats SA.

Limpopo has rich mineral deposits which include the platinum group metals, iron ore, chromium high- and middle-grade coking coal, diamonds, antimony, phosphate and copper, as well as mineral reserves (gold, emeralds, scheelite, magnetite, vermiculite, silicon and mica) and base commodities (black granite, corundum and feldspar).

Mining equipment and extracted ore are generally too bulky to transport cost-effectively by air, and therefore the mining industry mainly make use of the road and rail transport networks. Many mining companies own their own aircraft, and make use of landing strips near the mines to transport staff and contractors directly between mining operations.

For example, Foskor – that have mining operations in Phalaborwa and Richard's Bay – have their own jet to transport their staff and contractors between Phalaborwa and Richard's Bay, thereby enabling a direct air link between these two destinations that is not currently possible by using scheduled air services. For this reason they built the Phalaborwa airport, which they have subsequently sold to Airlink. Similarly, Eskom and the Grootegeluk coal mine have their own planes and helicopters that are used to ferry passengers from Gauteng and other locations to Lephalale. Eskom has upgraded the air strip in Lephalale and bought lighting equipment to also enable night operations.

Table 6.4 provides the current and potential future mining activities within the various municipalities in the province. Municipalities where no mining activities currently take place, and none are expected to take place in future has been excluded from the list.



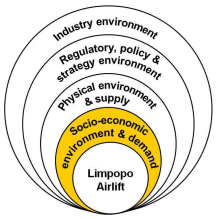


Table 6.4: Mining activities in Limpopo, by Municipality

District Municipality	Local Municipality	Current mining activities	Potential future mining opportunities
Waterberg	Lephalale	Coal, others	Coal & others
	Thabazimbi	Coal, platinum	Coal & others
	Mogalakwena	Platinum group metals	Platinum group metals
Capricorn	Polokwane	Some silica	Coal
	Blouberg	Very little	Flake granite, coal
	Lepelle-Nkumpi	Little	Coal
Vhembe	Makhado	None	Minerals
	Musina	Diamonds, coal, copper	Coal, diamonds, copper, etc.
	Mutale	Manganese	Manganese, coal, etc.
	Thulamela	None	Minerals
Mopani	Ba-Phalaborwa	Copper, phosphate	Vermiculite, magnesite
Greater Sekhukhune	Makhuduthamaga	Platinum group metals	Explorations taking place
	Fetakgomo	Platinum group metals	Some expansions being planned
	Greater Tubatse	Platinum group metals	New mines & expansions planned
	Elias Motsoaledi	Little	New mines & expansions planned

Source: Municipal IDPs

In terms of the provincial employment, growth and development plan, mining beneficiation is a key priority for the province, which may create the opportunity for higher-value cargo and increased passenger traffic in future. Examples of beneficiation initiatives that are currently in the process of being established are the Medupi Power station near Lephalale (which uses coal to generate electricity), and the planned Sasol Coal to Liquid petrochemicals complex (using coal to manufacture liquid petroleum and other products such as fertiliser). These initiatives jointly with others represented about R31 billion of investment into the province.

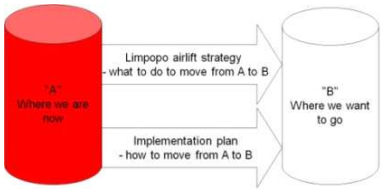
Implications for the Limpopo aviation strategy:

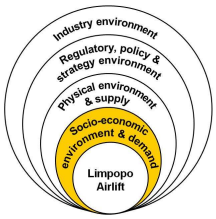
From a passenger demand perspective, mining in its present form presents little opportunity. The aviation requirements of the mining sector are for well-maintained landing strips where they can land their aircraft, as well as the associated services required, such as fuel, parking space, navigational services, etc.

Increased passenger demand will depend on beneficiation initiatives being successfully implemented, which appears to be the case in the Lephalale area.

6.5.2 Agriculture

Though agriculture is an important economic sector for Limpopo, and potential has been identified in most of the municipalities within the province, this sector presents limited potential from a passenger travel perspective.





6.5.3 Government Departments

Government services comprise a significant portion of the provincial economy, and as such have the potential to generate aviation passenger demand.

The Provincial Administration of the Limpopo Province is situated in Polokwane and its officials travel extensively to Pretoria and beyond. The Province does not have a policy that favour air travel for its employees and therefore many government employees opt to drive to Gauteng and then fly out from there to other destinations as opposed to flying from Polokwane. It has been suggested that government employees prefer to drive as they get reimbursed for their travels, while they receive no compensation if the government pays for their air travel expenses.

From the Development Options for Polokwane International Airport feasibility study we conducted in 2008, there were also indications that not many people were comfortable flying with the small aircraft that Airlink use on the Polokwane – Johannesburg route, and therefore preferred to drive.

Implications for the Limpopo aviation strategy:

There appears to be an opportunity to generate additional demand for air travel from Polokwane to Gauteng from government officials if government were to implement a policy that – where possible – government officials should fly from Limpopo to Gauteng (and other routes should they be established) instead of driving.

However, perceptions of small aircraft not being safe may have to be addressed through an educational campaign.

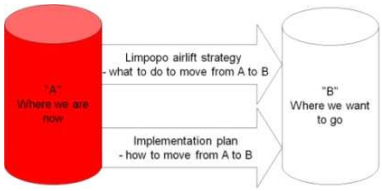
6.5.4 Other sectors

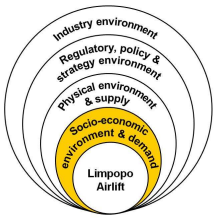
The services (accounting, legal, etc) and finance (banks) and real estate sectors is primarily a local economic activity and does not attract significant movement of people from outside of the immediate vicinity that would need to make use of passenger air travel.

In the construction sector, most employees or contractors are employed on a long-term contract, where it makes more sense to drive to the construction location, and therefore there is little potential for passenger air travel demand.

The manufacturing and the wholesale and retail sectors collectively represent 17% of the provincial economy, and several manufacturing initiatives are being planned in respect of the focus on industrial clusters (e.g. mining beneficiation, agro-processing, etc.). In spite of these prospects, these sectors do not generate significant passenger air travel demand.

Future growth in the logistics cluster may generate some passenger movement, though it is not expected to contribute in large volumes to aviation passenger demand.





Implications for the Limpopo aviation strategy:

The economic sectors present in Limpopo do not currently have a high demand for passenger air travel, though this may improve in future as manufacturing and logistics develop into more important sectors within the province.

6.5.5 Business tourism (meetings, conferences and events)

A sub-sector of business travel is business tourism, which forms part of the "MICE" and Infrastructure cluster of the tourism growth strategy (**Section 4.7.9**). The provincial government intends to use the infrastructure created in and around Polokwane for the hosting of the 2010 FIFA World Cup to attract events and conferencing to the city in future.

The marketing exposure during the event as well as the smooth running of all the arrangements in Polokwane during the event has already started this process, and we expect that growth can be expected in this market going forward.

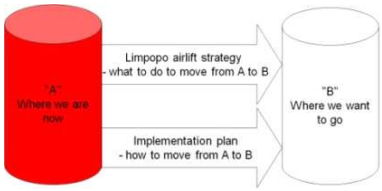
The air access available through the Polokwane International Airport can act as an additional benefit from the perspective of potential event organisers. The airport has shown during the World Cup that it is able to handle additional unscheduled flights if required.

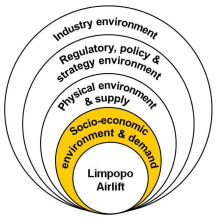
6.5.6 Summary of business travel demand potential

Given the discussion above, the potential for business travel to and from Limpopo can be summarised below:

Table 6.5: Aviation passenger demand potential from business travel

Sector	Short term	Medium term	Long term
Mining & mining beneficiation	Lephalale and Thabazimbi areas have some business travel potential, though mines currently use their own aircraft. Similar situation in Phalaborwa	As the Sasol petrochemical plant and the Medupi Power station start operating, demand for business travel to Lephalale area may increase to the extent that small scheduled flights may be implemented – similar to the current situation in Phalaborwa. The increased mining operations in the Tubatse area may create some business travel demand, though it is expected that the mines will make use of their own aircraft	The growth in the Lephalale economy as a result of the mining activities may result in increased demand from business travellers from elsewhere looking after their interests in the area. Additional beneficiation operations around the Tubatse area may increase demand for limited business travel by scheduled air service – similar to Phalaborwa.
Agriculture	Very little demand for passenger air travel	Increased agro-processing in the Vhembe district may create demand for air travel into the northern parts of the province to a limited extent	Significant agro-processing operations in the northern parts of Limpopo may require the introduction of scheduled services into a destination such as Thohoyando





Sector	Short term	Medium term	Long term
Government departments	Government officials travel regularly between Polokwane and Gauteng, and incentives to rather use air travel will increase the demand for business air travel.	Given Polokwane's central location and the size of the province, there may be a demand for air travel between Polokwane and major centres some distance away, such as Lephalale, Thabazimbi, Phalaborwa and Musina.	
Other sectors	Limited demand for passenger air travel	Growth in the economies of Polokwane and Lephalale may result in a limited increase in the demand for passenger air travel	The improved economic situation may result in increased numbers of business travellers to and from Polokwane making use of air travel, though it is expected to be to a limited extent
Business tourism	Good growth potential for Polokwane in the short, medium and long term, as the infrastructure and facilities were established for the World Cup.		

Source: Grant Thornton

In the short term, limited demand is expected in Lephalale, with Polokwane having the potential to increase business travel from government officials.

In the medium term, growth is expected in Polokwane and Lephalale, with limited demand from the Vhembe district.

In the long-term, there is good potential for business travel to and from Polokwane and Lephalale, with limited potential in the Tubatse and Thohoyandou areas.

6.6 Limpopo's tourism attraction value as a driver for leisure aviation travel demand

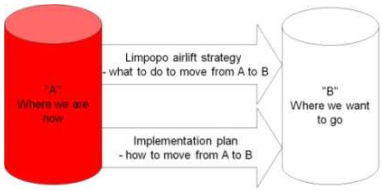
As identified in the provincial Tourism Growth strategy (**Section 4.7.9**) the Limpopo province has vast attraction value from an environment and conservation perspective, and as such should be promoted as an ecotourism destination.

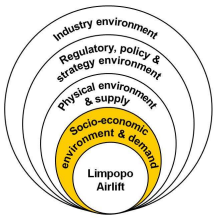
6.6.1 Nature

There are 3 national parks within the province (Kruger, Mapungubwe and Marakele), with two of them forming part of Transfrontier Conservation Areas (**"TFCAs"**) (i.e. the Limpopo Shashe TFCA and the Greater Limpopo TFCA). In addition, the province is host to three UNESCO-recognised biosphere reserves, i.e. the Waterberg Biosphere, the Vhembe Biosphere and the Kruger to Canyon Biosphere. In addition, there are 7 provincial parks and a further 23 nature reserves (including private nature reserves) in the province, as well as two RAMSAR sites. Almost 30% of the province's land mass comprises game farms, nature reserves and protected areas.

The natural environment of the province forms the backbone of its attraction value, with most of the activity clusters making use of it in some form to attract visitors.

In the 12 months ending March 2010, more than 500 000 visitors (both day and overnight visitors) entered the gates of the 3 national parks within the Limpopo province (**Figure 6.6**). About 24 000



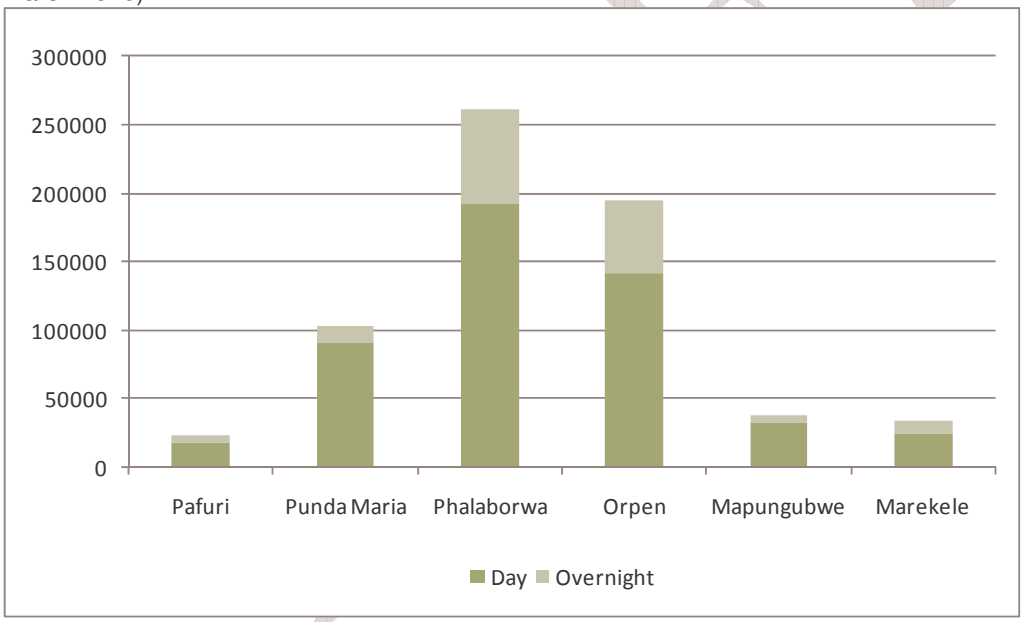


visitors entered Marakele national park within the Thabazimbi local municipality[9], while about 32 000 entered Mapungubwe in the Musina local municipality. The rest of the visitors entered the Kruger National Park through the Pafuri gate in Mutale (about 18 000 visitors), the Punda Maria gate in Thulamela (about 91 000 visitors), the Phalaborwa gate in the Ba-Phalaborwa municipality (about 193 000 visitors) and the Orpen gate in the Maruleng municipality (about 142 000 visitors).

The majority of visitors to the parks are South African, as illustrated by the pie graphs in Figure 6.4. Currently both Phalaborwa and Orpen have air access from Johannesburg, which may account to some extent for the larger proportion of visitors at these gates.

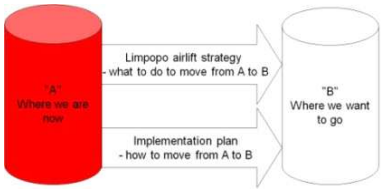
The bulk of arrivals at the gates mentioned above are day visitors (as illustrated by **Figure 6.7** below). This means that either they live close to the gate, or are staying at an accommodation establishment nearby. Given the proportion of arrivals that are from within the Limpopo province (**Figure 6.7**), the former is the most likely scenario, and therefore the number of potential visitors that may make use of passenger aviation to reach the entry gates further north are limited.

Figure 6.6: Day visitors vs overnight visitors arriving at National Park gates in Limpopo (Year ending March 2010)



Source: SANParks

[9] Though a large portion of Marakele falls within the Lephalale municipality, the gate is within the Thabazimbi local municipality.



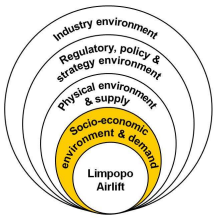
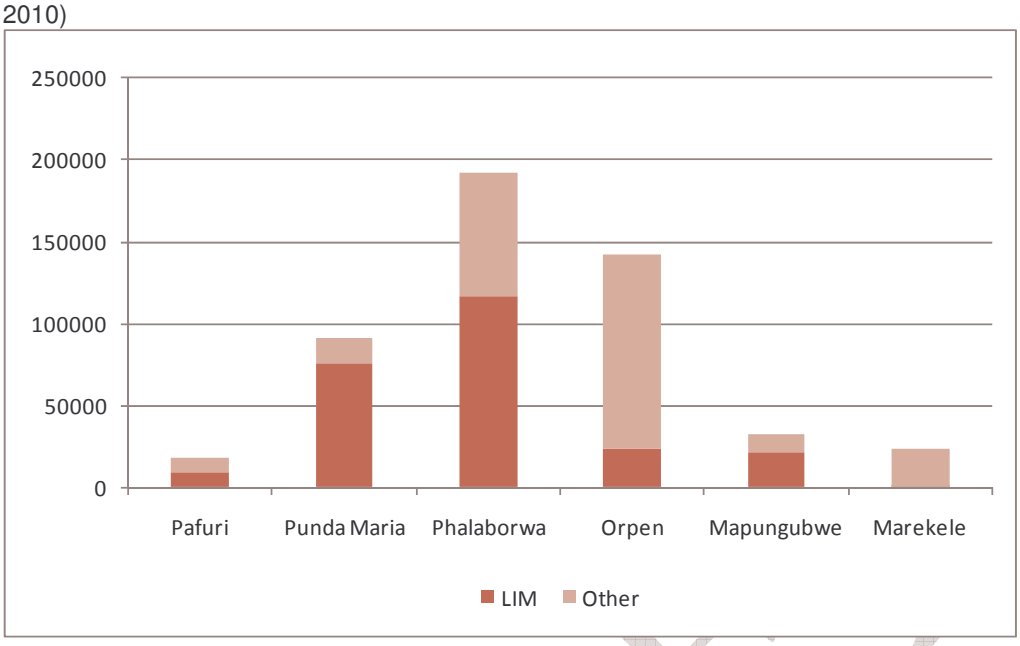
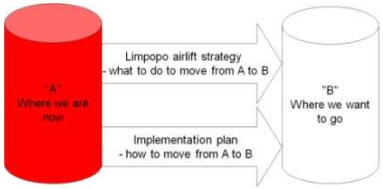


Figure 6.7: Limpopo vs Other visitors arriving at National Park gates in Limpopo (Year ending March 2010)



Source: SANParks



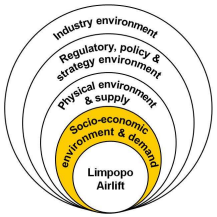
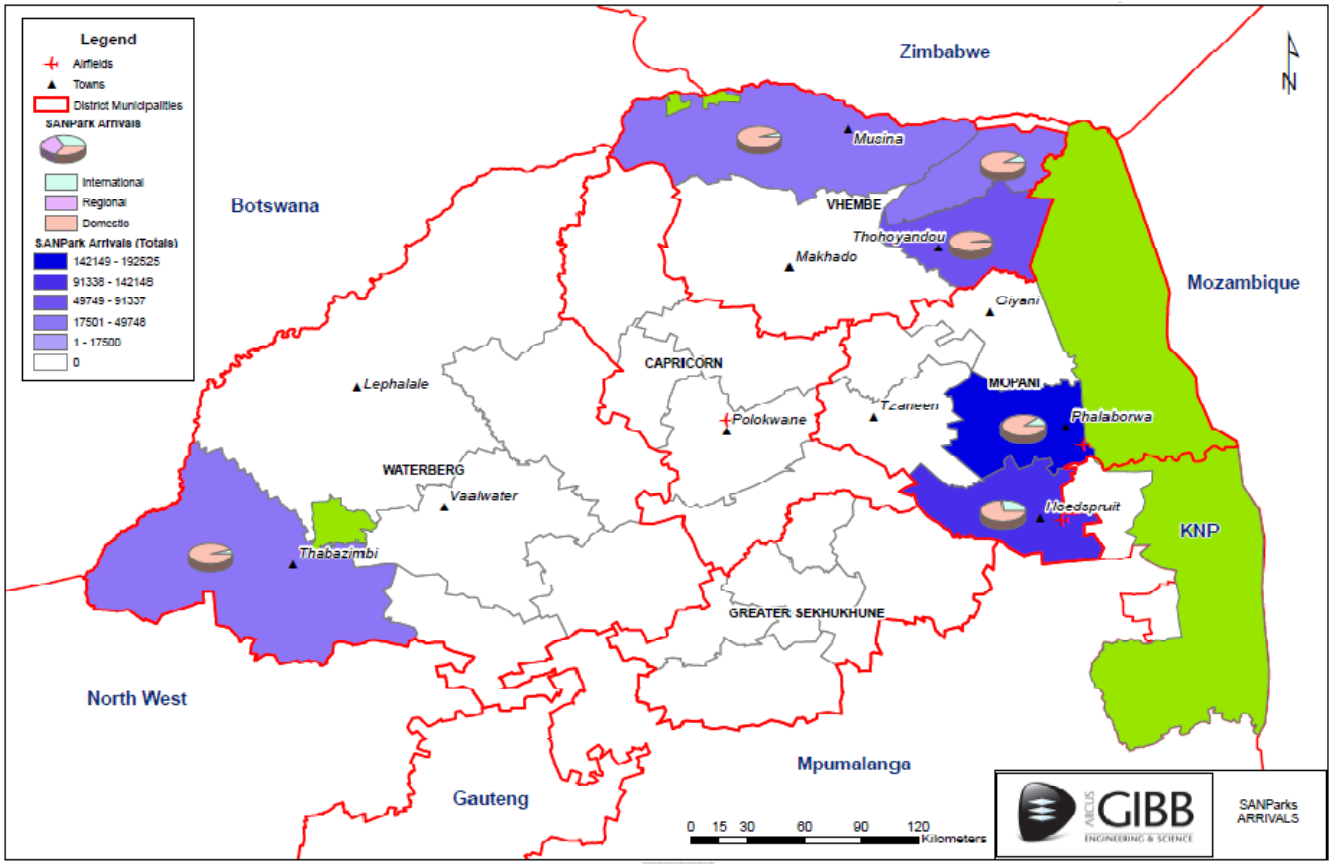
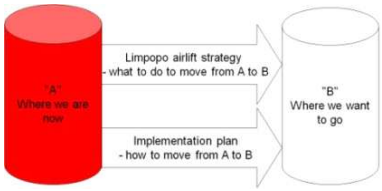
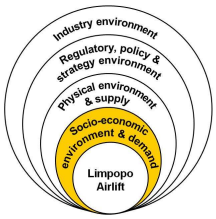


Figure 6.8: Arrivals at various National Parks in Limpopo, by origin



Source: SANParks





6.6.2 Culture

Limpopo is also home to the Mapungubwe Cultural Landscape – one of the country's seven World Heritage sites. This site was home to South Africa's first kingdom, Mapungubwe, which lasted for an estimated 400 years before it was abandoned in the 14th century. Valuable archaeological artefacts have been discovered in the area, which bears testament to trading activities with Chine, India and Egypt, involving gold and ivory.

In addition to Mapungubwe, the Limpopo province has another World Heritage site in the form of Makapan (close to the N1 near Mokopane), and has 28 other registered heritage sites.

6.6.3 Activities

The activity clusters group the potential activities that may draw visitors to the Limpopo province.

With 'golf and game' being a cluster on its own, there is a strong emphasis placed on golf to attract visitors to the province – in particular around the Bela-Bela / Modimolle area. The Hans Merensky Golf Course in Phalaborwa is also a very popular choice for visiting golfers.

Similarly, the hunting industry has a cluster of its own. This industry was estimated to contribute about R662 million to the Limpopo economy in 2008, and Limpopo is the province that attracts the bulk of hunting in South Africa.

Family recreation is another cluster, which aims to capitalize on the existing resorts in the province (e.g. former Aventura resorts, such as the hot springs in Bela-Bela) and planned developments aim to increase the potential of the province to attact families to the province.

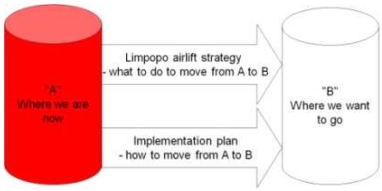
In the special interest cluster a number of activities are grouped together, of which many are nature-based. Activities such as birding, rock-climbing, 4x4 trails, etc. all form part of this cluster and enhances the province's attraction value for both visitors that have those particular interests and ordinary leisure visitors looking for something to do.

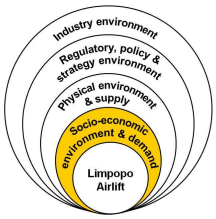
6.6.4 Accommodation

With regards to the tourism infrastructure required to accommodate visitors, Limpopo has an estimated 33 000 beds in about 13 000 rooms/units. The geographic distribution of these facilities is illustrated by **Figure 6.9**.

The Polokwane local municipality has the largest proportion of rooms/units available in Limpopo, followed by the Bela-Bela local municipality, the Maruleng local municipality, the Makhado local municipality and the Greater Tzaneen local municipality. The Waterberg district has the highest concentration of tourism accommodation availability, with almost 4 300 rooms/units available, followed by the Mopani district with 3 200 rooms/units and the Capricorn district with 2 900. Next is Lephalale with 740 and Ba-Phalaborwa with 680 rooms/units.

The availability of rooms/units can be used as a rough indicator of where the most visitors to the province go to, as the accommodation supply in these areas must have developed to keep up with the increasing demand. Therefore it can be assumed that Polokwane attracts the largest proportion





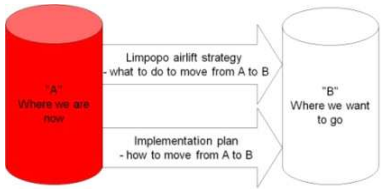
of visitors to the province, followed by Bela-Bela, Maruleng, Makahado and Greater Tzaneen. However, because of the strong business linkages in Polokwane, it is assumed that many visitors to Polokwane visit for business purposes, and therefore the leisure demand is concentrated in Bela-Bela, Maruleng, Makhado and Greater Tzaneen.

6.6.5 Planned new tourism projects

As mentioned in Section 4.7.9, several investment projects have been identified for various nodal and icon development in the province. Most of these projects are aimed at increasing the potential of the province to attract leisure tourism. **Table 6.6** lists the projects within each of the municipalities. No projects are planned in the municipalities of Thabazimbi, Mookgopong, Aganang, Molemole, Greater Giyani, Maruleng, Makhuduthamaga, Fetakgomo or Elias Motsoaledi.

Table 6.6: Planned Tourism Projects, by Municipality

District Municipality	Local Municipality	Current mining activities
Waterberg	Lephalale	Mokolo Dam, Marakele/Welgevonden and D'Nyala
	Modimolle	Nylsvlei
	Bela-Bela	Rust De Winter Dam
	Mogalakwena	Doorndraai dam, Makapan's Valley, Masebe, Percy Fyfe/Witvinger
Capricorn	Polokwane	Links with SADC for shopping & medical
	Blouberg	Wonderkop / Blouberg / Langjan, Makgabeng
	Lepelle-Nkumpi	Lekgalameetse / Wolkberg / Mafefe
Vhembe	Makhado	Dzata / Fundudzi, Zoutpansberg conservancy
	Musina	Mapungubwe, Musina
	Mutale	Makuya, Nwanedi
	Thulamela	Dzata / Fundudzi
Mopani	Greater Letaba	Modjadji
	Greater Tzaneen	Lekgalameetse / Wolkberg / Mafefe
	Ba-Phalaborwa	Muti wa va Tsonga
Greater Sekhukhune	Greater Marble Hall	Flag Boshielo Dam
	Greater Tubatse	Tjate, De Hoop Dam



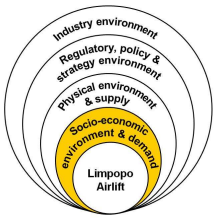
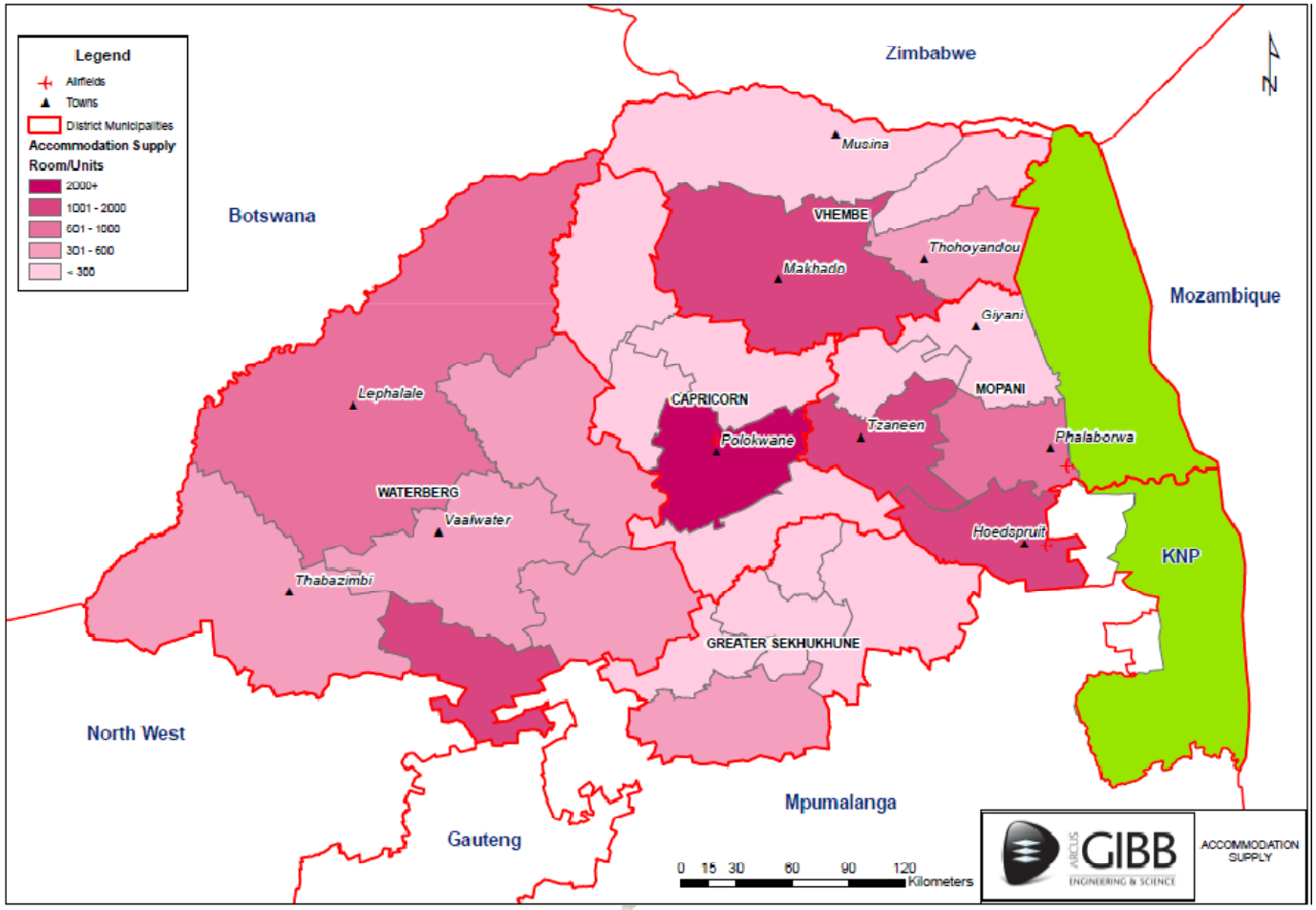
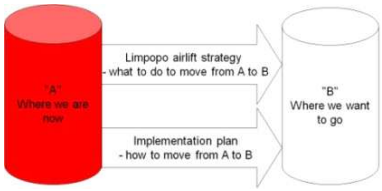
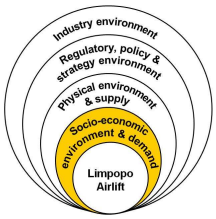


Figure 6.9: Number of tourism accommodation rooms / units, by local municipality



Source: Limpopo Tourism & Parks Accommodation Guide 09/10





6.6.6 Summary of leisure tourism demand for passenger aviation

Limpopo has potential attraction value from a leisure tourism perspective – particularly as a result of its natural resources and the activities that are possible as a result of this.

From an aviation demand perspective it is expected that the demand for ecotourism destinations will be limited and in smaller numbers at a time, which limits the opportunity for large-scale passenger aviation into the far northern and eastern parts of the province.

From a passenger aviation perspective, the areas that currently attract larger numbers of visitors (as envident through larger accommodation availability) are either already being served by scheduled flights (Maruleng served by Eastgate airport, Greater Tzaneen served by Polokwane and Phalaborwa airports, Makahdo served to some extent by Polokwane airport) or is too close to its key source market for aviation to be a viable alternative (Bela-Bela).

It is expected that with the development of new resorts, there will be capacity to attract greater numbers of leisure visitors to the destinations further from Gauteng, and that areas like the Vhembe district and Lephalale may require scheduled passenger aviation services. However, this is only expected in the long term, as there is limited funding to implement new projects in the short term.

In respect of leisure tourism it appears that there are opportunities for increasing the numbers that fly in existing areas of importance for leisure rather than creating new routes/airports.

6.7 Other reasons for travelling and the demand for passenger aviation

Apart from business and leisure travel, people can travel to visit friends and family, for medical reasons, for religious purpose or other reasons such as to go and work somewhere else.

6.7.1 VFR travellers as potential aviation passengers

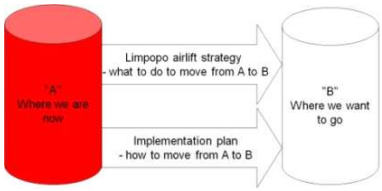
The majority of domestic trips to Limpopo is for the purposes of visiting friends and relatives, and often the reason is that a former resident of Limpopo has relocated to Gauteng and visits his/her family on a regular basis. The average spend on VFR trips is not very high, as these travellers often also support the family that remains in Limpopo, and therefore do not want to spend too much on travelling back to visit them.

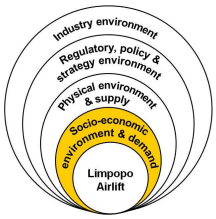
We therefore believe that there is very little demand for air travel that may be derived from this market.

The Stats SA Community Survey of 2007 found that the greatest number of people live in the Thulamela municipality (almost 340 000), followed by the Polokwane municipality (339 000), the Makhado municipality (270 000) and the Greater Tzaneen municipality (209 000). Should any VFR visitors be in a position to afford air travel, it is believed that they would consider direct routings to these municipalities, of which currently only Polokwane has an airport.

6.7.2 Medical travellers as potential aviation passengers

Basic healthcare services have improved throughout the province over the last 15 years, which means that residents do not have to travel that far for medical attention. However, it is assumed that





not many people in the province can afford private healthcare (refer to **Table 6.2**), and as such is not likely to be able to afford travelling by air to visit medical facilities in either Polokwane or Gauteng. The potential for medical travel out of the province (to Gauteng) is therefore relatively limited.

Though some of the medical facilities in Polokwane are up to the standard of facilities in Gauteng, not all medical procedures can be performed in Limpopo's capital, which limits its ability to attract visitors for medical reasons. However, given the status of medical facilities in neighbouring countries, there is an opportunity to create linkages to these countries to provide them with an alternative medical destination instead of Gauteng.

6.7.3 Religious travellers as potential aviation passengers

Every year over Easter, there is a religious gathering of the Zionist Christian Churce at Moria – between Polokwane and Tzaneen – that attract many visitors from all over the country. However, most of these visitors travel from Gauteng and elsewhere by bus, as they cannot afford to travel by air. There may be a limited potential to attract the more affluent travellers to convert to air travel, but this is a once-a-year event, and not a sustainable demand from religious travellers.

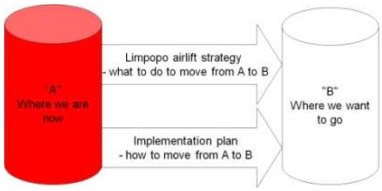
6.7.4 Summary of other demand for passenger aviation

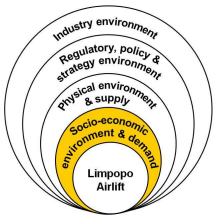
There is limited potential demand for passenger aviation from visitors that travel for purposes other than leisure or business.

6.8 Determining the potential for passenger aviation in Limpopo

As a result of the lack of statistics, data and hard facts about passenger aviation in Limpopo, we developed a scoring system to determine the potential for passenger aviation in the Limpopo province. Given that the province is so big, we expected that there may be demand for more than one airport in the province that provide passenger services, and therefore the basis of our scoring system was the 25 local municipalities within the province.

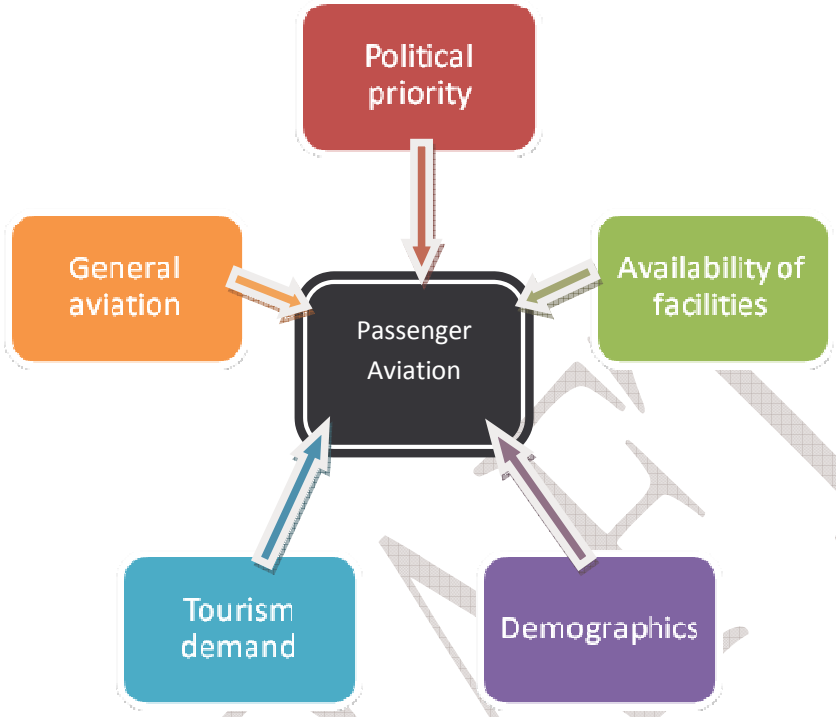
Each of the municipalities has been awarded a score based on a variety of factors. A scale of 1 to 5 was used, where 1 is very poor, and 5 is excellent.





6.8.1 Factors in the final score

The diagram below provides a graphical illustration of the various factors that were taken into consideration to determine the potential of a particular municipality for passenger aviation.



Each of the factors is represented as a map layer, and these are explained in more detail below.

6.8.2 Political priority

The map indicating political priority is provided in Section 4.

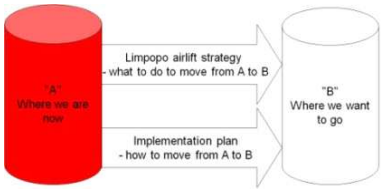
6.8.3 Physical facilities

The map indicating political priority is provided in Section 5.

6.8.4 Demographics

To provide an indication of the potential demand for passenger aviation from the local residents, the demographics of the municipalities were considered in terms of the residents' income.

The demographics map layer is comprised of two components, i.e. the percentage of residents earning an income (with a higher score the higher the percentage) and the number of residents earning more than R12 800 per month. **Table 6.7** provides the scoring criteria that were applied to each of the components.



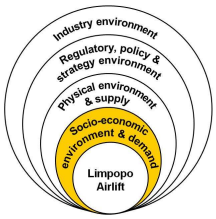
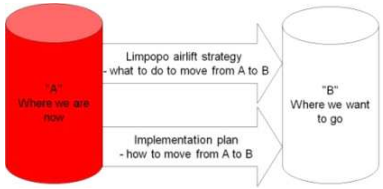


Table 6.7: Scoring criteria for demographic components

Score	% of residents earning an income	Number of residents earning above R12 800 per month
1	0-20%	0-500
2	21-40%	501-750
3	41-60%	751-1500
4	61-80%	1501-3000
5	81%+	3000+

The average score for the two components determined the final score for the demographics of the municipality (illustrated by **Figure 6.10**).

From a demographic perspectice, the residents of Thabazimbi and Polokwane are most able to support passenger aviation.



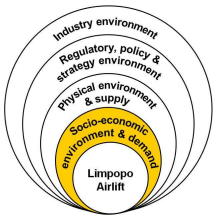
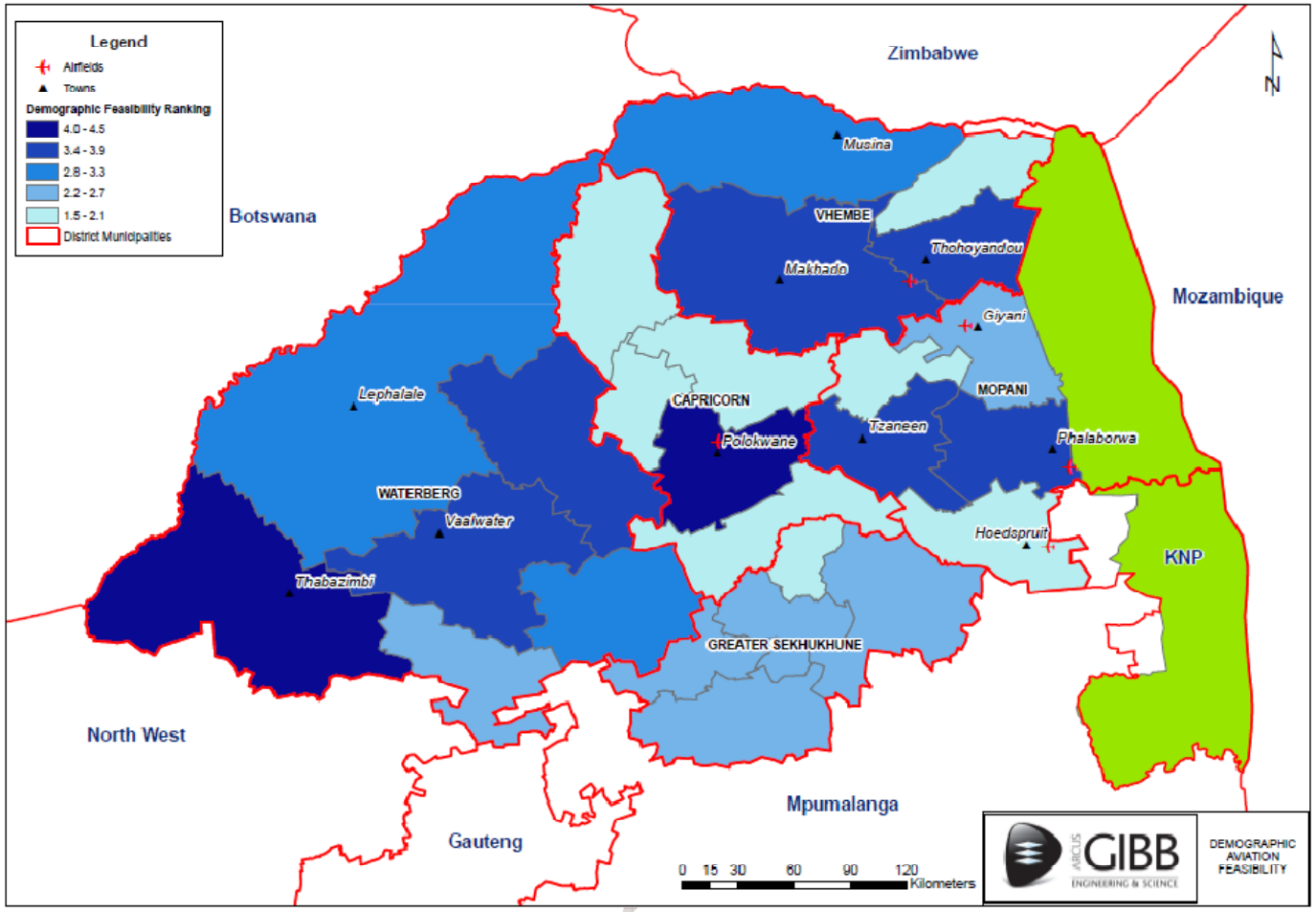


Figure 6.10: Demographic map layer, by local municipality



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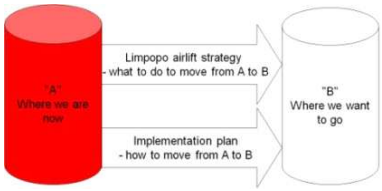
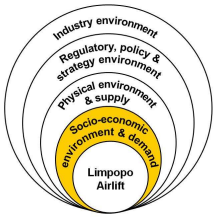




6.8.5 Tourism

To provide an indication of the tourism potential of a municipality, 4 components were considered, i.e. the business & leisure demand for passenger aviation in that municipality, the accommodation supply, the number of tourism development projects proposed for the municipality, and lastly its ecotourism potential to ensure alignment to the provincial tourism growth strategy.

To calculate the score for tourism demand, leisure and business travel were considered separately. For the business travel score, the current and potential status of the economy was each of the municipalities was considered. Each municipality was given a score out of 5 for the current economic performance in terms of mining, agriculture, manufacturing and other economic sectors. Similarly, a score was given for the potential future economic performance of the municipality in terms of the same economic sectors. The average of these scores result in the overall economic performce score of the municipality. However, not all economic activity results in aviation passenger demand, and therefore the potential of the municipality's economy to generate business travel by air was applied to calculate the final score for business travel. **Table 6.8** provides an example of the business travel scoring of the Lephalale municipality.

Table 6.8: Calculating the business travel score – example of Lephalale municipality

Economic sector	Current performance score	Potential future performance score	Overall Performance score	Aviation Passenger demand potential	Overall business travel score
Mining	4	5	3,9	3	3,5
Agriculture	4,5	4			
Manufacturing	1	5			
Other	3	5			

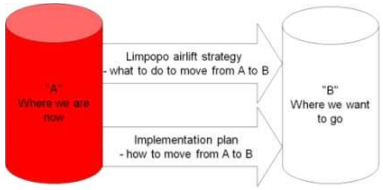
Leisure demand was calculated in a similar manner, with the current and potential demand for leisure travel to a municipality being given a score, and then potential for passenger aviation demand being applied to calculate the final score. The overall tourism demand score is an average between the leisure and business travel scores.

The scoring criteria for accommodation supply and the number of tourism development projects are outlined in **Table 6.9**.

Table 6.9: Scoring criteria for tourism components

Score	Accommodation supply (number of rooms/units)	Number of tourism development projects
1	Less than 300	0
2	301 – 600	1
3	601 – 1 000	2
4	1 001 – 2 000	3
5	2 000+	4

For the final component, each municipality was awarded a score based on its ecotourism potential using the same scoring system. **Figure 6.11** represents the results of the tourism scoring.



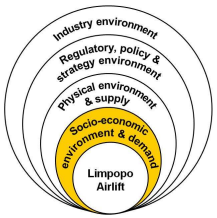
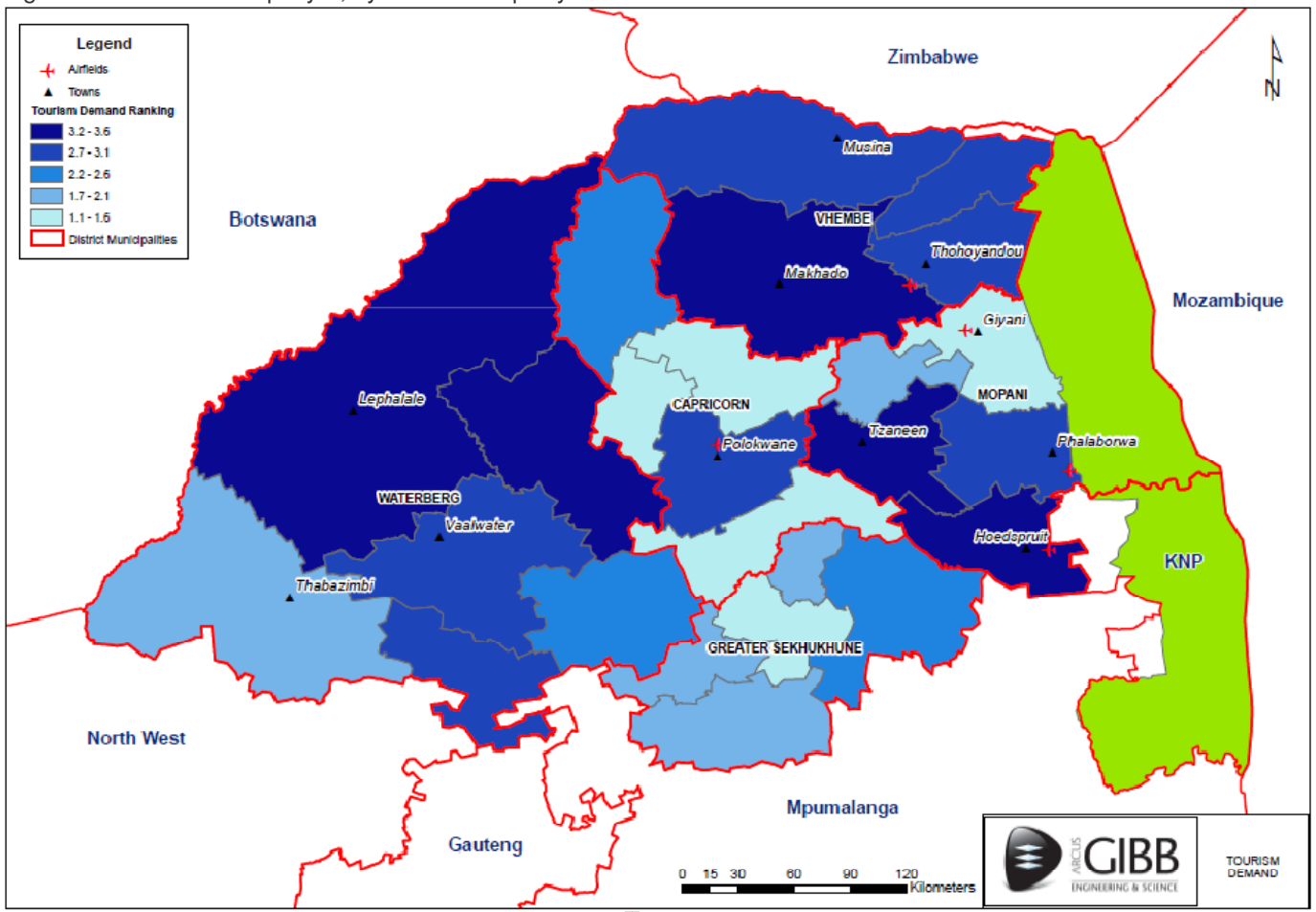


Figure 6.11: Tourism map layer, by local municipality



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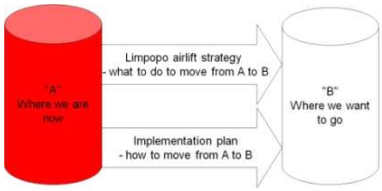
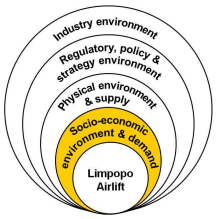




6.8.6 General aviation

Passenger aviation is not just dependent on scheduled services, and as such the general aviation industry can generate passenger air travel through charter and private flights. As mentioned previously, some tour operators now provide tours by small aircraft into the Limpopo province and other areas because of the possible time saving it provides.

General aviation can also be a source of visitors from a tourism perspective, with pilots flying into the destination using their own aircraft as opposed to their own motor vehicles to drive to the destination.

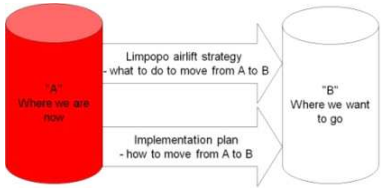
To understand the general aviation situation within a local municipality, we felt that it is important to consider the number of aircraft registered within that municipal area, as well as the availability of airports and airfields where pilots can land. **Table 6.10** provides the scoring criteria that were applied to each of these components.

Table 6.10: Scoring criteria for general aviation components

Score	Number of registered aircraft	Number of airfields
1	0 – 10	0 - 5
2	11 – 25	6 - 10
3	26 – 40	11 – 15
4	41 – 60	16 - 20
5	61+	21+

The average score for the two components determined the final score for the general aviation layer of the municipality (illustrated by **Figure 6.12**).

From a general aviation perspective, the Maruleng, Thabazimbi, Lephalale and Modimolle municipalities are the best equipped to handle general aviation.



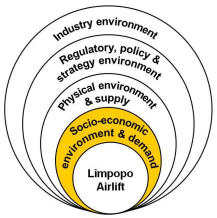
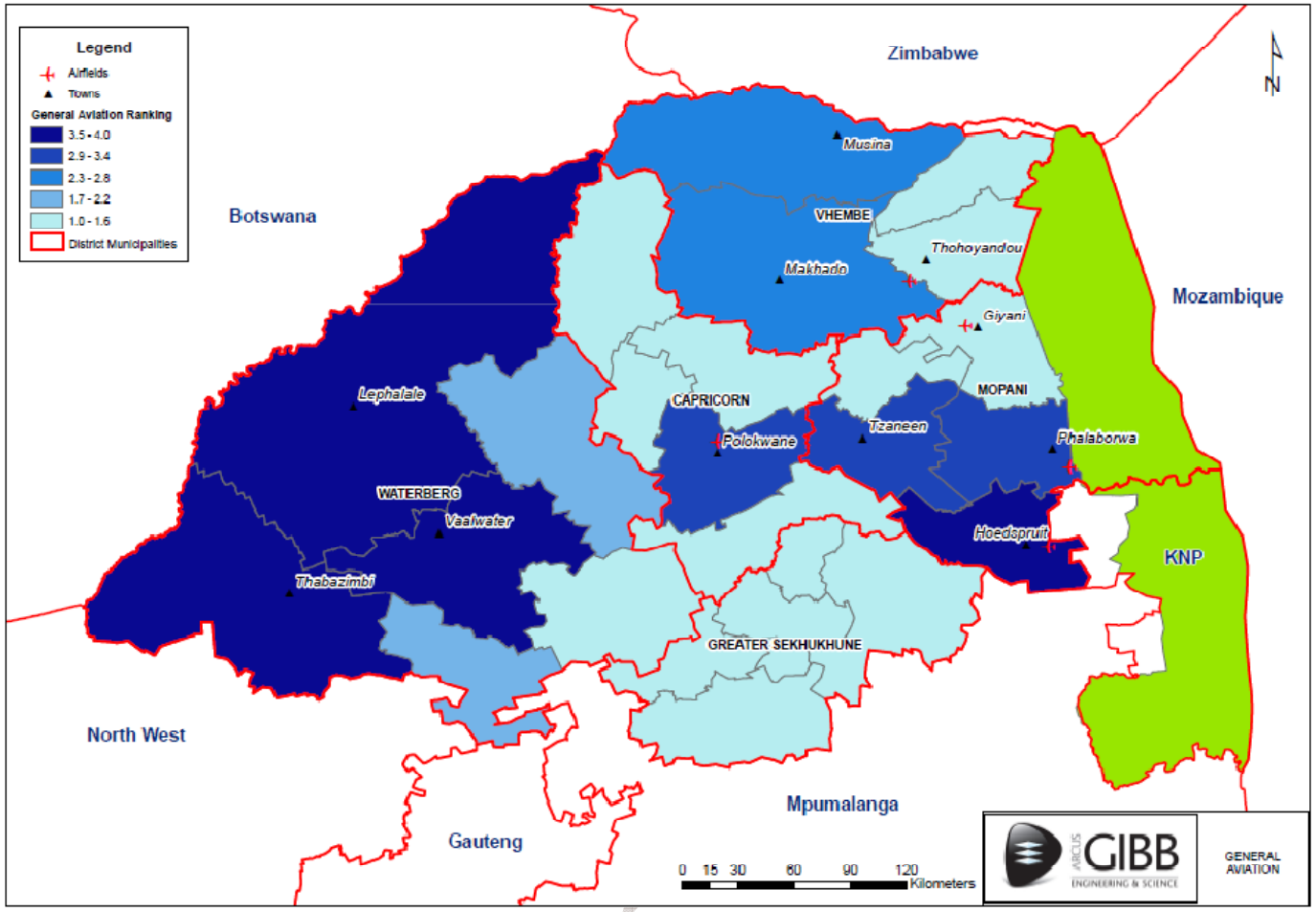


Figure 6.12: General aviation layer, by local municipality



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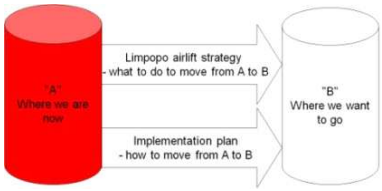
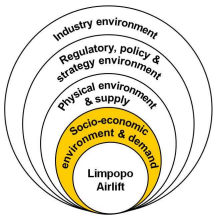
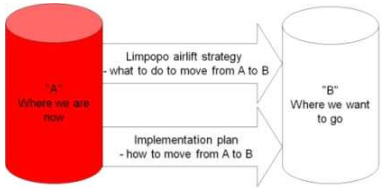




6.8.7 Summary of Passenger Aviation potential

The average of the various layer scores was calculated for each municipality to determine those with the higest potential for passenger aviation.

Figure 6.13 illustrates that Polokwane and Lephalale have the most potential for passenger aviation, followed by Ba-Phalaborwa and Maruleng. Thabazimbi and Thulamela follow those municipalities.



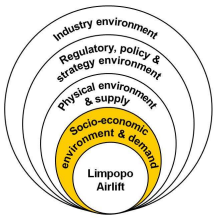
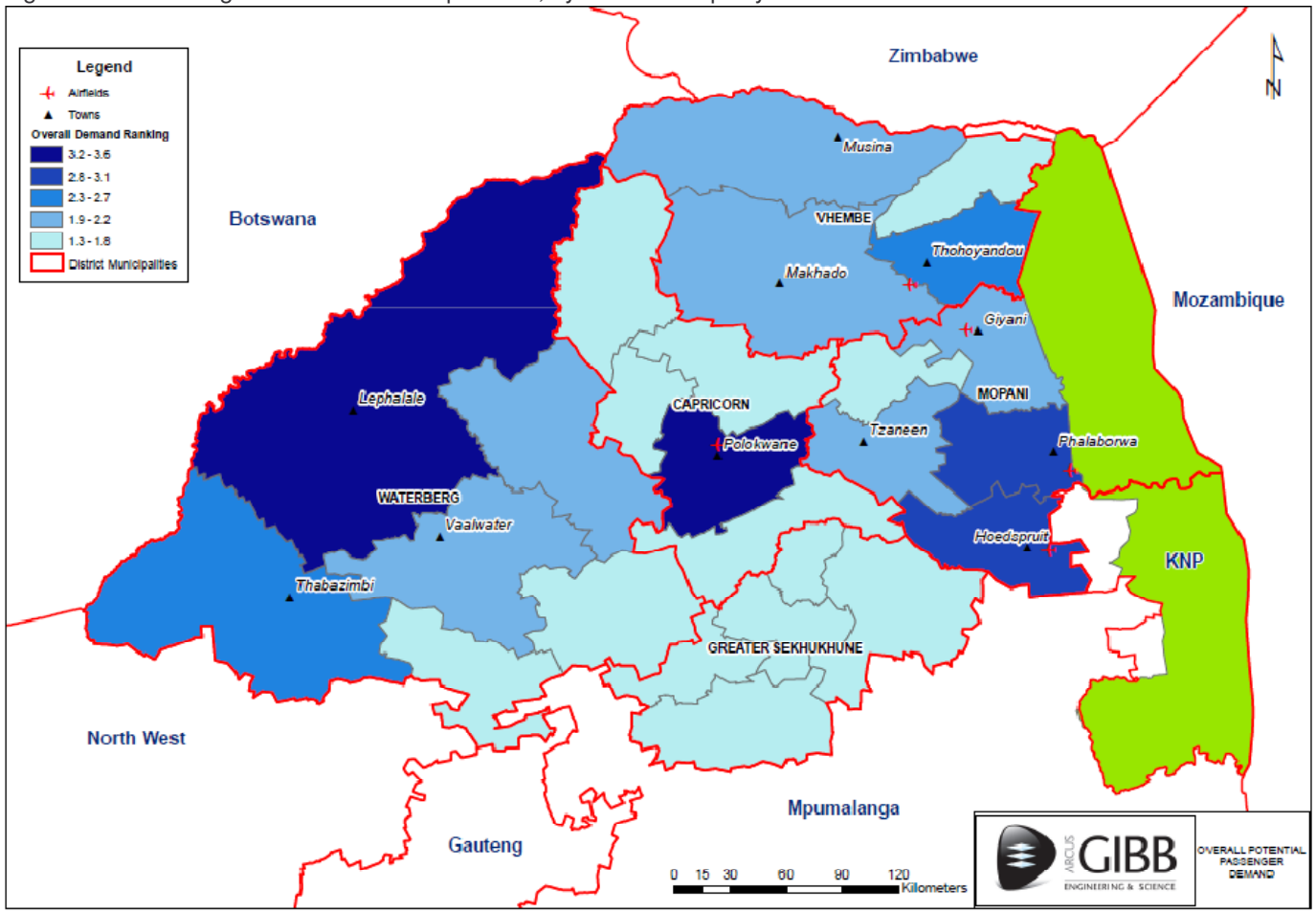


Figure 6.13: Passenger aviation demand potential, by local municipality



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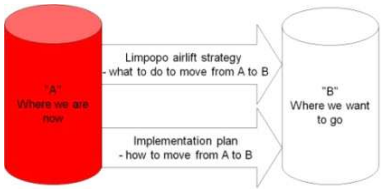
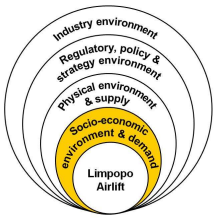




6.9 The Nature of Air Freight

The growth in airfreight over the last five decades has led to a diversification in the types of services and also the markets that are served. Most goods carried by air are high-value low-density cargoes, or time-sensitive goods such as perishables. The share (by value) of international freight traffic transported by air has increased. ICAO estimated airfreight accounts for about 40 percent of international exports by value, but the percentage based on weight remains close to one percent.

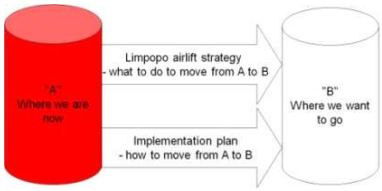
The basic commodity groups transported by air are:

- capital and transport equipment,
- computers, telecommunications equipment and other technology products,
- apparel and textiles,
- perishables and refrigerated goods,
- intermediate goods for distributed manufacturing, and
- other consumer products.

Overall, air cargo accounted for 34,6 percent of non-land international trade but only 0,6 percent of the weight (circa 2005/2006). The average value-to-weight ratio of air shipped goods is 31 times as high as that of vessel-shipped goods. The variation in the proportion of traded goods that are shipped by air (air-intensity) can be quite large for products with similar value-to-weight ratios, however. For example, motor vehicle bodies, valued at $9.14 per kilogram (or specialty motor scooters valued at $9.30 per kilogram) are shipped almost exclusively by surface freight but 60 percent of specialty chemicals, printed matter, or even specialty leathers (with a roughly equivalent value for weight) are shipped by air. It is important to note that in their World Air Cargo Forecast for 2008-2009 Boeing states that goods to the value of $16/kg and upwards are more likely to be transported by air.

The degree of variation in value-to-weight of specific products even within these detailed categories may play a role in determining the degree of air intensity but the bulkiness of the product and size of shipment may also be important. Perishability plays a role in the decision to ship by air. For example, approximately 80 percent of the international trade in cut flowers travels by air as does a similar proportion of specialty meats. Two-thirds of the fish traded internationally are shipped by air. Almost all of the trade in large live animals goes by air. Singapore, for example, imports much of its milk, non-tropical fruits, and even some types of mass marketing meat, by air.

Figure 6.14 reflects the general categories of goods transported by air.



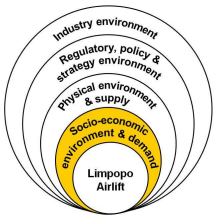
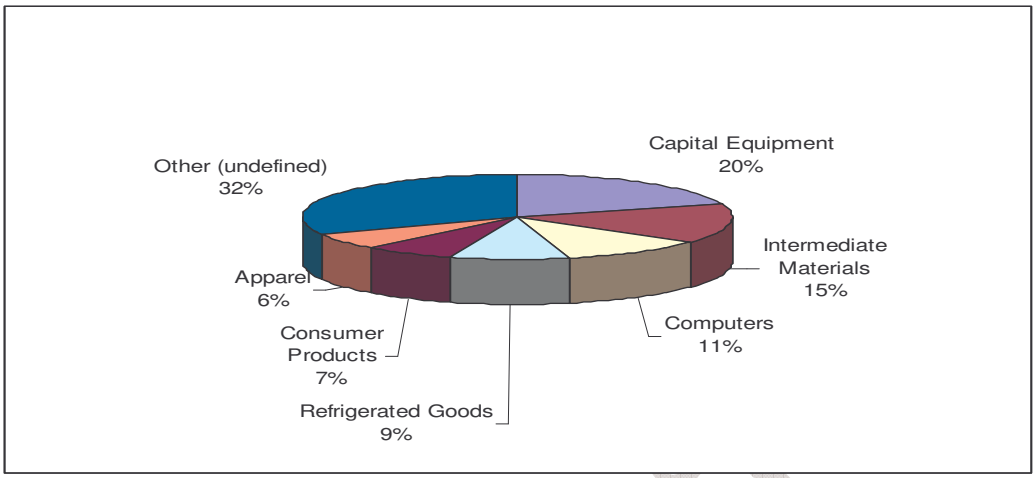


Figure 6.14: Goods Transported by Air



The three largest defined categories are capital equipment (20%), intermediate materials (15%) and computers (11%) made up nearly half (46%) of the commodities transported in 2005.

6.10 Types of air cargo services

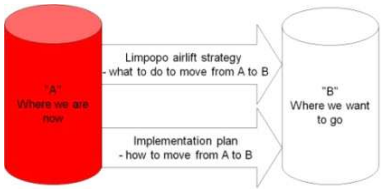
Air cargo can be characterized according to the types of services required. There are currently four such categories, i.e:

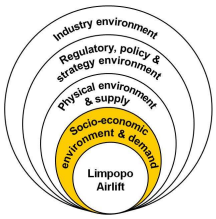
- emergency freight,
- high-value freight,
- perishables, and
- routine freight.

Emergency freight includes time-critical shipments of spare parts and business and financial documents (where these cannot be transmitted electronically). **High-value freight** includes gold, jewelry, currency, artworks, electronic components and luxury vehicles. These utilise airfreight for security as well as speed. **Perishables** include fresh seafood, fruits and vegetables, pharmaceuticals and cut flowers. Airfreight provides most of the value added and usually accounts for a majority of the delivered price. **Routine freight** is the residual from which new categories are emerging. Among these are the rapid replenishment shipments, which are used to limit the amount of inventory when demand is volatile, for example in the markets for fashion garments or apparel with short seasons. It also applies to a portion of the just-in-time manufacturing process in which a short lead-time is combined with a flexible production line. Related to this are the missed shipment cargoes, which are cargoes that would normally use a slower, less costly mode of transport but because of delays in production or other problems have to be rushed to meet agreed delivery dates.

6.11 Demand for air freight

The demand for airfreight is limited by cost which is typically 4–5 times that of road transport and 12–16 times that of sea transport. According to the World Bank Group the following costs are applicable to the various modes (rail excluded):





- Airfreight = $3.50 per kg for 15,000 kilometers,
- Road = $0.80 per kilometer for 15 tons,
- Sea = $3,500 for 15 tons for 15,000 kilometers

Since airfreight rates range from $1.50 - $4.50 per kilogram, the value of air cargo typically exceeds $4.00 per kilogram. In South Africa the General Sales Agent of Egypt Air indicated that that carrier typically charges between $2.30 and $2.80 per kilogram for freight. These rates are applicable to both freighter only operations as well as on belly freight. Converted to South African Rands it means that whatever product is shipped by air must be able to absorb air transport rates from between R10.80 and R32.40 (at an exchange rate of R7.20 to the $).

During discussions with the MD of SA Airlink Cargo some figures were put forward based on the company's experience with freight. These figures give some perspective on what is realistically happening in the local freight rate market.

Sometimes SA Airlink transports grapes from Upington International Airports. Grape exporters are prepared to pay a maximum of $1.50/kg for the 3 week peak period around Christmas. This rate is heavily dependent on the prices in Europe. The rest of the season they could not afford more than $1.10/kg for air freight. The going rate for flowers from Kenya to Tokyo is $1.80/kg.

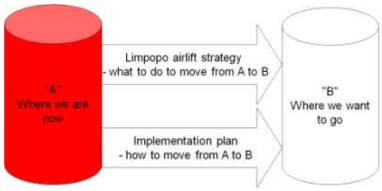
SA Airlink also charges variable rates between inbound (to ORTIA) freight and outbound freight. Inbound rates are between $2 and $3 – depending on type of freight commodity. Outbound rates are as low as $1.80.

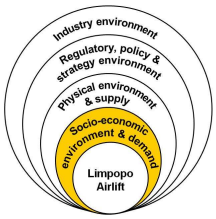
To make freight viable for SA Airlink, the aircraft load must yield around $2.20/kg.

It should be kept in mind that air freight rates vary between commodities and also on inbound and outbound traffic. Without significant inbound traffic (such as from SADC to South Africa) the outbound rates may be higher. This would obviously further impact on the products that can be carried by air.

Estimates indicate that a 50% reduction in travel time may lead to a growth of up to 5.2% in GDP. From this perspective air freight definitely has a role to play in economic growth.

Air freight can be used as part of a strategy for diversification. Manufacturers use airfreight to introduce products with shorter shelf life or to serve more distant markets with the same shelf life. Air freight can also be used when diversifying into new markets to provide reliable delivery of smaller volumes. Once the market has been established and volumes increase, the manufacturer can reconstruct supply chains based on less costly transport. Manufacturers moving up the value chain in terms of product quality will use airfreight to reduce the order cycle especially for smaller, customized orders.





6.12 Other Considerations Pertaining to Air Freight

Currently in South Africa, between 80 and 90% of freight by volume is moved by passenger aircraft (according to the State of Logistics Survey) and the remainder is moved by both scheduled and unscheduled freighters. In contrast, in other countries the split between belly freight (i.e. freight moved in passenger aircraft) and dedicated freighter aircraft is roughly 50:50. The main reason for the high percentage of belly freight in South Africa is the lack of dedicated facilities for freight aircraft, and this ratio is expected to remain high. The key disadvantage of the over-reliance on passenger aircraft for the provision of airfreight services is that it leads to poor predictability of available capacity for general air freight. This is because passengers and their baggage take preference over freight. During busy passenger periods general freight – which often constitutes perishables or urgent, high value cargo – may be "bumped" or left behind, which reduces the value proposition to customers.

The South African airfreight export market is dominated by perishables and high value exports such as diamonds, mostly originating from outside Limpopo Province. South African airfreight imports include high value items such electronic goods and specialist components. Increasing imports and exports of high value specialist components such as goods for the automotive sector is starting to dominate this market.

International operators are often able to charge less than local operators for services to and from Europe as they exploit a "paid for" return leg to reduce the export cost from South Africa.

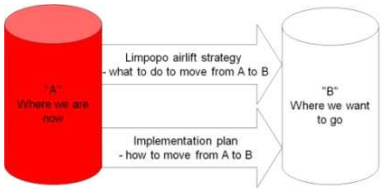
The air freight market within and between South Africa and international markets is characterized by different competitive conditions. Domestic freight is largely confined to movements of scheduled passenger services and is dominated by mail and courier customers. Freight moved into Africa tends to be strongly northbound and is dominated by mining, communication, oil and military customers. Freight operators registered in other African countries tend to have lower cost structures than South African freight operators. This is due to the weaker enforcement of safely regulations in these countries and high levies imposed on South Africa and other foreign operators by certain African countries. Poor enforcement of regulations (safety, security, etc.) within South Africa and in other parts of Africa allows non-compliant operators to undercut compliant operators.

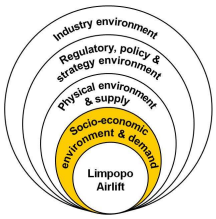
6.13 Stakeholder Consultation

Table 6.11 presents a summary of important input made during the stakeholder consultation process regarding freight related issues.

Table 6.11: Stakeholder Consultation feedback in terms of air freight in Limpopo

Stakeholder	Key inputs	Implications for Limpopo aviation strategy
Mr Inathi Nchanga, Commercial director at SA Express	• SA Express would not fly into Polokwane as a result of an internal arrangement between SAA, SA Express and Airlink that their routes would not overlap • At present, SA Express is not interested in expanding their operations in Limpopo • SA Express is primarily interested in passengers and not cargo as such	Potential competitors on routes to Limpopo will have to be airlines not associated with SAA, SA Express or Airlink
Mr Solomons of Express Air Services (EAS). EAS	• Cargo for these 3 airlines is passenger dependent and thus almost a bonus. Cargo is dumped if passenger	Passenger demand needs to be stimulated to increase



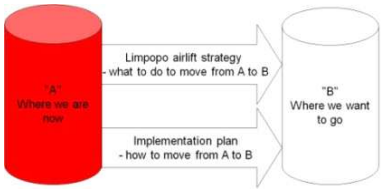


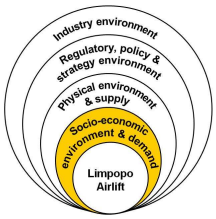
Stakeholder	Key inputs	Implications for Limpopo aviation strategy
holds the exclusive rights for freight services for BA Comair, Kulula and 1Time	volumes are high on a particular flight. • EAS does not see major growth in cargo in Limpopo, especially not from Polokwane, as the route would not be profitable. • Their airlines fly airplanes that need at least 109 pax to be profitable.	the potential interest from these three airlines
Mr Gerd von Mansberg General Sales Agent for Eqypt Air (freight), and previous CEO of now defunct Hydra Air (cargo operator)	• He regards ORTIA as the main hub and collector of freight which makes it easier to fill reserved block spaces on aircraft • He is of the view that aircraft can be scheduled if they can be shown that freight is available at the airport, i.e. at Polokwane International • Using Polokwane as a stop-over destination to or from ORTIA is unlikely to happen,and he therefore feels that there is a better chance for international movements directly to and from Polokwane if freight can be centralised at Polokwane Airport	A Polokwane – ORTIA air freight link is not an option because of costs, and if air freight is to be stimulated from Polokwane a direct freight hub would need to be established
Mr David Liebenberg Oversees the Air Freight portfolio for South African Air Freight Forwarders Association. He is also a senior manager at UTi.	• Route from ORTIA to Polokwane too short from an aircraft operating cost perspective, therefore not viable to take-off at ORTIA and land at Polokwane International Airport. • The Limpopo province is not regarded as a major source of air cargo products and therefore he does not foresee any major opportunity for expanding air freight in the province. • He feels that in order for air freight to work at Polokwane, the freight has to be relocated from ORTIA	Perceptions need to be addressed about Limpopo's potential for air cargo, while at the same time, the economy of the province should be stimulated to produce high-value export goods that can be sent with air freight, but directly from Polokwane to the end destination and not via ORTIA
Mr Alwyn Rautenbach, Managing Director Cargo, SA Airlink	• Airlink does only belly freight on the Limpopo routes, and mainly courier related items. • They would be interested in expanding operations into the rest of SADC, but the Open Skies policy in the destination countries are not applied properly. It is relatively easy for foreign airlines to fly into South Africa, but South African Airlines struggle to get frequencies to other countries. This is especially problematic in countries where there is a national carrier that the government protects. • Current Airlink freight to SADC is mainly one way – from South Africa to other SADC countries at a ratio of about 1:10 – i.e. 10 kgs to SADC and 1 kg back to South Africa. Within South Africa the ratio is also 1:10 – for every 1kg flown into ORTIA, 10 kg is flown out. • Introducing smaller aircraft is also not a viable option as achieving economies of scale is unlikely because the operational costs of smaller aircraft are more expensive per seat than those of larger aircraft.	Airlink may be interested in operating linkages between Limpopo and the rest of SADC

6.14 Air Freight Volumes in Limpopo

6.14.1 Potential Market

Determining a potential market for air freight in Limpopo is difficult given the dominance of ORTIA as a freight hub and the proximity of many areas in Limpopo to Gauteng. Therefore it was decided to estimate likely volumes based on a method of deduced reasoning. To this end two methodologies were employed. The purpose of these methodologies is to attempt to set a base year air freight volume (order of magnitude) for the province given the varied nature of information as well as age of such data:





6.6.1.1 Method 1: Use estimated national air freight tonnages as basis

- **Step 1**: Use a StatsSA Statistical report on volumes of freight and income per transport mode to determine the most likely products to be shipped by air;

- **Step 2**: Re-calculate the percentages reflected in terms of Step 1above into likely percentages per commodity type for Limpopo by excluding commodity types with low airfreight incomes out of the table;

- **Step 3**: Calculate likely volumes by using National Logistics Strategy volumes of total airfreight generated in South Africa of 522 000 tonnes in 2004 and adjust to the then 2004 GDP contribution of Limpopo Province of 6.7%. According to these calculations it means that Limpopo generated 34 974 tonnes of airfreight.

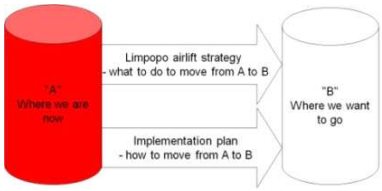
Table 6.12 below reflects the Volume and Income for South Africa in 2002

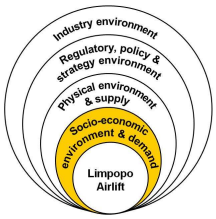
Table 6.12: Volume and Income of Freight in South Africa by Commodity and Mode (2002)

	Volume ('000)	Income (R million)								
Type of Commodity	**(Metric Tons)**	**Rail**	**%**	**Road**	**%**	**Water**	**%**	**Air**	**%**	**Total**
Livestock, fresh produce, and crops	8,892	48	2.6	1,473	79.8	213	*11.5*	111	*6.0*	1,845
Mining and quarrying products	129,139	3,478	65.2	1,573	29.5	233	*4.4*	51	*1.0*	5,335
Food, beverages and tobacco products	25,724	55	2.6	1,950	91.8	78	*3.7*	42	*2.0*	2,125
Textiles, clothing and leather products	68,102	4	0.6	459	63.0	206	*28.3*	60	*8.2*	729
Coke, petroleum,chemicals, rubber and plastic products	354,332	1,522	28.7	2,677	50.4	1,104	*20.8*	4	*0.1*	5,307
Non-metallic products	23,801	689	43.0	891	55.7	19	*1.2*	2	*0.1*	1,601
Basic metal products	25,773	970	41.2	922	39.2	461	*19.6*	0	*0.0*	2,353
Electrical machinery and apparatus, electronic communication and transport equipment	6,215	180	9.5	1,158	61.3	397	*21.0*	153	*8.1*	1,888
Furniture	3,735	7	0.5	1,293	92.4	66	*4.7*	33	*2.4*	1,399
Parcels/containers	13,055	33	0.4	1,780	22.5	4,506	*56.8*	1,610	*20.3*	7,929
Other goods	108,484	1,178	7.4	6,324	40.0	7,773	*49.1*	553	*3.5*	15,828
Total	**767,252**	**8,164**	**17.6**	**20,500**	**44.2**	**15,056**	***32.5***	**2,619**	***5.7***	**46,339**

Source: StatsSA, P7101

The table shows that in 2002 a total of just more than 767 million tonnes was transported in South Africa. Of this a total income of more than R2,6 billion was earned by airfreight. Parcels and containers was the commodity type with the highest value earned, followed by electrical machinery and apparatus. Volumes of Coke, petroleum chemicals, rubber and plastic products, Non-metallic products and Basic metal products were either at zero or very low levels.





The national Freight Logistics Strategy estimates that approximately 522 000 tons of cargo is moved by air each year. This is done through scheduled passenger services as well as through scheduled and unscheduled air freighter services. Most of the air cargo (approximately 85%) is passenger related.

Table 6.13 reflects the adjusted volumes based on the adopted methodology. It should be noted that the estimates are based on old figures in an attempt to get the various yearly figures as close to one another as possible. These figures should probably be regarded as on the conservative side, circa 2004.

Table 6.13: Estimated Air Freight Volumes in Limpopo

Type of Commodity	Volume ('000) (Metric Tons)
Livestock, fresh produce, and crops	1,515
Food, beverages and tobacco products	573
Textiles, clothing and leather products	819
Electrical machinery and apparatus, electronic communication and transport equipment	2,089
Furniture	450
Parcels/containers	21,978
Other goods	7,549
Total	**34,974**

Source: GIBB calculations

Parcels and containers (pallets) was the biggest commodity group at nearly 63%. Livestock and fresh produce, a big commodity group in Limpopo has moderate volumes of around 1 500 tonnes. To put this figure in perspective it represents 18,75 flights with an 80 ton air freighter. It should also be kept in mind that air freight is generally comprised of two thirds imports and a third exports.

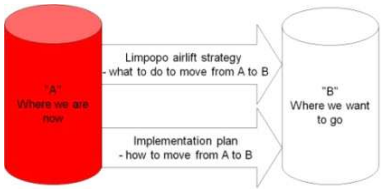
6.6.1.2 Method 2: Estimate Air Freight Flows from GIBB freight generation estimates

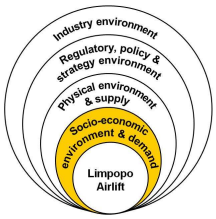
The second method entails estimating freight flows based on own (GIBB) generated freight volumes which are based on Regional Explorer model figures (GDP and GGP). For this purpose the year 2005 was used as a base year. The following steps were followed in this method:

- **Step 1**: Determine sector contribution of the 4 major freight generating activities to Limpopo GGP, i.e agriculture, mining, logging and manufacturing;

- **Step 2**: As with method 1, certain activities such as mining and logging are excluded as having significant impacts on air freight in the province. Recalculate the contributions of Agriculture and Manufacturing as being totally responsible for all air freight;

- **Step 3**: Determine the provincial air freight volumes based on the steps above and using a total estimated freight volume in Limpopo (61,406,410 tonnes as determined by the GIBB model) for 2005 to estimate a total sectoral contribution to air freight in Limpopo. It is assumed that air freight is 1% of total freight (in line with international trends, but probably optimistic in terms of South African conditions, and particularly with regard to Limpopo).





- **Step 4**: Distribute to each District Municipality based on that municipality's GGP contribution.

Table 6.14 reflects the estimated air freight volumes in Limpopo according to the above methodology.

Table 6.14: Base Year Air Freight Estimates, 2005

Sector	GGP Contribution	Estimated Tonnages	1% Air Freight
Agriculture	2.56%	1,572,004	**15,720**
Manufacturing	3.70%	2,272,037	**22,720**
Mining	25.81%	15,848,995	**0**
Forestry and Logging	0.40%	245,626	**0**
Total			**38,440**

Source: GIBB calculations

Table 6.15 reflects the freight allocation to the various District Municipalities based on the assumption that air freight is directly proportional to each district's GGP contribution to the Limpopo economy.

Table 6.15: Base Year Air Freight Volumes by district municipality, 2005

District Municipality	GGP Contribution	1% Air Freight
Mopani	23,4%	8,976
Vhembe	14,5%	5,574
Capricorn	24,8%	9,514
Waterberg	28,6%	10,975
Sekukhune	8,9%	3,402
Total		**38,440**

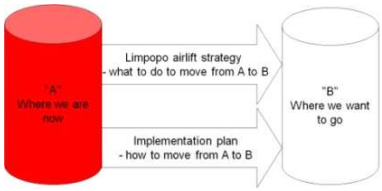
Source: GIBB calculations

The two methods employed to derive base year air freight volumes volumes do not differ markedly from each other. Based on the various assumptions that had to be used the likely base year (2004 to 2005) freight volumes in Limpopo province is estimated at between 34 974 and 38 440 tonnes. These volumes reflect imports (into the province) and exports (out of the province).

For purposes of this report the highest estimated volume of 38 440 tonnes of air freight for 2005 is used as a base value.

6.14.2 Actual Air Freight Volumes in Limpopo

Some information on actual freight volumes could be obtained from SA Airlink Cargo, as reflected in **Table 6.16**. Based on stakeholder feedback there are no freight movements to and from Eastgate or Kruger Gateway airports.



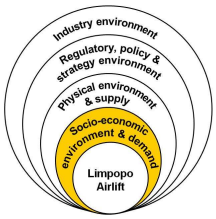


Table 6.16: Airlink Monthly freight volume (kg) to and from Polokwane

	2008			2009			2010		
Month	**Inbound**	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**	**Inbound**	**Outbound**	**Total**
Jan	3,938	551	4,489	3,249	496	3,745	2,422	1,346	3,768
Feb	5,621	896	6,517	3,461	814	4,275	3,112	687	3,799
Mar	3,857	948	4,805	4,163	924	5,087	3,674	1,243	4,917
Apr	3,633	1,219	4,852	6,441	402	6,843	5,401	970	6,371
May	4,196	1,411	5,607	4,530	889	5,419	4,421	808	5,229
Jun	4,687	908	5,595	4,208	1,048	5,256	6,437	727	7,164
Jul	3,359	920	4,279	4,310	641	4,951	3,407	1,180	4,587
Aug	3,855	1,030	4,885	5,864	1,285	7,149			
Sep	4,388	588	4,976	4,324	360	4,684			
Oct	4,673	1,867	6,540	4,225	1,449	5,674			
Nov	5,148	1,095	6,243	5,205	1,521	6,726			
Dec	4,610	1,570	6,180	4,861	978	5,839			
Total	51,965	13,003	64,968	54,841	10,807	65,648	28,874	6,961	35,835
Growth (annual)				5.5%	-16.9%	1.0%			
Growth (YTD)				3.7%	-23.9%	-1.6%	-4.9%	33.5%	0.7%

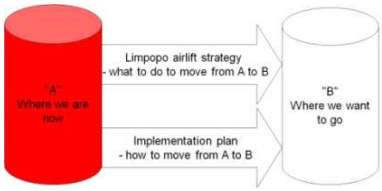
Source: Airlink Cargo

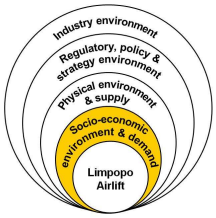
The information in the table above pertains to SA Airlink's flights to Polokwane only and shows around 65 tons per year in both directions. All freight is currently transported on passenger aircraft. The split between freight originating in Limpopo and transported to ORTIA and that transported from ORTIA to Limpopo is uneven with only between 16% (2009) and 20% (2008) going back to Limpopo. This situation is not unique to Limpopo but presents a major challenge in improving freight volumes in the province, especially in a hub situation.

6.14.3 Future Estimated Air Freight Volumes in Limpopo

Table 6.7 below reflects the estimated future air traffic flows (including both inbound and outbound volumes) based on the following assumptions:

- The base year is taken as 2005 and the base volume is set at 38 440 tons for the province;
- Agriculture and manufacturing in Limpopo is assumed to be responsible for all air freight generation;
- The base year freight volumes of each Local Municipality were calculated by means of each sector's relative contribution to its Distric Municipality's GGP (based on information obtained from the GIBB Regional Explorer Model) and actual volumes were allocated to each sector based on these relative contributions and the District Municipality's base year volumes as determined in **Table 6.15** above.
- Growth rates were assumed as follows:
  - 2005 – 2010: 3% p.a;





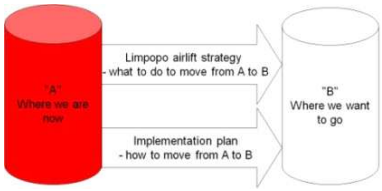
- 2010-2015: 2% p.a; and
- 2015-2020: 3% p.a.

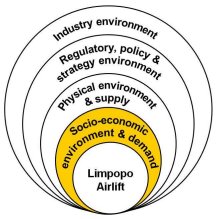
Table 6.17: Base Year and Future Estimated Air Freight Volumes in Limpopo, by Local Municipality

Municipality	2005	2010	2015	2020
Mopani district municipality	**8,976**	**10,405**	**12,063**	**13,984**
Greater Giyani local municipality	1,543	1,789	2,073	2,404
Greater Letaba local municipality	801	929	1,077	1,248
Greater Tzaneen local municipality	1,829	2,120	2,458	2,850
Ba-Phalaborwa local municipality	4,181	4,847	5,619	6,514
Maruleng local municipality	622	721	835	968
Vhembe district municipality	**5,574**	**6,461**	**7,490**	**8,683**
Makhado local municipality	2,466	2,859	3,314	3,842
Musina local municipality	470	544	631	732
Mutale local municipality	188	218	253	293
Thulamela local municipality	2,450	2,840	3,292	3,816
Capricorn district municipality	**9,514**	**11,029**	**12,786**	**14,822**
Polokwane local municipality	6,226	7,217	8,367	9,700
Aganang local municipality	381	441	512	593
Blouberg local municipality	471	546	632	733
Molemole local municipality	1,505	1,744	2,022	2,344
Lepelle-Nkumpi local municipality	932	1,081	1,253	1,452
Waterberg district municipality	**10,975**	**8,801**	**10,203**	**11,828**
Lephalale local municipality	1,046	1,213	1,406	1,630
Thabazimbi local municipality	6,543	7,585	8,793	10,194
Modimolle local municipality	890	1,032	1,196	1,387
Bela-Bela local municipality	909	1,053	1,221	1,415
Mookgopong local municipality	269	311	361	418
Mogalakwena local municipality	1,318	1,528	1,771	2,053
Greater Sekhukhune district municipality	**3,402**	**3,944**	**4,572**	**5,300**
Greater Marble Hall local municipality	483	560	649	753
Makhuduthamaga local municipality	546	633	734	851
Fetakgomo local municipality	228	265	307	355
Greater Tubatse local municipality	882	1,023	1,186	1,374
Elias Motsoaledi local municipality	1,262	1,463	1,696	1,966
Total - Limpopo	**38,440**	**44,562**	**51,660**	**59,888**
Agriculture	**14,977**	**17,363**	**20,128**	**23,334**
Manufacturing	**23,462**	**27,199**	**31,531**	**36,554**

Source: GIBB calculations

According to the assumptions made the current (2010) potential air freight volumes are estimated to be around 44 600 tonnes. Based on an 80 ton freighter load it means that 557 flights would be needed to transport the entire volume. This is equal to just more than 10 flights a week.





The 2010 air freight volumes are graphically presented in **Figure 6.15**. Given the location of the municipalities with the highest potential air freight, Polokwane is a convenient hub, as most of these municipalities would have to send their freight via Polokwane to reach ORTIA.

6.15 Determining the potential for freight aviation in Limpopo

As a result of the lack of statistics, data and hard facts about freight aviation in Limpopo, we developed a scoring system to assess the potential for freight aviation in the Limpopo province.

Each of the municipalities has been awarded a score based on a variety of factors. A scale of 1 to 5 was used, where 1 is very poor, and 5 is excellent. Four factors were used to determine the final ranking, i.e. the distance to ORTIA, estimated freight volumes as per **Table 6.17**, the type of freight and local economic factors.

- **The Distance to ORTIA from the geographic centre of the Local Municipality:**

  It was assumed that areas closer to ORTIA would rather make use of ORTIA's air freight facilities and services, and therefore these areas were given a lower score in terms of their potential for air freight in Limpopo;

- **Existing Estimated Air Freight volumes:**

  This factor was used to try to indicate areas where there is already some air freight generation as these would be more likely to generate air freight in the future. Each local municipality was ranked according to their relative levels of existing freight levels. Areas with higher levels relative to the province total scored higher than those with lower levels.

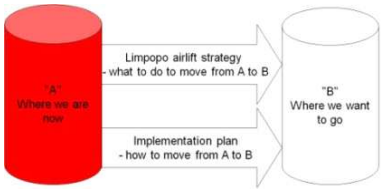
- **Manufacturing vs Agriculture**

  We believe that manufacturing freight is generally of a higher value than agricultural freight, as this type of freight represents economic value-add, whereas agricultural produce often has not been processed. We further believe that therefore manufacturing jobes are relatively easier to create than agricultural jobs. Areaswith higher existing manufacturing air freight compared to agriculture freight ranked higher in the scoring.

- **Local Economic factor**

  Local economic conditions were taken into account by determining each municipality's GGP ratio to the provincial GGP. Higher ratio regions score higher than lower ratio regions.

The results of the above ranking are graphically represented in **Figure 6.16**. The ranking does not include any assumptions about the future freight potential, but it is an attempt to provide a more robust analysis of the potential for freight aviation than purely relying on the freight volumes as presented in **Figure 6.15**.



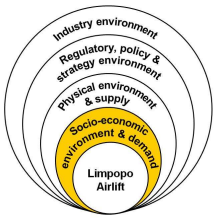
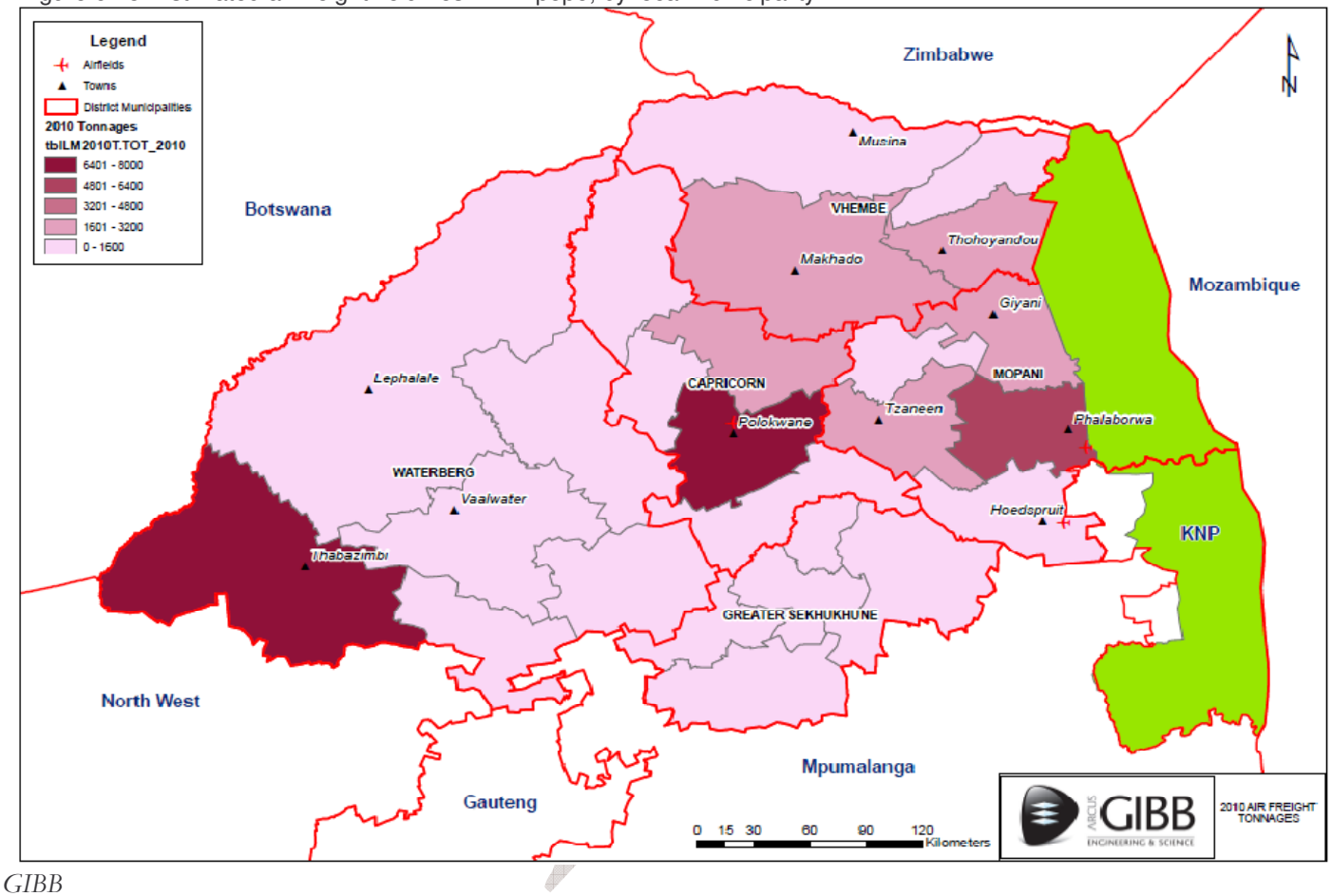
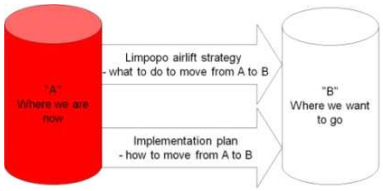


Figure 6.15: Estimated air freight volumes in Limpopo, by local municipality



Source: GIBB



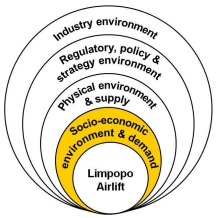
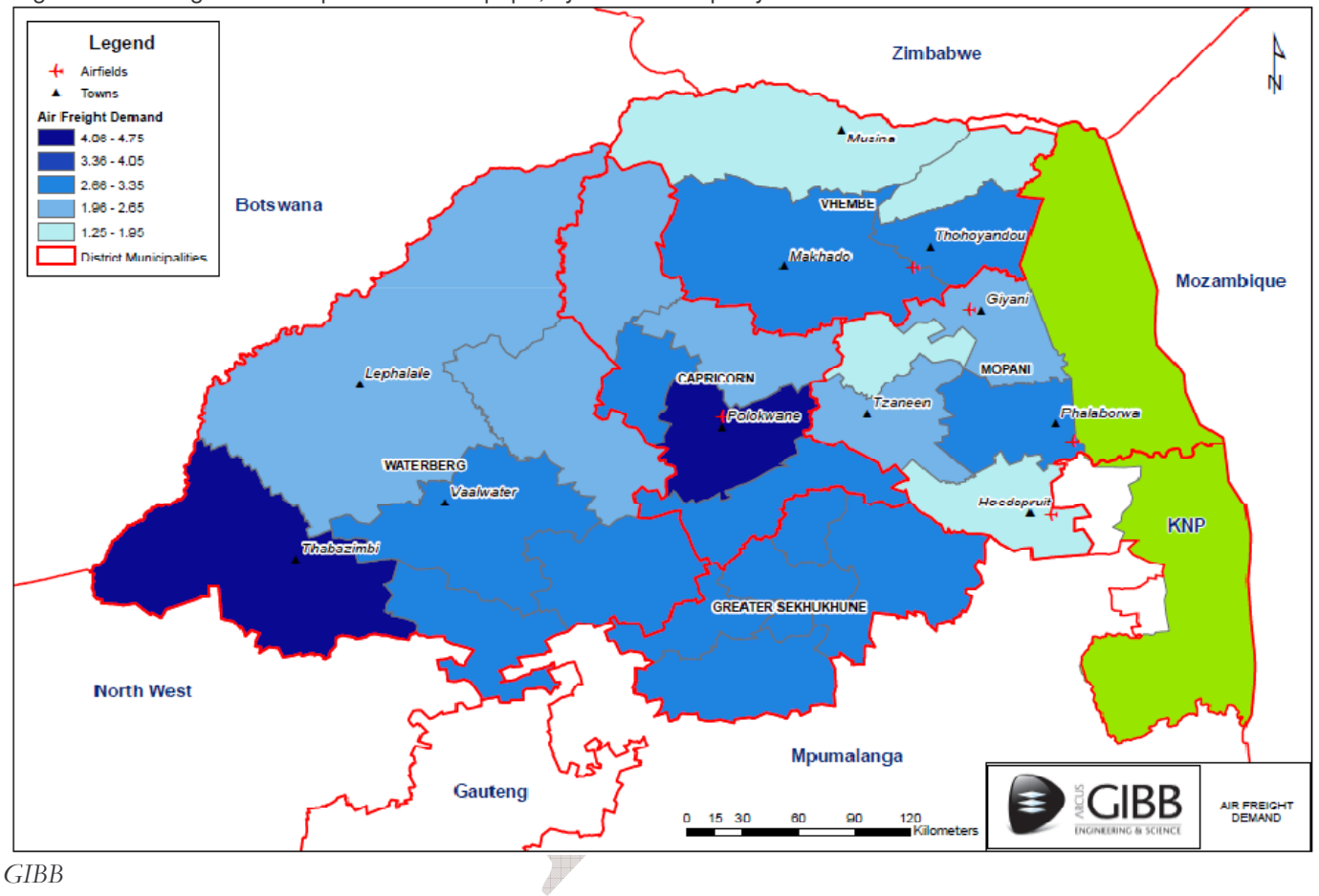
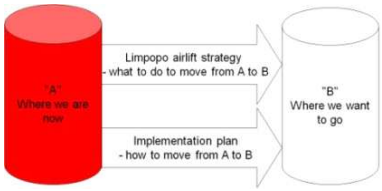
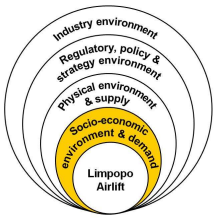


Figure 6.16: Freight aviation potential in Limpopo, by local municipality



Source: GIBB





6.16 Conclusion and relevance for aviation in Limpopo

From a passenger perspective, the current levels of utilization on routes from Johannesburg are relatively low, which may be due to the fact that air fares on routes between Johanensburg and destinations within Limpopo are relatively high. Polokwane and Eastgate airports handle similar numbers of passengers, though the flight frequency on the Johannesburg-Polokwane route is higher than on the Johannesburg-Eastgate route.

Passenger aviation is driven by the people that are able to travel (including both visitors and residents), as well as the purpose of travel and other factors such as travel distance, timing, cost, etc. Current demand supports linkages between Limpopo and Gauteng, and Limpopo and Zimbabwe. The local population in Polokwane has the highest potential to support aviation passenger demand from residents, while a destination like Hoedspruit is able to support inbound and outbound passenger aviation as a result of its tourism attraction value and not its local population.

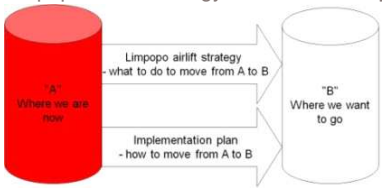
Given the government activity in Polokwane and the associated movement of government officials between Polokwane and Gauteng, this market could support higher business passenger aviation demand, though there would be a requirement for a policy decision in this regard. In addition, business tourism (meetings and events) presents an opportunity for Polokwane going forward. In the longer term, there may also be potential for business passenger aviation in Lephalale.

From a leisure perspective, the province has good potential, though in limited numbers. With Gauteng being the major source market for leisure tourism to Limpopo, destinations closer to Gauteng are not expected to demand passenger aviation services.

Overall, the potential for passenger aviation lie within the Polokwane, Lephalale, Maruleng (Hoedspruit) and Ba-Phalaborwa municipalities, with Thohoyandou offering potential in the future.

From an air freight perspective, the current lack of facilities for air cargo handling in the province constrains the existing volumes of air freight that is handled in the province. The small aircraft operated by Airlink on the Johannesburg-Polokwane route can handle only small amounts of freight (about 65 tonnes per annum). Analysis suggests that there is 38 000 tonnes of freight available within the province that could be shipped via air, but existing relationships with freight handlers and cargo operations at ORTIA are well established.

Based on our analysis, Polokwane would be the most suitable location for an air cargo handling facility in the Limpopo province.



7. Conclusions and Recommendations

7.1 Conclusions – existing situation in respect of aviation in Limpopo

Industry environment

Though aviation in Limpopo is impacted by the global aviation industry, the province has very little control over these impacts. Aviation development in the province should be stimulated with the global context in mind. The global aviation industry is expected to grow in line with global economic growth.

Positve:

- Global aviation industry is growing
- There are opportunities in Africa
- Possibility to establish a freight hub with the right investment
- Meeting minimum requirements for general aviation may stimulate private flights into the province

Negative:

- Lack of control
- Complexity of airlines' decision to operate new routes
- ORTIA is well established as the freight hub in sub-Saharan Africa

Regulatory, policy & strategy environment

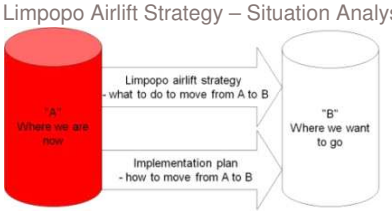
Alignment with the regulatory, policy and strategic environment at national and provincial is imperative for aviation in Limpopo to ensure political support. From a political perspective, Polokwane and Lephalale airports are priorities within the provincial context. In the regional context, there may be opportunities for linkages within the SADC region.

Positive:

- Strong support for Polokwane within provincial strategies
- Support for regional integration

Negative:

- Polokwane airport is not a priority for national government



- Limited implementation of Yamoussoukro Declaration and open skies policies within SADC

Physical and supply environment

Airport facilities at Polokwane are in excellent condition as a result of the preparations for the 2010 Fifa World Cup, though the facilities at Giyani and Thohoyandou airports are in a state of disrepair that will require significant investment to upgrade. The facilities at the two private airports in the province are also in good condition.

Positive:

- Existing facilities are able to handle expansions in passenger aviation – particularly at Polokwane
- Airport facilities are within the control of the province, as this may be expanded and developed as required.

Negative:

- If Giyani and Thohoyandou were to be upgraded, it will require significant investment

Socio-economic and demand environment

From a passenger perspective, Polokwane and Lephalale hold the most potential, followed by Ba-Phalaborwa and Maruleng (where the existing private airports are). Passenger demand is mainly driven by tourism demand, which will veer towards the areas with the most tourism potential. From a freight perspective, Polokwane and Thabazimbi offer the most potential based on existing freight volumes.

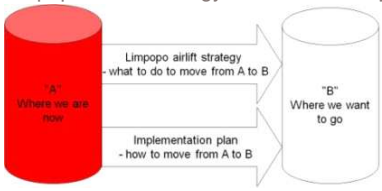
Positive:

- Exising passenger demand provides a base from which to grow the numbers
- Planned freight facilities at Polokwane are aligned to the findings that this city is the most appropriate location for freight aviation development in the province

Negative:

- The stimulation of passenger and freight demand is not within the control of the Limpopo Department of Roads and Transport
- Unless routes between Limpopo and other destinations are deemed to be viable and profitable, airlines will not consider them, and current utilization rates are not enticing

Aviation in Limpopo is controlled and modeled by the demand for passenger and freight aviation, as well as the global aviation industry. Both of these are very difficult to change and control, and therefore poses a challenge in respect of the strategy to develop commercial aviation in Limpopo.



7.2 Towards strategy development

Now that the existing situation has been established for aviation in Limpopo, the strategy will follow through a process of consultation. The process of strategy development will attempt to answer the questions posed in Section 1.1, as well as a number of other questions.

Table 7.1 provides some preliminary responses to the Client's questions outlined in Section 1.1, based on the situation analysis. It is expected that these responses may change based on stakeholder consultation.

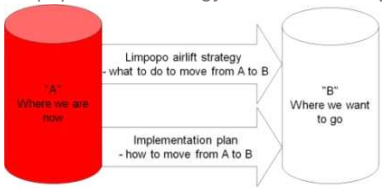
Table 7.1: Preliminary responses to the Client's questions

Question	Preliminary response
What is the role of tourism in driving passenger numbers?	Business travel is a result of the economy of a destination, and can therefore not be influenced by marketing the destination from a tourism perspective. In a bid to increase numbers, conferences and events can be used to attract people to a destination, and the availability of affordable aviation linkages can improve this potential. In Limpopo this is a potential for Polokwane in particular. The Limpopo province has great potential as a leisure destination, but in order to improve the passenger aviation demand, more flights, and therefore more affordable flights, need to be offered to the destinations that are attractive from a leisure tourism perspective.
How should Gateway Airport be positioned?	We recommend that the airport be positioned as the province's business gateway. This positioning supports the development of a cargo hub at the airport, though significant infrastructure investment will be required
What are the roles of the smaller airports in the province?	The smaller airports in Limpopo are are mainly gateways for passenger traffic – in the east the majority of these passengers are leisure travellers, while in the west there is potential for business travellers as the economy of Lephalale develops
What is the potential of developing a new airport in Lephalale?	Given the future economic development potential of Lephalale, and the tourism potential of the Waterberg district, there is potential to develop a small airport in Lephalale, similar to the airports that serve the gateways into the Kruger Park in the east of the province. The Lephalale airport could be viewed from a tourism perspective as the Gateway to the Waterberg
What is the role of the Department of Roads and Transport with regards to airlift?	As government, the Department of Roads and Transport has a facilitative role – it has to ensure that the right environment exist for aviation to develop. In the case of Limpopo it may entail a more direct intervention in some cases (e.g. facilitating the investment required to develop the cargo hub at Polokwane), while in other cases it may be more of a lobbying role (e.g. assisting Limpopo Tourism and Parks with negotiations to establish linkages between Polokwane and destinations in SADC).

The objectives of the study – as outlined in Section 1.2 – will be addressed in the process of developing the airlift strategy and will asssit in defining the end goal of the Limpopo airlift strategy (refer **Section 1**). Stakeholder consultation is very important in this process, as it ensures buy-in for the strategy that will improve its successful implementation. It will also assist in refining the focus of the airlift strategy in the province and determining the direction that the strategy will take.

The situation analysis raises a number of questions that will be answered by the strategy, such as:

- What is the importance that needs to be given to Polokwane airport in the context of the airlift strategy?
- Should the strategy include other airfields/airports or not?



- Should the focus be on scheduled or non-scheduled aviation?
- Does the strategy focus on growing the existing market, or does it need artificial stimulation?
- Is the focus on routes (market-driven) or airlines (supply-driven)?
- What level of support are there for private airports vs government-owned airports?
- Etc.

The information on the existing situation, together with the views of the stakeholders, will determine the answers to the above.

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