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# **Impact of Closing Six International Airport Points of Entry in Mozambique**

Supporting the Policy Environment for Economic Development (SPEED+)

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## DISCLAIMER

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# ACRONYMS

ADM	Aeroportos de Moçambique
AfDB	African Development Bank
AHLA	American Hotel and Lodging Association
AHSM	Associação dos Hotéis do Sul de Moçambique
AHTI	Associação Hotel Turismo de Inhambane
AMCI	Aircraft, Maintenance, Crew and Insurance (a type of aircraft lease agreement)
ASSOTHARQ	Associação de Hotelaria e Turismo
BASA	Bilateral Air Service Agreement
CDTUR	Associação de Hotelaria e Turismo de Cabo Delgado
CTA	Confederação das Associações Económicas de Moçambique
DAI	DAI Global LLC
FDI	Foreign direct investment
FEMOTUR	Federação Moçambicana de Turismo e Hotelaria
FSNC	Full Service Network Carrier
GDP	Gross Domestic Product
IACM	Instituto de Aviação Civil de Moçambique (Civil Aviation Institute of Mozambique)
IATA	International Aviation Transport Association
ICAO	International Civil Aviation Organisation
LAM	Linhas Aéreas Mocambicanas (Mozambique National Airline)
LLC	Low Cost Carrier
PPP	Public Private Partnership
LNG	Liquefied natural gas
MICE	Meetings, incentives, conferences and exhibitions
MITUR	Ministério do Turismo de Moçambique
MPM	Maputo International Airport
MEX	Moçambique Expresso, S.A.
MZN	Mozambican Metical
LAM	Linhas Aéreas de Moçambique
O&D	Origin and destination passenger traffic

SADC	Sothern African Development Community
VAT	Value-added tax
VFR	Visiting friends and relatives
WEF	World Economic Forum
UNWTO	United Nations World Tourism Organization
WTTC	World Travel and Tourism Council

# EXECUTIVE SUMMARY

The Mozambique Airports Company (AdM) proposes reducing the number of international airport points of entry from the current nine airports to only three. Maputo, Beira and Nacala airports would remain international points of entry, while the affected airports at Nampula, Inhambane, Vilanculos, Pemba, Tete, and Linchinga would serve only domestic flights. The proposal also prescribes the operation of hub-and-spoke route networks from the three remaining international airports, with domestic connecting flight routes established by regulation. National consultations and rigorous economic analysis strongly support maintaining the current international points of entry.

**Mozambique would lose \$340 million and almost 50,000 jobs over a five-year period following the closure of six international airport points of entry.**

The AdM proposal would represent a reversal of the aviation liberalization agenda and would eliminate the economic benefits of direct international flights serving the outlying provinces in Mozambique. Mozambique has previously adopted a more liberalized and competitive approach toward its aviation policy (see side box), which has facilitated the increase of direct flights from South Africa, Kenya and Tanzania to outlying points of entry.

Ease of access has enabled economic development across multiple sectors with significant increases in investment and jobs in the regions served by international airports. To a large extent these cities are already acting as the gateways and transport hubs for dynamic cross-border economic activity which would be stifled by the closure of these points of entry.

**Benefits of the current scenario**, with nine geographically dispersed points of entry include:

- Improved national and international connectivity with more reliable and frequent service to well distributed airport locations
- Efficiency of flight time and distance with maximum number of international direct flights to diverse locations
- Lower ticket prices with improved passenger satisfaction
- Increased investment in private sector businesses, catalyzing growth in construction and local supply chains, generating direct employment and economic growth
- Support services such as hotels, restaurants, and local transportation for the project workers, consultants, and investors generating indirect employment and economic growth

## ***National Strategy for the Integrated Development of the Transport System***

*The current Transport Strategy is informed by the following high-level objective for the transport sector:*

*‘Support national economic growth through the improvement of its alignment with the tourism, agriculture, mining and industry strategy, giving priority to the tourism markets and removing obstacles to the growth of the air transport sector through regulatory mechanisms, negotiating agreements within Africa (with particular emphasis on the SADC region) and at international level. The civil aviation strategy recognizes the role of transport in general as a catalyst for economic development and identifies air transport and tourism as two key elements for a sustainable socio-economic transformation*

**Negative impacts of the AdM proposal** to reduce points of entry would include:

- GDP reduced by \$340 million over five years
- Loss of almost 50,000 jobs over five years
- Reduction in passenger traffic by almost 80% over five years
- Reduced efficiency of flight time and distance – flight distance increases from 3%-48% depending on itinerary
- Increased intermediate domestic stops, increasing risk of delays, cancellations and accidents - 70% of all accidents occur during take-off and landing
- Increased environmental impact as additional take-offs and landings, as well as increased distances, increase carbon emissions from 7%-60% depending on itinerary
- Increased prices as additional take-offs and landings add costs, and an additional domestic ticket on LAM/MEX adds costs

The negative impacts would be long lasting. Research on similar policy actions globally has demonstrated that less than 20% of pre-closure capacity is regained three years after closure for single carrier routes. On multi-carrier routes, only about 40% of pre-closure capacity is regained three years on.

This study is supported by extensive stakeholder consultations in Vilanculos, Pemba, Nampula, Nacala and Tete. It provides five-year projections for passenger traffic and economic development under the status quo, under the scenario of the AdM proposal for international airport closures, and under a scenario of substantial growth in due to anticipated increase in economic activity from extractive industries and tourism. The research conducted for this report also includes an origin/destination study of passenger traffic using the affected Mozambican airports and projections of passenger demand at national airports.

## ECONOMIC IMPACT OF CLOSING INTERNATIONAL AIRPORT POINTS OF ENTRY

Currently, Kenya Airways, the South African carrier Airlink and the Mozambican carrier LAM/MEX offer international arrivals to the affected airports of Nampula, Vilanculos, Pemba, and Tete. The affected airport at Inhambane accepts LAM/MEX international arrivals via Maputo, and there are no current international arrivals to the affected airport at Linchinga.

The study carefully compared historic passenger data for each international itinerary to each of the affected airports and proposes a set of assumptions that anticipate the change in the number of passengers over the next five years based on two scenarios: 1) current scenario with no substantial changes in the operating environment; 2) implementation of the AdM proposal. A third scenario projecting higher growth in the number of passengers under assumptions of higher economic growth is included in Annex D of the report for comparison.

The study estimates that implementation of AdM's proposal would cause a precipitous drop in the number of passengers travelling to Mozambique, starting with an immediate decrease of 65% and losing up to 80% of current passenger traffic over five years. Over five years, a total of 525,000 visitors to Mozambique would be lost. Passenger totals will decrease for the international carriers but will be recouped to a certain extent by LAM/MEX. However, the conclusions demonstrate the serious negative impact of the closure of these six international points of entry.

It is important to note that the predicted impact of the AdM proposal is presented in comparison to a "steady state" of growth based on historical five-year data. The actual impact is likely to be far greater since economic growth and growth in demand for air transport is likely to be higher than

predicted by historic data. A number of megaprojects in the oil and gas industry are planned to come online in the medium term, and there are good indications of strong growth in the tourism industry. The costs for these industries associated with the AdM proposal may deter or diminish the investment and economic growth associated with those anticipated expansions. The prior five-year economic data have also been significantly affected by the economic crisis and currency devaluation. Therefore, the projected losses are likely to underrepresent the true impact on the Mozambican economy.

**Table 1. Passenger losses**

Scenario	Number of Passengers (Projected)						Total	Total
	Year 1	Year 2	Year 3	Year 4	Year 5	Total		
Base Model	124,987	126,930	138,600	154,259	174,441	719,217	719,217	
AdM Proposal	43,224	39,197	37,986	37,196	36,727	194,330	194,330	
Total Losses	-65%	-69%	-73%	-76%	-79%	-73%	(524,887)	

The decrease of passenger traffic will translate directly to decreases in economic activity and jobs in these areas. Over a five-year period, Mozambique will lose \$340 million and almost 50,000 jobs. Financial models were used to estimate the economic contribution of tourists and other visitors to Mozambique in terms of GDP and job generation. These models were based on those of the prior USAID SPEED project, and a United Nations framework for tourism economic statistics. A summary of the estimated negative impacts of the AdM proposal is shown in the tables below:

**Table 2: Reduced GDP**

Scenario	Contribution to GDP (Projected, USD Million)					
	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Base Model	81	82	90	100	113	466
AdM Proposal	28	25	25	24	24	126
Total Losses	(53)	(57)	(65)	(76)	(89)	(340)

**Table 3: Job Losses**

Scenario	Total Direct and Indirect Employment (Projected)				
	Year 1	Year 2	Year 3	Year 4	Year 5
Base Model	43,099	43,769	47,793	53,193	60,152
AdM Proposal	14,912	13,516	13,098	12,826	12,665
Cumulative Losses	(28,187)	(30,253)	(34,695)	(40,367)	(47,487)

Elimination of direct international flights to six of the current active points of entry will lower hotel and resort occupancy, hamper staff rotation, stifle new investment, reduce the availability of technical, operational and managerial staff for businesses, limit trade, delay cargo deliveries, and hinder the consultants, investors and financiers that support the overall economic growth and trade within these regions. It would also lower the connectivity and standing of Provincial Governments with the surrounding countries as they lose this direct connection for exchange of people, goods, services and potentially technology, skills and knowledge.

### **Economic Impact on Affected Areas**

The National Civil Aviation Institute (IACM), the Confederation of Economic Associations (CTA) and the Mozambican Tourism Federation (FEMOTUR) are concerned that AdM's proposal will have negative impact on the business environment, restricting the movement of people and goods. For example, the country's natural resources are largely located in Tete and Cabo Delgado, while tourism focuses along the coast in Inhambane, Vilanculos and Cabo Delgado. The closure of international airports in these places poses a significant risk to economic development and will make the country less competitive.

The impact of the AdM proposal would have unique impacts on each area. Perhaps the most devastating would be for **Vilanculos**, home of the Bazaruto Archipelago marine reserve and a major international tourist destination in Mozambique. Vilanculos has experienced strong economic growth following a major airport upgrade completed in 2011. This attracted reliable direct flights from Johannesburg and an increase in passenger traffic reaching an average 31% in 2015-2016. In fact, growth in international passenger traffic to Vilanculos drives most of the overall traffic growth for Mozambique. This has propelled substantial tourism development, investment in resorts, growth in employment and trade and the success of two universities specializing in tourism. Key informants in Vilanculos report that further investments such as the Solida hotel project have already been cancelled by the mere announcement of the potential closure of the airport for regular international traffic, which also resulted in the cancellation of 400 hotel reservations. **Inhambane**, which is currently served only by LAM, has more resorts than Vilanculos but has very low resort occupancy due to poor air transport infrastructure and service. The consistent annual percentage reduction in passenger traffic at Inhambane, where LAM has a monopoly, may demonstrate the impact if connectivity to South Africa is reliant on local LAM connections.

Another example of the negative impact of AdM's proposal is **Pemba**, which operates as a central logistics hub for the mining and oil/gas operations in the North and North East of Mozambique. 70% of passenger traffic to Pemba is for business purposes (oil, gas, graphite, ruby mining, commercial, fishing, corporate staff, government officials). International scheduled flights connect Pemba to Dar es Salaam and to Johannesburg. Direct connectivity is required for the rotation of technicians and workers in these industries, who are brought together in Johannesburg from around the world, then flown to Pemba in small groups. This is critical because most international travel insurance does not cover LAM flights, and employees of international firms are required to fly on a carrier that will be covered by their insurance in case of accident or injury on the plane. Mining and fishing are among the most dangerous occupations, and direct connections to Johannesburg enable rapid medical evacuation to top quality medical facilities. International air cargo shipments critical to business operations, such as urgent spare parts, require direct access to scheduled flights for guaranteed and timely delivery.

The closure of the airport at **Tete** to international air traffic would have similar impacts as for Pemba, but would be exacerbated by the elimination of the common practice of efficient one-day round trips from Johannesburg to Tete for mining company technicians or managers. Tete based business people also make use of the flights from Tete to South Africa as a transit point for travel to Maputo. This itinerary is preferred due to lower costs, the lack of travel insurance coverage when flying LAM, and the greater frequency and reliability of flights.

**Nampula** is a vibrant trading center and home to an international diaspora, where businesspeople are well connected to neighboring countries and direct international flights facilitate business and friendly cross-border relationships. Nampula is also the seat of Provincial Government and steady traffic demand for civil servants will remain. It takes just ten minutes for traders or government staff to connect from the city to Nampula airport. Nampula is also a natural hub for connectivity from surrounding countries to the rest of Mozambique. AdM's proposal would route international flights through Nacala, requiring a 2.5-hour minimum drive to reach Nampula.

Although the impacts of AdM's proposal will vary by area, one commonality is the universal opposition to the proposal expressed at the stakeholder consultations held in five of the six areas. In meeting after meeting, and in conversations and emails, the businesses, investors, hotel operators, and provincial authorities were unanimously opposed to the elimination of international flights from these airports.

## **Economic Development and Policy Implications**

As discussed above, Mozambique's Transport Strategy is grounded in a market-oriented approach to economic development and the facilitation of the movement of people and goods throughout the country. In addition, Mozambique is a signatory to a number of other international agreements that support the liberalization and increased connectivity of air transport worldwide, and which are contradicted by the AdM proposal. The International Civil Aviation Organization (ICAO) of which Mozambique is a member State, recommends 'States should foster the adoption and implementation of measures aimed at increasing the connectivity provided by air transport'. ICAO, and its members, should maintain the principles that airports should focus on increasing connectivity so that routes should have the minimum of transit points which makes the trip as short as possible, to provide optimal user satisfaction at the minimum price possible.

Mozambique has started reviewing the air services agreements to align them with the provisions of the Yamoussoukro Decision, and plans to sign the associated Solemn Commitment to join the single market undertaking (Open Skies for Africa). In air services negotiations, Mozambique has started to negotiate liberal bilateral agreements. It has moved from a single designation regime to a multiple designation per country and dual designation per route. Mozambique is also in the process of harmonizing the existing Mozambique Civil Aviation policy with the African Civil Aviation Policy. Other similar steps towards increased connectivity and integration include discussions about a single African passport and automatic visas for African passport holders.

The economic damage caused by the implementation of the AdM proposal would not result only from a reduction in visitors to Mozambique. It would also be the result of a multitude of business decisions, most of which will never be known in Mozambique, as global businesses perceive that the country may not be committed to the consistent, predictable market-oriented policies it has been embracing, and that doing business in Mozambique may be even more risky than previously assumed.

## **HUB-AND-SPOKE VERSUS POINT-TO-POINT ROUTE NETWORKS**

Restricting the international points of entry to only three airports and mandating that the Mozambican airline industry operate on a hub-and-spoke model, rather than on the current point-to-point route network, replaces the industry's competitive response to market demand with a network structure that is inefficient, inconvenient, unaffordable, and in some cases, even impossible given current resources.

In liberalized air markets, airlines are free to choose how to structure their national and international routing, either with Hub-and-Spoke or Point-to-Point networks. This allows airlines to be responsive to the market, adding or removing routes based on shifting customer demand. Point-to-Point networks can be most efficient and are often adopted by Low-Cost Carriers (LCCs) to maximize average daily use of aircraft equipment, lower costs, grow markets and respond to passenger preferences for direct flight services. Hub-and-Spoke networks are generally used by full service international airlines, which provide seamless service within their airline for travel to the hub and transfer to the spoke destination. Hub-and-Spoke networks generate scope advantages (i.e. the ability for a single airline company to compete across a large geographic market) not scale advantages (which lower costs by increasing volumes).

The application of a hub-and-spoke model for Mozambique is problematic for several reasons. First, the international carriers bringing passengers to the hub airports would not have transfer flights to the final destination. A transfer from Airlink, Kenya Airways, or other carriers to LAM/MEX would be required. This creates complications for ticketing, baggage transfer, and schedule coordination, and eliminates many of the advantages of the hub-and-spoke network model.

Second, the proposed hub airports are not well placed to serve their spoke networks. For example, AdM proposes that passengers currently served by airports in Nampula and Pemba will now fly in and out of Nacala, and transfer by road to Nampula and Pemba. This re-routing would be beneficial for AdM, which is faced with the high operating costs of a new large and expensive airport at Nacala, which is only served by two weekly domestic flights from Maputo by LAM/MEX. However, from the perspective of serving the demand for convenient, affordable international air travel to Mozambique, the Nacala airport falls far short. Nacala does not have the domestic connectivity that has attracted visitors to the hub at Nampula. In fact, there are no airline connections from Nacala to Pemba or to Nampula. Travelling the 384km between Nacala and Pemba by road requires at least 6.5 hours. The proposed road connection between Nacala and Nampula is equally unsuitable. Local communities have settled next to the road, which enables them to trade and commute along the road. There are roadblocks, heavy loaded trucks, some broken down trucks, overloaded and slow-moving vehicles, towns where trading takes place along the road, pedestrians on the edge of the road and negotiations on the price of rides before getting on vehicles and persons selling nuts and juice for local consumption. There are animals and commercial activities next to the road and speed limits in towns and some settlements. Driving times for the 195km trip vary from 2.5 hours to over 3 hours, barring major obstacles. This is certainly not an airport-to-airport connection where an average high speed can be maintained, and the time of travel can accurately be predicted.

Third, markets drive economic decisions and investment, and the current structure of the aviation sector in Mozambique has been established in part through customer demand for efficient and low-cost international travel. AdM's proposal to alter the structure by regulation fails to acknowledge that passenger traffic cannot simply be re-allocated. Passenger demand for direct flights to specific destinations was built up over time based on the particular attributes of the end destinations and the flight frequency and reliability of the specific airlines. By contrast, AdM proposes that passenger volumes will automatically grow in direct proportion to the increase in capacity provided by the immediate implementation of the new hub-and-spoke model. However, no passenger research has been conducted to determine the likely demand response to the new routing networks; and on the supply side the airplanes, employees, and other resources to implement that model do not exist.

## RECOMMENDATIONS

The closure of six of the current nine international airport points of entry will cause significant losses for the Mozambican economy. Over a five-year period following implementation of the policy, Mozambique will lose \$340 million and over 50,000 jobs, driven by decreases in passenger traffic of 65% in the first year, and up to 79% by the fifth year.

Driving the creation of a hub-and-spoke network model for the aviation industry through regulation is not economically viable or feasible with the current resources of LAM/MEX. This model does not reflect the market context in Mozambique, and the requirement to transfer from an international carrier to a domestic carrier eliminates the standard advantages of hub-and-spoke models used by single airline companies.

The AdM proposal would represent a reversal of the aviation liberalization agenda and would generate reputational risk for Mozambique and increase the perceived (and actual) risk of doing business for international investors across all sectors.

Therefore, it is recommended that Mozambique maintain the current system of international points of entry and the established route networks. Mozambique will benefit most from allowing increased market liberalization to drive competition, responsiveness to customer demand, and the flexibility and ability to innovate that can not only serve a growing economy, but also catalyse accelerated growth.

It is therefore recommended that:

- The nine (9) entry points for over border flights should be maintained. If Xai Xai airport is built, it should be an international point of entry.
- Route networks should be determined by commercial supply and demand, not by regulatory mandate.
- The government should actively encourage more airlines (especially Mozambique airlines) to operate cross-border services to increase level of competition.
- The government should support smaller airlines to service essential in-country airports (as is the case both in the EU and USA).
- Private sector concessions of smaller airports should be granted.

The Task Force established by the Government to review AdM's proposal recommends maintaining the status quo but revisiting the matter within a three- to six-year period. This creates uncertainty for passenger demand and hampers new investments, which require confidence in long term access to basic services like transportation. It is vital that the Government communicate a clear commitment to maintaining the international airport points of entry and create a climate of certainty to assure tourism and passenger traffic growth, stimulate investment and trade and create additional employment.

# INTRODUCTION

The Supporting the Policy Environment for Economic Development (SPEED+) activity assists the GRM to establish business, trade, and investment policies which promote private sector-led broad-based economic growth. As requested by government counterparts, facilitates evidence-based decision making on reforms across GRM ministries and strong private sector advocates in order to provide essential feedback loops on how citizens and companies are affected by proposed laws and regulations. This coordination includes efforts to improve the quality of problem identification and analysis of alternative policy options through broad stakeholder input.

In response to a recent proposal from the Mozambique Airports Company (AdM) to reduce the number of international airports (points of entry) from the current nine to only three, SPEED+ is supporting the Mozambican Institute of Civil Aviation (IACM), the Confederation of Economic Associations (CTA) and the Mozambican Tourism Federation (FEMOTUR) to study the economic impact of the proposed action and develop well-substantiated recommendations in support of maintaining a liberalized air transport sector. The analysis relies on passenger data compiled from IACM Passenger Traffic Airline and Airport Data. Projections and estimates use this data as the baseline for calculations.

The Government has constituted a Technical Commission (the 'Task Force')<sup>1</sup> to analyze AdM's proposal for the reduction of the number of international airports including:

- PCA of the Civil Aviation Institute of Mozambique (head of the commission);
- IACM
- Boards of the Company Airports of Mozambique (ADM);
- Mozambique Airlines (LAM);
- Mozambique Express Board (MEX);
- Board of the Ministry of Culture and Tourism;
- Board of the National Institute of Tourism; and
- Boards of the Confederation of Economic Associations of Mozambique (CTA).

The National Civil Aviation Institute (IACM), the Confederation of Economic Associations (CTA) and the Mozambican Tourism Federation (FEMOTUR), as members of the Task Force, are concerned that AdM's proposal will have negative impact on the business environment, restricting the movement of people and goods. The objective of this study is to provide substantiated facts and arguments which CTA, FEMOTUR and IACM can provide to inform the deliberations of the task force and the policy decisions of the Minister of Transport and Communication and the Council of Ministers.

The study objective is to:

- Determine the likely impact of the AdM proposal to close six of the current nine international airport points of entry using economic modelling under three scenarios:

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<sup>1</sup> The members of the Task Force are listed in Annex E

- the current position
  - the position under the proposed AdM reforms, and
  - a likely future scenario based on continued liberalization of the air transport sector, and increased investments in oil/gas extraction industry and growth of tourism demand.
- Provide recommendations for policy and regulatory positions that would support improved economic activity (jobs and investment) in the air transport sector and associated value chains such as tourism
  - Analyze the AdM proposal and identify strengths and weaknesses
  - Identify areas where priority investment should take place to account for future growth in the air transport sector.

The Task Force met three times<sup>2</sup> and as a result of deliberations established that the conditions for the immediate closing of entry points were not satisfied. The Task Force acknowledged that aspects of AdM's proposal need to be clarified, such as the legal status of Bilateral Air Transport Agreements (BASAs). In addition, the socio-economic impact for the country in general, and particularly for air operators, needs to be evaluated.

The Task Force has proposed that for the medium term (3 years) and potentially the long term (6 years) the current structure of entry points should be maintained, at the end of which:

- The national airlines have to present a detailed action plan for the implementation of a traffic distribution network within the radial distribution, a specific feature of a hub and spoke system; the operational plans for hub development; the operating hours; and the number of aircraft to be allocated at each airport hub for the distribution of passengers to the destinations to be closed.
- ADM should develop strategies that provide Maputo, Beira and Nacala airports and their respective cities with logistical and operational conditions so that they effectively operate as hubs, always taking into account the relevant precepts (like Mozambique Civil Aviation Regulation (MozCar) 139 and Annex 14 of International Civil Aviation Organization Chicago Convention which both establish requirements for aerodrome operations)
- A FEMOTUR study will serve as a guide for the development of the strategic actions to be implemented with regard to points of entry, which should cover all airports currently open to regional and international traffic, to analyze in depth the socio-economic impacts of the closure of airports in Inhambane, Vilankulo, Tete, Nampula, Pemba and Linchinga;
- ADM should discuss with IACM and with domestic and foreign operators the implications, especially of a legal nature, that airport closure will have for bilateral air transport agreements with South Africa and Kenya, which are the countries that designated airlines to operate scheduled flights to the affected airports.

This report will offer an initial analysis of the potential socio-economic impact of AdM's proposal to inform the Task Force and Ministry deliberations and decision making. It is important to note that negative impacts may equally be triggered by the uncertainty around the future of international air

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<sup>2</sup> 23 January 2017; 13 February 2017; and 6 March 2017

transport to Mozambique, as much as by any actual plan to move forward. Therefore, the uncertainty created by the Task Force strategy described above may not support the optimal growth trajectory for the air transport sector, and related value chains such as tourism, in Mozambique.

# OVERVIEW OF MOZAMBICAN INTERNATIONAL AIR TRANSPORT

## MOZAMBIQUE AVIATION POLICY

Mozambique has adopted what is regarded as a liberalized and more competitive approach toward its aviation policy, which has facilitated the growth of direct cross-border flights from Kenya, Tanzania and South Africa to multiple points of entry in Mozambique. In referring to categories of air transport, the Mozambican industry uses the following terms which are replicated in this report:

- **International** refers to cross-border long-haul flights from outside of Africa
- **Regional** refers to cross-border flights from within Africa, and more specifically from South Africa, Kenya and Tanzania
- **Domestic** refers to flights within Mozambique

Mozambique has adopted a comprehensive 'Strategy for the Integrated Development of the Transport System' (the 'Transport Strategy', 2012). The Transport Strategy states that the transportation system, including air travel, 'must support national economic growth through improving its alignment with the development strategies for tourism, agriculture, mining and industry'. The Transport Strategy gives priority to the tourism market and to removing obstacles to the growth of the air transport sector through regulatory mechanisms and negotiating agreements within Africa (with particular emphasis on the SADC region) and at the international level. The civil aviation strategy recognizes the role of transport in general as a catalyst for economic development and identifies air transport and tourism as two key elements for a sustainable socio-economic transformation of the country. The Transport Strategy's strategic vision for air transport is 'primary focus on the development of tourism and development of tourism poles in the country and the region', which is 'essentially aimed to achieve growth of the international tourism industry'.

The policy identified the leading role that Mozambique has to play in the Southern Africa region in distributing regional (SADC) traffic. A need was identified to 'rehabilitate' Maputo, Pemba, Nacala and Tete airports. In addition, the Transport Strategy states that 'some tourist destinations justify the need to build new airports with international characteristics' highlighting Xai Xai, Inhambane, Vilanculos and Mocimboa de Praia.

The Transport Strategy establishes a set of guiding principles for the development of the sector. The following are the most relevant for this analysis of AdM's proposal to limit international points of entry:

**Table 1: Relevant Transport Strategy Guiding Principles**

<b>Guiding Principle</b>	<b>Relevance to international airport points of entry</b>
Integrate civil aviation with the development of the country in general and of tourism in particular	Cross-border flights cannot be considered in isolation, but must be considered within the context of both the regional and domestic connectivity of airports. A balance of opportunities of national interest, tourism and economic development is considered in determining the exchange of traffic rights.
Enable competition among air transport operators and expand consumer choice	This demonstrates Mozambique’s pro-competitive stance and the focus on meeting the needs of consumers (demand side) rather than on the suppliers of services (including protection of dominance or monopolies of national airlines).
Facilitate air transport connections to the districts and the poorest populations	This prioritizes the establishment of air services to outlying communities which supports direct cross-border access to airports serving these communities and competition especially from Low-Cost Carriers
Capitalize on synergies of regional and international cooperation	Given Mozambique’s size and borders with multiple countries, regional and international cooperation is best served by easy access to cross-border flights. Mozambique should continue to participate in the liberalization trend within the region, in particular the Solemn Commitment for the implementation of the Yamoussoukro Decision, which implies greater market access to cross-border flights.

The Transport Strategy and other bi-lateral air services agreements (BASAs) define the international entry points for Mozambique as Maputo, Beira, Nampula, Inhambane, Vilanculos, Pemba, Tete, Nacala, and Linchinga. In addition, at the SADC level the ‘Strategy for the Integrated Development of the Transport System’ (2009) introduces the dual designation of airlines at the nine (9) entry points defined as regional airports being Maputo, Beira, Nampula, Inhambane, Vilanculos, Pemba, Tete, Nacala, and Linchinga.

Mozambique is also a signatory to a number of international agreements that support the liberalization and increased connectivity of air transport worldwide. The International Civil Aviation Organization (ICAO) of which Mozambique is a member State, recommends ‘States should foster the adoption and implementation of measures aimed at increasing the connectivity provided by air transport’. ICAO, and its members, should maintain the principles that airports should focus on increasing connectivity so that routes should have the minimum of transit points which make the trip as short as possible, to provide optimal user satisfaction at the minimum price possible.<sup>3</sup>

The International Civil Aviation Organization (ICAO) confirmed that: ‘In its efforts towards preparation for the full implementation of the Yamoussoukro Decision, Mozambique has embarked on an integrated aviation strategy that encourages tourism development and consequently resulting

<sup>3</sup> <https://www.icao.int/sustainability/Pages/Connectivity.aspx>

in economic growth'. Mozambique has started reviewing air services agreements to align them with the provisions of the Yamoussoukro Decision, and plans to sign the associated Solemn Commitment to join the single market undertaking (Open Skies for Africa). In air services negotiations, Mozambique has started to negotiate liberal bilateral agreements. It has moved from a single designation regime to a multiple designation per country and dual designation per route. Mozambique is also in the process of harmonizing the existing Mozambique Civil Aviation policy with the African Civil Aviation Policy. Other similar steps towards increased connectivity and integration include discussions about a single African passport and automatic visas for African passport holders.

Mozambique's integrated aviation strategy has been successful in that it encouraged tourism and business development. In particular:

- Improved reliability and frequency of air services to outlying airports
- Substantial numbers of new hotels, operators and project investments have materialised since the adoption of direct access, in particular from Johannesburg
- Direct employment and economic growth were generated
- Increased indirect employment and use of local suppliers
- Back-to-back rotation of essential staff is facilitated for project workers, consultants, investors, financiers
- Trading, local economies and tourism were stimulated.

## PASSENGER TRAFFIC STATISTICS

### **Historic Passenger Traffic Data**

During the course of the research, discussions and consultations on the AdM proposal, it became evident that a lack of accurate data was diminishing the ability of key stakeholders to engage in evidence-based decision making. Therefore, extensive data analysis is provided in Annex C to serve as a source of evidence for future discussions and evidence-based policy making. A brief summary of the major important data is included in this section. Data are derived from IACM Passenger Traffic Airport Data.

The overall passenger traffic at all airports are set out in Table 2 below. The major categories relate to domestic scheduled passenger traffic (60% of all traffic) and regional scheduled passenger traffic (29% of all traffic).

**Table 2: Passenger traffic at all national airports**

	Domestic		Regional		International		Domestic	Regional	Total
	Scheduled	Non-Scheduled	Scheduled	Non-Scheduled	Scheduled	Non-Scheduled	Private	Private	
2 012	904 147	113 620	544 103	40 485	72 279	328	801	185	1 675 948
2 013	1 047 437	100 501	572 194	34 385	79 034	309	1 100	312	1 835 272
2 014	1 191 438	109 024	612 829	32 945	76 285	402	6 061	360	2 029 344
2 015	1 159 797	83 908	610 476	21 228	109 747	269	8 526	464	1 994 415
2 016	1 133 094	62 905	554 767	16 050	121 993	266	15 091	71	1 904 237
% Composition of 2016	60%	3%	29%	1%	6%	0%	1%	0%	100%

The four-year trends of passenger traffic at all airports are set out in Table 3 below. Domestic scheduled passenger traffic reduced by single digits (-3% in 2015, and -2% in 2016) and regional scheduled passenger traffic was stable at 0% in 2015, and then reduced by -9% in 2016.

**Table 3: Trends in passenger traffic at all national airports**

	Domestic		Regional		International		Domestic	Regional	Total	Total
	Scheduled	Non-Scheduled	Scheduled	Non-Scheduled	Scheduled	Non-Scheduled	Private	Private		
2 013	16%	-12%	5%	-15%	9%	-6%	37%	69%	10%	10%
2 014	14%	8%	7%	-4%	-3%	30%	451%	15%	11%	11%
2 015	-3%	-23%	0%	-36%	44%	-33%	41%	29%	-2%	-2%
2 016	-2%	-25%	-9%	-24%	11%	-1%	77%	-85%	-5%	-5%

The trends of passenger traffic at each of the affected airports are set out in Table 4 below. Domestic scheduled passenger traffic has recently improved at Vilanculos and Inhambane. Passenger volumes at Tete, Nampula and Pemba have declined more rapidly.

**Table 4: Detailed trends in passenger traffic at affected airports**

	VILANCULOS		INHAMBANE		TETE		NAMPULA		PEMBA	
	Domestic Scheduled	Regional Scheduled								
2 013	14%	8%	9%	-10%	12%	3%	22%	37%	17%	11%
2 014	-7%	-6%	-19%	-21%	11%	13%	20%	10%	10%	19%
2 015	-3%	-16%	-5%	-19%	-2%	-10%	-11%	-6%	-4%	-4%
2 016	8%	0%	2%	-32%	-12%	-12%	-9%	-13%	-5%	-19%

It is within this context that the proposal from AdM will be evaluated.

# PRINCIPLES OF AIR TRANSPORT ECONOMICS

Important air transport economics principles relevant to this study include the concepts of airport connectivity, air transport route networks (hub-and-spoke versus point-to-point networks) and catchment areas of airports. These are presented here as the foundation for the analysis of AdM's proposal.

## AIRPORT CONNECTIVITY

Airports normally focus on increasing the web of connectivity by inviting more airlines to use the airport in order to increase the number of connections with other airports. The International Civil Aviation Organisation (ICAO), of which Mozambique is a member, defines improved connectivity as follows: *the movement of passengers, mail and cargo should involve the minimum number of transit points which make the trip as short as possible with optimal user satisfaction at the minimum price possible.*<sup>4</sup>

According to ICAO, improved connectivity builds concrete value in the air transport industry by providing a better end-user experience, which encourages more travel, leading to greater economic development and hence more passenger traffic. ICAO recommends that: 'States should foster the adoption and implementation of measures aimed at increasing the connectivity provided by air transport'.<sup>5</sup>

ICAO recommends that in order to optimize connectivity, a strong supporting policy framework is required, including measures enabling expanded market and capital access of both air transport and tourism sectors. Continuous opening-up of the air transport market through liberalizing measures has an overall positive impact on the growth of air traffic, tourism and the economy at large. Liberalized air transport leads to better tourist experiences, including increased air transport connectivity and lower fares, which in turn stimulates additional tourist traffic and can bring about increased economic growth and employment, as illustrated by Figure 1.<sup>6</sup>

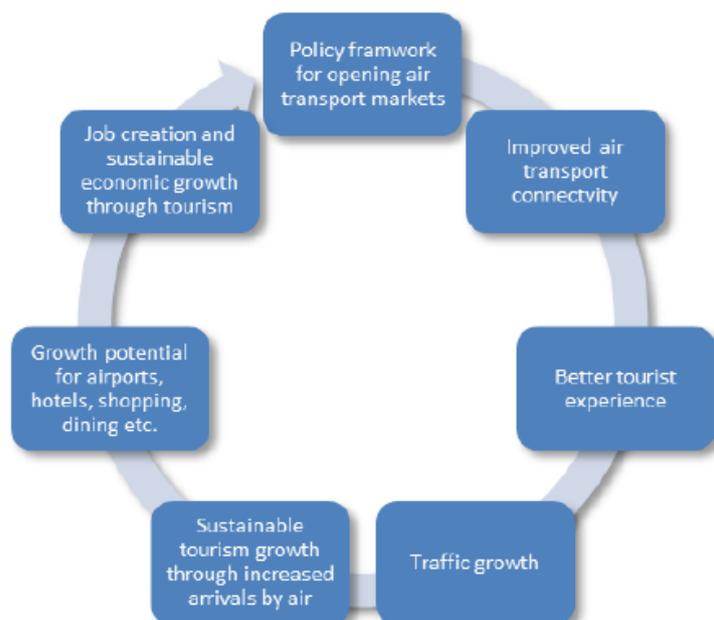
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<sup>4</sup> <https://www.icao.int/sustainability/Pages/Connectivity.aspx>

<sup>5</sup> ICAO Secretariat, Enhancement of Air Transport Connectivity and Facilitation, Working Paper ATConf/6-WP/20 19/12/12, Worldwide Air Transport Conference (ATCONF) Sixth Meeting, Montréal, 18 to 22 March 2013

<sup>6</sup> ICAO, utilization rate of connectivity opportunities by air carriers, Concept Paper, April 2015

**Figure 1: Opportunities of Increased Connectivity**



Mozambique has already adopted a strong supporting policy framework (see Mozambique Aviation Policy above). These measures enabled an expanded market and capital access of both air transport and tourism sectors, which had an overall positive impact on the growth of air traffic, tourism and the economy at large. The AdM proposal would reduce Mozambique’s regional connectivity and can be regarded as a reversal of liberalization in the air transport sector.

According to research by Hayley Morphet and Claudia Bottini<sup>7</sup>, increased airport connectivity creates economic value in the following ways:

- It benefits travellers by giving them access to a wider network as well as more frequent and better-connected services.
- It also can strengthen a country’s economy over the long haul, boosting productivity through its positive impact on businesses.
- It reduces air travel times, giving businesses access to a wider marketplace.
- It makes it easier for managers and executives to oversee far-flung operations, which infuses efficiency into those operations.
- Better transport linkages enable equipment, inputs, supplies and human capital to flow more freely and inexpensively across borders, improving returns on investment.

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<sup>7</sup> Hayley Morphet and Claudia Bottini, Air connectivity: Why it matters and how to support growth, PwC Air Traffic Demand Modelling Professionals, London, p

## AIRLINE ROUTE NETWORKS

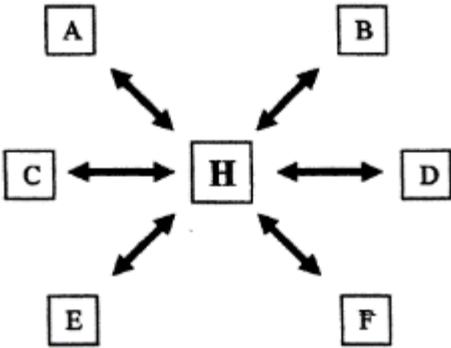
Airline route networks, whether structured as hub-and-spoke or point-to-point networks, are normally the result of airline business practices in response to customer demand. They are generally not determined by airport operators, or through government regulation. In deregulated or liberalized aviation markets, airlines are free to choose which routes to serve and how to structure their route network, what aircraft to deploy, how much seating capacity to offer, which service levels to include and which pricing strategies to use.

Hub-and-spoke route networks are normally operated by full service network airlines (FSNC) while point-to-point routes are normally operated by low cost carriers (LCCs). An overview of characteristics for each route model is presented below.<sup>8</sup>

### Hub-and-Spoke Route Networks

In the hub and spoke system, all passengers except those whose origin or destination is the hub, transfer at the hub for a second flight to their end destination.

**Figure 2: Hub-and-Spoke Networks**

Schematic illustration	Salient features
<p style="text-align: center;"><b>HUB &amp; SPOKE</b></p> 	<ul style="list-style-type: none"> <li>• Hubs are located where there is high volume of Origin and Destination passenger traffic</li> <li>• Needs minimum critical mass of flights &amp; passengers</li> <li>• Flights arrive and later depart in banks (groups) of 10-20 aircraft</li> <li>• Passenger switch flights at hub airport</li> <li>• Hub airport geographically located in middle of route network</li> <li>• Distance from spokes to hub needs to be similar</li> <li>• Enables fewer aircraft to be used</li> </ul>

Airline hub locations also serve as operation centers, centralizing administration, aircraft bases, parts and service warehouses, maintenance operations, and crew locations. Historically a single airline seeks to dominate air traffic at a given hub.

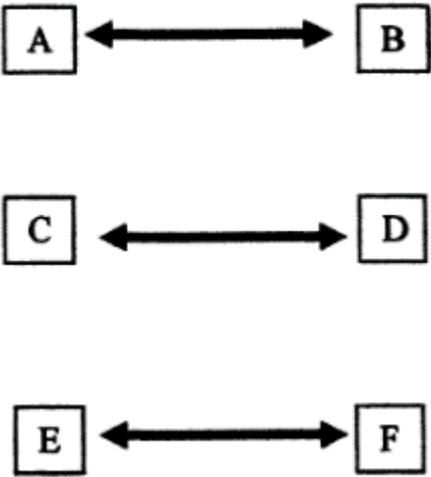
### Point-to-Point Route Networks

All passengers in a pure point-to-point system board at flight origin and deplane at the destination. However, point-to-point networks also often require stops and transfers, although these are organized within a network of connected point-to-point airports rather than in a hub-and-spoke system as described above.

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<sup>8</sup> Source: Cook, G.N. and Goodwin, J., 2008, Airline Networks: A Comparison of Hub-and-Spoke and Point-to-Point Systems, Hub-and-Spoke Airline Networks Journal of Aviation/Aerospace Education & Research, Volume 17, Number 2 JAAER Winter 2008

Figure 3: Point-to-Point Networks

Schematic illustration	Salient features
<p style="text-align: center;"><b>POINT-TO-POINT</b></p>  <p>The diagram shows three separate, non-interconnected flight routes. Each route consists of two boxes representing airports, connected by a thick, double-headed horizontal arrow. The first route connects airport A to airport B. The second route connects airport C to airport D. The third route connects airport E to airport F. There are no connections between these routes.</p>	<ul style="list-style-type: none"> <li>• Offer direct flights to the end destination (quicker and cheaper)</li> <li>• Shortest elapsed flight time</li> <li>• Reduce travel time for passenger &amp; simplify air fares</li> <li>• Match seat capacity to demand per route</li> <li>• Higher daily aircraft and gate use than hubs</li> <li>• Applied by all low-cost carriers (LCCs)</li> <li>• Airport personnel can be utilized fully throughout the day</li> <li>• Flight crew utilization increase</li> <li>• Connectivity via a non-stop flight and elimination of the intermediate stop at the connecting airport provides savings of more than 30%</li> <li>• Avoid circuitous routings and increase aircraft block speeds</li> </ul>

## AIRPORT CATCHMENT AREAS

A catchment area is defined as the area or sphere of influence of an airport or the portion of the market where a given airport dominates over other airports. Catchment areas can overlap where two or more airports compete for the same traffic. Catchment area depends principally on the nature of traffic under consideration, the total length of trip, and the airline service and fares offered at each airport. Airports where airlines offer a large choice of destinations, high frequencies and low fares would also be expected to have much larger catchment areas than those that did not have such attributes.

A passenger's choice of airport is based on the travel time to and from the airport, as well as any differences in airline ticket cost. Airport competition exists when two or more airports have overlapping catchment areas. The typical catchment area for an airport is:

- Business passengers: 100km or one hour driving time (minimum catchment area)
- Leisure passengers: Up to two hours of driving time

# THE ADM PROPOSAL

## OVERVIEW

In August 2016, the Mozambique Airports Company (AdM) proposes reducing the number of international airport points of entry from the current nine airports to only three. Maputo, Beira and Nacala airports would remain international points of entry, while the affected airports at Nampula, Inhambane, Vilanculos, Pemba, Tete, and Linchinga would serve only domestic flights.

The proposal also prescribes the operation of hub-and-spoke route networks from the three remaining international airports, with domestic connecting flight routes established by regulation. The affected airports currently provide direct connectivity to Johannesburg, Kenya, Tanzania and Mayotte (France/Comoros).

### Reduction of International Airport Points of Entry

Current cross-border flights to the affected airports are summarized in the table below:

**Table 5: Current cross-border routes to affected airports**

Airline	Routing of Passenger Traffic
<b>VILANCULOS</b>	
SA Airlink	Johannesburg Vilanculos Johannesburg
SA Airlink	Nelspruit Vilanculos Nelspruit
LAM/MEX	Johannesburg Maputo Vilanculos Maputo Johannesburg
LAM/MEX	Johannesburg Maputo Inhambane Vilanculos Maputo Johannesburg
<b>INHAMBANE</b>	
SA Airlink	No direct flights currently
LAM/MEX	Johannesburg Maputo Inhambane Maputo Johannesburg
LAM/MEX	Johannesburg Maputo Inhambane Vilanculos Maputo Johannesburg

<b>TETE</b>	
SA Airlink	Johannesburg Tete Johannesburg
LAM/MEX	Johannesburg Maputo Tete Maputo Johannesburg
<b>PEMBA</b>	
LAM PB/HTDA/PB	Pemba Dar es Salaam Pemba
LAM PB/HKJK/PB	Pemba Nairobi Pemba
LAM PB/FMCZ/PB	Pemba Dzaoudzi (Mayotte) Pemba
SA Airlink	Johannesburg Pemba Johannesburg
<b>NAMPULA</b>	
LAM NP/FAOR/NP	Nampula Johannesburg Nampula
LAM NP/HTDA/NP	Nampula Dar es Salaam Nampula (via Pemba)

LAM NP/HKJK/NP	Nampula Nairobi Nampula
AIRLINK	Johannesburg Nampula Johannesburg
KENYA AIRWAYS	Nairobi Nampula Nairobi

### Proposed Hub-and-Spoke Route Networks

Current cross-border flights to airports scheduled for elimination as international points of entry would be re-routed via a mandated hub-and-spoke model described in the AdM proposal. The three remaining international airports (Maputo, Beira and Nacala) are proposed to operate as the hubs, with a prescribed structure of domestic connecting spoke flights. These spoke flights would replace all of the direct cross-border flights that currently arrive to Nampula, Pemba, Tete, Vilanculos, and Inhambane.

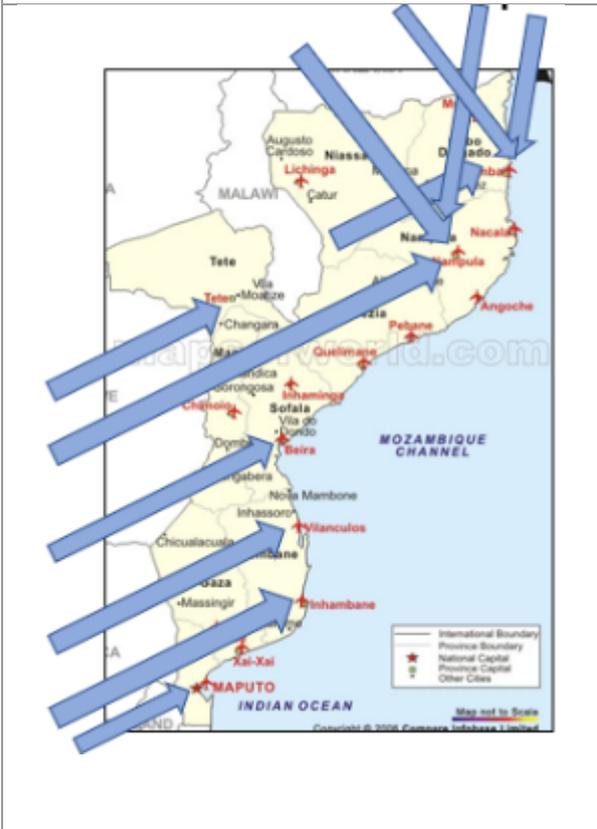
**Table 6: Proposed Hub-and-Spoke Airports**

Proposed hub airport	Nacala airport (North)	Beira airport (Central)	Maputo airport (South)
Affected (spoke) airport	Nampula Pemba Linchinga	Tete Quelimane Chimoio	Vilanculos Inhambane,
Affected (spoke) aerodromes (airstrips)	Mocímboa da Praia Angoche and Lumbo	Songo and Ulongué	Inhaca Bilene and Ponta de Ouro

International charter operations would still be allowed to the affected airports with international security requirements (but most costs will remain for the affected airports). There are however non-scheduled flights directly from the affected airports to the affected airstrips.

The effect of the AdM proposal on passenger traffic flow is illustrated in the following charts:

**Chart 1: Current Situation**



**Chart 2: Proposed Hub-and-Spoke Model**



Legend:

	Existing international flights
	Flights in accordance with AdM proposed decision
X	Closure of existing international gateway airport

**Background for ADM’s Proposal**

AdM’s proposal was made as a proposal for an amendment of ‘public policies’ and as the best strategy to attain viability for the Mozambican airports to reduce costs and to improve access and flexibility. The AdM proposal was developed against a background of healthy passenger traffic growth between 2011 to 2014 (2% in 2012; 17% in 2013; 11% in 2014), with substantial growth in passengers projected for future years.

Another consideration was AdM’s investment in the expanded and modernized Maputo International Airport; the newly built Nacala International Airport (currently served by only two weekly LAM/MEX domestic flights); and the rehabilitated runway and equipment at Beira International Airport. As the established hub airports in AdM’s proposal, these airports would benefit from increased passenger volumes and provide better returns on AdM’s upgrading investments.

**LAM/MEX Competition with Airlink South Africa Flights**

At the workshop of 22 November 2017, LAM/MEX expressed concern about the air services operated by Airlink (a South African based airline) between Johannesburg South Africa and the affected airports of Pemba, Nampula, Tete, and Vilanculos. Airlink also operates to Vilanculos from intermediate point in South Africa, Nelspruit (Kruger Park Mpumalanga International Airport) on flight rotations that operate to and from Johannesburg. The data on passengers generated by Airlink

on direct cross border flights is detailed in Annex C. On the other hand, LAM/MEX operates the only route from South Africa to Inhambane, via Maputo.

From an aviation regulatory perspective, the bilateral air services agreement (BASA) between Mozambique and South Africa gives the same rights to LAM/MEX and to Airlink to serve these routes. However, LAM/MEX does not have adequate aircraft or bases at the affected airports to enable them to operate effectively on these routes.<sup>9</sup>

The AdM proposal would enable LAM/MEX to access the passenger traffic currently generated by Airlink between South Africa and the affected airports, since LAM/MEX would provide the domestic flight from the point of entry to the final destination at one of the affected airports.

The AdM proposal would also affect LAM/MEX air services at the affected airports that receive cross-border flights from Dar es Salaam Tanzania and Nairobi Kenya. Passenger traffic at Inhambane would not be affected as LAM/MEX already operates connecting services via Maputo. However, LAM/MEX has experienced large annual decreases in passenger traffic even though it has a monopoly at Inhambane.

## ANALYSIS OF IMPACT OF THE ADM PROPOSAL

The AdM proposal, if implemented, would have a number of negative impacts, from the basic impact on passenger travel experiences to larger scale impacts on the economy. This report analyses and presents the impact along three dimensions: the impact on passenger traffic; the resulting impact on the economy, jobs and investment; and the impact on Mozambique's international positioning as a destination for tourism and investment.

For the individual passenger currently flying directly to the affected airports, the AdM proposal would imply an additional landing and take-off, additional transit time at the intermediate airports, overall longer journey time, the additional cost of an extra domestic flight, higher overall prices and exposure to schedule uncertainty, flights delays, and cancellations. Additional take-offs and landings increase safety risks as 70% of all accidents occur during these phases of travel, which are also responsible for a significant portion of the total costs of a flight. More take-offs and landings as well as increased flight distances also increase carbon emissions. Flight distances will increase by 3%-48% depending on the itinerary, while carbon emissions will increase by 7%-60%. Detailed analysis of point-to-point increases is provided in Annex B.

### **Impact on Passenger Traffic**

In order to analyze the potential impact of the AdM proposal to close six of the nine international airports in Mozambique, three models were developed that projected future passenger traffic. The Base Model assumes current trends will continue, and the AdM Proposal Model reflects the estimated impact of closing the six affected international airports. A third model, the Growth Model, assumes continued liberalization of the air transport sector and higher future levels of economic

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<sup>9</sup> LAM/MEX previously had an operational base at both Beira and Nampula, but these were closed some time ago.

activity from increased oil and gas exploitation and tourism development. The Growth Model is presented in Annex D since it provides a fairly speculative analysis.

The models estimate that implementation of AdM's proposal would cause a precipitous drop in the number of passengers travelling to Mozambique, starting with an immediate decrease of 65% and losing up to 80% of current passenger traffic over five years. Over five years, a total of 525,000 visitors to Mozambique would be lost.

## Base Model

The development of the base model used current trends in passenger traffic from 2012-2016, as shown in the table below.

**Table 7: Trends in Passenger Traffic**

<b>Historic Passenger Traffic numbers</b>						<b>Trends in Passenger Traffic</b>			
	<b>Total Sector Passengers</b>					<b>% Increase in Total Sector Passengers</b>			
<b>VILANCULOS</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
Airlink Johannesburg - Vilanculos	-	7 184	14 604	18 937	23 811		103%	30%	26%
Airlink Nelspruit - Vilanculos	-	-	653	1 707	2 542			161%	49%
<b>Airlink Total</b>	<b>-</b>	<b>7 184</b>	<b>15 257</b>	<b>20 644</b>	<b>26 353</b>		<b>112%</b>	<b>35%</b>	<b>28%</b>
<b>LAM/MEX</b>	<b>10 643</b>	<b>11 500</b>	<b>10 532</b>	<b>5 974</b>	<b>1 598</b>	<b>8%</b>	<b>-8%</b>	<b>-43%</b>	<b>-73%</b>
<b>TOTAL</b>	<b>10 643</b>	<b>18 684</b>	<b>25 789</b>	<b>26 618</b>	<b>27 951</b>	<b>76%</b>	<b>38%</b>	<b>3%</b>	<b>5%</b>
	<b>Total Sector Passengers</b>					<b>% Increase in Total Sector Passengers</b>			
<b>INHAMBANE</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
Airlink									
LAM/MEX	15 039	13 571	10 780	7 959	5 827	-10%	-21%	-26%	-27%
<b>TOTAL</b>	<b>15 039</b>	<b>13 571</b>	<b>10 780</b>	<b>7 959</b>	<b>5 827</b>	<b>-10%</b>	<b>-21%</b>	<b>-26%</b>	<b>-27%</b>
	<b>Total Sector Passengers</b>					<b>% Increase in Total Sector Passengers</b>			
<b>TETE</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
Airlink Johannesburg - Tete	21 507	18 722	18 011	15 949	14 129	-13%	-4%	-11%	-11%
LAM/MEX	6 997	10 632	15 125	13 923	12 041	52%	42%	-8%	-14%
<b>TOTAL</b>	<b>28 504</b>	<b>29 354</b>	<b>33 136</b>	<b>29 872</b>	<b>26 170</b>	<b>3%</b>	<b>13%</b>	<b>-10%</b>	<b>-12%</b>
	<b>Total Sector Passengers</b>					<b>% Increase in Total Sector Passengers</b>			
<b>NAMPULA</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
(LAM)NP/FAOR/NP Nampula JNB Nampula		2 114	1 963	1 561	1 129	100%	-7%	-20%	-28%
(LAM)NP/HTDA/NP Nampula Dar es	2 787	228	2 136	2 865	769	-92%	837%	34%	-73%
(LAM)NP/HKJK/NP Nampula Nairobi	-	2 490	475	203	448	100%	-81%	-57%	121%
<b>LAM Total</b>	<b>2 787</b>	<b>4 832</b>	<b>4 574</b>	<b>4 629</b>	<b>2 346</b>	<b>73%</b>	<b>-5%</b>	<b>1%</b>	<b>-49%</b>
<b>AIRLINK Johannesburg - Nampula</b>	<b>14 491</b>	<b>21 441</b>	<b>23 000</b>	<b>20 005</b>	<b>18 495</b>	<b>48%</b>	<b>7%</b>	<b>-13%</b>	<b>-8%</b>
<b>KENYA AIRWAYS Nairobi - Nampul</b>	<b>11 569</b>	<b>12 612</b>	<b>14 999</b>	<b>15 060</b>	<b>12 598</b>	<b>9%</b>	<b>19%</b>	<b>0%</b>	<b>-16%</b>
<b>TOTAL</b>	<b>28 847</b>	<b>38 885</b>	<b>42 573</b>	<b>39 694</b>	<b>33 439</b>	<b>35%</b>	<b>9%</b>	<b>-7%</b>	<b>-16%</b>
	<b>Total Sector Passengers</b>					<b>% Increase in Total Sector Passengers</b>			
<b>PEMBA</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>
(LAM)PB/HTDA/PB Pemba Da es Sa	11 032	18 141	18 377	18 478	10 837	64%	1%	1%	-41%
(LAM)PB/HKJK/PB Pemba Nairobi F	8 702	8 301	13 679	15 638	10 989	-5%	65%	14%	-30%
(LAM)PB/FMCZ/PB Pemba Dzaoudz	-	702	276	-	422		-61%	-100%	
<b>LAM Total</b>	<b>19 734</b>	<b>27 144</b>	<b>32 332</b>	<b>34 116</b>	<b>22 248</b>	<b>38%</b>	<b>19%</b>	<b>6%</b>	<b>-35%</b>
Airlink	6 324	9 962	11 323	10 627	11 289	58%	14%	-6%	6%
<b>TOTAL</b>	<b>26 058</b>	<b>37 106</b>	<b>43 655</b>	<b>44 743</b>	<b>33 537</b>	<b>42%</b>	<b>18%</b>	<b>2%</b>	<b>-25%</b>

The data above was used as the foundation for the Base Model. The following assumptions were applied to the trend data to calculate the five-year projections.

### Vilanculos

- Airlink Johannesburg - Vilanculos passenger volumes to increase by 26% for year 1 and year 2 (the 2016 increase of 26%)
- Airlink Nelspruit - Vilanculos passenger volumes to increase by 40% for all the years, on a small base (the 2016 increase of 49%)

- LAM/MEX to decline by 50% for year 1 and year 2 then stabilize on small volume (the 2016 increase of 49%)

#### Inhambane

- LAM/MEX to decline by 25% for year 1 to year 5, on a small base (the 2016 decline of 27%)

#### Tete

- Dependency on coal
- A decline of 11% for year 1 to year 5 and then stabilize until 2021.

#### Nampula

- All airlines reduce by 15% for year 1 to year 5 and then stabilize until 2021 (the 2016 decline of 16%).

#### Pemba

- Increase of 3% for all airlines for year 1 to year 5 (re-gas price increase)

The Base Model results of applying the growth/decline assumptions above to the 2016 actual results are shown in the table below.

**Table 8: Base Model passenger traffic projections**

	Base Case: Assumptions on growth					Base Case: Total Sector Passengers				
	2017	2018	2019	2020	2021	Year 1	Year 2	Year 3	Year 4	Year 5
<b>VILANCULOS</b>										
Airlink Johannesburg - Vilanculos	26%	26%	26%	26%	26%	30 002	37 802	47 631	60 015	75 619
Airlink Nelspruit - Vilanculos	40%	40%	40%	40%	40%	3 559	4 982	6 975	9 765	13 671
Airlink Total										
LAM/MEX	-50%	-50%	-50%	-50%	-50%	799	400			
<b>TOTAL</b>						<b>34 360</b>	<b>43 184</b>	<b>54 606</b>	<b>69 780</b>	<b>89 290</b>
<b>INHAMBANE</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
Airlink										
LAM/MEX	-25%	-25%	-25%	-25%	-25%	4 370	3 278	2 458	1 844	1 383
<b>TOTAL</b>						<b>4 370</b>	<b>3 278</b>	<b>2 458</b>	<b>1 844</b>	<b>1 383</b>
<b>TETE</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
Airlink Johannesburg - Tete	-11%	-11%	0%	0%	0%	12 575	11 192	11 192	11 192	11 192
LAM/MEX	-11%	-11%	0%	0%	0%	10 716	9 538	9 538	9 538	9 538
<b>TOTAL</b>						<b>23 291</b>	<b>20 729</b>	<b>20 729</b>	<b>20 729</b>	<b>20 729</b>
<b>NAMPULA</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
(LAM)NP/FAOR/NP Nampula JNB Nampula										
(LAM)NP/HTDA/NP Nampula Dar es Salaam Nampula										
(LAM)NP/HKJK/NP Nampula Nairobi Nampula										
<b>LAM Total</b>	-15%	-15%	0%	0%	0%	1 994	1 695	1 695	1 695	1 695
AIRLINK Johannesburg - Nampula	-15%	-15%	0%	0%	0%	15 721	13 363	13 363	13 363	13 363
KENYA AIRWAYS Nairobi - Nampula	-15%	-15%	0%	0%	0%	10 708	9 102	9 102	9 102	9 102
<b>TOTAL</b>						<b>28 423</b>	<b>24 160</b>	<b>24 160</b>	<b>24 160</b>	<b>24 160</b>
<b>PEMBA</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
(LAM)PB/HTDA/PB Pemba Da es Salaam Pemba										
(LAM)PB/HKJK/PB Pemba Nairobi Pemba										
(LAM)PB/FMCZ/PB Pemba Dzaoudzi, Mayotte Pemba										
<b>LAM Total</b>	3%	3%	3%	3%	3%	22 915	23 603	24 311	25 040	25 792
Airlink	3%	3%	3%	3%	3%	11 628	11 977	12 336	12 706	13 087
<b>TOTAL</b>						<b>34 543</b>	<b>35 579</b>	<b>36 647</b>	<b>37 746</b>	<b>38 879</b>
<b>TOTAL ALL AFFECTED AIRPORTS</b>						<b>124 987</b>	<b>126 930</b>	<b>138 600</b>	<b>154 259</b>	<b>174 441</b>

The historic traffic volumes and the Base Model results for each affected airport are set out below.

**Table 9: Summary of historic traffic and Base Model projections**

Historic traffic volumes						Base Model Projections					
	Total Historic Sector Passengers						Base Model: Assumptions on growth				
	2012	2013	2014	2015	2016		Year 1	Year 2	Year 3	Year 4	Year 5
VILANCULOS	10 643	18 684	25 789	26 618	27 951	VILANCULOS	34 360	43 184	54 606	69 780	89 290
INHAMBANE	15 039	13 571	10 780	7 959	5 827	INHAMBANE	4 370	3 278	2 458	1 844	1 383
TETE	28 504	29 354	33 136	29 872	26 170	TETE	23 291	20 729	20 729	20 729	20 729
NAMPULA	28 847	38 885	42 573	39 694	33 439	NAMPULA	28 423	24 160	24 160	24 160	24 160
PEMBA	26 058	37 106	43 655	44 743	33 537	PEMBA	34 543	35 579	36 647	37 746	38 879
<b>TOTAL ALL AFFECTED AIRPORTS</b>	<b>109 091</b>	<b>137 600</b>	<b>155 933</b>	<b>148 886</b>	<b>126 924</b>	<b>TOTAL ALL AFFECTED AIRPORTS</b>	<b>124 987</b>	<b>126 930</b>	<b>138 600</b>	<b>154 259</b>	<b>174 441</b>

The Base Model projected trends in passenger traffic at each airport are shown in the table below:

**Table 10: Base Model projected trends**

Annual percentage increase (decrease) of the Base Case Model					
% Increase or decrease	Year 1	Year 2	Year 3	Year 4	Year 5
VILANCULOS	23%	26%	26%	28%	28%
INHAMBANE	-25%	-25%	-25%	-25%	-25%
TETE	-11%	-11%	0%	0%	0%
NAMPULA	-15%	-15%	0%	0%	0%
PEMBA	3%	3%	3%	3%	3%
<b>TOTAL ALL AFFECTED AIRPORTS</b>	<b>-2%</b>	<b>2%</b>	<b>9%</b>	<b>11%</b>	<b>13%</b>

This demonstrates that the overall growth at affected airports is driven by the growth at Vilanculos and, to a lesser extent, at Pemba.

### AdM Proposal Model

The following assumptions about the impact of implementation of the AdM proposal were informed by the discussions and meetings with stakeholders, and global experience of the impacts of international airport closures.

#### Vilanculos

- Airlink volumes will cease and will be recaptured by LAM on the basis of the 2017 LAM levels (2016 less 25%) at Inhambane of 4 370 and then decline by 25% per annum in line with LAM/MEX' trend at Inhambane.

#### Inhambane

- LAM/MEX to decline by 25% for 2017 to 2021, on a small base (the 2016 decline of 27%). Same as above.

#### Tete

- Dependency on coal
- Immediate decline of 100% for Airlink
- The remaining 40% of Airlink for year 1 would be recaptured and be carried by LAM to link via the domestic network.
- A decline of 11% for year 2 and then stabilise until 2021.

#### Nampula

- LAM, Airlink and Kenya Airways airlines regional passenger volumes will cease and 30% their passenger volumes of year 1 be recaptured by LAM immediately and then reduce by 15% for year 2 and then stabilise until 2021 (the 2016 decline of 16%)

### Pemba

- LAM, Airlink and Kenya Airways airlines regional passenger volumes will cease and 40% their passenger volumes of year 1 be recaptured by LAM immediately and then increase of 3% for all the airlines passenger volumes for year 1 and year 2 (re-gas price increase).

The AdM Proposal Model results of applying the growth/decline assumptions above to the 2016 actual results are shown in the table below.

**Table 11: AdM Proposal Model detailed passenger traffic projections**

	Year 1	Year 2	Year 3	Year 4	Year 5
VILANCULOS					
Airlink Johannesburg - Vilanculos	4,370	3,278	2,458	1,844	1,383
Airlink Nelspruit - Vilanculos					
Airlink Total					
LAM/MEX					
TOTAL	4,370	3,278	2,458	1,844	1,383
INHAMBANE					
Airlink					
LAM/MEX	4,370	3,278	2,458	1,844	1,383
TOTAL	4,370	3,278	2,458	1,844	1,383
TETE					
Airlink Johannesburg - Tete					
LAM/MEX	9,317	8,292	8,292	8,292	8,292
TOTAL	9,317	8,292	8,292	8,292	8,292
NAMPULA					
(LAM)NP/FAOR/NP Nampula JNB Nampula					
(LAM)NP/HTDA/NP Nampula Dar es Salaam Nampula					
(LAM)NP/HKJK/NP Nampula Nairobi Nampula					
LAM Total	11,369	10,119	10,119	10,119	10,119
AIRLINK Johannesburg - Nampula					
KENYA AIRWAYS Nairobi - Nampula					
TOTAL	11,369	10,119	10,119	10,119	10,119
PEMBA					
(LAM)PB/HTDA/PB Pemba Da es Salaam Pemba					
(LAM)PB/HKJK/PB Pemba Nairobi Pemba					
(LAM)PB/FMCZ/PB Pemba Dzaoudzi, Mayotte Pemba					
LAM Total	13,817	14,232	14,659	15,098	15,551
Airlink					
TOTAL	13,817	14,232	14,659	15,098	15,551
TOTAL ALL AFFECTED AIRPORTS	43,244	39,197	37,986	37,196	36,727

**Table 12: AdM Proposal Model summary passenger traffic projections**

	Projected Passenger Traffic under AdM Proposal				
	Year 1	Year 2	Year 3	Year 4	Year 5
VILANCULOS	4,370	3,278	2,458	1,844	1,383
INHAMBANE	4,370	3,278	2,458	1,844	1,383
TETE	9,317	8,292	8,292	8,292	8,292
NAMPULA	11,369	10,119	10,119	10,119	10,119
PEMBA	13,817	14,232	14,659	15,098	15,551
<b>TOTAL ALL AFFECTED AIRPORTS</b>	<b>43,244</b>	<b>39,197</b>	<b>37,986</b>	<b>37,196</b>	<b>36,727</b>

The AdM Proposal Model projected trends in passenger traffic at each airport are shown in the table below:

**Table 13: AdM Proposal Model projected trends**

Annual Percentage Increase/Decrease of the AdM Model					
	Year 1	Year 2	Year 3	Year 4	Year 5
VILANCULOS	-87%	-92%	-95%	-97%	-98%
INHAMBANE	0%	0%	0%	0%	0%
TETE	-60%	-60%	-60%	-60%	-60%
NAMPULA	-60%	-58%	-58%	-58%	-58%
PEMBA	-60%	-60%	-60%	-60%	-60%
<b>TOTAL ALL AFFECTED AIRPORTS</b>	<b>-65%</b>	<b>-69%</b>	<b>-73%</b>	<b>-76%</b>	<b>-79%</b>

### Comparison of Base Model to AdM Proposal Model

The following tables summarize the projections for passenger traffic calculated from applying the Base Model and the AdM Proposal Model to historic trends. These projections include all airlines operating to the affected airports.

**Table 14: Total historic passenger traffic**

	Total Historic Sector Passengers				
	2 012	2 013	2 014	2 015	2 016
VILANCULOS	10 643	18 684	25 789	26 618	27 951
INHAMBANE	15 039	13 571	10 780	7 959	5 827
TETE	28 504	29 354	33 136	29 872	26 170
NAMPULA	28 847	38 885	42 573	39 694	33 439
PEMBA	26 058	37 106	43 655	44 743	33 537
<b>TOTAL ALL AFFECTED AIRPORTS</b>	<b>109 091</b>	<b>137 600</b>	<b>155 933</b>	<b>148 886</b>	<b>126 924</b>

**Table 15: Base Model projections of passenger traffic**

	Base Model: Assumptions on growth				
	Year 1	Year 2	Year 3	Year 4	Year 5
VILANCULOS	34 360	43 184	54 606	69 780	89 290
INHAMBANE	4 370	3 278	2 458	1 844	1 383
TETE	23 291	20 729	20 729	20 729	20 729
NAMPULA	28 423	24 160	24 160	24 160	24 160
PEMBA	34 543	35 579	36 647	37 746	38 879
<b>TOTAL ALL AFFECTED AIRPORTS</b>	<b>124 987</b>	<b>126 930</b>	<b>138 600</b>	<b>154 259</b>	<b>174 441</b>

**Table 16: AdM Proposal Model projections of passenger traffic**

	Outcome of AdM Proposal				
	Year 1	Year 2	Year 3	Year 4	Year 5
VILANCULOS	4 370	3 278	2 458	1 844	1 383
INHAMBANE	4 370	3 278	2 458	1 844	1 383
TETE	9 317	8 292	8 292	8 292	8 292
NAMPULA	11 369	10 119	10 119	10 119	10 119
PEMBA	13 817	14 232	14 659	15 098	15 551
<b>TOTAL ALL AFFECTED AIRPORTS</b>	<b>43 244</b>	<b>39 197</b>	<b>37 986</b>	<b>37 196</b>	<b>36 727</b>
Percentage Increase (Decrease) on Base Model	<b>-65%</b>	<b>-69%</b>	<b>-73%</b>	<b>-76%</b>	<b>-79%</b>

The study estimates that implementation of AdM's proposal would cause a precipitous drop in the number of passengers travelling to Mozambique, starting with an immediate decrease of 65% and losing up to 80% of current passenger traffic over five years. Over five years, a total of 525,000 visitors to Mozambique would be lost. Passenger totals will decrease for the international carriers but will be recouped to a certain extent by LAM/MEX. However, the conclusions demonstrate the serious negative impact of the closure of these six international points of entry.

**Table 17. AdM Proposal Impact on Passenger Traffic**

Scenario	Number of Passengers (Projected)						
	Year 1	Year 2	Year 3	Year 4	Year 5	Total	Total
Base Model	124,987	126,930	138,600	154,259	174,441	719,217	719,217
AdM Proposal	43,224	39,197	37,986	37,196	36,727	194,330	194,330
Total Losses	-65%	-69%	-73%	-76%	-79%	-73%	(524,887)

### Impact on Economy, Jobs and Investment

The decrease of passenger traffic would translate directly to decreases in economic activity and jobs in these areas. Over a five-year period, this analysis projects that Mozambique would lose \$340 million and almost 50,000 jobs. Financial models were used to estimate the economic contribution of tourists and other visitors to Mozambique in terms of GDP and job generation. These models

were based on those of the prior USAID SPEED project<sup>10</sup>, and a United Nations framework for tourism economic statistics<sup>11</sup>.

### **MODELLING ECONOMIC IMPACT**

The assumptions for modelling economic impact in US dollars per visitor are shown in the table below:

**Table 18: Model for GDP Contribution Per Visitor**

	<b>2013</b>	<b>2017</b>
Visitors Exports (a)	400,40	448,50
Domestic Expenditure (b)	570,00	638,40
<b>Internal Tourism Consumption (c = a+b)</b>	<b>970,40</b>	<b>1086,90</b>
Purchases by Tourism Provides, including imported goods (e)	-391,00	-437,90
<b>Direct Contribution of Travel &amp; Tourism to GDP (e=c-d)</b>	<b>579,40</b>	<b>649,00</b>
Other Final Impacts Domestic supply chain (f)	343,90	385,20
Capital Investment (g)	188,40	211,00
Government Collective Spending (h)	56,50	63,30
Imported Goods from Indirect Spending (i)	-37,70	-42,20
Induced (j)	259,10	290,20
<b>Total Contribution of Travel &amp; Tourism to GDP (k=e+f+g+h-i+j) per visitor</b>	<b>1389,60</b>	<b>1556,50</b>

Using the model above, and calculations for investment and job creation as shown in the table below, the following table estimates the contribution to GDP, investment and employment under the Base Model.

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<sup>10</sup> DAI and Nathan Associates (United States Agency for International Development), Impact of Air Transport Liberalization on Tourism and the Wider Economy in Mozambique, October 2013

<sup>11</sup> United Nations Department of Economic and Social Affairs Statistics Division ST/ESA/STAT/SER.F/80/Rev.1 Tourism Satellite Account: Recommended Methodological Framework, 2008

**Table 19: Base Model GDP, Investment and Employment Generation**

	TOTAL ALL AFFECTED AIRPORTS				
	Base Model: Assumptions on growth				
	Year 1	Year 2	Year 3	Year 4	Year 5
Visitors and Tourists (Number of Visitors)	124 987	126 930	138 600	154 259	174 441
Total US\$ Contribution of Travel & Tourism to GDP per pax	649,00	649,00	649,00	649,00	649,00
Total US\$ Contribution of Travel & Tourism to GDP	81 116 868	82 377 693	89 951 521	100 114 202	113 211 995
US\$ : MZN Exchange Rate	60,02160	60,02	60,02	60,02	60,02
<b>Total MZN Contribution of Travel &amp; Tourism to GDP</b>	<b>4 868 764 206</b>	<b>4 944 440 914</b>	<b>5 399 034 214</b>	<b>6 009 014 569</b>	<b>6 795 165 089</b>
<b>Investment in new hotel rooms per year</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
Additional Visitors and Tourists (Number of Visitors)	124 987	126 930	138 600	154 259	174 441
Additional Visitors and Tourists (Number of Visitors) per day	342	348	380	423	478
Average number of guest per room (1.5)	228	232	253	282	319
Average number of nights per stay 3 days	685	696	759	845	956
Number of new rooms (5 & 4 Stars) at 85% Occupancy factor	806	818	893	994	1125
Total Hotel Investment (million USD) US\$100,000 per room	80 572 100	81 824 457	89 347 421	99 441 850	112 451 681
Total Investment (million USD) multiplier 1,8 of hotels	145 029 780	147 284 023	160 825 357	178 995 331	202 413 026
US\$ : MZN Exchange Rate	60,02160	60,02160	60,02160	60,02160	60,02160
<b>Total Investment (MZN)</b>	<b>8 704 919 435</b>	<b>8 840 222 689</b>	<b>9 652 995 270</b>	<b>10 743 586 153</b>	<b>12 149 153 694</b>
<b>Employment Impact</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
Direct Employment (One direct worker per every 7.911 visitors)	15 799	16 045	17 520	19 499	22 050
Total Employment (Total worker per every 2.9 visitors)	43 099	43 769	47 793	53 193	60 152

The following table estimates the contribution to GDP, investment and employment under the AdM Proposal Model.

**Table 20: AdM Proposal Model GDP, Investment and Employment Generation**

	Model of Negative Implication of AdM Proposal				
	Year 1	Year 2	Year 3	Year 4	Year 5
Visitors and Tourists (Number of Visitors)	43 244	39 197	37 986	37 196	36 727
Total US\$ Contribution of Travel & Tourism to GDP per pax	649,00	649,00	649,00	649,00	649,00
Total US\$ Contribution of Travel & Tourism to GDP	28 065 047	25 439 165	24 652 648	24 140 346	23 836 033
US\$ : MZN Exchange Rate	60,02	60,02	60,02	60,02	60,02
<b>Total MZN Contribution of Travel &amp; Tourism to GDP</b>	<b>1 684 509 030</b>	<b>1 526 899 377</b>	<b>1 479 691 357</b>	<b>1 448 942 169</b>	<b>1 430 676 811</b>
<b>Investment in new hotel rooms per year</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
Additional Visitors and Tourists (Number of Visitors)	43 244	39 197	37 986	37 196	36 727
Additional Visitors and Tourists (Number of Visitors) per day	118	107	104	102	101
Average number of guest per room (1.5)	79	72	69	68	67
Average number of nights per stay 3 days	237	215	208	204	201
Number of new rooms (5 & 4 Stars) at 85% Occupancy factor	279	253	245	240	237
Total Hotel Investment (million USD) US\$100,000 per room	27 876 567	25 268 319	24 487 084	23 978 223	23 675 954
Total Investment (million USD) multiplier 1,8 of hotels	50 177 820	45 482 975	44 076 752	43 160 801	42 616 716
US\$ : MZN Exchange Rate	60,02160	60,02160	60,02160	60,02160	60,02160
<b>Total Investment (MZN)</b>	<b>3 011 753 038</b>	<b>2 729 960 931</b>	<b>2 645 557 168</b>	<b>2 590 580 343</b>	<b>2 557 923 500</b>
<b>Employment Impact</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
Direct Employment (One direct worker per every 7.911 visitors)	5 466	4 955	4 802	4 702	4 643
Total Employment (Total worker per every 2.9 visitors)	14 912	13 516	13 098	12 826	12 665

The comparison of the Base Model and the AdM Proposal Model implications for GDP, investment and employment are as follows:

**Table 21: Net impact of AdM proposal on contribution to the GDP, Investment and employment**

	Pax traffic loss				
	Model of Negative Implication of AdM Proposal				
	Year 1	Year 2	Year 3	Year 4	Year 5
Visitors and Tourists (Number of Visitors)	81 744	87 733	100 615	117 063	137 713
Total US\$ Contribution of Travel & Tourism to GDP per pax	649,00	649,00	649,00	649,00	649,00
Total US\$ Contribution of Travel & Tourism to GDP	53 051 821	56 938 528	65 298 873	75 973 856	89 375 963
US\$ : MZN Exchange Rate	60,02	60,02	60,02	60,02	60,02
<b>Total MZN Contribution of Travel &amp; Tourism to GDP</b>	<b>3 184 255 177</b>	<b>3 417 541 537</b>	<b>3 919 342 857</b>	<b>4 560 072 400</b>	<b>5 364 488 277</b>
<b>Investment in new hotel rooms per year</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
Additional Visitors and Tourists (Number of Visitors)	81 744	87 733	100 615	117 063	137 713
Additional Visitors and Tourists (Number of Visitors) per day	224	240	276	321	377
Average number of guest per room (1.5)	149	160	184	214	252
Average number of nights per stay 3 days	448	481	551	641	755
Number of new rooms (5 & 4 Stars) at 85% Occupancy factor	527	566	649	755	888
Total Hotel Investment (million USD) US\$100,000 per room	52 695 533	56 556 138	64 860 336	75 463 628	88 775 728
Total Investment (million USD) multiplier 1,8 of hotels	94 851 960	101 801 048	116 748 606	135 834 530	159 796 310
US\$ : MZN Exchange Rate	60,02160	60,02160	60,02160	60,02160	60,02160
<b>Total Investment (MZN)</b>	<b>5 693 166 397</b>	<b>6 110 261 758</b>	<b>7 007 438 102</b>	<b>8 153 005 810</b>	<b>9 591 230 194</b>
<b>Employment Impact</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
Direct Employment (One direct worker per every 7.911 visitors)	10 333	11 090	12 718	14 797	17 408
Total Employment (Total worker per every 2.9 visitors)	28 188	30 253	34 695	40 367	47 487

In summary, economic and financial modeling demonstrate the significant negative impact on the economy of Mozambique if the AdM proposal is implemented. It is important to note that the predicted impact of the AdM proposal is presented in comparison to a “steady state” of growth based on historical five-year data. The actual impact is likely to be far greater since economic growth and growth in demand for air transport is likely to be higher than predicted by historic data. A number of megaprojects in the oil and gas industry should come online in the medium term, and there are good indications of strong growth in the tourism industry. The prior five-year economic data have also been significantly affected by the economic crisis and currency devaluation. Therefore, the projected losses are likely to underrepresent the true impact on the Mozambican economy.

**Table 22: AdM Proposal Impact on GDP**

	Contribution to GDP (Projected, USD Million)					
Scenario	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Base Model	81	82	90	100	113	466
AdM Proposal	28	25	25	24	24	126
Total Losses	(53)	(57)	(65)	(76)	(89)	(340)

**Table 23: AdM Proposal Impact on Employment**

	Total Direct and Indirect Employment (Projected)				
Scenario	Year 1	Year 2	Year 3	Year 4	Year 5
Base Model	43,099	43,769	47,793	53,193	60,152
AdM Proposal	14,912	13,516	13,098	12,826	12,665
Cumulative Losses	(28,187)	(30,253)	(34,695)	(40,367)	(47,487)

## **Impact on Mozambique's Positioning as Destination For Tourism & Investment**

The international positioning of Mozambique as a destination for tourism and for investment would be affected in two main ways by the implementation of the AdM proposal. First, the limitations to connectivity and the poor service to airport catchment areas (see Economic Principles of Air Transport above) would pose onerous burdens to leisure and business travelers. Second, the reversal of Mozambique's trend towards a liberalized, open and globally connected economy would signal that the country's commitment to the consistent pursuit of these policies is in question, and that perhaps Mozambique is not, in fact, open for business.

### ***Increased Burdens to Tourism and Business Travelers***

Elimination of direct international flights to six of the current active points of entry will lower hotel and resort occupancy, hamper staff rotation, stifle new investment, reduce the availability of technical, operational and managerial staff for businesses, limit trade, delay cargo deliveries, and hinder the consultants, investors and financiers that support the overall economic growth and trade within these regions. It would also lower the connectivity and standing of Provincial Governments with the surrounding countries as they lose this direct connection for exchange of people, goods, services and potentially technology, skills and knowledge.

A critical issue for business travellers is that most international travel insurance does not cover LAM flights, and employees of international firms are required to fly on a carrier that will be covered by their insurance in case of accident or injury. Mining, oil/gas extraction and fishing are among the most dangerous occupations, and direct connections to Johannesburg enable rapid medical evacuation to international standard medical facilities.

Negative impacts on all travelers include:

- Reduced efficiency of flight time and distance – flight distance increases from 3%-48% depending on itinerary
- Increased intermediate domestic stops, increasing risk of delays, cancellations and accidents - 70% of all accidents occur during take-off and landing
- Increased environmental impact as additional take-offs and landings, as well as increased distances, increase carbon emissions from 7%-60% depending on itinerary
- Increased prices as additional take-offs and landings add costs, and an additional domestic ticket on LAM/MEX adds costs

### **Damaging Mozambique's Flourishing Tourism**

Perhaps the most devastating impact of the AdM proposal would be for **Vilanculos**, home of the Bazaruto Archipelago marine reserve and a major international tourist destination in Mozambique. Vilanculos has experienced strong economic growth following a major airport upgrade completed in 2011. This attracted reliable direct flights from Johannesburg and an increase in passenger traffic reaching an average 31% in 2015-2016. In fact, growth in international passenger traffic to Vilanculos drives most of the overall traffic growth for Mozambique. This has propelled substantial tourism development, investment in resorts, growth in employment and trade and the success of two universities specializing in tourism. Key informants in Vilanculos report that further investments such as the Solida hotel project have already been cancelled by the mere announcement of the potential closure of the airport for regular international traffic, which also resulted in the cancellation of 400 hotel reservations.

### **Raising Costs and Barriers for Business**

The AdM proposal's negative impacts on business are demonstrated by the expected results at **Pemba**, which operates as a central logistics hub for the mining and oil/gas operations in the North and North East of Mozambique. 70% of passenger traffic to Pemba is for business purposes (oil, gas, graphite, ruby mining, commercial, fishing, corporate staff, government officials). International scheduled flights connect Pemba to Dar es Salaam and to Johannesburg. Direct connectivity is required for the rotation of technicians and workers in these industries, who are brought together in Johannesburg from around the world, then flown to Pemba in small groups. This is critical because most international travel insurance does not cover LAM flights, and employees of international firms are required to fly on a carrier that will be covered by their insurance in case of accident or injury on the plane. Mining and fishing are among the most dangerous occupations, and direct connections to Johannesburg enable rapid medical evacuation to top quality medical facilities. International air cargo shipments critical to business operations, such as urgent spare parts, require direct access to scheduled flights for guaranteed and timely delivery.

The closure of the airport at **Tete** to international air traffic would have similar impacts as for Pemba, but would be exacerbated by the elimination of the common practice of efficient one-day round trips from Johannesburg to Tete for mining company technicians or managers. Tete based business people also make use of the flights from Tete to South Africa as a transit point for travel to Maputo. This itinerary is preferred due to lower costs, the lack of travel insurance coverage when flying LAM, and the greater frequency and reliability of flights.

**Nampula** is a vibrant trading center and home to an international diaspora, where businesspeople are well connected to neighboring countries and direct international flights facilitate business and friendly cross-border relationships. Nampula is also the seat of Provincial Government and steady traffic demand for civil servants will remain. It takes just ten minutes for traders or government staff to connect from the city to Nampula airport. Nampula is also a natural hub for connectivity from surrounding countries to the rest of Mozambique. AdM's proposal would route international flights through Nacala, requiring a 2.5-hour minimum drive to reach Nampula.

### ***Reversal of Liberalized Aviation Policy Framework***

The AdM proposal would represent a reversal of the aviation liberalization agenda. As discussed above, Mozambique has previously adopted a more liberalized and competitive approach toward its aviation policy (see side box), which has facilitated the increase of direct flights from South Africa,

Kenya and Tanzania to Mozambique's nine international airport points of entry. Ease of access has enabled economic development across multiple sectors with significant increases in investment and jobs in the regions served by international airports. To a large extent these cities are already acting as the gateways and transport hubs for dynamic cross-border economic activity which would be stifled by the closure of these points of entry.

Mozambique's Transport Strategy is grounded in a market-oriented approach to economic development and the facilitation of the movement of people and goods throughout the country. In addition, Mozambique is a signatory to a number of other international agreements that support the liberalization and increased connectivity of air transport worldwide, and which are contradicted by the AdM proposal.

Mozambique has started reviewing the air services agreements to align them with the provisions of the Yamoussoukro Decision, and plans to sign the associated Solemn Commitment to join the single market undertaking (Open Skies for Africa). In air services negotiations, Mozambique has started to negotiate liberal bilateral agreements. It has moved from a single designation regime to a multiple designation per country and dual designation per route. Mozambique is also in the process of harmonizing the existing Mozambique Civil Aviation policy with the African Civil Aviation Policy. Other similar steps towards increased connectivity and integration include discussions about a single African passport and automatic visas for African passport holders.

The economic damage caused by the implementation of the AdM proposal would not result only from a reduction in visitors to Mozambique. It would also be the result of a multitude of business decisions, most of which will never be known in Mozambique, as global businesses perceive that the country may not be committed to the consistent, predictable market-oriented policies it has been embracing, and that doing business in Mozambique may be even more risky than previously assumed.

The negative impacts would be long lasting. Research on similar policy actions globally has demonstrated that less than 20% of pre-closure capacity is regained three years after closure for single carrier routes. On multi-carrier routes, only about 40% of pre-closure capacity is regained three years on.

### **National Strategy for the Integrated Development of the Transport System**

*The current Transport Strategy is informed by the following high-level objective for the transport sector:*

*'Support national economic growth through the improvement of its alignment with the tourism, agriculture, mining and industry strategy, giving priority to the tourism markets and removing obstacles to the growth of the air transport sector through regulatory mechanisms, negotiating agreements within Africa (with particular emphasis on the SADC region) and at international level. The civil aviation strategy recognizes the role of transport in general as a catalyst for economic development and identifies air transport and tourism as two key elements for a sustainable socio-economic transformation*

# CRITICAL ANALYSIS OF ADM PROPOSAL

In addition to the analysis of the potential economic impact of implementing the AdM proposal, a close review of AdM's proposal identified a number of issues and assumptions that are either portrayed inaccurately or are unrealistic. It is important to identify these in a comprehensive analysis of the AdM proposal.

## INCOMPLETE DATA ON SOUTHERN AFRICA REGIONAL AIRPORTS

The AdM proposal provided justification for the reduction in international points of entry by stating that other countries in the region had implemented a similar policy. However, the data provided by AdM in the proposal was incomplete, and does not provide a good justification for AdM's proposal. Countries in the Southern Africa region are not reducing their international points of entry.

**Table 24: International Airports in the Region**

	<b>AdM Proposal</b>	<b>Actual</b>
Africa do Sul	3	10
Tanzânia	3	3
Malawi	2	2
Zimbabwe	3	3
Moçambique	3	9
	<b>14</b>	<b>27</b>
<b>Not included in proposal</b>		
Botswana		4
Zambia		3
Kenya		3
Namibia		2
Angola		1
<b>Total in Region</b>	<b>14</b>	<b>40</b>

The details of these international airports are set out in table 24 below.

**Table 25: International Airports in Each Country within the Region**

	ICAO	IATA	Total							
<b>South Africa</b>				<b>10</b>	<b>Zimbabwe</b>					<b>3</b>
1	Port Elizabeth International Airport	FAPE	PLZ		1	Bulawayo - Joshua Mqabuko Nkomo International	FVBU	BUQ		
2	Bram Fischer International Airport	FABL	BFN		2	Harare - Harare International Airport	FVHA	HRE		
3	O.R Tambo International Airport	FAOR	JNB		3	Victoria Falls Airport	FVFA	VFA		
4	Lanseria International Airport	FALA	HLA		<b>Kenyan International Airports</b>					<b>3</b>
5	King Shaka International Airport	FALE	DUR		1	Eldoret - Eldoret International Airport	HKEL	EDL		
6	Polokwane International Airport	FAPP	PTG		2	Mombasa - Moi International Airport	HKMO	MBA		
7	Kruger Mpumalanga International Airport	FANC	NCS		3	Nairobi - Jomo Kenyatta International Airport	HKJK	NBO		
8	Upington International Airport	FAUP	UTN		<b>Tanzania</b>					<b>3</b>
9	Pilanesberg International Airport	FAPN	NTY		1	Dar es Salaam - Julius Nyerere International Airport	HTDA	DAR		
10	Cape Town International Airport	FACT	CPT		2	Hai District - Kilimanjaro International Airport	HTKJ	JRO		
	Wonderboom Airport (Application lodged for international status)	FAWB	PRY		3	Zanzibar Archipelago are				
<b>Namibia</b>				<b>2</b>		Unguja Island - Abeid Amani Karume International Airport	HTZA	ZNZ		
	Walvis Bay International Airport					Proposed airports[edit]				
1	Walvis Bay Airport	FYWB	WVB			- Msalato International Airport, Dodoma (capital)				
2	Windhoek Hosea Kutako International Airport	FYWH	WDH			- Kajunguti International Airport, Kagera Region				
						- Serengeti International Airport, Mugumu				
<b>Angola</b>					<b>Malawi</b>					<b>2</b>
1	Luanda - 4 de Fevereiro Airport	FNLU	LAD	<b>1</b>	1	Blantyre - Chileka International Airport	FWCL	BLZ		
	Luanda (Angola International Airport)		Under constructon		2	Lilongwe - Lilongwe International Airport (Kamuzu Int'l)	FWKI	LLW		
	Luau International Airport	pending	pending		<b>Mozambique</b>					<b>9</b>
<b>Botswana</b>				<b>4</b>	1	Beira Airport	FQBR	BEW		
1	Francistown International Airport	FBFT	FRW		2	Inhambane Airport	FQIN	INH		
2	Kasane Airport	FBKE	BBK		3	Lichinga Airport	FQLC	VXC		
3	Maun Airport	FBMN	MUB		4	Maputo International Airport	FQMA	MPM		
4	Gaborone - Sir Seretse Khama International Airport	FBSK	GBE		5	Nacala Airport	FQNC	MNC		
<b>Zambia</b>				<b>3</b>	6	Nampula Airport	FQNP	APL		
1	Livingstone - Harry Mwanga Nkumbula International	FLHN	LVI		7	Pemba Airport	FQPB	POL		
2	Lusaka - Kenneth Kaunda International Airport	FLKK	LUN		8	Vilankulo Airport (Vilanculos Airport)	FQVL	VNX		
3	Ndola - Simon Mwansa Kapwepwe International	FLSK	NLA			Tete - Chingozi Airport	FQIT	TET		
					<b>Total</b>				<b>40</b>	

## UNREALISTIC PROJECTIONS FOR LAM/MEX GROWTH

The AdM proposal assumes an immediate (2016) increase of 71% in LAM's fleet by the addition of five regional aircraft, increasing the fleet from 7 aircraft to 12 aircraft and adding 48% more seat capacity.

**Table 26: Number of LAM/MAX fleet of aircraft according to AdM proposal**

	Number of Aircraft				Seats	Total Seat Capacity			
	Now	2016	2017	2018		Now	2016	2017	2018
E190	2	2	4	4	93	186	186	372	372
Q400		3			72	-	216	-	-
E170				2	70	-	-	-	140
E120		2	2	2	30	-	60	60	60
E145	3	3	3	3	50	150	150	150	150
B737-500	1	1	1	-	111	111	111	111	-
ATR42			2	2	50	-	-	100	100
B737-700	1	1	1	1	132	132	132	132	132
<b>Total</b>	<b>7</b>	<b>12</b>	<b>13</b>	<b>14</b>		<b>579</b>	<b>855</b>	<b>925</b>	<b>954</b>
<b>% Increase in aircraft and seat capacity</b>		<b>71%</b>	<b>8%</b>	<b>8%</b>			<b>48%</b>	<b>8%</b>	<b>3%</b>

The AdM proposal also assumes that new routes will operate immediately at full capacity, with customer demand rising to match the capacity increase and continuing to grow consistently at 4% per year. However, actual overall passenger traffic in Mozambique is dropping, and customer

demand for new routes takes substantial time to develop. The AdM proposal did not include market research supporting the demand for the proposed routes shown below.

**Table 27: Routes proposed in AdM proposal**

From FQNC Nacala		From FQBR Beira		From FQMA Maputo	
	Johannesburg		Harare		Johannesburg
	Johannesburg		Johannesburg		Nairobi
	Doha				Harare
	Mumbai	<b>From FQBR Beira</b>			
	Punta Europa (Equatorial Guinea) & Lisbon		Nacala	<b>From FQMA Maputo</b>	
	Nairobi				Inhambane
	Lagos, Nigeria				Vilankulo
	Johannesburg				Beira
	Dar es Salaam				Nacala
					Tete
					Quelimane
<b>From FQNC Nacala</b>					Chimoio
	Mocímboa da Praia				Nampula
	Pemba				
	Lichinga				
	Chingozi				
	Maputo				
	Beira				

For customer demand to meet this new level of supply requires substantial demand at both airports of each route or connectivity to a large existing international network. Normally passenger traffic is built up on smaller aircraft by means of connecting flights and only when volumes have built up enough (via indirect routes) to justify direct operations are large aircraft direct services launched.

## UNREALISTIC MANDATE FOR HUB-AND-SPOKE ROUTE NETWORK

Restricting the international points of entry to only three airports and mandating that the Mozambican airline industry operate on a hub-and-spoke model, rather than on the current point-to-point route network, replaces the industry’s competitive response to market demand with a network structure that is inefficient, inconvenient, unaffordable, and in some cases, even impossible given current resources.

In liberalized air markets, airlines are free to choose how to structure their national and international routing, either with Hub-and-Spoke or Point-to-Point networks. This allows airlines to be responsive to the market, adding or removing routes based on shifting customer demand. Point-to-Point networks can be most efficient and are often adopted by Low-Cost Carriers (LCCs) to maximize average daily use of aircraft equipment, lower costs, grow markets and respond to passenger preferences for direct flight services. Hub-and-Spoke networks are generally used by full service international airlines, which provide seamless service within their airline for travel to the hub and transfer to the spoke destination. Hub-and-Spoke networks generate scope advantages (i.e. the

ability for a single airline company to compete across a large geographic market) not scale advantages (which lower costs by increasing volumes).

The application of a hub-and-spoke model for Mozambique is problematic for several reasons. First, the international carriers bringing passengers to the hub airports would not have transfer flights to the final destination. A transfer from Airlink, Kenya Airways, or other carriers to LAM/MEX would be required. This creates complications for ticketing, baggage transfer, and schedule coordination, and eliminates many of the advantages of the hub-and-spoke network model.

Second, the proposed hub airports are not well placed to serve their spoke networks. For example, AdM proposes that passengers currently served by airports in Nampula and Pemba will now fly in and out of Nacala, and transfer by road to Nampula and Pemba. This re-routing would be beneficial for AdM, which is faced with the high operating costs of a new large and expensive airport at Nacala, which is only served by two weekly domestic flights from Maputo by LAM/MEX. However, from the perspective of serving the demand for convenient, affordable international air travel to Mozambique, the Nacala airport falls far short. Nacala does not have the domestic connectivity that has attracted visitors to the hub at Nampula. In fact, there are no airline connections from Nacala to Pemba or to Nampula. Travelling the 384km between Nacala and Pemba by road requires at least 6.5 hours. The proposed road connection between Nacala and Nampula is equally unsuitable. Local communities have settled next to the road, which enables them to trade and commute along the road. There are roadblocks, heavy loaded trucks, some broken down trucks, overloaded and slow-moving vehicles, towns where trading takes place along the road, pedestrians on the edge of the road and negotiations on the price of rides before getting on vehicles and persons selling nuts and juice for local consumption. There are animals and commercial activities next to the road and speed limits in towns and some settlements. Driving times for the 195km trip vary from 2.5 hours to over 3 hours, barring major obstacles. This is certainly not an airport-to-airport connection where an average high speed can be maintained, and the time of travel can accurately be predicted.

Third, markets drive economic decisions and investment, and the current structure of the aviation sector in Mozambique has been established in part through customer demand for efficient and low-cost international travel. AdM's proposal to alter the structure by regulation fails to acknowledge that passenger traffic cannot simply be re-allocated. Passenger demand for direct flights to specific destinations was built up over time based on the particular attributes of the end destinations and the flight frequency and reliability of the specific airlines. By contrast, AdM proposes that passenger volumes will automatically grow in direct proportion to the increase in capacity provided by the immediate implementation of the new hub-and-spoke model. However, no passenger research has been conducted to determine the likely demand response to the new routing networks; and on the supply side the airplanes, employees, and other resources to implement that model do not exist.

## ANALYSIS OF PROPOSED BENEFITS OF THE ADM PROPOSAL

The AdM Proposal identified certain benefits of reducing entry points which are reviewed below.

**Table 28: Comments on the AdM proposed benefits of reducing entry points**

Proposed benefits of reducing entry points	Comments
1) Improve direct access to increase economic and tourism development and maximize revenues for the country	Direct access is terminated in favour of journeys via intermediate 'hub' airports Connectivity of Mozambique to other destinations will be reduced

	<p>Consequently, distance and time of travel, risks of missed connections and prices will increase.</p> <p>Likely negative impact on tourism (Pemba &amp; Vilanculos)</p> <p>Likely negative impact on staff rotation and new economic projects (Pemba and Tete)</p>
<p>2) Create favourable conditions for the introduction of Hub-and-Spoke operations</p>	<p>The essential elements for Hub-and-Spoke network systems do not exist in Mozambique. Passenger traffic is neither geographically concentrated nor large enough to support this model.</p> <p>The design of the hub system does not correspond with airport catchment areas, and infrastructure for identified hub airports such as Nacala is extremely poor.</p> <p>No scheduled airlines are based at the proposed hubs of Nacala or Beira. No spare parts, maintenance or crews are based there.</p> <p>The regulatory mandate for a hub-and-spoke network would reverse the air transport sector liberalization agenda, to which Mozambique has committed through multiple international agreements.</p> <p>Airlines can operate Hub-and-Spoke route networks on a commercial basis without regulatory intervention if these are most economically viable.</p> <p>LAM currently has too few aircraft to operate Hub-and-Spoke systems, and does not have the financial ability to rapidly increase capacity.</p> <p>Most LCCs operate point-to-point services which has been proven as a beneficial business model to grow air travel in a domestic market</p> <p>This intervention implies a reintroduction of economic control and regulation, rather than an improved business enabling environment</p>
<p>3) Maximization of fleet utilization, increased flight frequency, increased seats, competition and increased economies of scale in the air passenger and cargo market;</p>	<p>These claims were not substantiated in the proposal, and are contrary to international experience and academic research</p> <p>Hub-and-Spoke route networks generally generate lower average fleet use and staff utilization</p> <p>Hub-and-Spoke route networks increase scope not scale advantages</p> <p>Unnecessary increased flight time, distance and emissions will result</p> <p>Competition increases with more participants not less</p>
<p>4) Reduction of operating costs, increased efficiency benefits and consequent reduction of airfare costs;</p>	<p>Airlines' operational cost will collectively increase due to additional flight time, distance, landings &amp; take offs</p> <p>Airport operating costs will remain constant as international non-scheduled flights will continue</p> <p>As costs increase, airfares will increase</p>

5) Attracting new operators to serve the domestic and international market	New entrants to domestic market are already planning their own route networks, but may pull out due to the AdM proposal. LAM may increasingly monopolize domestic and regional flights Large batch size (seat capacity) of long haul aircraft require high demand on each flight, making it unlikely that additional carriers will enter the small Mozambican market especially with the uncertainty created by the AdM proposal.
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## STAKEHOLDER CONSULTATIONS

### DISCUSSIONS WITH AIRLINES

Discussions were held with AdM, Ethiopian Airways<sup>12</sup>, Airlink and LAM/MEX. Further written submissions were requested from all other airlines servicing the Mozambique market, and were received from Airlink as well as CR Aviation (other responses remain pending). Refer to Annex G.

A summary of the companies' feedback is as follows:

- Passengers prefer to fly directly to destinations rather than through intermediate stops. The AdM proposal would reduce tourism and visitor traffic as passengers have alternative choices of other competing destinations.
- Reliability of air service is essential for customers, and there are concerns across the market regarding the disappointing experiences on LAM domestic services, including the lack of connectivity, infrequent flights, delays and flight interruptions.
- Passenger traffic has to be generated by economic activity (increasing either business or tourism travel) which is also facilitated by the airlines and cannot be taken for granted. Airlink has played a substantial role in the development of the Mozambican economy, particularly in tourism at Vilanculos and Tete.
- There is strong opposition to the use of Nacala as a hub. Nacala cannot replace Pemba or Nampula, which have their own distinct markets. Nacala is not a catchment area for passengers traveling to either location.
- The uncertainty of the AdM proposal hampers tourist planning and business investment

Airlink submitted a written response including the following:

*'The most prominent hub in the region is JNB and it is important that all destinations within Mozambique enjoy global air access via JNB instead of diverting traffic through secondary nodes such as MPM, BEW and MNC (Nacala).'*

*'Please note that MNC does not have a published instrument approach procedure and therefore Airlink has not commenced services JNB-MNC.'*

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<sup>12</sup> Although Ethiopian Airways is focussed on domestic operations, it may in future be interested to operate directly to some of the outlying affected airports.

*'We have already seen the adverse impact on tourism traffic at VNX resulting from the rumours that VNX will be closing to international traffic where tour operators are preferring to recommend other competing destinations such as Mauritius and Seychelles that enjoy direct services from JNB. We believe that changing these international gateway airports to domestic will be the death knell to tourism at POL, TET, APL, VNX, and INH. Our belief is supported by the local hospitality sector'.*

## **DISCUSSIONS WITH ADM**

Mr Emanuel Chaves (Chairman and CEO) of Aeroportos se Mocambique (AdM) provided a broad outline of his overall vision which is primarily geared towards the use of Nacala airport as a logistic hub including a deep-water port, rail and aviation hub. The objective is to attract large wide-body aircraft for long-haul international flights. Nampula, Tete and Pemba have constraints to further growth, which limits aircraft size. Nacala lies between Nairobi (NBO) and Johannesburg (JNB), with a 2.5 hour flight to JNB and 2 hour flight to NBO. The East African coast hubs are currently Cairo, NBO and JNB.

Nacala is located at sea level, which promises better aircraft performance than airports located at higher altitudes. Cost savings can be achieved by greater volumes of passenger traffic throughput through Nacala airport. Refer to Annex G.

## **DISCUSSIONS WITH IACM**

Discussion with Cmdt. Joao Martins de Abreu, President of IACM, included feedback on visits to the outlying districts. The National Transport Policy and the areas applicable to aviation were identified and discussed. The current status of the AdM proposal is that the status quo will remain for 3 to 6 years during which development would be gauged for the suitability of the AdM proposal. Airport runway lengths should be suitable for B737 or A320 type of aircraft. The Bi-lateral air services agreement (BASA) grants traffic rights on an inter-State treaty level and is lodged at ICAO. The BASA allows for dual designation of airlines per route. Such rights were exchanged on a reciprocal basis and the rights granted cannot be suspended without creating an international incident and exposing Mozambique to potential retaliatory action. Under the AdM proposal, airport costs will remain materially the same as international charter flights will still continue. It may benefit LAM's domestic services. Unique destinations that can perhaps be combined are the Archipelagos (which compete with the Comoros), Game Parks and Safari Reserves. Swaziland and Kruger Park can perhaps be combined with visits to Mozambique.

# OVERVIEW OF FIELD RESEARCH

Field research was conducted in the locations to be affected by the proposal, including Pemba, Nampula, Nacala, Tete, and Vilanculos. Although a visit was not made to Inhambane, the research in Vilanculos included 11 representatives from Inhambane. The field research meetings generally included discussions with the local airport manager, local and Provincial Government, development agencies and representatives of commerce and industry (facilitated by CTA and FEMOTUR). Passenger traffic data presented for each location is compiled from IACM Passenger Airport Traffic Data.

## DESTINATION VILANCULOS

*Figure 4: Photo impressions of Vilanculos*



### **Stakeholder Discussions at Vilanculos**

A workshop was held on 15 November 2017 at the Hotel Massunguine in Vilanculos with 60 participants, where responses to the AdM proposal were discussed. The workshop was very well-organized by the Associação de Hotelaria e Turismo da Provincia de Inhambane (AHTPI), the

Inhambane Province's Tourism Association. A copy of the agenda for the meeting, a detailed synopsis of the inputs and observations made, and the attendance register are in the Annexes.



Meeting with 60 delegates Hotels, Lodges, Operators and President of the Municipal Council of Vilanculos and the Administrator of the District of Vilanculos

## Origin & Destination Scheduled Passenger Traffic

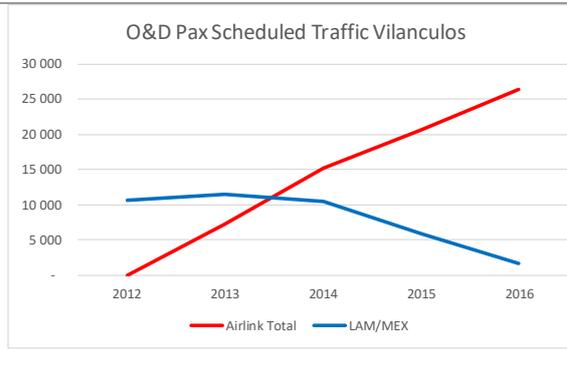
**Table 29: Origin and destination (Regional Scheduled Passenger traffic flow) – Vilanculos**

VILANCULOS	Total Sector Passengers					% Increase in Total Sector Passengers			
	2012	2013	2014	2015	2016	2013	2014	2015	2016
Airlink Johannesburg - Vilanculos	-	7 184	14 604	18 937	23 811		103%	30%	26%
Airlink Nelspruit - Vilanculos	-	-	653	1 707	2 542			161%	49%
<b>Airlink Total</b>	-	<b>7 184</b>	<b>15 257</b>	<b>20 644</b>	<b>26 353</b>		<b>112%</b>	<b>35%</b>	<b>28%</b>
LAM/MEX	10 643	11 500	10 532	5 974	1 598	8%	-8%	-43%	-73%
<b>TOTAL</b>	<b>10 643</b>	<b>18 684</b>	<b>25 789</b>	<b>26 618</b>	<b>27 951</b>	<b>76%</b>	<b>38%</b>	<b>3%</b>	<b>5%</b>

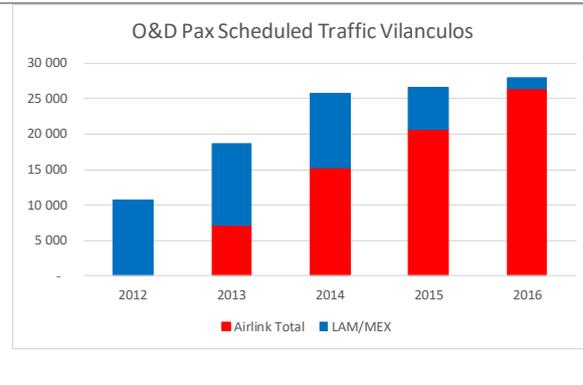
  

VILANCULOS	Percentage of Total				
	2012	2013	2014	2015	2016
Airlink		38%	57%	71%	85%
Airlink			3%	6%	9%
<b>Airlink Total</b>		<b>38%</b>	<b>59%</b>	<b>78%</b>	<b>94%</b>
LAM/MEX	100%	62%	41%	22%	6%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

**Chart 3: O&D Scheduled Passenger Traffic at Vilanculos**



**Chart 4: Composition of O&D Scheduled Passenger Traffic at Vilanculos**



**Notes:**

- Vilanculos represents high-value tourism and competes with other destinations like the Seychelles and Mauritius
- Airlink service has generated significant growth
- LAM is in consistent decline
- Airlink service combines sea/marine tourism at Vilanculos with land based wildlife at Kruger Park (compete with Seychelles and Mauritius)

**Vilanculos – Destination Impressions**

- The massive development of Vilanculos was brought about through the development of an international airport at Vilanculos and direct links to South Africa.
- The development of tourism in Vilanculos is in line with Government objectives.
- Apart from Johannesburg, Nelspruit provides connections for tourists to combine beach activities with the Kruger National Park.
- Many successful hotels and lodges were developed and tourism’s economic impact has created jobs and economic development for the whole area, with indirect employment of more than 80,000 persons.
- Tourism offers a better potential for sustainable and broad-based development than the oil and gas activities.
- Further investments have already been hampered by the mere announcement of the potential closure of the airport for regular international traffic
- Some of the islands have the most luxurious and expensive resorts and hotels that would also be affected.
- The archipelago of Bazaruto is a world-famous landmark rated as the 6<sup>th</sup> tourism wonder of the world, and should remain connected internationally.
- Vilanculos already competes with the more expensive destinations like the Seychelles islands and Mauritius, which are directly accessible from South Africa. Most foreign visitors come to Vilanculos via South Africa.
- LAM does not have enough aircraft to replicate the existing connections, if Vilanculos is closed to international traffic.
- Many tourists cannot get medical insurance for LAM flights, which is considered a necessity in travel destination decisions.

## Vilanculos – Views on AdM's Proposal

- There was unanimous opposition to AdM's proposal
- The Government encouraged investment in Vilanculos and substantial investments have been made, which bring employment. This will all be lost if AdM's Proposal proceeds.
- Closure of the airport for regular international flights will be a huge mistake that would negatively impact investors and employment significantly
- About 400 tourists cancelled their bookings when AdM's Proposal was announced
- The Solida hotel project has been cancelled on rumours that the Vilanculos airport may be closed
- LAM does not have the capacity to offer direct international flights and cannot replace the Airlink flights.
- The airport director expressed his view that the proposal represented a choice of two alternative scenarios: The development of the “national interest” airline (LAM) versus the development of tourism and the local economy

## DESTINATION INHAMBANE

Inhambane was not visited but some of the delegates at Vilanculos represented lodges and tour operators from Inhambane. A written submission was received from Casa de Mar in Inhambane (see Annex H) which expressed concern with the decline in tourism in Inhambane in recent years, and regarded the closure of the airports for direct access as an enormous setback. The poor performance of LAM in recent months has contributed to the decline in tourism, and would be worsened by the implementation of the AdM proposal.

Shortly before the meeting at Vilanculos, LAM cancelled its air services to Inhambane, apparently due to technical reasons which stranded many passengers in both Maputo (on their way to Inhambane) or those due to return (within Inhambane). This included a group of 40 persons from Europe, who, after staying in Maputo for two nights, were driven to Inhambane and back to Maputo by bus. This required an additional overnight stop, which reduced their week-long confirmed stay to an effective three nights in Inhambane. The European tour operator who made the booking responded with the words: 'never again'. This already demonstrates what may happen if connectivity to South Africa is made fully reliant on local connections based on LAM flights via intermediate landings.

At the time that the discussions took place in Vilanculos, LAM's air service was re-instated by subcontracting an AMCI lease with a South African airline.

### Notes:

- LAM has a monopoly in Inhambane
- Airlink does not operate in Inhambane
- LAM passenger volumes are in consistent decline of over 20% annually
- There are more resorts at Inhambane than Vilanculos
- Very low resort occupancy due to reduction in tourism
- Inhambane airport is outdated and located far from resorts

## Origin & Destination Scheduled Passenger Traffic

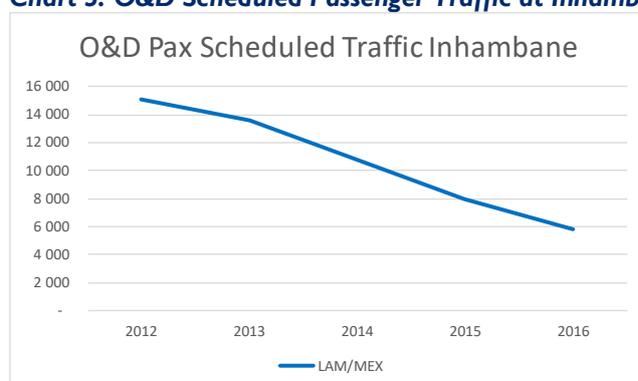
**Table 30: Origin and destination (Regional Scheduled Passenger traffic flow) – Inhambane**

INHAMBANE	Total Sector Passengers					% Increase in Total Sector Passengers			
	2012	2013	2014	2015	2016	2013	2014	2015	2016
Airlink									
LAM/MEX	15 039	13 571	10 780	7 959	5 827	-10%	-21%	-26%	-27%
<b>TOTAL</b>	<b>15 039</b>	<b>13 571</b>	<b>10 780</b>	<b>7 959</b>	<b>5 827</b>	<b>-10%</b>	<b>-21%</b>	<b>-26%</b>	<b>-27%</b>

INHAMBANE	Percentage of Total				
	2012	2013	2014	2015	2016
Airlink					
LAM/MEX	100%	100%	100%	100%	100%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

**Chart 5: O&D Scheduled Passenger Traffic at Inhambane**



# DESTINATION PEMBA

Figure 5: Photo impressions of Pemba

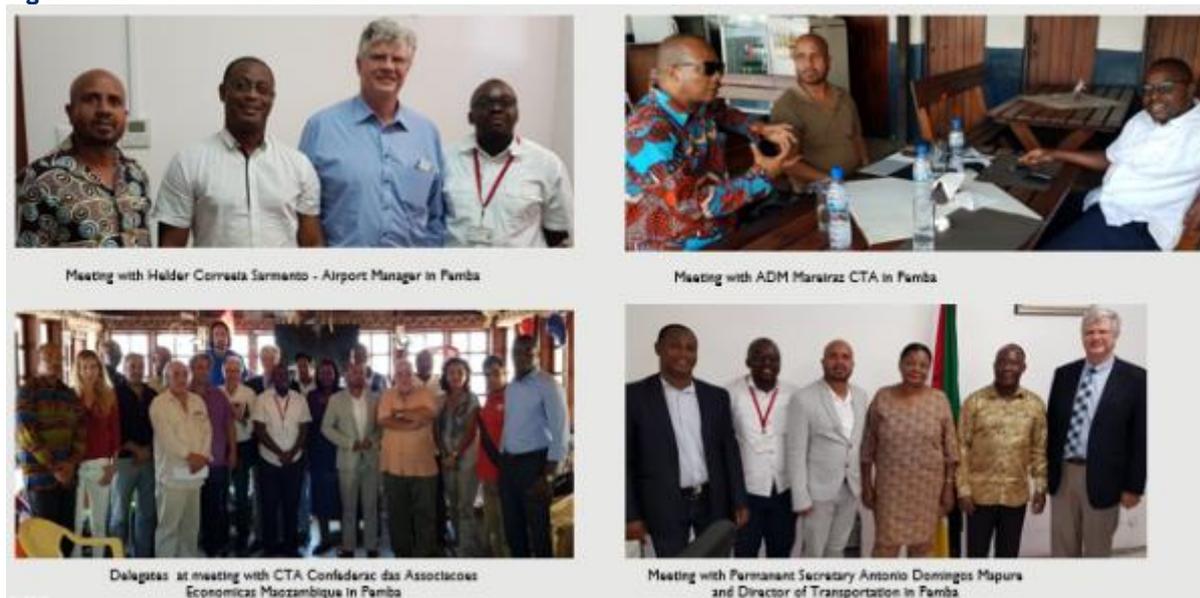




### **Stakeholder Discussions in Pemba**

Following discussions with the Pemba airport director on 6 November 2017, a workshop was held on 7 November 2017 at the Dolphin Resort with 16 participants. The workshop was very well-organized by the local branch of the Confederação das Associações Económicas de Moçambique (CTA) and the Associação de Hotelaria e Turismo de Cabo Delgado (CDTUR). This was followed by further meetings on 7 November 2017, notably with the Provincial Permanent Secretary and Director of Transport and Communication. A copy of the agenda for the meeting, a detailed synopsis of the inputs and observations made, and the attendance register are in the Annexes.

**Figure 6: Discussions at Pemba**



## Origin & Destination Scheduled Passenger Traffic

**Table 31: Origin and destination (Regional Scheduled Passenger traffic flow) – Pemba**

PEMBA	Total Sector Passengers					% Increase in Total Sector Passengers			
	2012	2013	2014	2015	2016	2013	2014	2015	2016
(LAM)PB/HTDA/PB Pemba Da es Sa	11 032	18 141	18 377	18 478	10 837	64%	1%	1%	-41%
(LAM)PB/HKJK/PB Pemba Nairobi F	8 702	8 301	13 679	15 638	10 989	-5%	65%	14%	-30%
(LAM)PB/FMCZ/PB Pemba Dzaoudz	-	702	276	-	422		-61%	-100%	
<b>LAM Total</b>	<b>19 734</b>	<b>27 144</b>	<b>32 332</b>	<b>34 116</b>	<b>22 248</b>	<b>38%</b>	<b>19%</b>	<b>6%</b>	<b>-35%</b>
Airlink	6 324	9 962	11 323	10 627	11 289	58%	14%	-6%	6%
<b>TOTAL</b>	<b>26 058</b>	<b>37 106</b>	<b>43 655</b>	<b>44 743</b>	<b>33 537</b>	<b>42%</b>	<b>18%</b>	<b>2%</b>	<b>-25%</b>

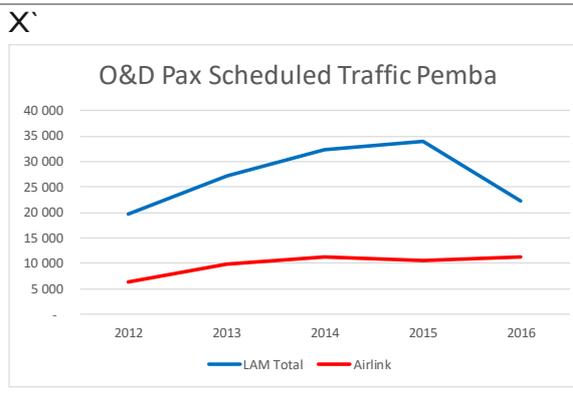
  

PEMBA	Percentage of Total (Market Share)				
	2012	2013	2014	2015	2016
(LAM)PB/HTD	42%	49%	42%	41%	32%
(LAM)PB/HKJ	33%	22%	31%	35%	33%
(LAM)PB/FMC		2%	1%		1%
<b>LAM Total</b>	<b>76%</b>	<b>73%</b>	<b>74%</b>	<b>76%</b>	<b>66%</b>
Airlink	24%	27%	26%	24%	34%
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

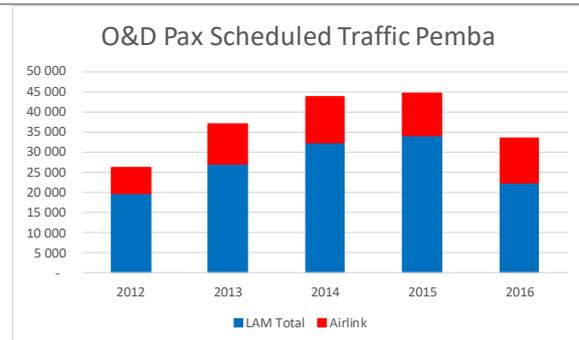
**Notes:**

- LAM declining passenger traffic
- Airlink 2016 increased passenger traffic

**Chart 6: O&D Scheduled Passenger Traffic at Pemba**



**Chart 7: Composition of O&D Scheduled Passenger Traffic at Pemba**



### Pemba - Destination Attributes

- Pemba operates as a central logistics hub for the mines and oil and gas operations (mainly North and North East)
- Pemba is the seat of the Provincial Government. Provides international exposure to Cabo Delgado and direct connectivity to neighbouring areas
- Direct access to Pemba airport is important for the development of Pemba & Province of Cabo.
- There are historic ties with neighbouring SADC countries - Tanzania, Kenya and now, South Africa
- Provincial integrated development program being drawn up – expect approval and investors conference in 2018
- International scheduled flights connect Pemba to Dar es Salaam and to Johannesburg
- Direct connectivity is required for the rotation of technicians and workers on a back-to-back basis. Workers are assembled in Johannesburg from various places in the world, then flown to Pemba in small groups. Reliability of flights are essential for scheduling
- Tourists require flights straight to the final destination of Pemba and not via an intermediate airport
- General consensus was that passenger volume is 70% for business purposes (oil, gas, graphite, ruby mining, commercial fishing, corporate staff, government officials) and 30% for tourism. However, Airlink estimates tourism at only 15%.
- Travel insurance does not cover LAM flights so most passengers choose other airlines
- Medical evacuation is possible directly to large hospitals in Johannesburg
- Door to door cargo shipments require direct access to scheduled flights and reliability and certainty of deliveries
- Tourism development is constrained as result of high ticket prices
- Experience in support services for oil and gas industries and mining is already established in Pemba
- Pemba's economy is slowing due to the completion of the initial stages of several megaprojects (oil and gas) and also influenced by lower oil prices
- Most new developments have been put on hold

## **Pemba – Views on AdM's Proposal**

- The private sector, hotel industry, tourism, operators as well as Provincial Government are against AdM's Proposal and losing direct international access for Pemba
- The looming decision creates uncertainty, inhibits new investments and deters tourists
- There are no effective alternative links from Nacala to Pemba
  - The road connections are not good (almost non-existent)
  - There are no connecting airlines that offer services from Nacala to Pemba
- Risks of interruption to production could be a negative factor for further investment from the oil and gas industry - estimated cost of delay of technicians for critical missions can reach \$1 million to \$2 million per day
- Hotels and tour operators were encouraged to invest in Pemba and took on debt, which relies on continued (or improved) levels of clients.
- The AdM proposal would be devastating on Pemba and Cabo Delgado
- Rather than reducing connectivity, more direct international destinations should be opened from Pemba
- If AdM does not want to continue operating the Pemba airport, a consortium would be prepared to purchase the airport

# DESTINATION NAMPULA

Figure 7: Photo impressions of Nampula





### **Stakeholder Discussions in Nampula**

Following discussions with the Nampula airport director on 8 November 2017, a workshop was held on 9 November 2017 at the local offices of the Confederação das Associações Económicas de Moçambique (CTA) with 21 participants for discussion of the AdM proposal. The workshop was very well-organized by the local branch of the CTA. This was followed by further meetings, notably with the Nacala Corridor Development Agency and hotel proprietors. A copy of the agenda for the workshop, a detailed synopsis of the inputs and observations made, and the attendance register are in the Annexes.

Figure 8: Discussions at Nampula



## Origin & Destination Scheduled Passenger Traffic

Table 32: Origin and destination (Regional Scheduled Passenger traffic flow) – Nampula

NAMPULA	Total Sector Passengers					% Increase in Total Sector Passengers			
	2012	2013	2014	2015	2016	2013	2014	2015	2016
(LAM)NP/FAOR/NP Nampula JNB Nampula		2 114	1 963	1 561	1 129	100%	-7%	-20%	-28%
(LAM)NP/HTDA/NP Nampula Dar es	2 787	228	2 136	2 865	769	-92%	837%	34%	-73%
(LAM)NP/HKJK/NP Nampula Nairobi	-	2 490	475	203	448	100%	-81%	-57%	121%
<b>LAM Total</b>	<b>2 787</b>	<b>4 832</b>	<b>4 574</b>	<b>4 629</b>	<b>2 346</b>	73%	-5%	1%	-49%
<b>AIRLINK Johannesburg - Nampula</b>	<b>14 491</b>	<b>21 441</b>	<b>23 000</b>	<b>20 005</b>	<b>18 495</b>	48%	7%	-13%	-8%
<b>KENYA AIRWAYS Nairobi - Nampula</b>	<b>11 569</b>	<b>12 612</b>	<b>14 999</b>	<b>15 060</b>	<b>12 598</b>	9%	19%	0%	-16%
<b>TOTAL</b>	<b>28 847</b>	<b>38 885</b>	<b>42 573</b>	<b>39 694</b>	<b>33 439</b>	<b>35%</b>	<b>9%</b>	<b>-7%</b>	<b>-16%</b>

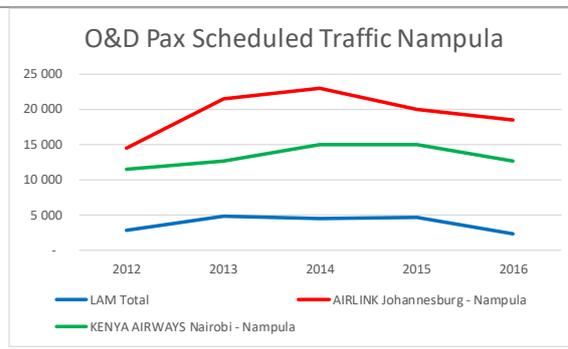
  

NAMPULA	Percentage of Total				
	2012	2013	2014	2015	2016
(LAM)NP/FAC		5%	5%	4%	3%
(LAM)NP/HTD	10%	1%	5%	7%	2%
(LAM)NP/HKJ		6%	1%	1%	1%
<b>LAM Total</b>	<b>10%</b>	<b>12%</b>	<b>11%</b>	<b>12%</b>	<b>7%</b>
<b>AIRLINK</b>	<b>50%</b>	<b>55%</b>	<b>54%</b>	<b>50%</b>	<b>55%</b>
<b>KENYA AIRWA</b>	<b>40%</b>	<b>32%</b>	<b>35%</b>	<b>38%</b>	<b>38%</b>
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

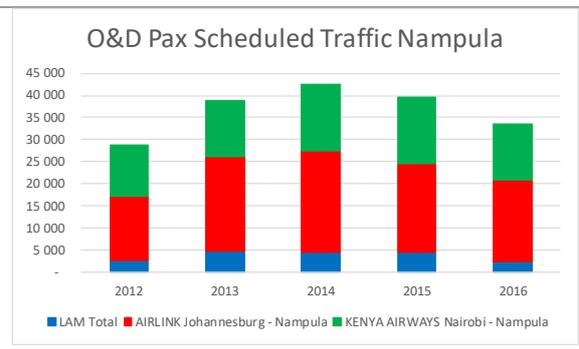
### Notes

- All airlines have declining passenger volumes to Nampula since 2014: LAM is down 49% and Airlink down 16%

**Chart 8: O&D Scheduled Passenger Traffic at Nampula**



**Chart 9: Composition of O&D Scheduled Passenger Traffic at Nampula**



### Nampula – Destination Attributes

- Nampula is the seat of Provincial Government, and requires consistent accessible air transport for civil servants
- Passenger traffic includes traders, business people, Government officials, NGOs (UN refugee camp for displaced persons), but very few tourists.
- Traders have easy access from the airport to the city - 10 minutes for an affordable taxi ride
- Nampula is already the hub for the north of Nampula province and is traditionally known as a central gathering place for the region and neighbouring countries
- Nampula is the destination of choice for passengers, representing a distinct market for connectivity to other destinations that cannot be replicated through the use of Nacala airport
- Sufficient demand has not been demonstrated for Nacala. There are only 2 domestic flights per week for Nacala, and the passenger train between Nampula and Nacala was terminated for lack of demand.

### Nampula – Views on AdM's Proposal

- The AdM proposal would be negative for Nampula's economy
- Most persons, especially the private sector and development agencies, were against AdM's Proposal
- Companies and government based in Nampula will not move to Nacala, so the closure of Nampula airport would only increase costs and make connections more difficult
- As most international traffic has the final destination in Nampula, a mandatory shift to Nacala airport would increase traffic on connecting road. The road is heavily used for commerce, commuting, travelling and trading. It is dangerous and prone to accidents and breakdowns with many stops and delays. This significantly increases the risk of missing flights
- Despite all the lower cost advantages and incentives of Nacala, airfares are substantially higher to Nacala than to Nampula, and the cost of road transport to Nampula has to be factored in.
- Nacala needs further infrastructure, since hospitals and hotels have not been developed as originally planned
- A few participants suggested that it may be negative to the local economy but can perhaps benefit the country as a whole

## ROAD BETWEEN NAMPULA AND NACALA

Much of the AdM proposal relates to utilizing Nacala airport as a hub for passenger destined to Pemba and Nampula.

The road connection between Nacala and Nampula is not suitable to handle the passenger volumes required by a shift of international air transport to Nacala airport. Local communities have settled next to the road, which enables them to trade and commute along the road. There are roadblocks, heavy loaded trucks, some broken down trucks, overloaded and slow-moving vehicles, towns where trading takes place along the road, pedestrians on the edge of the road and negotiations on the price of rides before getting on vehicles and persons selling nuts and juice for local consumption. There are animals and commercial activities next to the road and speed limits in towns and some settlements. This makes it unlikely to have a planned arrival time for a flight departure.

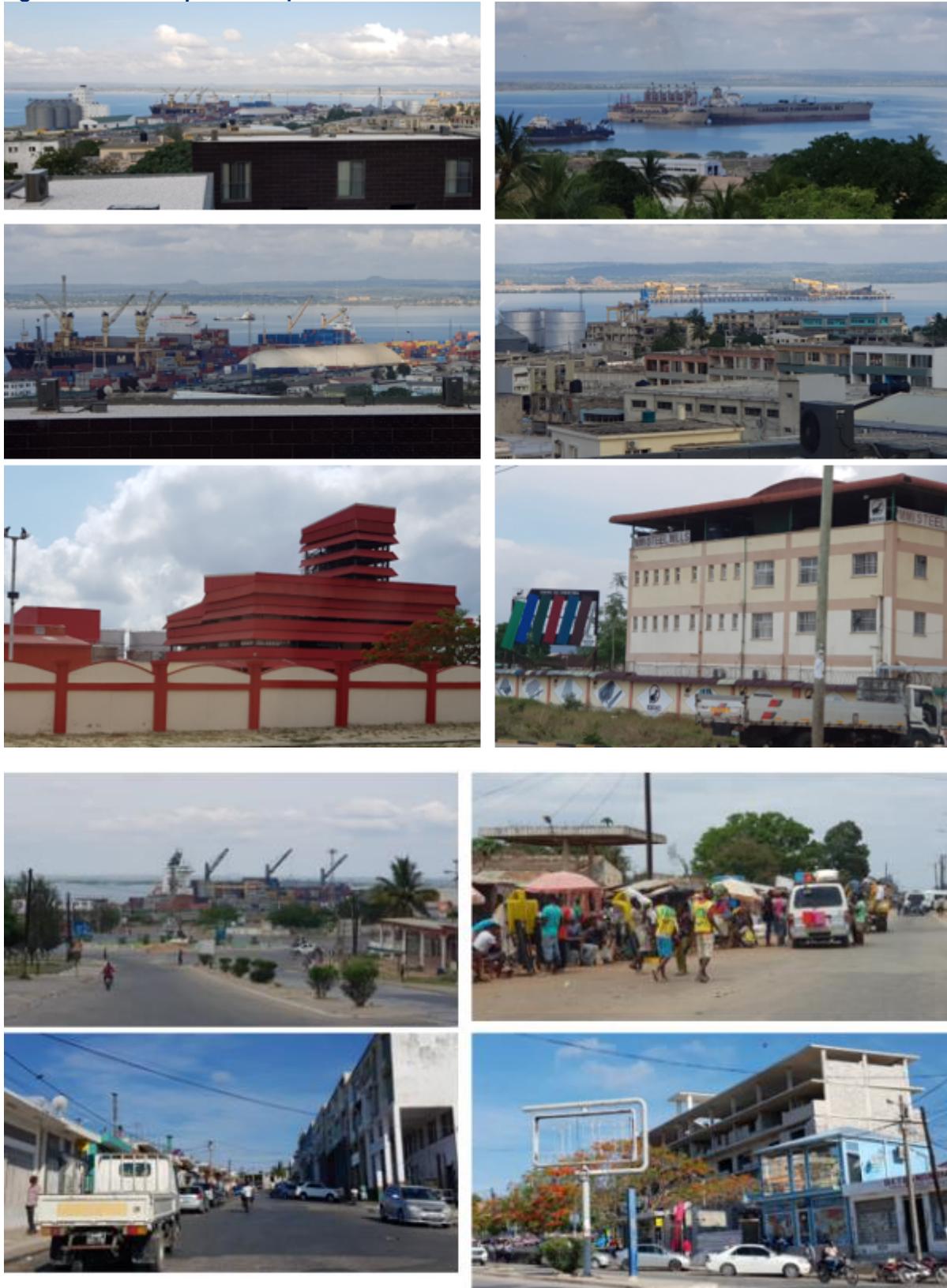
The travel time between Nacala and Nampula can range from 2.5 to 3.5 hours to travel the 195 km. It is certainly not an airport-to-airport connection where an average high speed can be maintained and the time of travel can accurately be predicted.

**Figure 9: Photo impressions of road between Nampula and Nacala**



# DESTINATION NACALA

Figure 10: Photo impressions of Nacala







**Figure 11: Photo impressions of Nacala Airport**





### Stakeholder Discussions in Nacala

Following discussions with the Pemba airport director on 10 November 2017, a workshop was held at the conference center of the Nacala Plaza Hotel with 17 participants. The workshop was very well-organized by the local branch of the Confederação das Associações Económicas de Moçambique (CTA). A copy of the agenda for the workshop, a detailed synopsis of the inputs and observations made, and the attendance register are in the Annexes.

**Figure 12: Discussions at Nacala**



Airport Manager – Nacala Airport

Airport Manager and staff – Nacala Airport

Meeting Hotels, Lodges and Industries Nacala

Delegates Nacala meeting Hotels, Lodges and Industries Nacala

### **Nacala – Destination Attributes**

- Excellent facilities for passenger and cargo exist at the airport. They are well maintained, clean and staffed by the friendly airport director, Mr Jeronimo Tambajane and staff.
- Some of the departure/arrivals halls can also be used for conferences and functions to stimulate demand
- The original overall development plan for the transport integrated hub of sea, rail and air connections has not been completed
- Nacala is an industrial city with an industrial and coal terminal atmosphere and reputation
- LAM's operations had a negative impact on airport usage. Tickets are about \$100 more expensive than flights to Nampula despite lower costs. LAM's operations have not been reliable
- Less demand for LAM's flights from Nacala than from Nampula.
- Business traffic (Nacala and Tete) is possible in relation to coal mining operations of Vale. However, Vale does not support this. Vale operates its own aircraft based in Nacala.
- Critical to have large enough scale of domestic flights to improve Nacala's connectivity with other domestic airports (LAM only connects with Maputo)
- Nacala airport has not published the instrument approach procedure and therefore Airlink cannot operate services
- There is no effective alternative link from Nacala to Pemba or Nampula
  - No effective road connections to Nampula
  - No connecting airlines that offer services from Nacala to Pemba

### **Nacala – Views on AdM's Proposal**

- Further investments are required to make the airport fully functional for airlines. This includes hospitals and hotel investments and publication of instrument approach procedure
- Nacala should start afresh, launch a tourism development mechanism similar to the Wesgro developments in South Africa.
- Nacala should attract a small airline to commence services from Nacala as its base of operations to develop connectivity
- Nacala needs more connectivity to domestic destinations to link to international routes
- If international flights are operated from Nacala participants estimated that only 50% of Nampula's passenger traffic would travel through Nacala (This may be high taking the road condition into account)
- It is too soon to use Nacala as a hub to replace international connections to Pemba, Nampula and Tete

# DESTINATION TETE

Figure 13: Photo impressions of Tete



## Stakeholder Discussions in Tete

Following discussions with the Tete airport director on 12 November 2017, a workshop was held at the VIP Executive Hotel organized by the Associação de Hotelaria e Turismo (ASSOTHARQ-Tete) and Federation of Mozambican Tourism (FEMOTUR) with 11 participants, including the managers of the VIP Executive Hotel and the Ferry Bridge Sun Hotel. Responses to the AdM proposal were noted. This was followed by further meetings on 13 November 2017, notably with the Provincial Director of Health, who was mandated by the Permanent Secretary as well as the Agency Zambezi, the CPI Investment Promotion Centre and the APIEX investments and exports agency. Thereafter valuable insights were obtained from the manager of the Plaza Radisson Hotel and the General Manager of Vale, the largest operating coal mine, who submitted a written submission. A copy of the agenda for the workshop, a detailed synopsis of the inputs and observations made, and the attendance register are in the Annexes.

**Figure 14: Discussions at Tete**

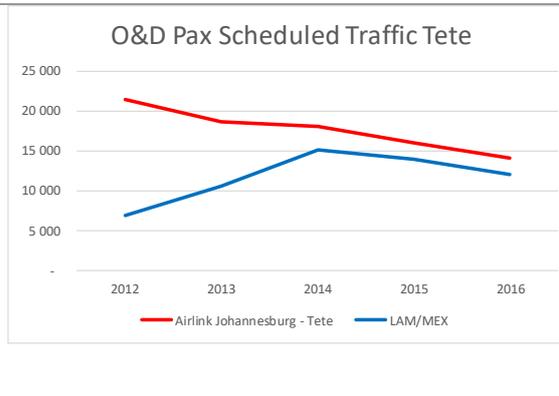


## Origin & Destination Scheduled Passenger Traffic

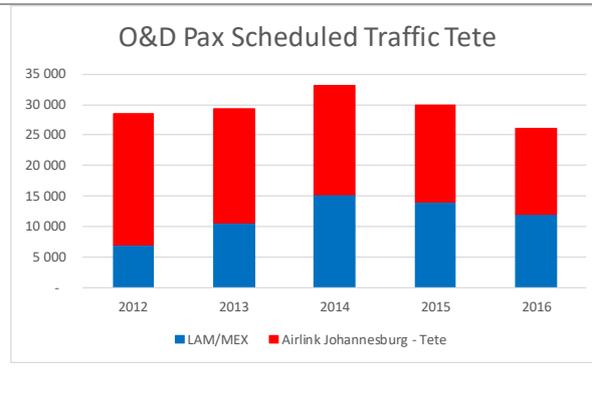
**Table 33: Origin and destination (Regional Scheduled Passenger traffic flow) – Tete**

TETE	Total Sector Passengers					% Increase in Total Sector Passengers				
	2012	2013	2014	2015	2016	2013	2014	2015	2016	
Airlink Johannesburg - Tete	21 507	18 722	18 011	15 949	14 129	-13%	-4%	-11%	-11%	
LAM/MEX	6 997	10 632	15 125	13 923	12 041	52%	42%	-8%	-14%	
<b>TOTAL</b>	<b>28 504</b>	<b>29 354</b>	<b>33 136</b>	<b>29 872</b>	<b>26 170</b>	<b>3%</b>	<b>13%</b>	<b>-10%</b>	<b>-12%</b>	
		Percentage of Total								
TETE	2012	2013	2014	2015	2016					
Airlink	75%	64%	54%	53%	54%					
LAM/MEX	25%	36%	46%	47%	46%					
<b>TOTAL</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>					

**Chart 10: O&D Scheduled Passenger Traffic at Tete**



**Chart 11: Composition of O&D Scheduled Passenger Traffic at Tete**



Source: Compiled from IACM Passenger Traffic Airport Data

### Tete – Destination Attributes

- International scheduled traffic relates to the following businesses: mining (Vale coal operations, iron and steel mining), Kapenta fish project, tobacco, tourists (safari), and expatriates that need to exit for Visa purposes
- Mining expansion has been interrupted by global economic conditions
- New hotels invested substantial amounts of debt financing which is at risk if the Tete airport is no longer available for scheduled traffic. These expensive hotels cater to international standards and are targeting foreign visitors from South Africa.
- Due to the very high LAM ticket prices and lack of travel insurance cover for LAM flights, businesspeople use international carriers to travel via South Africa when they are travelling from Tete to Maputo.
- Major projects facilitated by the Zambezi Development Agency include iron mining, steel processing, poultry industry; hotels; and hydro energy.
- Lots of partnerships are dependent on direct connections, which also bring people into Tete to initiate projects that create employment. Many foreigners are essential for mining and other projects.
- The traffic volumes to Tete will reduce substantially if flight routings have to be made via Beira.
- New project financing depends on people that are flown in from Johannesburg. There are a number of projects which are almost at financial close and may be at risk from the closure of the airport.

## Tete – Views on AdM's Proposal

- Largest mine (Vale), private sector, hotel industry, as well as Provincial Government are against AdM's Proposal and losing direct international access for Tete
- The closure would create a domino effect, as hotels' employees would be reduced for cost savings and local suppliers are dependent on the continued hotel operations
- The Local Provincial Authority is opposed to the closure of Tete to international flights:
  - Flexibility - Passengers prefer to fly direct and non-stop to South Africa.
  - The cost of ticket prices is lower and more stable than LAM
  - Passenger demand will reduce substantially.
  - Expats come to Tete due to mining activities, which is dependent on direct flights.
- This proposal will negatively impact Vale's business as it has service providers and specialist technical expertise coming to Vale's site from South Africa on a daily basis. Airfreight cargo also feeds Vale's logistics chain.
- Direct Foreign Investment (DFI) require direct access to Tete operations offices and should not be independent on Beira and Nacala
- Staff requiring urgent medical attendance need to be evacuated directly to Johannesburg (faster from an international airport)
- If LAM delays and flight cancellations happen at an intermediate landing airport (Beira) the delays would be exacerbated.

# CONCLUSIONS AND RECOMMENDATIONS

The closure of six of the current nine international airport points of entry will cause significant losses for the Mozambican economy. Over a five-year period following implementation of the policy, Mozambique will lose \$340 million and over 50,000 jobs, driven by decreases in passenger traffic of 65% in the first year, and up to 79% by the fifth year.

The regulatory mandate to create a hub-and-spoke route network for the aviation industry is not economically viable or feasible with the current resources of LAM/MEX. This model does not reflect the market context in Mozambique, and the requirement to transfer from an international carrier to a domestic carrier eliminates the standard advantages of hub-and-spoke models used by single airline companies.

The AdM proposal would represent a reversal of the aviation liberalization agenda and would generate reputational risk for Mozambique and increase the perceived (and actual) risk of doing business for international investors across all sectors.

Therefore, it is recommended that Mozambique maintain the current system of international points of entry and the established route networks. Mozambique will benefit most from allowing increased market liberalization to drive competition, responsiveness to customer demand, and the flexibility and ability to innovate that can not only serve a growing economy, but also catalyse accelerated growth.

It is therefore recommended that:

- The nine (9) entry points for over border flights should be maintained. If Xai Xai airport is built, it should be an international point of entry.
- Route networks should be determined by commercial supply and demand, not by regulatory mandate.
- The government should actively encourage more airlines (especially Mozambique airlines) to operate cross-border services to increase level of competition.
- The government should support smaller airlines to service essential in-country airports (as is the case both in the EU and USA).
- Private sector concessions of smaller airports should be granted.

The Task Force established by the Government to review AdM's proposal recommends maintaining the status quo but revisiting the matter within a three- to six-year period. This creates uncertainty for passenger demand and hampers new investments, which require confidence in long term access to basic services like transportation. It is vital that the Government communicate a clear commitment to maintaining the international airport points of entry and create a climate of certainty to assure tourism and passenger traffic growth, stimulate investment and trade and create additional employment.

# ANNEX A: STUDY METHODOLOGY

Dr Joachim Vermooten, an independent consultant with expertise in aviation regulatory reform, air transport economics, the airline industry, airline restructuring and airline business competition undertook the following research and consultations resulting in the findings and recommendations of this report.

The project scope included:

- Working meetings with stakeholders in the Mozambican air transport sector and with institutions and organizations linked to the main economic sectors affected by air transport including tourism, natural resources and agriculture. Discussions were held with AdM, Ethiopian Airways, and Airlink as well as LAM/MEX. Written submissions were received from Airlink and CR Aviation. Other airlines in Mozambique were requested to make submissions.
- Working meetings with stakeholders in districts and provinces which will be affected by the AdM proposals, and/or which will be affected by probable economic development such as gas and growth in the tourism sector. These meetings generally included discussions with the local airport manager, Provincial Government, Development Agencies and representatives of commerce and industry facilitated in particular by CTA, FEMOTUR at Pemba, Nampula, Nacala, Tete, Vilanculos. Linchinga and Inhambane were not visited, although the delegation at Vilanculos included 11 representatives from Inhambane. Written submissions were received from the Vale coal mine at Tete and Casa de Mar in Inhambane.
- This report was researched and compiled in coordination with CTA, FEMOTUR and IACM, incorporating the scenarios and providing quantitative and qualitative analysis of the proposed reforms and their likely impacts on the economy
- Dissemination of the findings of the report in coordination with CTA, FEMOTUR and IACM.

The study was conducted in October and November 2017 greatly assisted by Mr Raufo Usta, the Executive Director of Federação Moçambicana de Turismo e Hotelaria ('Femotur') as well as Mr Francisco Cabo, Head of Department of Air Transport and Ms Carla Tamele Air Transport Officer of the Intituti Aviancao de Mozambique (Mozambique Civil Aviation Authority) ('ICAM'). This enabled simultaneous facilitation of discussions and live translation of responses from Portuguese into English at the various meetings and workshops held at Pemba, Nampula, Nacala, Tete and Vilanculos as well as the workshop held in Maputo. The study was advanced by the assistance from both IACM and AdM who enabled access to airport directors, as well as the Moçambicana de Turismo e Hotelaria ('Femotur'), Associação de Hotelaria e Turismo da Provincia de Inhambane (the Inhambane Province's Tourism Association) (AHTPI), Confederação das Associações Económicas de Moçambique (CTA) Associação de Hotelaria e Turismo de Cabo Delgado (CDTUR), Associação de Hotelaria e Turismo (ASSOTHARQ-TETE) and Associação dos Hoteis do Sul de Moçambique (AHSM) as well as local Provincial Authorities and Development Agencies.

In particular Messers. Usta and Cabo and Ms. Tamele mobilised their personal relationships to gain access to a great number of relevant persons within a short span of time at the outlying areas visited during this study.

The research for the study was accomplished in Mozambique as follows:

<b>Location</b>	<b>Dates</b>
Pemba	6 November 2017 to 8 November 2017
Nampula	8 November 2017 to 10 November 2017
Nacala	10 November 2017 to 11 November 2017
Nampula	11 November 2017
Tete	11 November 2017 to 14 November 2017
Maputo	14 November 2017
Vilanculos	15 November 2017 to 16 November 2017
Maputo	16 November 2017 to 24 November 2017

A workshop was held with 16 members of the Task Force on 22 November 2017 at the IACM Aviation Training School where a presentation relating to the completed work was made. The participant list is attached in Annex F.

Some adjustments in the wording of the presentation were proposed and implemented and it was resolved that a further study be requested on how to integrate and access international (comprising of intercontinental and regional passenger traffic) and domestic passenger traffic, inclusive of the traffic flow at larger hubs within the region.

The research conducted for this report also includes:

- A critical analysis of AdM's recommendations, including analysis of the detail and proposed benefits of the proposal;
- An origin/destination study of passenger traffic using the affected Mozambican airports;
- Projections of passenger demand at national airports;
- Development of scenarios on the status quo, the situation with airport closures factored in, and with continued liberalization and significant increases in domestic and international travel;
- A list of recommendations and priorities.

# ANNEX B: ADM PROPOSAL IMPACT ON TRAVEL DISTANCE & CARBON EMISSIONS

## INCREASE IN DISTANCE FLOWN

Implementation of the AdM proposal would reduce efficiency of flight time and distance for all destinations. Flight distance increases from 3%-48% depending on itinerary, as follows:

The total distance that would be flown by passengers on direct regional scheduled flights from the West (South Africa) increase by:

- 3% to Pemba;
- 18% to Nampula;
- 13% to Tete; and
- 11% to Vilankulo.
- 10% collectively for all these routes

The international portion of the journey operated by Airlink reduce from 100% with the direct flights to:

- 92% for both Pemba and Nampula;
- 69% for Beira;
- 46% to Vilankulo; and
- 54% to Inhambane (no direct flights operated presently)

The total distance that would be flown by passengers on direct regional scheduled flights from the North increase by:

- 48% from Dar es Salaam to Pemba;
- 25% from Nairobi to Pemba;
- 13% from Dar es Salaam to Nampula and
- 9% to Nairobi to Nampula
- 20% collectively for all these routes

The international portion of the journey operated by LAM and Kenya Airways reduce from 100% with the direct flights to:

- 84% from Dar es Salaam to Pemba;
- 90% Nairobi to Pemba;
- 84% for Dar es Salaam to Nampula; and
- 90% for Nairobi to Nampula.

**Table BI: Increase in Distance Flown**

		Air Distance Calculations				Carbon Footprint in CO2				
Direct regional scheduled flights from the West (South Africa)		Air Distance in km	% Int & Dom	% Diff Int Sector	Total % Diff	Metric Tonnes	% Difference	Number of Pax in 2016	Direct Metric Tonnes	Increase in Metric Tonnes
Johannesburg	POL - Pemba Airport	1 944,88				0,140				
Johannesburg	MNC - Nacala Airport	1 832,83	92%	-6%						
MNC - Nacala Airport	POL - Pemba Airport	168,19	8%							
<b>New Combined Routing</b>		<b>2 001,02</b>	<b>100%</b>		<b>3%</b>	<b>0,150</b>	<b>7%</b>	<b>11289</b>	<b>1 693,35</b>	<b>120,95</b>
Johannesburg	APL - Nampula Airport	1 696,00				0,12				
Johannesburg	MNC - Nacala Airport	1 832,83	92%	8%						
MNC - Nacala Airport	APL - Nampula Airport	168,41	8%							
<b>New Combined Routing</b>		<b>2 001,24</b>	<b>100%</b>		<b>18%</b>	<b>0,15</b>	<b>25%</b>	<b>19624</b>	<b>2 943,60</b>	<b>735,90</b>
Johannesburg	Tete (TET) Chingozi Airport	1 247,39				0,09				
Johannesburg	BEW - Beira Airport	980,68	69%	-21%						
BEW - Beira Airport	Tete (TET) Chingozi Airport	431,46	31%							
<b>New Combined Routing</b>		<b>1 412,14</b>	<b>100%</b>		<b>13%</b>	<b>0,1</b>	<b>11%</b>	<b>26170</b>	<b>2 617,00</b>	<b>290,78</b>
Johannesburg	Vilankulo VNX	851,02				0,06				
Johannesburg	Maputo	433,25	46%	-49%						
Maputo	Vilankulo VNX	515,55	54%							
<b>New Combined Routing</b>		<b>948,80</b>	<b>100%</b>		<b>11%</b>	<b>0,07</b>	<b>17%</b>	<b>27951</b>	<b>1 956,57</b>	<b>326,10</b>
Johannesburg	INH Inhambane	763,76				0,06				
Johannesburg	Maputo	433,25	54%	-43%						
Maputo	INH Inhambane	365,35	46%					5827		
<b>New Combined Routing</b>		<b>798,60</b>	<b>100%</b>		<b>5%</b>	<b>0,06</b>	<b>0%</b>		<b>-</b>	<b>-</b>
<b>Carbon Footprint in CO2</b>		<b>6 503,05</b>	<b>7 161,80</b>						<b>9 210,52</b>	<b>1 473,73</b>
<b>Increase in Carbon Footprint in CO2</b>				<b>10%</b>						<b>16%</b>

## INCREASE IN CARBON FOOTPRINT

Implementation of the AdM proposal would also increase environmental impact. Additional take-offs and landings, as well as increased distances, increase carbon emissions from 7%-60% depending on itinerary as follows:

- Direct regional scheduled flights from the West (South Africa)
  - 7% more for Johannesburg to POL - Pemba Airport;
  - 25% more for Johannesburg to APL - Nampula Airport.
  - 11% more for Johannesburg to Tete;
  - 17% from Johannesburg to Vilankulo;
  - 16% for Westerly routes collectively.
  
- Direct regional scheduled flights from the North (Tanzania and Kenya)
  - 60% more for Dar es Salaam to Pemba
  - 20% more for Nairobi to Pemba
  - 14% more for Dar es Salaam to Nampula
  - 9% more for Nairobi to Nampula
  - 19% for Northern routes collectively.

**Table B2: Increase in Carbon Footprint**

		Air Distance Calculations								
Direct regional scheduled flights from the North (Tanzania and Kenya)		Air Distance in km	% Int & Dom	% Diff Int Sector	Total % Diff					
Dar es Salaam	Pemba	694,45				0,05				
Dar es Salaam	Nacala	862,09	84%	24%						
Nacala	Pemba	168,19	16%							
<b>New Combined Routing</b>		<b>1 030,28</b>	<b>100%</b>		<b>48%</b>	0,08	<b>60%</b>	10837	<b>866,96</b>	<b>520,18</b>
<b>Nairobi</b>		<b>1 356,55</b>				0,1				
Nairobi	Nacala	1 522,33	90%	12%						
Nacala	Pemba	168,19	10%							
<b>New Combined Routing</b>		<b>1 690,52</b>	<b>100%</b>		<b>25%</b>	0,12	<b>20%</b>	10989	<b>1 318,68</b>	<b>263,74</b>
<b>Dar es Salaam</b>		<b>914,90</b>				0,07				
Dar es Salaam	Nacala	862,09	84%	-6%						
Nacala	Numpula	168,41	16%							
<b>New Combined Routing</b>		<b>1 030,50</b>	<b>100%</b>		<b>13%</b>	0,08	<b>14%</b>	13367	<b>1 069,36</b>	<b>152,77</b>
<b>Nairobi</b>		<b>1 554,70</b>				0,11				
Nairobi	Nacala	1 522,33	90%	-2%						
Nacala	Numpula	168,41	10%							
<b>New Combined Routing</b>		<b>1 690,74</b>	<b>100%</b>		<b>9%</b>	0,12	<b>9%</b>	448	<b>53,76</b>	<b>4,89</b>
<b>Carbon Footprint in CO2</b>		4 520,60	5 442,04						<b>3 308,76</b>	<b>941,56</b>
<b>Increase in Carbon Footprint in CO2</b>			<b>20%</b>							<b>28%</b>
<b>Carbon Footprint in CO2 for all affected routes</b>									<b>12 519,28</b>	<b>2 415,29</b>
<b>Increase in Carbon Footprint in CO2 for all affected routes</b>										<b>19%</b>

Calculations of distance flown and increases in carbon footprint were calculated per <https://www.carbonfootprint.com/calculator.aspx>.

# ANNEX C: PASSENGER TRAFFIC STATISTICS

During the course of the research, discussions and consultations on the AdM proposal, it became evident that a lack of accurate data was diminishing the ability of key stakeholders to engage in evidence-based decision making. Therefore, extensive data and analysis are provided below to serve as a source of evidence for future discussions and evidence-based policy making. All data in this Annex is compiled from IACM Passenger Traffic Airport Data.

## PASSENGER TRAFFIC AT ALL NATIONAL AIRPORTS

The statistics on total passenger traffic provide insight into the context for and the impact of the AdM proposal. The total passenger traffic at all airports, according to data supplied by the IACM, differs somewhat from the data contained in the AdM proposal. This report utilizes the data provided by IACM.

Passenger traffic includes Domestic, Regional and International traffic, further divided into Scheduled or Non-Scheduled flights.

- **International** refers to cross-border long-haul flights from outside of Africa
- **Regional** refers to cross-border flights from within Africa, and more specifically from South Africa, Kenya and Tanzania
- **Domestic** refers to flights within Mozambique
- **Scheduled** refers to flights that are regulated in the BASA treaty between countries (e.g. number of flights, seat capacity, etc). These are applicable to typical airline activities according to a pre-determined and published time-tables, agreed to by both States that are party to the treaty.
- **Non-scheduled** refers to flights that take place with special permission of the State of the destination, from a regulatory perspective. The receiving State has the option to allow these flights or not. Non-scheduled would also include 'private flights' and 'charters', although in some data these are noted separately.

The total passenger traffic at all Mozambique airports is set out in the table below.

**Table C1: Passenger traffic at all national airports**

	Domestic		Regional		International		Domestic	Regional	Total
	Scheduled	Non-Scheduled	Scheduled	Non-Scheduled	Scheduled	Non-Scheduled	Private	Private	
2 012	904 147	113 620	544 103	40 485	72 279	328	801	185	1 675 948
2 013	1 047 437	100 501	572 194	34 385	79 034	309	1 100	312	1 835 272
2 014	1 191 438	109 024	612 829	32 945	76 285	402	6 061	360	2 029 344
2 015	1 159 797	83 908	610 476	21 228	109 747	269	8 526	464	1 994 415
2 016	1 133 094	62 905	554 767	16 050	121 993	266	15 091	71	1 904 237
<b>% Composition of 2016</b>	<b>60%</b>	<b>3%</b>	<b>29%</b>	<b>1%</b>	<b>6%</b>	<b>0%</b>	<b>1%</b>	<b>0%</b>	<b>100%</b>

Scheduled passenger traffic represents the backbone of airline operations. The overall historic trends of passenger traffic at all airports are set out in the table below. Domestic scheduled passenger traffic reduced by single digits (3% in 2015, and 2% in 2016) and regional scheduled passenger traffic was stable at 0% change in 2015, and then reduced by 9% in 2016.

**Table C2: Trends in passenger traffic at all airports**

	Domestic		Regional		International		Domestic	Regional	Total	Total
	Scheduled	Non-Scheduled	Scheduled	Non-Scheduled	Scheduled	Non-Scheduled	Private	Private		
2 013	16%	-12%	5%	-15%	9%	-6%	37%	69%	10%	10%
2 014	14%	8%	7%	-4%	-3%	30%	451%	15%	11%	11%
2 015	-3%	-23%	0%	-36%	44%	-33%	41%	29%	-2%	-2%
2 016	-2%	-25%	-9%	-24%	11%	-1%	77%	-85%	-5%	-5%

**Domestic scheduled traffic:** The small decreases in overall domestic scheduled traffic represent a reversal in the previous trend of two years of double digit growth (16% from 2012 to 2013 and 14% from 2013 to 2014).

**Domestic non-scheduled traffic:** Significant declines are seen in domestic non-scheduled passenger traffic, with a decline of 23% from 2014 to 2015, followed by a decline of 25% from 2015 to 2016.

**Regional scheduled traffic:** Small increases are evident for regional scheduled passenger traffic, only 5% from 2012 to 2013 and 7% from 2013 to 2014. There was no growth from 2014 to 2015 and a decline of 9% from 2015 to 2016.

**Regional non-scheduled traffic:** Significant (double digit) declines are generally evident in regional non-scheduled passenger traffic, especially recently, with a decline of 23% from 2014 to 2015, followed by a decline of 25% from 2015 to 2016.

**International scheduled traffic:** These somewhat mediocre trends for domestic and regional traffic were overshadowed by a large percentage increase in recent international scheduled traffic of 44% in 2015 and 11% in 2016. Whether this substantial increase was generated by foreign airlines or by LAM is not known and falls outside the scope of this study.

**Private flights:** There is a very large trend in increased number of passengers carried on private flights within the domestic market. Passengers carried by private domestic flights increased by 37% from 2012 to 2013; by 451% from 2013 to 2014; by 41% from 2014 to 2015 and by 77% from 2015

to 2016. This is a notable trend probably driven by large businesses and corporations that are increasingly operating their own aircraft and equipment, which may present opportunities for new domestic carriers.

The composition of passenger traffic in various categories is set out in the table below.

**Table C3: Composition of passenger traffic at all airports**

	Domestic		Regional		International		Domestic	Regional	Total
	Scheduled	Non-Scheduled	Scheduled	Non-Scheduled	Scheduled	Non-Scheduled	Private	Private	
2 012	54%	7%	32%	2%	4%	0%	0%	0%	100%
2 013	57%	5%	31%	2%	4%	0%	0%	0%	100%
2 014	59%	5%	30%	2%	4%	0%	0%	0%	100%
2 015	58%	4%	31%	1%	6%	0%	0%	0%	100%
2 016	60%	3%	29%	1%	6%	0%	1%	0%	100%

In 2016, overall scheduled regional passenger comprised of 29% of all passenger traffic, whilst scheduled domestic passenger represented 60% of all passenger traffic. The percentage composition has remained fairly stable from 2012 to 2016. Smaller movements were: domestic scheduled passenger which increased to 60% in 2016 and regional scheduled passenger which decreased in its percentage composition from 31% to 29% in 2016 and international scheduled passenger traffic which increased from 4% to 6% in 2015 and remained at 6% in 2016.

## PASSENGER TRAFFIC AT AFFECTED AIRPORTS

The passenger traffic at each of the affected airports is comprised of Domestic (i.e. within the country) and Regional (i.e. flights originating within Africa) traffic, with no international traffic (i.e. flights originating outside Africa).

**Table C4: Total passenger traffic at affected airports**

		Domestic		Regional		International		Domestic	Regional	Total
		Scheduled	Non-Scheduled	Scheduled	Non-Scheduled	Scheduled	Non-Scheduled	Private	Private	
VILANCULOS	2016	19 687	8 439	28 195	5 773	-	-	168	-	62 262
INHAMBANE	2016	18 038	162	5 896	395	-	-	83	-	24 574
TETE	2016	96 421	7 636	26 248	1 066	-	12	404	14	131 801
PEMBA	2016	64 743	9 577	34 658	490	-	-	878	-	110 346
Outlying Affected Airports	2016	198 889	25 814	94 997	7 724	-	12	1 533	14	328 983
NAMPULA	2016	164 544	6 345	35 334	195	-	-	3 206	3	209 627
Total Affected Airports	2016	363 433	32 159	130 331	7 919	-	12	4 739	17	538 610
% composition for the year 2016	% of 2016	67%	6%	24%	1%	0%	0%	1%	0%	100%
% of Affected Airports to All Airports	2016	32%	51%	23%	49%	0%	5%	31%	24%	28%

The overall trends of passenger traffic at all the affected airports are set out in the table below. Domestic scheduled passenger traffic has recently improved at Vilanculos and Inhambane. Passenger traffic at Tete, Nampula and Pemba has declined more rapidly.

**Table C5: Trends in passenger traffic at affected airports**

	VILANCULOS		INHAMBANE		TETE		NAMPULA		PEMBA	
	Domestic Scheduled	Regional Scheduled								
2 013	14%	8%	9%	-10%	12%	3%	22%	37%	17%	11%
2 014	-7%	-6%	-19%	-21%	11%	13%	20%	10%	10%	19%
2 015	-3%	-16%	-5%	-19%	-2%	-10%	-11%	-6%	-4%	-4%
2 016	8%	0%	2%	-32%	-12%	-12%	-9%	-13%	-5%	-19%

**Domestic Scheduled Traffic:** There was over the last two years, a single digit decrease (of 7% from 2014 to 2015 and of 8% from 2015 to 2016) in the domestic scheduled traffic at affected airports, which represents a reversal in trend, of two years of double digit growth (17% from 2012 to 2013 and 12% from 2013 to 2014) in the domestic scheduled traffic at affected airports.

**Domestic Non-Scheduled Traffic:** Significant (double digit) declines are generally evident in domestic non-scheduled passenger, especially recently, (a decline of 27% from 2014 to 2015, followed by a decline of 26% from 2015 to 2016). This is slightly more decline than in the overall domestic market.

**Regional Scheduled Traffic:** There was over the last two years decreases (of 5% from 2014 to 2015 and of 13% from 2015 to 2016) in the regional scheduled traffic at affected airports, which represents a reversal in trend, of two years of growth (8% from 2012 to 2013 and 12% from 2013 to 2014) in the regional scheduled traffic at affected airports.

**Regional Non-Scheduled Traffic:** Significant (double digit) declines are generally evident in regional non-scheduled passenger, since 2012 onwards, especially recently, with a decline of 23% from 2014 to 2015, followed by a decline of 28% from 2015 to 2016), slightly more decline than in the overall domestic market.

**Private Flights:** There is also very large trend in increased number of passenger carried on private flights within the domestic market at affected airports. Passenger carried by private domestic flights increased by 592% from 2013 to 2014; by 27% from 2014 to 2015 and by 36% from 2015 to 2016). This is a notable trend probably by large businesses and corporations that are increasingly operating their own aircraft and equipment, which may present opportunities for new domestic carriers.

The composition of passenger traffic in various categories is set out in the table below.

**Table C6: Composition of passenger traffic at affected airports**

		Domestic		Regional		International		Domestic	Regional	Total	Total
		Scheduled	Non-Scheduled	Scheduled	Non-Scheduled	Scheduled	Non-Scheduled	Private	Private		
<b>VILANCULOS</b>	2 012	27%	26%	37%	10%			0%		100%	66 624
	2 013	31%	25%	33%	11%			0%		100%	64 763
	2 014	29%	20%	40%	11%			0%		100%	64 233
	2 015	30%	16%	45%	9%			0%		100%	61 548
	2 016	32%	14%	45%	9%			0%		100%	62 262
<b>INHAMBANE</b>	2 012	56%	2%	40%	2%			0%		100%	37 481
	2 013	61%	1%	36%	2%			0%		100%	37 658
	2 014	60%	1%	35%	3%			2%		100%	31 134
	2 015	65%	1%	32%	1%			0%		100%	27 034
	2 016	73%	1%	24%	2%			0%		100%	24 574
<b>TETE</b>	2 012	69%	7%	22%	2%		0%	0%	0%	100%	129 203
	2 013	73%	5%	21%	1%		0%	0%		100%	137 773
	2 014	72%	5%	22%	1%		0%	0%	0%	100%	154 906
	2 015	74%	5%	20%	1%		0%	0%		100%	148 359
	2 016	73%	6%	20%	1%		0%	0%	0%	100%	131 801
<b>PEMBA</b>	2 012	46%	21%	28%	6%		0%	0%	0%	100%	121 347
	2 013	50%	17%	28%	5%		0%	0%	0%	100%	131 080
	2 014	49%	16%	31%	3%		0%	0%	0%	100%	144 005
	2 015	52%	12%	33%	3%		0%	1%	0%	100%	131 060
	2 016	59%	9%	31%	0%		0%	1%		100%	110 370
<b>NAMPULA</b>	2 012	79%	5%	16%	0%			0%		100%	174 753
	2 013	76%	6%	18%	0%			0%	0%	100%	220 396
	2 014	77%	6%	16%	0%			0%		100%	261 794
	2 015	77%	4%	17%	0%			1%		100%	233 934
	2 016	78%	3%	17%	0%			2%	0%	100%	209 627

The aggregated composition of passenger traffic in various categories is set out in the table below.

**Table C7: Aggregated composition of passenger traffic at affected airports**

	Domestic		Regional		International		Domestic	Regional	Total
	Scheduled	Non-Scheduled	Scheduled	Non-Scheduled	Scheduled	Non-Scheduled	Private	Private	
2 012	61%	11%	25%	3%		0%	0%	0%	100%
2 013	64%	10%	24%	3%		0%	0%	0%	100%
2 014	64%	9%	24%	2%		0%	0%	0%	100%
2 015	66%	7%	25%	2%		0%	1%	0%	100%
2 016	67%	6%	24%	1%		0%	1%	0%	100%

Overall (in 2016) scheduled aggregated regional passenger comprised of 24% of all the affected airports passenger traffic, whilst scheduled domestic passenger represented 67% of all the affected airports passenger traffic. This implies that regional passenger traffic represent 36% of aggregated the domestic passenger numbers all the affected airports. This is substantially less than the national percentage of 49% for all airports in Mozambique.

## 2016 PASSENGER TRAFFIC AT AFFECTED AND HUB AIRPORTS

For the most current comparison, the 2016 passenger traffic is shown for the affected airports and for the designated hub airports.

**Table C8: Passenger traffic at affected airports (2016)**

		Domestic		Regional		International		Domestic	Regional	Total
		Scheduled	Non-Scheduled	Scheduled	Non-Scheduled	Scheduled	Non-Scheduled	Private	Private	
VILANCULOS	2016	19 687	8 439	28 195	5 773	-	-	168	-	62 262
INHAMBANE	2016	18 038	162	5 896	395	-	-	83	-	24 574
TETE	2016	96 421	7 636	26 248	1 066	-	12	404	14	131 801
NAMPULA	2016	164 544	6 345	35 334	195	-	-	3 206	3	209 627
PEMBA	2016	64 743	9 577	34 658	490	-	-	878	-	110 346
<b>Total affected Airports</b>	<b>2016</b>	<b>363 433</b>	<b>32 159</b>	<b>130 331</b>	<b>7 919</b>	<b>-</b>	<b>12</b>	<b>4 739</b>	<b>17</b>	<b>538 610</b>

**Table C9: Passenger traffic at designated hub airports (2016)**

		Domestic		Regional		International		Domestic	Regional	Total
		Scheduled	Non-Scheduled	Scheduled	Non-Scheduled	Scheduled	Non-Scheduled	Private	Private	
Beira	2 016	166 656	10 147	37 466	2 764	-	24	5 392	-	222 449
Nacala	2 016	17 302	1 764	-	83	-	-	570	-	19 719
Maputo	2 016	448 302	12 774	386 970	5 108	121 993	206	2 553	54	977 960
<b>Total for the three earmarked Hub Airports</b>	<b>2 016</b>	<b>632 260</b>	<b>24 685</b>	<b>424 436</b>	<b>7 955</b>	<b>121 993</b>	<b>230</b>	<b>8 515</b>	<b>54</b>	<b>1 220 128</b>
% composition for the year 2016	% of 2016	52%	2%	35%	1%	10%	0%	1%	0%	100%
% of Hub Airports to All Airports	2 016	56%	39%	77%	50%	100%	86%	56%	76%	64%

The percentage composition of total passenger traffic throughput at the three earmarked hub airports are set out in table 27 below.

**Table C10: Composition of passenger traffic at designated hub airports**

		Domestic		Regional		International		Domestic	Regional	Total	Total
		Scheduled	Non-Scheduled	Scheduled	Non-Scheduled	Scheduled	Non-Scheduled	Private	Private		
Beira	2 012	67%	11%	19%	3%	0%	0%	0%	0%	100%	165 528
	2 013	71%	6%	20%	2%	0%	0%	0%	0%	100%	188 927
	2 014	73%	5%	19%	2%	0%	0%	1%	0%	100%	208 282
	2 015	75%	4%	18%	1%	0%	0%	1%	0%	100%	207 112
	2 016	75%	5%	17%	1%	0%	0%	2%	0%	100%	222 449
Nacala	2 012										
	2 013										
	2 014	67%	22%	0%	0%	0%	0%	11%	0%	100%	1 505
	2 015	94%	4%	0%	0%	0%	0%	2%	0%	100%	25 879
	2 016	88%	9%	0%	0%	0%	0%	3%	0%	100%	19 719
Maputo	2 012	44%	2%	45%	1%	9%	0%	0%	0%	100%	844 126
	2 013	46%	1%	43%	1%	9%	0%	0%	0%	100%	915 627
	2 014	48%	2%	42%	1%	8%	0%	0%	0%	100%	991 113
	2 015	45%	1%	42%	1%	11%	0%	0%	0%	100%	1 007 336
	2 016	46%	1%	40%	1%	12%	0%	0%	0%	100%	977 960
<b>Total for the three Earmarked Hub Airports</b>											
	2 012	48%	3%	41%	1%	7%	0%	0%	0%	100%	1 009 654
	2 013	51%	2%	39%	1%	7%	0%	0%	0%	100%	1 104 554
	2 014	52%	2%	38%	1%	6%	0%	0%	0%	100%	1 200 900
	2 015	51%	2%	37%	1%	9%	0%	0%	0%	100%	1 240 327
	2 016	52%	2%	35%	1%	10%	0%	1%	0%	100%	1 220 128

## ANALYSIS OF REGIONAL SCHEDULED PASSENGER TRAFFIC AT AFFECTED AIRPORTS

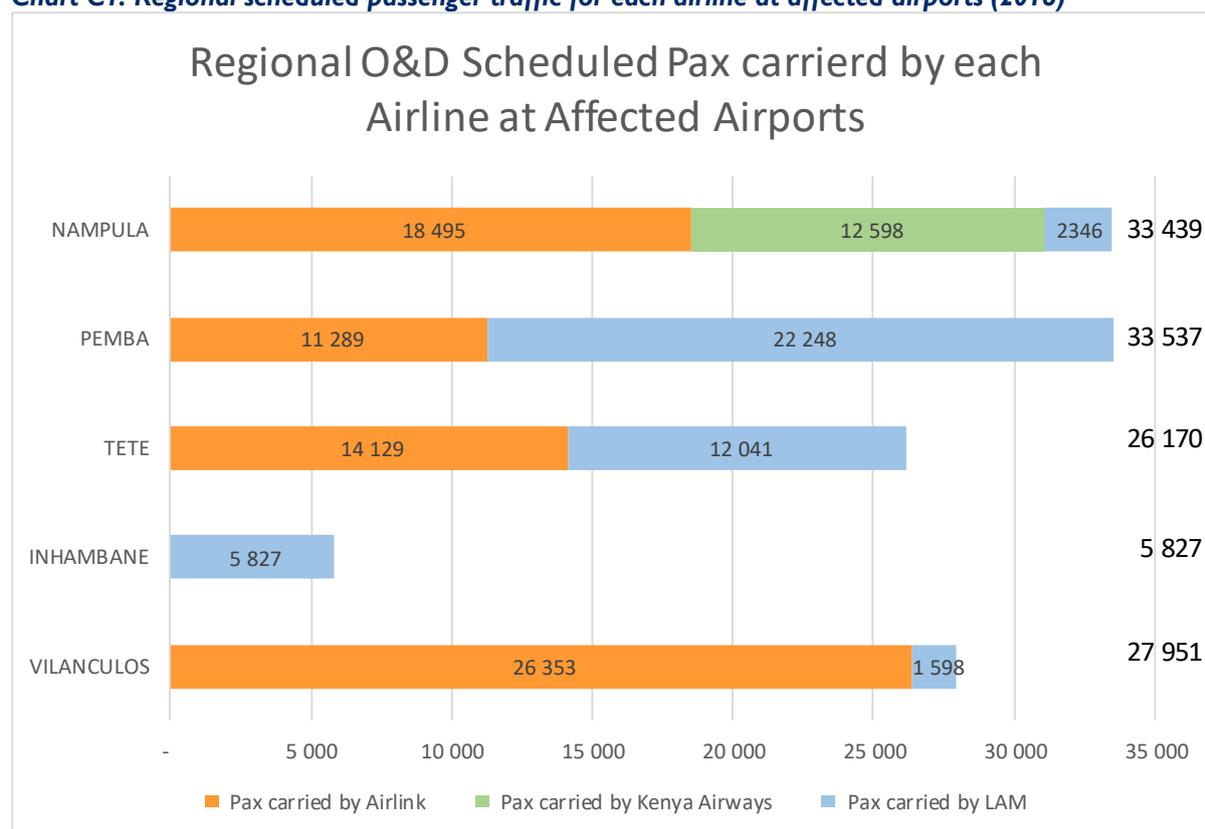
The passenger traffic carried by Airlink directly to the affected airports comprises only a small portion (4%) of the overall passenger traffic in Mozambique at all airports and 13% of all the scheduled regional passenger traffic carried in the country. LAM/MEX also carries scheduled regional passenger traffic to the affected airports, but from other points of origin and destination.

Not all the regional passenger traffic at the affected airports has been generated by foreign airlines (Airlink and Kenya Airways). LAM also carries some of the passengers from foreign destinations to and from the affected airports by connecting with various LAM flights. Notably, in 2016 LAM already carried the most passenger traffic (66%) to Pemba, 100% of passenger traffic to Inhambane, and 46% of passenger traffic to Tete through its network. Airlink carries only 34% of passenger traffic to Pemba, and no traffic to Inhambane. Airlink has a major market share of 94% of passenger traffic to Vilanculos; 54% of passenger traffic to Tete; and 55% of passenger traffic to Nampula. This is demonstrated in the table and chart below.

**Table C11: Regional scheduled passenger traffic for each airline at affected airports (2016)**

Total Regional Scheduled Pax Traffic	Total regional scheduled Pax Traffic	Pax carried by Airlink	Pax carried by Kenya Airways	Pax carried by LAM	Total Pax at affected airport
VILANCULOS	27 951	26 353		1 598	27 951
INHAMBANE	5 827			5 827	5 827
TETE	26 170	14 129		12 041	26 170
PEMBA	33 537	11 289		22 248	33 537
<b>OUTLYING AFFECTED AIRPORTS</b>	<b>93 485</b>	<b>51 771</b>	<b>-</b>	<b>41 714</b>	<b>93 485</b>
NAMPULA	33 439	18 495	12 598	2346	33 439
<b>TOTAL AFFECTED AIRPORTS</b>	<b>126 924</b>	<b>70 266</b>	<b>12 598</b>	<b>44 060</b>	<b>126 924</b>

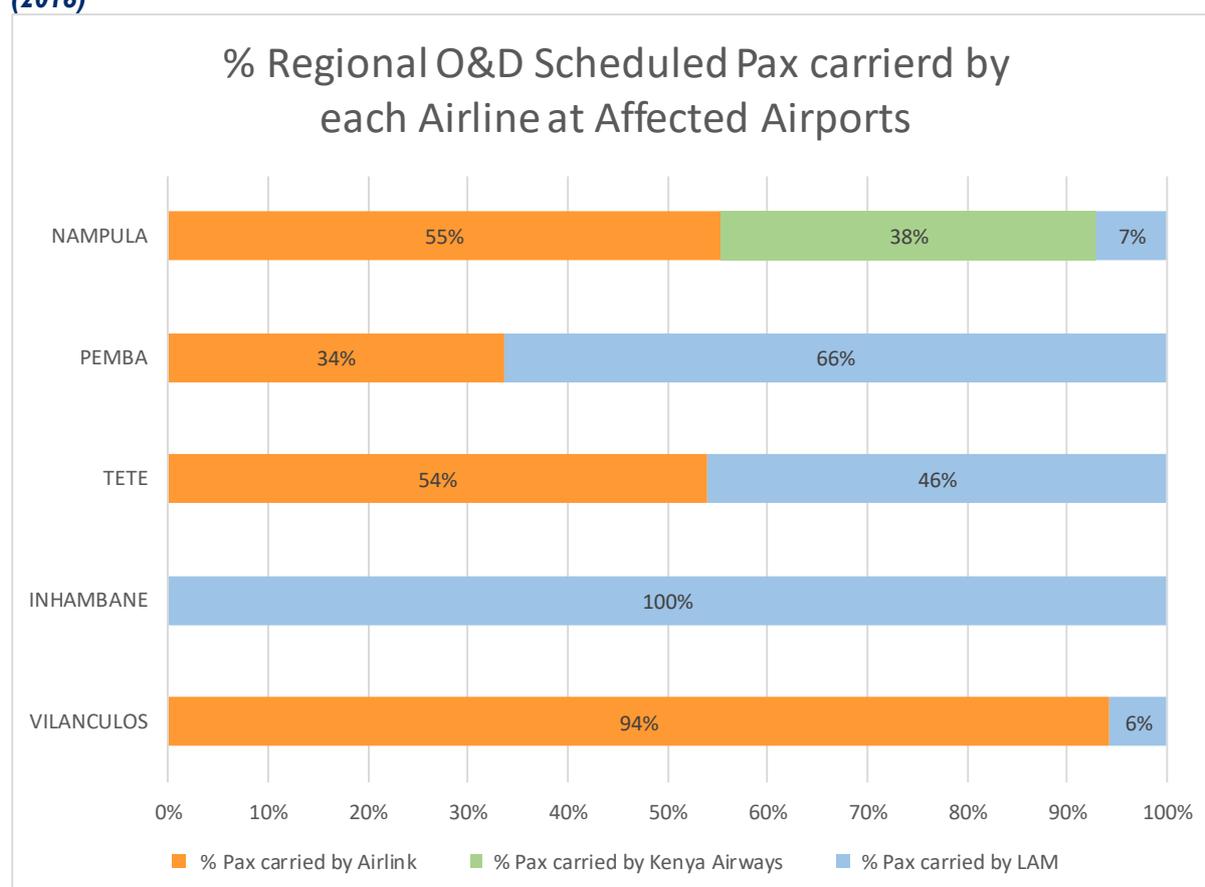
**Chart C1: Regional scheduled passenger traffic for each airline at affected airports (2016)**



**Table C12: Composition of regional scheduled passenger traffic for each airline at affected airports (2016)**

Percentage Composition of Total Regional Scheduled Pax Traffic	Total regional scheduled Pax Traffic	% Pax carried by Airlink	% Pax carried by Kenya Airways	% Pax carried by LAM	Total % Pax at affected airport
VILANCULOS	27 951	94%		6%	100%
INHAMBANE	5 827			100%	100%
TETE	26 170	54%		46%	100%
PEMBA	33 537	34%		66%	100%
<b>OUTLYING AFFECTED AIRPORTS</b>	<b>93 485</b>	<b>55%</b>		<b>45%</b>	<b>100%</b>
NAMPULA	33 439	55%	38%	7%	100%
<b>TOTAL AFFECTED AIRPORTS</b>	<b>126 924</b>	<b>55%</b>	<b>10%</b>	<b>35%</b>	<b>100%</b>

**Chart C2: Composition of regional scheduled passenger traffic for each airline at affected airports (2016)**



Within the context of airline activities, Nampula already has the characteristics of a focus city due to its overall traffic volumes and connectivity to both regional and domestic destinations. Nampula offers the opportunity to become a mini-hub or even the hub of an airline in the future.

The percentage increases and decreases of passenger regional scheduled traffic at affected airports is set out in the table below.

**Table C13: Trends in regional scheduled passenger traffic at affected airports**

% Increase in Total Regional Scheduled Pax Traffic	2012 to 2013	2013 to 2014	2014 to 2015	2015 to 2016
VILANCULOS	76%	38%	3%	5%
INHAMBANE	-10%	-21%	-26%	-27%
TETE	3%	13%	-10%	-12%
PEMBA	42%	18%	2%	-25%
<b>OUTLYING AFFECTED AIRPORTS</b>	<b>23%</b>	<b>15%</b>	<b>-4%</b>	<b>-14%</b>
NAMPULA	35%	9%	-7%	-16%
<b>TOTAL AFFECTED AIRPORTS</b>	<b>26%</b>	<b>13%</b>	<b>-5%</b>	<b>-15%</b>

## DETAILED ROUTING OF REGIONAL SCHEDULED PASSENGER TRAFFIC AT AFFECTED AIRPORTS (BY EACH AIRLINE)

The detailed routing composition of regional scheduled passenger traffic and the annual increases and decreases at affected airports are set out in the table below.

**Table C14: Detailed Routing of Regional Scheduled Passenger Traffic at Affected Airports**

Total Sector Passengers						% Increase in Total Sector Passengers			
	2012	2013	2014	2015	2016	2013	2014	2015	2016
<b>VILANCULOS</b>									
Airlink Johannesburg - Vilanculos	-	7 184	14 604	18 937	23 811		103%	30%	26%
Airlink Nelspruit - Vilanculos	-	-	653	1 707	2 542			161%	49%
<b>Airlink Total</b>	-	<b>7 184</b>	<b>15 257</b>	<b>20 644</b>	<b>26 353</b>		<b>112%</b>	<b>35%</b>	<b>28%</b>
LAM/MEX	10 643	11 500	10 532	5 974	1 598	8%	-8%	-43%	-73%
<b>TOTAL</b>	<b>10 643</b>	<b>18 684</b>	<b>25 789</b>	<b>26 618</b>	<b>27 951</b>	<b>76%</b>	<b>38%</b>	<b>3%</b>	<b>5%</b>
<b>Total Sector Passengers</b>						<b>% Increase in Total Sector Passengers</b>			
	2012	2013	2014	2015	2016	2013	2014	2015	2016
<b>INHAMBANE</b>									
Airlink			-	-	-				
LAM/MEX	15 039	13 571	10 780	7 959	5 827	-10%	-21%	-26%	-27%
<b>TOTAL</b>	<b>15 039</b>	<b>13 571</b>	<b>10 780</b>	<b>7 959</b>	<b>5 827</b>	<b>-10%</b>	<b>-21%</b>	<b>-26%</b>	<b>-27%</b>
<b>Total Sector Passengers</b>						<b>% Increase in Total Sector Passengers</b>			
	2012	2013	2014	2015	2016	2013	2014	2015	2016
<b>TETE</b>									
Airlink Johannesburg - Tete	21 507	18 722	18 011	15 949	14 129	-13%	-4%	-11%	-11%
LAM/MEX	6 997	10 632	15 125	13 923	12 041	52%	42%	-8%	-14%
<b>TOTAL</b>	<b>28 504</b>	<b>29 354</b>	<b>33 136</b>	<b>29 872</b>	<b>26 170</b>	<b>3%</b>	<b>13%</b>	<b>-10%</b>	<b>-12%</b>
<b>Total Sector Passengers</b>						<b>% Increase in Total Sector Passengers</b>			
	2012	2013	2014	2015	2016	2013	2014	2015	2016
<b>NAMPULA</b>									
(LAM)NP/FAOR/NP Nampula JNB Nampula		2 114	1 963	1 561	1 129	100%	-7%	-20%	-28%
(LAM)NP/HTDA/NP Nampula Dar es Salaam Nampula	2 787	228	2 136	2 865	769	-92%	837%	34%	-73%
(LAM)NP/HKJK/NP Nampula Nairobi Nampula	-	2 490	475	203	448	100%	-81%	-57%	121%
<b>LAM Total</b>	<b>2 787</b>	<b>4 832</b>	<b>4 574</b>	<b>4 629</b>	<b>2 346</b>	<b>73%</b>	<b>-5%</b>	<b>1%</b>	<b>-49%</b>
AIRLINK Johannesburg - Nampula	14 491	21 441	23 000	20 005	18 495	48%	7%	-13%	-8%
KENYA AIRWAYS Nairobi - Nampula	11 569	12 612	14 999	15 060	12 598	9%	19%	0%	-16%
<b>TOTAL</b>	<b>28 847</b>	<b>38 885</b>	<b>42 573</b>	<b>39 694</b>	<b>33 439</b>	<b>35%</b>	<b>9%</b>	<b>-7%</b>	<b>-16%</b>
<b>Total Sector Passengers</b>						<b>% Increase in Total Sector Passengers</b>			
	2012	2013	2014	2015	2016	2013	2014	2015	2016
<b>PEMBA</b>									
(LAM)PB/HTDA/PB Pemba Da es Salaam Pemba	11 032	18 141	18 377	18 478	10 837	64%	1%	1%	-41%
(LAM)PB/HKJK/PB Pemba Nairobi Pemba	8 702	8 301	13 679	15 638	10 989	-5%	65%	14%	-30%
(LAM)PB/FMCZ/PB Pemba Dzaoudzi, Mayotte Pemba	-	702	276	-	422		-61%	-100%	
<b>LAM Total</b>	<b>19 734</b>	<b>27 144</b>	<b>32 332</b>	<b>34 116</b>	<b>22 248</b>	<b>38%</b>	<b>19%</b>	<b>6%</b>	<b>-35%</b>
Airlink	6 324	9 962	11 323	10 627	11 289	58%	14%	-6%	6%
<b>TOTAL</b>	<b>26 058</b>	<b>37 106</b>	<b>43 655</b>	<b>44 743</b>	<b>33 537</b>	<b>42%</b>	<b>18%</b>	<b>2%</b>	<b>-25%</b>

## Regional Traffic Compared to all Traffic at the Five Affected Airports

The relative importance of regional scheduled passenger moved through the five affected airports of Vilanculos, Inhambane, Tete, Pemba and Nampula in 2016 in comparison to all passenger traffic and all scheduled regional passenger traffic is determined in this section. A total of 130,331 regional scheduled passengers moved through the affected airports in 2016.

Regional scheduled passengers at the five affected airports only comprise collectively 7% of the overall total passenger traffic of 1,904,237 at all airports in Mozambique. Regional scheduled passenger at each of the five affected airports only comprise the following percentages of the overall total passenger traffic: 1% at Vilanculos; 0% at Inhambane; 1% at Tete; 2% at Nampula; 2% at Pemba and 7% in aggregation for all the affected Airports.

Regional scheduled passengers at the five affected airports comprise 23% of all regional scheduled traffic at all airports. Regional scheduled passenger traffic comprised the following percentages of each of the affected airports: 45% of all passenger traffic at Vilanculos; 24% of all passenger traffic at Inhambane; 20% of all passenger traffic at Tete; 17% of all passenger traffic at Nampula; 31% of all passenger traffic at Pemba and in aggregation, 24% of all passenger traffic at all the affected Airports.

The relative importance of regional scheduled passenger traffic at the five affected airports and the earmarked hub airports in 2016 is demonstrated in the table below.

**Table C15: Regional scheduled passenger traffic at affected and hub airports (2016)**

		Regional Scheduled	Total Pax Taffric at each & group Airport	% of Regional Scheduled of Each airport	% of Regional Scheduled of All Pax Traffic of All Airports	% of Regional Scheduled of each Airport to Regional Scheduled of All Airports
<b>Affected Airports</b>						
VILANCULOS	2016	28 195	62 262	45%	1%	5%
INHAMBANE	2016	5 896	24 574	24%	0%	1%
TETE	2016	26 248	131 801	20%	1%	5%
PEMBA	2016	34 658	110 346	31%	2%	6%
<b>Outlying Affected Airports</b>	<b>2016</b>	<b>94 997</b>	<b>328 983</b>	<b>29%</b>	<b>5%</b>	<b>17%</b>
NAMPULA	2016	35 334	209 627	17%	2%	6%
<b>Total affected Airports</b>	<b>2016</b>	<b>130 331</b>	<b>538 610</b>	<b>24%</b>	<b>7%</b>	<b>23%</b>
<b>Earmarked Hub Airports</b>						
Beira	2016	37 466	222 449	17%	2%	7%
Nacala	2016	-	19 719	0%	0%	0%
Maputo	2016	386 970	977 960	40%	20%	70%
<b>Total three Earmarked Hub Airports</b>	<b>2016</b>	<b>424 436</b>	<b>1 220 128</b>	<b>35%</b>	<b>22%</b>	<b>77%</b>
<b>Other airports</b>						
		-	145 499	0%	0%	0%
<b>Total for all airports</b>		<b>554 767</b>	<b>1 904 237</b>	<b>29%</b>	<b>29%</b>	<b>100%</b>

Note: This passenger data includes smaller numbers of non-revenue (transit and airline employees). As a result, these numbers are slightly higher than the analysis of actual origin and destination (Origin and Destination) passenger traffic flight routing of paying passengers to the affected airports.

## **ANALYSIS OF THE REGIONAL SCHEDULED PASSENGER TRAFFIC CARRIED BY AIRLINK AT AFFECTED AIRPORTS**

Due to the concern of LAM/MEX with the regional scheduled passenger carried by Airlink to and from the affected airports, this analysis focuses on the market share of Airlink on the routes to the affected airports.

The regional scheduled passengers carried by Airlink directly to the affected airports are set out in the table below.

**Table C16: Regional scheduled passenger traffic carried by Airlink to the affected airports**

Airlink Regional Scheduled Pax Traffic	2012	2013	2014	2015	2016
VILANCULOS	-	7 184	15 257	20 644	26 353
INHAMBANE					
TETE	21 507	18 722	18 011	15 949	14 129
PEMBA	6 324	9 962	11 323	10 627	11 289
<b>OUTLYING AFFECTED AIRPORTS</b>	<b>27 831</b>	<b>35 868</b>	<b>44 591</b>	<b>47 220</b>	<b>51 771</b>
NAMPULA	14 491	21 441	23 000	20 005	18 495
<b>TOTAL AIRLINK AT AFFECTED AIRPORTS</b>	<b>42 322</b>	<b>57 309</b>	<b>67 591</b>	<b>67 225</b>	<b>70 266</b>

In 2016 Airlink generated 13% of all regional scheduled passenger traffic at affected airports. This has steadily increased from about 8% in 2012 as a result of Airlink's growth at Vilanculos. This is demonstrated in the table below.

**Table C17: Percentage of regional scheduled passenger traffic carried by Airlink to the affected airports**

% Airlink of All Regional Scheduled Pax Traffic	2012	2013	2014	2015	2016
VILANCULOS		1%	2%	3%	5%
INHAMBANE					
TETE	4%	3%	3%	3%	3%
PEMBA	1%	2%	2%	2%	2%
<b>OUTLYING AFFECTED AIRPORTS</b>	<b>5%</b>	<b>6%</b>	<b>7%</b>	<b>8%</b>	<b>9%</b>
NAMPULA	3%	4%	4%	3%	3%
<b>TOTAL AIRLINK AT AFFECTED AIRPORTS</b>	<b>8%</b>	<b>10%</b>	<b>11%</b>	<b>11%</b>	<b>13%</b>
<b>Airlink Regional Scheduled Pax Traffic</b>	<b>42 322</b>	<b>57 309</b>	<b>67 591</b>	<b>67 225</b>	<b>70 266</b>
<b>All Regional Scheduled Pax Traffic</b>	<b>544 103</b>	<b>572 194</b>	<b>612 829</b>	<b>610 476</b>	<b>554 767</b>

**Table C18: Trends in regional scheduled passenger traffic by Airlink to the affected airports**

% Increase in Airlink Regional Scheduled Pax Traffic	2012	2013	2014	2015	2016
VILANCULOS			112%	35%	28%
INHAMBANE					
TETE	-	-13%	-4%	-11%	-11%
PEMBA	-	58%	14%	-6%	6%
<b>OUTLYING AFFECTED AIRPORTS</b>	<b>-</b>	<b>29%</b>	<b>24%</b>	<b>6%</b>	<b>10%</b>
NAMPULA	-	48%	7%	-13%	-8%
<b>TOTAL AIRLINK AT AFFECTED AIRPORTS</b>	<b>-</b>	<b>35%</b>	<b>18%</b>	<b>-1%</b>	<b>5%</b>

Overall Airlink has generated excellent and continuous growth in Vilanculos, growth has recovered at Pemba in 2016, whilst declines were evident at Tete and Nampula. Overall, Airlink only had a small decline in 2015 and generated good growth in the other years.

In 2016 Airlink generated 4% of all regional scheduled passenger traffic at all airports in Mozambique. This has increased from about 3% in 2012. This is demonstrated in table 15 below.

**Table C19: Percentage of regional scheduled passenger traffic by Airlink at all airports**

% Airlink of All Pax Traffic	2012	2013	2014	2015	2016
VILANCULOS		0%	1%	1%	1%
INHAMBANE					
TETE	1%	1%	1%	1%	1%
PEMBA	0%	1%	1%	1%	1%
<b>OUTLYING AFFECTED AIRPORTS</b>	<b>2%</b>	<b>2%</b>	<b>2%</b>	<b>2%</b>	<b>3%</b>
NAMPULA	1%	1%	1%	1%	1%
<b>TOTAL AIRLINK AT AFFECTED AIRPORTS</b>	<b>3%</b>	<b>3%</b>	<b>3%</b>	<b>3%</b>	<b>4%</b>
<b>Airlink Total Pax at Affected Airports</b>	<b>42 322</b>	<b>57 309</b>	<b>67 591</b>	<b>67 225</b>	<b>70 266</b>
<b>Total Pax at All Airports</b>	<b>1 675 948</b>	<b>1 835 272</b>	<b>2 029 344</b>	<b>1 994 415</b>	<b>1 904 237</b>

Historic trends in true origin and destination passenger traffic statistics of passenger traffic at the affected airports (for all airlines) and the historic trends of true origin and destination passenger traffic generation by Airlink at the affected airports are set out in the tables below.

<b>Table C20: Historic trends in passenger traffic at the affected airports - all airlines</b>						<b>Table C21: Historic trends in passenger traffic at the affected airports - Airlink</b>					
% Increase in Total Regional Scheduled Pax Traffic	2012 to 2013	2013 to 2014	2014 to 2015	2015 to 2016		% Increase in Airlink Regional Scheduled Pax Traffic	2013	2014	2015	2016	
VILANCULOS	76%	38%	3%	5%		VILANCULOS		112%	35%	28%	
INHAMBANE	-10%	-21%	-26%	-27%		INHAMBANE					
TETE	3%	13%	-10%	-12%		TETE		-13%	-4%	-11%	-11%
PEMBA	42%	18%	2%	-25%		PEMBA		58%	14%	-6%	6%
<b>OUTLYING AFFECTED AIRPORTS</b>	<b>23%</b>	<b>15%</b>	<b>-4%</b>	<b>-14%</b>		<b>OUTLYING AFFECTED AIRPORTS</b>		<b>29%</b>	<b>24%</b>	<b>6%</b>	<b>10%</b>
NAMPULA	35%	9%	-7%	-16%		NAMPULA		48%	7%	-13%	-8%
<b>TOTAL AFFECTED AIRPORTS</b>	<b>26%</b>	<b>13%</b>	<b>-5%</b>	<b>-15%</b>		<b>TOTAL AIRLINK AT AFFECTED AIRPORTS</b>		<b>35%</b>	<b>18%</b>	<b>-1%</b>	<b>5%</b>

Airlink performed extremely well at Vilanculos, achieving a growth of 28% in 2016. Airlink performed well with passenger growth at Pemba of 6%. Airlink passenger traffic in Tete declined by 11% and in Nampula by 8%, but this compares well to overall declines in these airports (12% in Tete and 16% in Nampula).

Inhambane, where LAM/MEX operates domestic connections through Maputo but Airlink does not operate and there are no direct connections to South Africa, incurred significant declines (2014 declined by 21%; 2015 declined by 26%; 2016 declined by 27%).

LAM/MEX performance at Inhambane did not stimulate any increase in the generation of traffic over four years. This negative trend may be indicative of LAM/MEX inability to generate passenger traffic in South Africa, where Airlink has a larger footprint from a customer perspective than LAM/MEX.

# ANNEX D: COMPARATIVE RESULTS OF A SUBSTANTIAL GROWTH MODEL

## SUBSTANTIAL GROWTH MODEL

The comparison of the Base Model and AdM Proposal Model in the main body of the report demonstrates the significant negative impact of the closure of six of the nine international airport points of entry. However, the actual impact is likely to be far greater since the anticipated economic growth and growth in demand for air transport is likely to be higher than predicted by the Base Model. A number of megaprojects in the oil and gas industry should come online in the medium term, and there are good indications of strong growth in the tourism industry. However, the Growth Model is based on a large number of assumptions and is therefore presented here for consideration only.

The Growth Model projects increases in passenger traffic based on an assumption that LAM would recover in the second year and thereafter grow by the IATA long-term annual growth forecast of about 5%, which then increases to 10% per per year in years four and five. It also assumes that Airlink will enter the Inhambane route and grow in line with its performance on the Nelspruit – Vilanculos route. Other assumptions are described below.

### **Vilanculos**

- Airlink Johannesburg - Vilanculos passenger volumes to increase by 26% for year 1 and year 2 (the 2016 increase of 26%)
- Airlink Nelspruit - Vilanculos passenger volumes to increase by 40% for all the years, on a small base (the 2016 increase of 49%)
- LAM/MEX to stabilise at same as 2016 for year 1 and increase by 5% per annum for two years and then 10% growth for two years.

### **Inhambane**

- LAM/MEX stabilise at same as 2016 for year 1 and increase by 5% per annum for two years and then 10% growth for two years.
- Airlink to enter this market in year 2 and achieve the same passenger volumes as achieved from its Nelspruit – Vilanculos route in 2016 and thereafter increase by 20% per annum for the fifth year.

### **Tete**

- Dependency on coal recovery.
- Airlink decline of 11% (2016 rate of decline) for year 1 year and then increase by 5% per annum for two years and then 10% growth for two years.
- LAM/MEX decline of 14% (2016 rate of decline) for year 1 year and then increase by 5% per annum for two years and then 10% growth for two years

### **Nampula**

- All airlines reduce by 15% for year 1 and then stabilise at a growth of 5% per annum for two years and then 10% growth for two years.

**Pemba**

- Increase of 5% growth per annum for three years and then 10% growth for two years

**IMPACT ON PASSENGER TRAFFIC**

The assumptions above were applied to 2016 data to calculate the following estimates of passenger traffic.

**Table D1: Growth model projected passenger traffic trends**

	<b>Growth Model: Assumptions on growth</b>				
VILANCULOS	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
Airlink Johannesburg - Vilanculos	26%	26%	26%	26%	26%
Airlink Nelspruit - Vilanculos	40%	40%	40%	40%	40%
Airlink Total					
LAM/MEX		5%	5%	10%	10%
<b>TOTAL</b>					
INHAMBANE					
Airlink		Same as Nelspruit Vilanculos trend but from 2018			20%
LAM/MEX		5%	5%	10%	10%
<b>TOTAL</b>					
TETE					
Airlink Johannesburg - Tete	-11%		5%	10%	10%
LAM/MEX	-14%	5%	5%	10%	10%
<b>TOTAL</b>					
NAMPULA					
(LAM)NP/FAOR/NP Nampula JNB Nampula					
(LAM)NP/HTDA/NP Nampula Dar es Salaam Nampula					
(LAM)NP/HKJK/NP Nampula Nairobi Nampula					
LAM Total	-15%	5%	5%	10%	10%
AIRLINK Johannesburg - Nampula	-15%	5%	5%	10%	10%
KENYA AIRWAYS Nairobi - Nampula	-15%	5%	5%	10%	10%
<b>TOTAL</b>					
PEMBA					
(LAM)PB/HTDA/PB Pemba Da es Salaam Pemba					
(LAM)PB/HKJK/PB Pemba Nairobi Pemba					
(LAM)PB/FMCZ/PB Pemba Dzaoudzi, Mayotte Pemba					
LAM Total	5%	5%	5%	10%	10%
Airlink	5%	5%	5%	10%	10%
<b>TOTAL</b>					

**Table D2: Growth Model detailed passenger traffic projections**

	Growth Model: Total Sector Passengers				
VILANCULOS	Year 1	Year 2	Year 3	Year 4	Year 5
Airlink Johannesburg - Vilanculos	30 002	37 802	47 631	60 015	75 619
Airlink Nelspruit - Vilanculos	3 559	4 982	6 975	9 765	13 671
Airlink Total					
LAM/MEX	1 598	1 678			
<b>TOTAL</b>	<b>35 159</b>	<b>44 463</b>	<b>54 606</b>	<b>69 780</b>	<b>89 290</b>
<b>INHAMBANE</b>					
Airlink		653	1 707	2 542	3 050
LAM/MEX	5 827	6 118	6 424	7 067	7 773
<b>TOTAL</b>	<b>5 827</b>	<b>6 771</b>	<b>7 077</b>	<b>8 774</b>	<b>10 315</b>
<b>TETE</b>					
Airlink Johannesburg - Tete	12 575	12 575	13 204	14 524	15 976
LAM/MEX	10 355	10 873	11 417	12 558	13 814
<b>TOTAL</b>	<b>22 930</b>	<b>23 448</b>	<b>24 620</b>	<b>27 082</b>	<b>29 790</b>
<b>NAMPULA</b>					
(LAM)NP/FAOR/NP Nampula JNB Nampula					
(LAM)NP/HTDA/NP Nampula Dar es Salaam Nampula					
(LAM)NP/HKJK/NP Nampula Nairobi Nampula					
LAM Total	1 994	2 094	2 198	2 418	2 660
AIRLINK Johannesburg - Nampula	15 721	16 507	17 332	19 065	20 972
KENYA AIRWAYS Nairobi - Nampula	10 708	11 244	11 806	12 986	14 285
<b>TOTAL</b>	<b>28 423</b>	<b>29 844</b>	<b>31 337</b>	<b>34 470</b>	<b>37 917</b>
<b>PEMBA</b>					
(LAM)PB/HTDA/PB Pemba Da es Salaam Pemba					
(LAM)PB/HKJK/PB Pemba Nairobi Pemba					
(LAM)PB/FMCZ/PB Pemba Dzaoudzi, Mayotte Pemba					
LAM Total	23 360	24 528	25 755	28 330	31 163
Airlink	11 853	12 446	13 068	14 375	15 813
<b>TOTAL</b>	<b>35 214</b>	<b>36 975</b>	<b>38 823</b>	<b>42 706</b>	<b>46 976</b>
<b>TOTAL ALL AFFECTED AIRPORTS</b>	<b>127 553</b>	<b>141 501</b>	<b>156 463</b>	<b>182 812</b>	<b>214 290</b>

**Table D3: Growth Model summary passenger traffic projections**

	Pax Traffic of substantial growth scenario				
	Year 1	Year 2	Year 3	Year 4	Year 5
VILANCULOS	35 159	44 463	54 606	69 780	89 290
INHAMBANE	5 827	6 771	7 077	8 774	10 315
TETE	22 930	23 448	24 620	27 082	29 790
NAMPULA	28 423	29 844	31 337	34 470	37 917
PEMBA	35 214	36 975	38 823	42 706	46 976
<b>TOTAL ALL AFFECTED AIRPORTS</b>	<b>127 553</b>	<b>141 501</b>	<b>156 463</b>	<b>182 812</b>	<b>214 290</b>
<b>Percentage Increase of Growth model to Base Model</b>	<b>2%</b>	<b>11%</b>	<b>13%</b>	<b>19%</b>	<b>23%</b>

## IMPACT ON ECONOMY, JOBS AND INVESTMENT

**Table D4: Growth Model GDP, Investment and Employment Generation**

	Model of substantial growth of Pax Traffic of Pax Traffic Scenario				
	Year 1	Year 2	Year 3	Year 4	Year 5
Visitors and Tourists (Number of Visitors)	127 553	141 501	156 463	182 812	214 290
Total US\$ Contribution of Travel & Tourism to GDP per pax	649,00	649,00	649,00	649,00	649,00
Total US\$ Contribution of Travel & Tourism to GDP	82 781 722	91 833 887	101 544 802	118 645 028	139 073 932
US\$ : MZN Exchange Rate	60,02	60,02	60,02	60,02	60,02
<b>Total MZN Contribution of Travel &amp; Tourism to GDP</b>	<b>4 968 691 391</b>	<b>5 512 016 844</b>	<b>6 094 881 496</b>	<b>7 121 264 388</b>	<b>8 347 439 907</b>
<b>Investment in new hotel rooms per year</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
Additional Visitors and Tourists (Number of Visitors)	127 553	141 501	156 463	182 812	214 290
Additional Visitors and Tourists (Number of Visitors) per day	349	388	429	501	587
Average number of guest per room (1.5)	233	258	286	334	391
Average number of nights per stay 3 days	699	775	857	1002	1174
Number of new rooms (5 & 4 Stars) at 85% Occupancy factor	822	912	1009	1178	1381
Total Hotel Investment (million USD) US\$100,000 per room	82 225 773	91 217 145	100 862 843	117 848 226	138 139 933
Total Investment (million USD) multiplier 1,8 of hotels	148 006 391	164 190 861	181 553 118	212 126 807	248 651 880
US\$ : MZN Exchange Rate	60,02160	60,02160	60,02160	60,02160	60,02160
<b>Total Investment (MZN)</b>	<b>8 883 580 397</b>	<b>9 854 998 212</b>	<b>10 897 108 618</b>	<b>12 732 190 377</b>	<b>14 924 483 667</b>
<b>Employment Impact</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>
Direct Employment (One direct worker per every 7.911 visitors)	16 123	17 887	19 778	23 109	27 088
Total Employment (Total worker per every 2.9 visitors)	43 984	48 793	53 953	63 039	73 893

**Table D5: Base Model GDP, Investment and Employment Generation**

	Base Model: Assumptions on growth				
	Year 1	Year 2	Year 3	Year 4	Year 5
Visitors and Tourists (Number of Visitors)	124 987	126 930	138 600	154 259	174 441
Total US\$ Contribution of Travel & Tourism to GDP (Millions)	81	82	90	100	113
<b>Total MZN Contribution of Travel &amp; Tourism to GDP (Millions)</b>	<b>4 869</b>	<b>4 944</b>	<b>5 399</b>	<b>6 009</b>	<b>6 795</b>
<b>Investment in new hotel rooms per year</b>					
Total Investment (million USD)	145	147	161	179	202
<b>Total Investment (MZN)</b>	<b>8 705</b>	<b>8 840</b>	<b>9 653</b>	<b>10 744</b>	<b>12 149</b>
<b>Employment Impact</b>					
Direct Employment	15 799	16 045	17 520	19 499	22 050
Total Employment	43 099	43 769	47 793	53 193	60 152

**Table D6: Net additional contribution of the Growth Model vs Base Model**

	Difference between Base Model and Growth of Pax Traffic Scenario				
	Year 1	Year 2	Year 3	Year 4	Year 5
Visitors and Tourists (Number of Visitors)	2 565	14 570	17 863	28 553	39 849
Total US\$ Contribution of Travel & Tourism to GDP	1 664 854	9 456 195	11 593 281	18 530 826	25 861 937
<b>Total MZN Contribution of Travel &amp; Tourism to GDP</b>	<b>99 927 185</b>	<b>567 575 930</b>	<b>695 847 283</b>	<b>1 112 249 819</b>	<b>1 552 274 818</b>
<b>Investment in new hotel rooms per year</b>					
Total Investment (million USD) multiplier 1,8 of hotels	2 976 611	16 906 839	20 727 760	33 131 476	46 238 854
<b>Total Investment (MZN)</b>	<b>178 660 962</b>	<b>1 014 775 522</b>	<b>1 244 113 348</b>	<b>1 988 604 225</b>	<b>2 775 329 973</b>
<b>Employment Impact</b>					
Direct Employment (One direct worker per 7.911 visitors)	324	1 842	2 258	3 609	5 037
Total Employment (Total worker per 2.9 visitors)	885	5 024	6 160	9 846	13 741

# ANNEX E: TASK FORCE ON ADM AIRPORT CLOSURE PROPOSAL

Name	Institutions
João Martins de Abreu	Chairman IACM
Arlindo Soto	Director Nacional de Navegação Aérea – IACM
Tibério Elias	Gabinete Jurídico – IACM
Eduardo Mutereda	Aeroportos de Moçambique
Ercília Mucavele	Aeroportos de Moçambique
Abdul Sacur Adam	Director Comercial da MEX
Ângela Lima	LAM
Pinto Duarte Madeira	Chefe do Departamento de Estudos e Projectos – Direcção Nacional do Turismo
Rui Monteiro	Pelouro do Turismo – CTA
Abdulla Momade	Director dos Serviços de Investimento e Desenvolvimento – INATUR
Miguel Ribeiro	Pelouro dos Transportes – CTA
Francisco Cabo	Departamento de Economia de Transporte e Trabalho Aéreo – IACM
Carla Tamele	Departamento de Economia de Transporte e Trabalho Aéreo – IACM
António Neves	Pelouro dos Transportes – CTA
Rafo Ustá	Director Executivo FEMOTUR
Bashir Adam	PCA da Moçambique Expresso – MEX

# ANNEX F: SPEED+ PRESENTATION TO ADM PROPOSAL TASK FORCE

The following is a summary of the discussions at the SPEED+ presentation to the designated Task Force on the AdM proposal, held at the IACM Aviation Training School on November 22, 2017.

Some delegates understood that the AdM proposal only related to over-border access points, however, it was demonstrated that the AdM proposal specifically related to the imposition of Hub-and-Spoke operations on airlines, and that certain destinations would have to be operated from specific Hub airports. Liberalised aviation markets do not normally have prescriptions for how airlines should operate their routes. Airports normally focus on attracting more airlines to operate air services from the airports and not reducing access to airports in order to channel passenger flows in a particular way. Airlines normally develop their own route networks without any policy or regulatory requirements on which routes airlines should operate.

On the issue of over-border access airports, the AdM proposal was factually incorrect. Specifically, South Africa did not reduce its international airports to three, as is alleged in the AdM proposal. South Africa has 10 international airports, and another airport has applied for international status. Specifically, Airlink operates from Nelspruit to Vilanculos, which demonstrates that not only the three large airports have international status. An analysis of international regional airports was presented to clarify the number of international airports of countries within the region.

LAM/MEX claims not to be in a position to operate direct flights between Johannesburg and the affected airports due to a lack of aircraft, resources and the fact that it operates from its base of operations based in the South of Mozambique (Maputo). This contrasts with Airlink's operations, which enables direct services from its Johannesburg base, where most of the traffic to the affected airports originate.

LAM/MEX regarded its inability to be able to operate in competition against Airlink due to a lack of equipment and a lack of market access in Johannesburg, where the most of pax traffic originates as unfair. Airlink has more aircraft and operates from its hub based in Johannesburg. LAM/MEX regards Airlink's operations as unfair. LAM/MEX do not have any bases in any of the affected airports, however, it used to have such bases at Beira and Nampula. It was not clear why these were abolished as that would balance the operational issues. Airlink does, however, have a benefit in loyalty schemes at its home base. accessing passenger traffic. LAM/MEX has to operate a large variety of equipment to serve the diverse needs of Mozambique. However, in liberalized markets airlines adopt certain principles that make airlines viable, like operating similar equipment (for the advantage of spares and crew training commonality), increasing frequencies and operating direct to destinations instead of incurring the costs of doubling-up of take-offs and landing for passengers that are carried via intermediate points (as transit passengers). This is one of the challenge of an airline to adapt from a monopoly with public service commitments to a market participant in a competitive market.

A need was expressed for more numerical analysis, which is to be provided in the final report. Also, the cost of developing hospitals needs to be determined e.g. to determine whether it is viable to spend the additional money to develop Nacala into a larger operational airport. It was suggested that the

strategy on Nacala be reformulated and some incentives are provided to assist a small airline to initiate air services and to develop connectivity as Nampula has substantial domestic connectivity.

LAM used to have a code-share agreement with SA Express on the Cape Town to Maputo route which was cancelled as it did not have the desired results.

The non-scheduled flight and pax volumes would remain little as most people prefer the reliability and lower costs of scheduled air services. Also, wide-bodied aircraft (twin-aisle) aircraft require large traffic volumes. The approach of route development was explained, which consider the build-up of indirect journeys to sizable volumes (from large networks) until such traffic flows can be channeled to justify a direct flight from source markets.

There was a concern that pax traffic in Mozambique air transport industry has not yet developed on the same scale as South Africa. Traffic volumes are sparse. Mozambique domestic airline industry has to be improved increased by AdM proposal in order for Mozambique airlines to compete with South African and big and strong airlines. Mozambique airlines do not have the ability to attract so many passengers as do South African Airlines have.

The example of Cape Town was mentioned to illustrate the ability of Public/private organizations can attract foreign airlines without a national carrier once demand is created. In that case, Wesgro established an Air Access programme following SAA's cessation of international flights from Cape Town due to its hub being based in Johannesburg and the high cost of ferrying flights and uneconomic domestic flights by wide-body aircraft between Johannesburg and Cape Town.

Some delegates regarded Nacala airport as a white elephant. The example of refocusing of George airport was discussed. George became a major golfing area and gave access to the garden route in the Southern Cape.

LAM feels an obligation to serve many destinations with a small number and diverse type of aircraft to serve everyone. This is different in competitive markets. LAM is trying to fly to all airports and operate different types of aircraft with few frequencies in order to accommodate all the different needs within Mozambique to serve the rest of the country. Instead, LAM could focus on its geographic strength to operate direct services from its base of operations at Maputo and rely on other airlines to fill the gaps in a competitive market.

LAM was of the view that If intervention is not taken in most of the air transport development will take place along the coast it's no revenue and passengers need to fly

The integration of traffic should be considered. LMA regarded South African airlines as all killing aviation in Mozambique, although most passengers emanate and are generated from South Africa. CTA made recommendations for the next 3 to 6 years and 12 conditions were included in a letter to the Minister that need to be met before international ports are closed.

The issue of security with regional flights was discussed. It was mentioned that there is less risk with passengers arriving from scheduled flights as they have already passed security inspections at large airports and the airlines carrying such passengers directly to in Mozambique. The risk of security is higher with non-scheduled international flights, which will continue under the AdM proposal, than with scheduled airlines.

Large investments in hotels were contrasted to the operation of aircraft, which require three months of deposits to lease an aircraft. The operational cost of an aircraft is, however, more than that of a hotel as the asset has to be moved.

Another further study is required with regard to the integration of domestic and international traffic. Most traffic (e.g. from Asia) feed Johannesburg by crossing Mozambique to land in Johannesburg two stops would be needed from Johannesburg via Maputo instead of operating directly from Johannesburg to Pemba. The question is how to capitalize on traffic from SA to Mozambique and to make the airports available the problem is to increase passengers from the first destination to reduce access on the roads.

Some adjustments in the wording of the presentation were proposed (and subsequently implemented) and it was resolved that a further study be requested on how to integrate and access international (comprising of intercontinental and regional pax traffic) and domestic pax traffic, inclusive of the traffic flow at larger hubs within the region.

# ANNEX G: DISCUSSION NOTES

## Discussion Notes: Mr. Emanuel Chaves, Chairman/CEO of Aeroportos de Mocambique

Mr Chaves developed the idea to develop Nacala as a hub airport as part of his MBA studies at the University of Toulouse. Essentially this was to re-arrange the routing structures in Mozambique and to turn Nacala into a hub based on the approach of hub-and-spoke systems instead of direct point-to-point air services. He shared his opinion on the factors and benefits of the proposal.

General view on the proposal:

- Mozambique is a long (vertical) country of about 2.5 hours flying of about 27 million population
- It is developed in regions based on railway development (the South, Centre and the North)
- Maputo, Beira and Nacala have been developed into port hubs with logistics facilities
- The Nacala Development Corridor links the deep-water harbour and rail project
- Maputo is a rail and harbour centre
- Beira was entry point before 1975 then became a domestic operation
- Studies have shown the Nampula airport is limited to expansion. It cannot be extended longer than 2000m and has a slope of 73%, which is a limitation as well as parts of the city and river crossings. There are no alternatives on the Northsides
- Pemba has an 1800 m runway and limited expansion possibilities to 2400 m but would require a huge investment

Factors in favour of Nacala are:

- The aircraft size is limited to Nampula and Pemba
- Only foreign airlines fly directly to these airports:
- Nampula = Kenya Airways (B737) and SA Airlink (E145)
- Pemba = Sa Airlink and LAM
- The North area is geared for future growth for the oil and gas industries
- 2 concessions to North of Pemba and further have been issued
- Nacala is the best fit for both these developments
- Tourism is spread to the North
- Islands
- Pemba deals with smaller demand on point-to-point routes and cannot develop into a hub
- Nacala is in the middles of Nairobi (NBO) and Johannesburg (JNB) 2.5 flight hours to JNB and 2 flight hours to NBO. The east coast hubs are currently Cairo, NBO and JNB.
- Nacala is located at sea level, which promises better aircraft performance that airports located at higher altitudes

Benefits of the proposal:

- LAM has a lack of route optimization of its route structure
- Maputo is the busiest airport with a throughput of about 1 million pax per year

- The objective is to attract 200/250/300-seater aircraft
- Nacala could attract Emirates Qatar to Nacala then distribute to smaller airports
- There should not be additional costs
- Pemba demand is irregular (over weekends too low)
- Through Nacala critical mass can be created
- There is interest in Nacala from Kenya Airways, Qatar, Turkish TAP, Etihad
- The development of the oil and gas fields creates demand from expatriates from Asia / Bangladesh
- Dubai can be used as a base for charters for Asiatic or Fly Dubai.
- Connectivity through hubs are required not point-to-point flights
- Agriculture and mining area
- Harare and Johannesburg exports
- Possible development of a Cargo airport
- It is time to re-invent aviation of Mozambique instead of allowing the market to define itself
- There is congestion problem outside Maputo
- The middle class is increasing and everyone wants or deserves to fly instead of remaining on buses for very long trips e.g. to Beira due to the high prices of LAM
- Charters can develop point-to-point services
- Nacala has reduced prices relating to short leg flights of 10 to 15 minutes
- Airports are losing money

**Discussion notes: Mr. Daniel Tsige, Mozambique Country Manager, Ethiopian Airlines (Lusoglobo Tours GSA)**

- More entry points are generally of benefit to tourism
- Tourists want easy access and the lowest cost
- Most of Ethiopian's traffic is destined for Maputo
- The choice of passengers is Nampula and not Nacala
- Recommend that existing airports be kept open as it would increase tourism and the economy
- The ban may assist domestic operators but may affect North-South passengers as they prefer direct flights to their ultimate destinations
- For passengers, the airports should remain open
- Ethiopian's new domestic operations are neutral to the closure plan
- Nampula is Ethiopian's preferred destination otherwise flights through Nacala would add 3 additional hours of travel time and additional travel cost like car rental, additional time.
- An option would be to provide free/affordable, safe public transport
- An example was Kaduna in Nigeria, where the airport provided a free bus (paid by the airport authorities) when flights were diverted to Kaduna at the time when Abuja airports was undergoing repairs
- Ethiopian has future interests to operate to Nampula (tourism) and Pemba (oil and gas) but not to Nacala. Ethiopian has no interest in Beira at this time.

## Discussion Notes: Mr. Roger Foster and Mr. De Villiers Engelbrecht, Airlink

Introductory comments via email:

- The issue is not just about Tete. Nampula, Vilanculos, Pemba and Inhambane are also affected. The most prominent hub in the region is JNB and it is important that all destinations within Mozambique enjoy global air access via JNB instead of diverting traffic through secondary nodes such as MPM, BEW and MNC (Nacala).
- Please note that MNC does not have a published instrument approach procedure and therefore Airlink has not commenced services JNB-MNC.
- We have already seen the adverse impact on tourism traffic at VNX resulting from the rumours that VNX will be closing to international traffic where tour operators are preferring to recommend other competing destinations such as Mauritius and Seychelles that enjoy direct services from JNB. We believe that changing these international gateway airports to domestic will be the death knell to tourism at POL, TET, APL, VNX, and INH. Our belief is supported by the local hospitality sector.

Telephone conversation notes November 20, 2017:

- Airlink has developed air links from Johannesburg and Cape Town within the African region, many of which are competing destinations to Mozambique.
- Airlink has invested specifically in additional aircraft and built its network to take advantage of the more progressive approach toward liberalisation within the Africa, which includes the implementation of the YD, and has enjoyed the support by both the Mozambique and South African authorities.
- Airlink has devoted many resources to generate passengers on its flights to Mozambique. It has a substantial client base and the ability to source passengers. It has been focussed on African liberalization for over 10 years and has been operating to Beira for about 15 years.
- Airlink's has provided direct connectivity to end destinations in Africa and put a number of destinations on the map due to their direct connectivity to Johannesburg, which is the major Hub in Africa. As a result, local economies have gained and developed substantially.
- Airlink made quite a big difference to the development of Tete and one can consider the position in Tete before and after Airlink initiated direct flights. Increased mining activity required the increased direct connectivity. It is clear that more direct flights reliable is service and direct connectivity has assisted the mining industry suppliers the hospitality and other industries (even new local brewery). Tete has a completely different economy today as a result of Airlink's reliable operations. Reliability of services is almost more price than price.
- Vilanculos has grown a lot in the last 5 years since Airlink's entry. This followed on a period during which LAM only provided connecting services from Vilanculos via Maputo to South Africa. Airlink took up the rights to basically replace the 19-seater aircraft of Pelican, which at that time did not do well.
- The result was a whole new breed of passengers were generated and gave rise to investments in hotels and resorts and hospitals. There is also a direct foreign investment element as many South African based passengers have holiday homes in Vilanculos. Airlink has a lot of trust and support from the tourism sector and heavy investments brought about by developing (generating) passenger traffic on the route.

- Tour operators are not confident at the moment as a result of the rumours that the international gateway status of the airport will be closed. That has stalled growth in Vilanculos.
- The typical passenger will go to the Seychelles or Mauritius which are also expensive individual destinations as opposed to mass tourism destinations. Vilanculos would be hurt if Airlink is not allowed to operate there anymore. Airlink believe it has done a lot in developing the market for Mozambique.  
LAM is not yet in a position to regain the same level of confidence from prospective passengers and the question is who would be operating services from the proposed Hub airports to the outlying destinations. There is no market for flights from Beira to Tete.
- Inhambane airport differs from Vilanculos in terms of general quality and the requirements of the hospitality industry. The airport needs attention as it is inferior to that of Vilanculos. There is also a 2-hour drive required by road from the Inhambane airport to the coast.
- Pax traffic volumes of LAM, which is the only airline servicing Inhambane at the moment has reduced substantially and overall there are more beds available in Inhambane than in Vilanculos, perhaps not of the same expensive focus.
- Airlink also developed a Vilanculos - Nelspruit connection to link the Lowveld and Kruger Park to Vilanculos as a competitive advantage for passengers that consider Seychelles and Mauritius.
- Similar destinations that can be developed are connections to Skukuza and Vic Falls as well as routes from Cape Town. Airlink has not yet taken advantage of any 5th freedom rights but it's something that will be studied in future.
- Many South African investors have invested in Vilanculos. Sasol operates hey Swift flight once a week and collects groups on a time schedule for their Gas operations at Vilanculos.
- Nacala can develop but it is not much of a tourist destination but more of an industrial port nature.
- Nampula has its own catchment area probably the biggest population density around the city in Mozambique with its own requirements and it would develop as a separate market.
- Nacala has not published the instrument approach procedure, which prohibits Airlink from operating to Nacala. There are also other requirements for Nacala airport to be fully functional. Nacala airport is inadequate for connections. Nacala image is a difficulty. The question is what will happen as Nampula traffic will not use Nacala. Demand is for Nampula. Not certain if both the two airports will remain open.
- Nacala is a separate industry and business destination with smaller leisure and beach activities. Airlink has been approached by Inhambane accommodation establishments to operate to Inhambane to start direct operations, as the bed occupancy has fallen to about 20%. LAM airline does not have enough credibility to build up that market yet and there have been recent incidents of interruptions of services to Inhambane.
- Pemba is also somewhat of an expensive tourist destination it has industrial and Gas activities and visitors use the islands which are extremely expensive and require helicopters to connect. Estimate 10% to 15% of the passenger volumes relate to tourists and the rest relate to Gas and business.
- Impressions are that LAM is getting weaker, feedback is that customers will not move to LAM at any price due to inadequate scheduling and reliability.
- The market has changed, shifted and now requires direct flights and not intermediate stops to the end destinations.

- Things that can be improved relates to tourism activities e.g. fishing, snorkelling activities.
- Further developments of the infrastructure are necessary to be on par with Mauritius which requires some investment in infrastructure and into the hospitality industry.
- When Airlink started to operate to Noisy Bay the average occupant occupancy increased from 23% to 60%. This experience is demonstrated at Vilanculos.
- Airlink developed ensures the reliability of air services and access directly to Johannesburg. As the coal is developed and frequency build-up and competitors enter prices will go down.
- Supply chain elements may be improved and wholesalers and large well-known chains like Woollies can improve the situation substantially.

# ANNEX H: STAKEHOLDER WRITTEN INPUTS

**Marta Bagnath, Operations Manager**

**Charters, Aerial Work, Cargo and Aircraft Management**

**CR Aviation**

Via email November 29, 2017

I will start with what CR Aviation do. We are operating since August 2012, first from Maputo then from Vilankulos (VNX) and Pemba (POL). Our main business activity is indeed charter flights, we are compromised in transporting people not just between main airports but also flying to more recondite places. Exceptionally in Vilankulos and Pemba, we also offer ticket prices to promote tourism and make the trips more affordable. As you may understand, if we rent the entire aircraft we get bigger revenue because all costs are fully covered no matter if the aircraft goes full or with just one pax, but selling tickets and having a 5-seater just with two pax flying we operate on break even, but still we are compromised in supporting tourism and making those destinations affordable, despite so expensive operation cost in Mozambique (AvGas costs around MZN 100,00/L)

I honestly believe that closing VNX and especially POL would make selling tickets impossible, due to the long distances from Nacala to the islands in POL province as well as offering Bazaruto Archipelago destinations from Beira (approx. 01H00 flight against 20Min from Vilankulos to Bazaruto). In POL especially the access by boat and + the ticket on a commercial airline (Nacala to Pemba) would just kill the destinations. Also, note that from POL we also offer flights to Niassa Reserve and other bush destinations.

Is also important to not forget that around 90% of passengers we carry connect from the international flight (LAM, SA and Airlink coming from JHB or KMI to VNX and POL).

Because most of the tourists arriving in VNX are coming from Kruger, CR Aviation created recently a new product beach and bush inside Mozambique, this is just possible because Vilankulos is international and after the beach in VNX pax go to Gorongosa (where their investments on going to open lodges) and vice-versa, having Vilankulos closed, makes Beira as beach option but unfortunately, for now, Beira don't have much to offer.

With regards to Nacala (my favorite airport), the challenge to have it active, involves making business center around the airport (Aeroportos de Moçambique apparently has in mind an "airport town") and making it a "fiscal free zone" might attract investment - this also involves education and human development so local people can be hired, but most importantly opening new resorts and touristic destination in Nacala, Mussuril (keep Lumbu airstrip opened) is the best option to bring a new/or one more tourism destination desired internationally, because the region has it all, from the colors of the ocean to the culture... is amazing!

This will not happen in a snap, that's why I believe POL should remain open for some time while Nacala gets strong and ready.

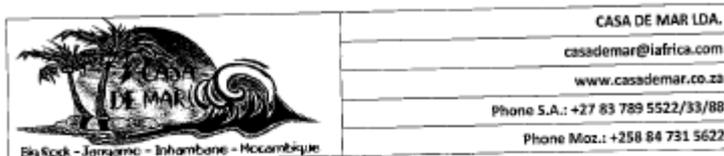
On the signature, you have my phone, if additional information needs just let us know we are very pleased to help and clarify.

Best regards,  
Marta Bagnath, Operations Manager  
Charters, Aerial Work, Cargo and Aircraft Management

## Des and Mary Denbridge, Casa de Mar Resort

### Inhambane

Via email November 14, 2017



AHTPI

14<sup>th</sup> November 2017

Inhambane

Dear Sir,

We wish to voice our strong objection to the proposed closure of Airports.

Tourism in Inhambane has experienced a great decline in recent years and resorts have really struggled to survive.

With the latest announcements made by his excellency the president of Mocambique that tourism should be given top priority in order to increase the number of visitors to the country together with a concerted effort to ensure their safety and comfort.

Resort owners are actively publicising these initiatives proposed by the president in the belief that a combined effort will produce results.

With this in mind we were all looking forward to an upswing in tourism, particularly in the Inhambane Province.

The closure of the Airports would be an enormous setback.

After the poor performance of LAM in recent months, Inhambane Tourism was expecting some positive steps to be taken to improve the efficiency of Air travel and the Airport.

This proposal however is a deadly blow to the Province particularly coming into high season.

We trust that any closure or curtailment of Air traffic will be seriously reconsidered.

Kind regards

Des and Mary Dandridge

Casa de Mar Resort

## Wilco Uys and Karla Santos

### Vale Mocambique

Via email November 15, 2017

Good day Joachim,

I am very sorry that I missed you. I was unfortunately extremely busy yesterday and arrived home fairly late.

I have passed the meeting letter to my colleagues Delmira and Katia as received from Johan van Wyk.

This proposal regarding the Tete Airport will significantly (mainly negatively) impact our business as we have Service Providers and Specialist Technical expertise coming to our site from South Africa on a daily basis. Then there is the matter of airfreight cargo as part of our logistics chain.

Kind regards,

Wilco

Good afternoon Joachim,

I'm responsible for HR in Vale Mozambique.

I would like to add Wilco's email.

This airport is very important because the ease of arrival and departure is a tool that attracts employees to transfer knowledge to the local staff.

The other aspect is if we need an urgent medical attendance, access to Johannesburg is faster if we have an international airport.

I would like to know more information about this subject.

Kind Regards.

**Karla Santos**

Recursos Humanos África| Head Human Resources África

Vale Moçambique S.A.

**Telephone:** +258 2522 7505

Carrier Moçambique: 802 7505

Carrier Brasil: 954 802 7505

E-Mail: [karla.santos@vale.com](mailto:karla.santos@vale.com)

Vila Carbomoc, Casa 20 - Moatize – Tete – Moçambique

# ANNEX I: PUBLISHED ARTICLES ON NACALA AIRPORT

## FLYING HIGH

### Mozambique 2016 | TRANSPORT | INTERVIEW

<https://www.thebusinessyear.com/mozambique-2016/flying-high/interview>

BY talks to Emanuel Chaves, Chairman and CEO of Aeroportos de Moçambique (ADM), on boosting air travel, promoting competition, and the role the air cargo sector plays in Mozambique.



#### *BIOGRAPHY*

Emanuel Chaves is the Chairman and CEO of Aeroportos de Moçambique. He obtained his BA and MA degrees in economics and management from the Catholic University of Mozambique. He moved to Maputo in 2006 and became head of Aeroportos de Moçambique in 2013. He recently completed an aerospace MBA at Toulouse Business School in France.

#### ***How would you describe the first year of operations of Nacala International Airport?***

The first year registered low amounts of both aeronautical and non-aeronautical revenue because only one airline was operating domestic scheduled flights five times a week. The airport started receiving international traffic within the second half of December 2015. The passenger terminal at Nacala International Airport was awarded the African Property Awards for 2015/16. As this award was for the architects of the building, it seems that the architectural design of the building, and its comfort and functionality were the most important characteristics being considered. The facility's architecture, design, and localization make this infrastructure unique in Africa.

#### ***Compared to other countries, the prices of domestic and international flights to and from Mozambique are relatively high. How can the ADM promote greater price competition?***

Airport and air navigation charges are regulated and cannot be freely set by airports themselves. Regulation models vary from country to country. Our airline charges are not too high compared to other countries in the region. Landing charges and passenger charges are fairly reasonable, for example, but our security charges are considered relatively high. The structure of charges varies among airports. The ADM plays an important role in promoting competitiveness in terms of prices, and our main strategy is to create incentives for airlines and promote the introduction of low-cost carriers to our facilities. We recently announced an incentive scheme to encourage airlines to fly to/from Nacala International Airport. We also reduced charges for the use of passenger boarding bridges at Maputo Airport by 15%. We believe we can in the future increase the overall number of passengers and airlines operating scheduled routes to and from Maputo Airport, increase its attractiveness as well as motivate airlines to extend their operations. We also have an incentive scheme for the operational fees that apply to airport parking fees, landing, air navigation services, jet fuel, handling, and passenger catering. In order to promote the use of Nacala International Airport we propose reducing the tariffs currently in force, such as by 50% for Nacala routes to Nampula and Pemba, by 25% for regional routes to and Nacala-Addis Ababa and Nacala-Johannesburg-Nairobi, and by 25% for domestic routes in the "Ponte Aérea da Zona Norte" (Northern Region Airlift) scheme.

***How will the depreciation of the metical change trade dynamics and the level of international cargo entering via air?***

According to the expectations and traffic forecasts of Aeroportos de Moçambique, we expect an air traffic increase of about 8.5% in 2016 over 2015 due to the entry of new companies operating in our airports. They will partner with several economic sectors to achieve greater synergies and work closely with stakeholders to further increase passengers and cargo traffic. The Nacala Airport Cargo Terminal has great potential to boost economic growth. The cargo terminal is located in an economical special trade zone and agrizone and is also near a deep-sea port. The port is also set to become the country's premier logistics platform, providing connectivity to several international destinations and access to local distribution networks. Several projects being conducted in Mozambique will provide a strong impetus to the air cargo sector.

***What are your expectations for the year ahead?***

As long as the airport is certified, it will work to win more traffic, particularly international routes. The coming year is expected to be one of reforms, with the gas, petrol, and agriculture megaprojects of gas, petrol, coal, and agriculture growing and bringing in increased investment and more exports. The opening of Nacala International Airport and the concentration of international traffic in the north of the country will propitiate a restructuring of flight routes, with more passengers and airline companies flying to Mozambique.

**HUB TO BE**

**Mozambique 2015 | TRANSPORT | VIP INTERVIEW**

<https://www.thebusinessyear.com/mozambique-2015/hub-to-be/vip-interview>

*Interview with Emanuel Chaves, Chairman & CEO of Aeroportos de Moçambique, on the opportunity for Nacala to become a new aviation hub on the east coast of Africa.*

***How would you describe the new Nacala International Airport infrastructure?***

The project cost was around \$250 million. It had to be expanded as there were many adjustments made throughout the project, although the initial estimate was around \$130-150 million. There were some substantial changes to the project; for example, while the initial scheme envisaged a rehabilitation of the existing railway, we had to build an entirely new one, which required massive investment. Also, we had to expand the facilities to make it a future hub. The inauguration took place on the December 13, 2014.

***What is your strategy regarding air transport agreements and MoUs to bring traffic into the airport?***

We are in talks to partner with certain huge brands. In handling, we will have one of the largest operations in the world and are considering three handling companies. In Maputo, we have the Mozambique Handling Services company (MHS) and are tendering to sell a 51% stake in it as we want to bring in a strategic partner in order to ensure that we deliver international-standard service. Another strategic partnership will be made with a catering company. Today, the catering company is owned by the airport and Linhas Aéreas de Moçambique, but we have companies interested in a joint venture. We are also considering bringing in an airport operator to partner us in managing the airport as soon as there is a clear strategy and capacity to attract more airlines. We want a dedicated airport operator with a huge capacity to mobilize airlines to Nacala. Currently, we have secured almost 90% of personnel already trained to operate Nacala International Airport. Our company is 100% Mozambican with all Mozambican employees highly trained to international standards.

***From which countries will people be able to fly directly to Nacala?***

Initially, we have Linhas Aéreas de Moçambique securing domestic flights. We have also already secured South African Airlines flights to Nacala. We are quite certain, too, that Ethiopian Airlines and Kenyan Airways will have flights. Kenyan Airlines is already flying to Nampula and will shift its flights to Nacala, and Ethiopian Airlines is already willing to fly to the north of Mozambique and will be open to flying to Nacala. There needs only to be an update of the bilateral agreement in order for them to fly there. Qatar airlines, TAP, and JAAL will also consider flying to Nacala given that bringing people to Maputo and then traveling two and a half hours to the north is impractical. We also have almost confirmed intentions from Lufthansa, Air France, and Emirates to fly to Mozambique. Linhas Aéreas de Moçambique is entering into a partnership with Air Austral from Reunion because many people from Reunion are also keen to invest in Nacala. The director of ENI Mozambique has shown clear interest in linking Nacala to Milan and Oporto. Also, from Anadarko we have heard that there is a need for flights from Houston to Mozambique. From 2015, there will be a large market linking Asia to Mozambique. Nacala Airport can handle aircraft such as Boeing 747s and 847s, and also Airbus 380s.

*"Nacala has many natural advantages compared with other hubs."*

***What are the main competitive advantages of Nacala becoming the main hub on the east coast of Africa?***

Nacala has many natural advantages compared with other hubs. Dar es Salaam is very close to Nairobi. And from Nairobi to Nacala is two hours' flight, while Nacala to Johannesburg takes two and a half hours. Secondly, Nacala is located close to a future significant port on the east coast, which is a good combination for a successful hub. Nacala is closer than Nairobi to Singapore, Australia, and other countries, as Nairobi is inland and Nacala is on the coast. Mozambique stands to surpass the GDP of both Tanzania and Kenya over the next 15 years, which will be reflected in air travel statistics. Nacala is closer to the sea than Johannesburg and Nairobi, meaning more savings on fuel at departure and more luggage being carried on departures from Johannesburg and Nairobi. This region represents 120 million people and is growing at an average rate of 5%, while Tanzania and Kenya are at 7%. So as Africa reaches 2.3 billion people by 2050, the area will have almost doubled. In the short run we still need to grow capacity and connectivity in Nacala, and if we do so capacity will surpass that of Nairobi.

***How would you assess the expansion of the Pemba airport inaugurated in March?***

We made a small investment of about \$5 million on the runway and terminal to cope with the demand of the next four years, while concluding the plans and construction of the new Pemba Airport. We are at the design and feasibility study phase, and expect to submit proposals for study in 2015.

***What is your strategy for improving competitiveness among airlines and increasing the number of connections and companies operating in Mozambique?***

Mozambique is growing rapidly, and over the past 10 years international arrivals have grown from 400,000 to around 2.3 million. The airports along the coast are all focused on tourism. We are making airports viable. The government is working with Linhas Aéreas de Moçambique on expansion capable of offering connectivity. Additionally, the strategy for Nacala is to get people to come to Mozambique and from here fly elsewhere. One strategy is to offer rebates for airport fees and air navigation fees for shorter, or regional, flights. We are offering flights from Nacala to Pemba and Nacala to Nampula, for example, at a 50% rebate. That is one of the strategies to position the airport. But it could as easily be done somewhere else. For example, we are launching a tender for the concession of the three airports: Inhambane, Ponta do Ouro, and Bilene.

© The Business Year - January 2015

***BIOGRAPHY***

Emanuel Chaves is the Chairman & CEO of the Aeroportos de Moçambique. He obtained his Bachelor's and Master's degrees in Economics and Management from the Catholic University of Mozambique. He moved to Maputo in 2006 and became head of ADM in 2013. He has recently completed an aerospace MBA from Toulouse Business School, France.

# ANNEX J: STAKEHOLDER CONSULTATIONS

Pemba, Cabo Delgado Province

November 6-7, 2017

**PEMBA STAKEHOLDER WORKSHOP ON 7 NOVEMBER 2017**

**DOLPHIN RESORT**

## Agenda

**CTA - Confederação das Associações Económicas de Moçambique**  
 Conselho Empresarial Provincial de Cabo Delgado

**Assunto: Convite**

**CONVITE**

Como é de conhecimento de V. Exa, a associação dos empresários do sector privado da Província de Pemba, que desde 2004 possui o estatuto de entidade autárquica local (Associação Económica de Moçambique).

Neste âmbito, a FEMOTUR (Confederação Moçambicana de Turismo) junto à CTA, registou na zona a abertura de empresas do sector privado de turismo, com as devidas qualificações de organização turística.

Assim sendo, tendo em conta o contexto local, surge um opportunity para as empresas privadas e sector do turismo, que com o apoio, estão em Pemba entre os dias 6 e 7 de Novembro 2017 a realizar um encontro de sector privado de turismo, com as devidas qualificações de organização turística.

Agendamos antecipadamente a toda a comunidade empresarial um encontro de grande importância para a Província.

**Pelo Melhorar do Ambiente de Negócios!**

Pemba, 06 de Novembro de 2017

**PROGRAMA**

**ENCONTRO DE AUSCULTAÇÃO DO SECTOR PRIVADO DA PROVINCIA DE CABO DELGADO SOBRE ENTRADAS NO ESPAÇO AÉREO MOÇAMBICANO**

Terça-feira, 07 de Novembro de 2017 Cidade de Pemba, Local: Deck Pemba Dolphin

08:00 - 09:00	Chegada e Registo dos Participantes (CEP)
09:05 - 09:30	Intervenção do Representante do CEP (Dr. Assif Osman)
09:35 - 09:50	Intervenção da FEMOTUR e apresentação dos objectivos do encontro (Dr. Raífo Ustá)
09:55 - 10:10	Intervenção do Consultor
10:15 - 10:30	Debates (Todos)
10:35 - 10:50	Considerações Finais pelo Representante da FEMOTUR (Dr. Raífo Ustá)
10:55 - 11:00	Encerramento do encontro pelo Representante do CEP (Dr. Assif Osman)

*Pelo Melhorar do Ambiente de Negócios!*

## Attendance Roster



**CTA - Confederação Das Associações Económicas de Moçambique**

Conselho Empresarial Provincial de Cabo Delgado  
**ENCONTRO DE AUCULTAÇÃO SOBRE ENTRADAS NO ESPAÇO AÉREO MOÇAMBICANO**  
 Local: Deck Pemba Dolphin, 07/11/2017  
 Lista de Presenças

No	NOME DA EMPRESA	REPRESENTANTE	Cargo	CONTACTO	
				Celular	E-MAIL
1	Grupo Osman Yacob				
2	CARGO FRETE	ALCANTARA		843719441	CARGOFRETE@GMAIL.COM
3	Carlos Advogados				carlos@carlosadvogados.com
4	CDTUR	Agencia de Turismo	Proprietor	848591776	ngidipocis@cdtur.com
5	R. Reggio Emelia	CARLO FURNICARI	Proprietario	849282510	
6	Pemba Dolphin				fully
7	IIConsultores				
8	ASSECAD	Juana Sousa	Proprietor	826273630	juana@sousa.com
9	FRUTICAD				
10	AMECAD				AMECAD
11	Macaloe				
12	NUNISA CONSULTORES				
13	Grupo Abubacar Varinda				

No	NOME DA EMPRESA	REPRESENTANTE	Cargo	CONTACTO	
				Celular	E-MAIL
14	Kauri Resort	MUHAMMAD FARHAN	DIRECTOR	312555762	MUHAMMAD.FARHAN@KAURIRESORT.COM
15	Hotel Wimbi Sun	ZAHARA-BALAM	DIRETOR	847086460	ZAHARA@WIMBISUN.CO.MZ
16	Rezz,Lda	ZINAT ALREZZOQ	DIRETOR	820800808	Rezz.Resort@Gmail.com
17	Upeponi				
18	Bolore Logistic	Niven Fariapa	Branch Manager	851000142	niven.fariapa@bolore.com
19	Avani Pemba Beach Hotel				
20	Nautilus Beach Resort				
21	Diamond Mecufi Beach Hotel				
22	Strong Eagle	ALCANTARA	C.O.	868966504	ALCANTARA@STRONGEAGLE.COM
23	Hotel Sarima				
24	Agencia de Viagens Kaskazini				
25	Chiuba Bai Lodge				
26	Anadarko				
27	Eni				
28	Twig Exploration & mining				
29	Montepuez Rubi Mining				
30	Miti holding,Lda				
31	Petronor Mozambique	Benedicta Schell	Manager	842601019	benedicta.schell@petronor.com
32	EFERA DEZMAGNUS	LYIA MARGULYAE	CEO	848886395	LYIA.MARGULYAE@EFERADEZMAGNUS.COM
33	EliStarva Shop	Maria (Maria)	Assistant	847579840	maria@elistarva.com
34	KALA VILLAGE	SANIKELLA VELEMA	HR MANAGER	844970770	SANIKELLA.VELEMA@KALAVILLAGE.COM
35					

## **Workshop Summary Notes**

The meeting was organized by the local branch of the Confederação das Associações Económicas de Moçambique (CTA) and the Associação de Hotelaria e Turismo de Cabo Delgado (CDTUR).

Pemba airport is used by:

- Fishing
- Mining
- Commercial
- Tourism
- Oil & Gas industries

Possible future developments can include:

- Tourism
- Casinos
- Packaged trips to Niassa reserve and islands
- Tax-free zone for Tourism
- Future air cargo development with regard to urgent deliveries for break bulk

Oil and Gas industry cannot afford delays and requires direct flights to Pemba

Antonov charters are operated directly to Pemba (with 100 to 110 tons of air freight)

Pemba operates as a central logistics hub

The realities are that there is no effective alternative link from Nacala to Pemba

- The road connections are not good (almost non-existent)
- There are no connecting airlines that offer services from Nacala to Pemba

There is too much uncertainty and the risks of interruption of continued production are too great for the oil and gas industry Nacala.

Nacala is known as a logistical coal railway part of the Nacala corridor.

The proposed decision is not at the right time, maybe 6 to 10 years in the further the proposed decision can be considered following an economic study on the different airports as hubs

Proper infrastructure has to be in place, which simply does not exist

Pemba should be the hub for supplying the mines and oil and gas operations rather than Nacala (proposed a number of times)

Tourism and Gas support company (also supply oil and gas industries in other countries e.g. in Basra Iraq).

Oil and Gas industry need direct access to scheduled international services to the Pemba airport due to the requirements of rotation of staff and urgent supplies that can rapidly be flown in from other parts in the world via Johannesburg. Teams are flown in to and assembled in Johannesburg from various places in the world, they arrive in small groups to be transported to rigs, factories and mines. Staff rotations cannot afford the delays and cancelled flights experienced in the domestic market. Travel insurance does not cover LAM flights, hence there is no choice but to fly with Airlink. The availability of rapid evacuation to large modern hospitals in South Africa in care of medical injuries within three

hours is an important consideration for staff (especially management or executive) to be based in Pemba.

Door to door cargo shipments requires direct access to scheduled flights and reliability and certainty of deliveries. Some bulk sea-freight is broken down (break-bulk) at Nacala (import duties are paid) and then shipped to Pemba for transshipment to rigs. This may increase smaller port operations for Pemba.

Handles about 2000 back-to-back rotations of technical staff that are then flown to off-shore rigs by helicopter.

Value-added services like car rental should be developed.

Impact on off-shore operations have to be considered, if drilling is stopped as a result of insufficient technical personnel on rigs results from missing flights or delays in flights e.g. 20-day staff rotations. This is estimated to be \$1million to \$2million per day if technicians are delayed in Nacala.

Should Nacala replace Pemba, about 15000 to 20000 workers and about 500 to 600 technical persons would be relocated to Nacala. This would also impact Pemba negatively. Also, the cost of everything would increase.

Hotels and tour operators were encouraged to invest in Pemba, and substantial loans were taken out to finance investments. Now there is a risk that everything would be lost and investments are put into doubt. This uncertainty also inhibits new investments.

Experience in support services to Oil and Gas industries and mining has already been established in Pemba. This would cease over time (in Pemba) and would have to be relocated as is not developed in Nacala. Services in Pemba took years to develop and its functions cannot be just replicated and replaced at Nacala.

Pemba is the seat of the Provincial Government. Its international access should not be replaced by Nacala in another province, Nampula.

Investment in infrastructure and hotels was done based on Government encouragement. Tax incentives should be applicable to Pemba to support the new developments (mining, gas, tourism).

Without direct access to Pemba, the region will fall back into oblivion. Investors are reliant on the scheduled and direct connection to Pemba airport. If no scheduled international flights are possible then there will be a decline of investors to invest in a market which is already under strain. Should there not be direct access, many property investments (which are indebted) will just not be viable.

More destinations should be opened from Pemba. Instead of the risk of losing markets and destinations, markets should be opened for Pemba. If the Airports Company is not interested in Pemba airport, a consortium from Pemba can be mobilized to purchase the airport or run it as a concession (an independent airport).

The looming proposed decision creates uncertainty and lack of tourists. Overseas travel agents/ tour operators arrange bookings well in advance and do not book where customers may be stranded (stuck) for any reason.

The Meridiana charters were also raised. Such charters would require more accommodation to fit the cabin size of larger aircraft.

Should relocate airport, develop the existing property to accommodate more and larger aircraft. Pemba should perform the role of a hub with a bigger plan.

Nacala is positioned as an import of goods and export of coal, whilst Pemba serves oil rigs and mines. The biggest constraint is high flight prices, especially since June 2015.

The activity level in Pemba reduced in line with the reduction of oil prices, which have now levelled out. The announcement of the pending closure of Pemba airport to international scheduled flights and the hub idea.

Nacala has no hospital and travel insurance is not possible on LAM, hence flights of Airlink are preferred.

The impact on secondary destinations (islands) should also be taken into account.

### ***Statement from Permanent Secretary & Director of Transport and Communications of Province of Cabo Delgado***

Direct access to Pemba airport is important to the development of Pemba as well as the Province of Cabo Delgado.

Pemba airport represent international exposure for Cabo Delgado.

Scheduled international flights need to maintained at the airport and not closed down. It helps with the development of Cabo Delgado in particular for the tourism sector.

Tourism is one of the four pillars for development of Mozambique.

New industries, like oil and gas, bring pax from outside Mozambique.

There are no links in the short and medium term to link Nacala to Pemba.

Cabo Delgado has historic ties with neighboring SADC countries in:

- Tanzania
- Kenya
- And South Africa for newer industries

Without international scheduled flights economic and social problems are expected.

The proposed decision will reverse the current planning for the province

Would like to have Pemba as a special economic zone as it supports new industries and tourism.

The development plan of Cabo Delgado is to develop Pemba into a modern hub. To this extent, a medium-term development plan is being developed by Ernest & Young, which would be submitted to Cabinet towards the end of the year.

- The drafting of the development plan is in its final phase.
- A meeting would be arranged to present it to stakeholders
- Then to present it to the Provincial Assembly, where after
- It would be presented to an investor conference during 2018 to launch the development plan

The plan would include new road needs to Nampula, Tanzania and a bridge as well as a railway line for passengers. Palma, another bridge and a road to Tanzania.

Regional tourism development would be addressed, including linkages of Cabo Delgado to Niassa reserve and Malawi. Pemba opens the door to Northern countries.

Infrastructure (hotels and lodges) will be addressed.

Pemba requires qualified people.

The air ticket prices from Maputo to Pemba is prohibitive

It is hoped that the new domestic airlines would reduce fares. LAM has a record of cancellations and delays, which is a problem for meeting international flight connections.

The politicians would like tourism to develop. This is based on local entrepreneurs, which are financially constraint. Partnerships between land and capital are required as banks are only able to finance a small percentage of the property developments.

The Pemba airport should be modernized, runway extended for large aircraft to land, and other infrastructure to complement the airport e.g. parking at the airport. Perhaps the airport could include a shopping center, for the region (shops and restaurants). There are also ideas of a new city across the bay.

Nacala has a different mission to Pemba. Nacala has its own purpose, it has a special economic zone, receive Asian traffic. It is an industrial city with a coal terminal, neither of which are really attractive to passengers especially tourists, who see coal in an adverse light.

In summary, Pemba airport should be renewed, it requires additional investment, it is included in the integrated development plan, scheduled traffic from outside Mozambique is necessary for new industries. The flights to Johannesburg are essential. Pemba airport is a means for investment.

## **SUMMARY OF INDIVIDUAL MEETINGS AND DISCUSSIONS**

### ***Meeting with Airport Director on 6 November 2017***

Director do Aeroporto Internacional de Pemba Cabo Delgado district of Mozambique: Mr Helder Correia Sarmento

#### **In Attendance:**

- Hermenegildo Idefonso (Director Nelson Games Investments - Local Tourism Forum)
- Raufo Usta
- Fransisco Cabo
- Dr Joachim Vermooten

#### **Pemba Airport**

The economic and aviation development is not yet suitable for large-scale connectivity via the proposed hub strategy, which does not seem to be based on demand.

For Pemba connectivity is most important especially for ex-pat technicians and workers that are rotated on a back-to-back basis e.g. 5 days in and 5 days out, for whom scheduling and reliability of flights are essential.

Tourists demand characteristics require flights straight into the final destination of Pemba and not via an intermediate airport.

Flights connect Pemba to Dar es Salaam and to Johannesburg.

Estimate a pax throughput of about 140 000 passengers per annum arriving at about 10 000 flights per year.

About 70% of pax traffic reflect journeys for business purposes and about 30% for tourism.

Business demand relates to the following industries: Oil, Gas, Graphite, Ruby mining, corporate staff, Government related persons.

The major constraints to tourism development relate to high ticket prices (fares) charged by airlines, which may reduce if more competition emerge. Hotel prices seem to be reasonable mostly at about \$100 per room per night with the higher-class hotels at about \$200 per night. There are not many charters.

The business sector includes Oil, Gas, Graphite, Ruby Mining, Government, corporate people.

The last two years have seen a decrease due and in line with bleak economic conditions in Mozambique as well as the completion of the initial stages of 1st stage of oil and gas projects and the associated departure of staff and also influenced by lower oil prices.

Oil and Gas industries have about 600 people based at Pemba, whilst Moringa factory at Palma there are about 15000 employees. During the construction of projects about 5000 people with a back-to-back rotation of a month in and a month out for whom scheduled dates of departure and return are

The Ports of Cabo Delgado (PCD) has been delayed and an oil and gas port to be built at Palma 400 kilometers north of Pemba. A new a 2500m runway Palma Airport is in development Palma by Anadarko Petroleum and ENI to support a new natural gas processing facility (environmental reports pending).

There is also a 2000m runway airport at Mocímboa da Praia 328 km north of Pemba (4 hours 17 minutes).

Small tour operators and hotel investors regard the flight ticket prices to Pemba as the major constraint to develop much more. Hopefully, new entrant airlines would reduce ticket prices from 2018 onwards as a result of more competition.

There are four travel agencies in Pemba town.

A charter company, Meridiana operated a B767 to from Milan to Zanzibar and then a B737 to Pemba, with about 100 pax. Only 3 – 4 flights took place.

Most new developments have been put on hold. (This is very visible, with many new property developments stalled mid-way completion).

### **Pending Nacala Airport Hub Decision**

The decision appears to be driven by other factors than demand.

Modern infrastructure too soon for the level of economic development and the level of aviation development at the moment.

Challenges of the proposed decision relate to:

- Surface travel (by road) is inadequate and does not provide a reasonable option to connect Nacala to Pemba

- There is no connectivity with small airlines with small aircraft to provide connecting flights (to link Nacala with Pemba)
- LAM has a history of delays, whilst the needs of back-to-back rotation require schedule reliability on-time performance.
- Prices will probably increase

The proposed decision will not reduce airport running costs substantially.

Previous informal discussion with Qatar Airways indicated that the following is required for Nacala to be considered as a destination from an operational perspective:

1. 5 Star hotels with enough bed capacity have to be available, should there be a delay of a B787 flights and passengers have to stay overnight
2. Sufficient hospital and emergency facilities have to be available to deal with casualties relating to accidents or to deal with a fire.

### **Possible further development of Pemba Airport**

Further developments are to lengthen the runway to 2500m from the current 1800m runway length, taxiway and apron aircraft parking. A320 type of aircraft can be accommodated presently (maximum of 3 B737 or A320 aircraft at a time on the apron). To develop further the existing runway can be lengthened (very expensive due to ground works to cover ravines at both ends) and the terminal increased. The current airport site is ideal for property development. Another property is available (reserved) for the relocation of the airport.

Pemba's population is 141,316 (2007) and is the gateway to visit the Quirimbas Islands and Quirimbas National Park.

Nampula, Nampula Province

November 8-9, 2017

Nampula Stakeholder Workshop on 9 November 2017

CTA Office

Attendance Roster



**CONSELHO CEP- NAMPULA**  
EMPRESARIAL PROVINCIAL DE NAMPULA

**LISTA DE PARTICIPANTES**

ENCONTRO DE *Ausultação A-O EMPRESARIO S/ENCERRAMENTO DE 2017*

LOCAL: \_\_\_\_\_ Data: \_\_\_\_/\_\_\_\_/2017 Hora: \_\_\_\_:\_\_\_\_

N.º	NOME	INSTITUÇÃO	Cargo	CONTACTO	
				Cellular	E-MAIL
01	ABDUL GANI	R. VIMANHA	ESCRITURÁRIO	844960040	
02	Munguá Sacausa	ASABANA	Administrador	84275801	msacausa@gmail.com
03	Mauco Mourão	PC Taurim	chefe	94670530	maucmourao@pcmaurao.com.br
04	Vasumara Mandote	SOAL	Gerente	84264326	vasumaramandote@gmail.com
05	Juliana Herculito	AMEL MOURÃO	Anal. Cont. PV	8420632	julianaherculito@gmail.com
06	Julia Herculito	SOAL	Procuradora	84442046	juliaherculito@gmail.com
07	Jeremias Mourão	ANJE	Executivo	84279370	jeremiasmourao@gmail.com
08	Edga Chiga	OCCAM	DELEGADO	84201646	edgachiga@ccam.com
09	ALBERTO DA SILVA	ASSISTENTE	Resistente	84266446	albertosilva@ccam.com


**CONSELHO CEP- NAMPULA**  
 EMPRESARIAL PROVINCIAL DE NAMPULA

N.º	NOME	INSTITUIÇÃO	Cargo	CONTACTO	
				Celular	E-MAIL
10	Mohamed Yunus Abdul Gafar	Coel. Comércio	Presidente	82601420	mygafar@cepna
11	JOACHIM CERNEIRO	SPEED	Presidente	+27 83468211	joachim@
12	ALTAIR NURDINE	HOTEL Lúcio	CONTABILISTA	846932867	altairnurdine2003
13	JULIO MORO	RM	JORNALISTA	843833940	Julio.moro@cepna
14	Abdul Javir	R. hag	Journalists	844102207	abduljavir2003
15	Umaiza Ali Inyfa	AEMPREM	Presidente	842600559	umaizalimufa
16	André Pinto	PSE	Projecto	820277910	apinto@psi
17	Raufão Bambin	DLIC	Ch. Dph. Prov.	845704969	bambin@gmail.com
18	NEW HOTEL				ABDUL HADJI
19	Jorge José Claudio	Associação	Associação	848894009	Joseluis@cepna
20	Inês António Rencina	CEP-CTA	Administradora	86663575 84602845	Cap.reimpulsa
21					

### Workshop Summary Notes

The meeting was chaired by Mr Yunuss A Gafar, president of the Nampula CTA branch at CTA's offices.

Nampula is clearly the destination of choice for pax. If flights are forced to Nacala, the links to Nampula has to be improved. Nampula is a trading destination and most of its traffic has its origin and destination of Nampula, with very little demand for Nacala. These persons have to travel on the road.

Nampula has most international and domestic connections.

So long as Nampula remains the seat of Provincial Government, steady traffic demand for civil servants will remain for Nampula, unless the seat of Government is moved to Nacala.

### The proposed decision

Nacala will never become the Cape Town of Mozambique. It is not an economic hub and will take a long time to develop to the same scale of Nampula. Central Bank and tax authorities and licensing have to be obtained in Nampula.

Nacala has the demand as a local airport. It takes more than 2 hours to travel between Nampula and Nacala. The road is dangerous and has delays due to broken down trucks and other obstacles. It is not suitable for international tourism development. It will add travel time and additional cost.

In order to fly form Nacala additional travel time is required before the flight (including domestic flights). At the moment, traders have 10 minutes taxi ride to the Nampula airport, whilst with Nacala additional time and cost would have to be reflected, which will make goods more expensive and uncompetitive in Nampula.

It would have a huge negative impact on Nampula. Companies based in Nampula will not move, it would only increase cost and make connections more difficult. Why sacrifice the economy of Nampula for the benefit of Nacala airport? There was agreement that the movement would be negative for Nampula's economy.

## **SUMMARY OF INDIVIDUAL MEETINGS AND DISCUSSIONS**

### ***Meeting with Airport Director on 8 November 2017***

Director Nampula Airport in Nampula Province Mozambique:

#### **In Attendance:**

- Mr Elias Felisberto Joao (representing Artur Sitol, who was in Maputo)
- Rauf Usta
- Fransisco Cabo
- Dr Joachim Vermooten

#### **Nampula Airport**

Passengers are traders, business people, Government officials, NGOs (UN refugee camp for displaced persons), and some tourists.

Growth increasing slightly but affected by political conflicts/stability. There are very little international tourists (to Mozambique Island, where there are retired guesthouses). Summer is the busiest time.

Nampula is already the hub for the north of Nampula province and traditional association of population (diaspora) in this and neighbouring countries.

#### **Pending Nacala Airport Hub Decision**

Nacala airport has modern infrastructure, with new technology and a long runway. However, the traveler choice (demand) is for Nampula.

Nacala has the deep-water port and is a special economic zone.

Pax demand, however, demonstrated that the real demand is for Nampula. LAM started with three daily flights from Maputo to Nacala but has reduced to 2 flights per week and the aircraft is not full.

Despite all the lower cost advantages of Nacala, airfares are substantially higher to Nacala than to Nampula, and the cost of road transport to Nampula has to factor in.

If flights from Nairobi, Johannesburg, Dar es Salaam (via Pemba) are forced to use Nacala, traffic would be diverted but at a higher cost and time delay.

The road between Nampula and Nacala attracted many people who live along the road and use it for selling, commuting, travelling and trading. The road between Nampula and Nacala is dangerous and prone to accidents and breakdowns with many stops. This poses a risk of missing flights or complicate matters if there are flight delays.

The demand for Nampula is substantial and only 2 flights for Nacala. Nacala needs further infrastructure hospitals hotels have not been developed as originally planned.

Passenger train between Nampula and Nacala was terminated

The airport runway of 2000m can be extended to 3000m, ELS (electronic landing guide slope) is required and airport terminal needs to be refurbished and modernized. Nampula airport should not be closed to international scheduled flights. There is also a need for technical English training to avoid misinterpretations (including in English speaking countries) and HR development. The proposed decision will not materially change (reduce) the costs for the Nampula airport.

### **Possible further development of Nampula Airport**

The airport is functional but can be updated.

### ***Meeting with Nacala Corridor Development Agency***

Nilza Mabote and Felicidade Mulocha

The objective is to monitor the development of Nampula provincial development strategy. The focal point is Government and private sector and civil society's 4<sup>th</sup> pillar of the development strategy.

Airport development and integration need to be studied and a development plan is to be submitted to the Nampula Provincial Government. Under the impression that the closure of Nampula airport for international scheduled traffic would assist in the viability of Nacala and is linked to other projects associated with the airport. Johannesburg is an example of a central hub. Nacala airport's viability would be in the in the interest of the country.

The Nacala airport development has been likened to the development of Johannesburg as a central hub, (which is not correct). The matter was considered from the perspective of the benefits for the whole country although it may imply additional cost for the immediate economy.

However, travel to Nacala would imply an additional cost. Bus operators would have to be established. Concerned about why air travel at Nacala has not taken off after all the time that it has been operational. The reasons for the low use of Nacala airport by airlines may be the result of lack of hospitals and the requirements of airlines to operate to Nacala.

The houses that were built for the development of the port are still there.

The overall plan was to develop the Nacala corridor combining road, railway and air transport.

Nacala, Nampula Province

November 10-11 2017

Nacala Stakeholder Workshop on 10 November 2017

Nacala Plaza Hotel

Attendance Roster

	NOME	EMPRESA	CONTACTO Tel / EMAIL
1.	EDUARDO PINTO	BLUE COASTS / ASHOTA	847326835 EDUARDO@BLUECOASTS.LOCAO
2.	Emilio Ribeiro	Lobby tel e Macala CEO Nacala	846015370 emilioribeiro.orgmail.com
3.	URANIA NOITE	Empreendimento Joves	845059252
4.	Bruno Pereira	BTB	844807066
5.	ZUCCATI ANTONIO	JUDITH HOTEL	847861901
6.	MICHAEL DIAPOSO	DOZ ADVENTURES	846413837 michaeldiaposo@dozadventures.com
7.	EMÍDIO BAPTISTA	EB Farmacia Profissional	843469774
8.	Ricardo Freitas	CORAL LODGE	845694192 - @coral.lodge
9.	Armando Costa Chonal	NACALA PLAZA HOTEL	ricardo.freitas@coral.lodge.moz 841411828 arcosta@nacalaplaza.com
10.	Luís Belo dos Reis P.	Reunio Françoise	844098136 / 829985409
11.	NELSON BELMONTE	NBI	nibelabangescuendi@gmail.com 82601611 840542053
12.	PEDRO ARAÚJO	MARTINS DA CRUZ	845537560/comercial.martins@necruz.com
13.	Eliz Pezosa	C.T. Ponta Nacala	843696518 / Elizpezos@ctn.com
14.	JOSE ANTONIO ROJOLA	ROBENNY INVESTMENT	840590921 / rojola30@gmail.com

Workshop Summary Notes

Nacala should be the hub as the airport's infrastructure has been developed.

The original overall development plan for the transport integrated hub of the sea, rail and air connections has not been completed. This should be completed as many people and investors have made investments on the expectation that such developments would happen. There is disappointment that things were not developed to the scale originally envisaged. There are quite a number of sizeable

tourist accommodation facilities that have not yet been completed of which the development was halted mid-way.

Flights to link Pemba to Nacala has to be developed (air taxis for 10 to 15 people) as the road is not an option for connections. Nacala can also link per helicopter to the rigs in the same way as from Pemba.

LAM's flights are too expensive, it has the wrong business plan and seats are too expensive. Promised property developments have not taken place. Helicopter operations could operate from Nacala as well.

Tourism and local accommodation have to work together. Visitors can drive the 100kms to the Mozambique Island from Nacala.

The reason that there are more flights at Nampula is that there is more demand for flights at Nampula than at Nacala.

Passenger train no longer operate between Nacala and Nampula.

Large port exports about 100 tons freight a day. Pemba port is inadequate to ship large volumes of sea freight.

Although there was insufficient demand (less than at Nampula) and less domestic flights there was general support for Nacala to gain from the proposed restrictions on Nampula. Mostly due to the fact that the infrastructure that has already been developed in order to support the financing commitments made.

Nacala should form a tourist development mechanism similar to the Wesgro developments in South Africa and attract a small airline to commence services from Nacala as its base of operations.

## **SUMMARY OF INDIVIDUAL MEETINGS AND DISCUSSIONS**

### ***Meeting with Airport Director on 10 November 2017***

Director Nacala Airport in Nacala Province Mozambique:

#### **In Attendance:**

- Jeronimo Tambajane (Nacala Airport Director)
- Rauf Usta
- Fransisco Cabo
- Dr Joachim Vermooten

#### **Nacala Airport**

LAM's operations killed the business. Tickets are about \$100 more expensive than flights to Nampula despite lower costs. LAM's customer service is inadequate, it mistreats passengers and can be more service friendly. If international flights are operated then about 50% of Nampula's passenger traffic would accrue to Nacala.

The reliability of LAM's operations was affected by delays when it started and as a result of aircraft problems. There is a lot of business between Nacala and Tete as a result of the coal mining operations of Vale. (Please refer to the feedback from Vale in the main report). There is, however not enough domestic flight connections for Nacala at the moment. There is less demand for LAM's flights from Nacala than from Nampula.

It is critical that there needs to be a large enough scale of domestic flights that connect with Nacala with domestic airports be established to improve Nacala's connectivity. Therefore, a domestic air network is necessary to connect with international connectivity.

Short distance to Nampula is problematic. The same difficulties will emerge with the new plans for a large airport at Xai Xai near Maputo.

Traffic demand is from Nacala to Tete. International tourists would have to be bussed to Nampula. Too close for air connections. The overall idea is to sacrifice flight operations at Nampula to improve the viability of Nacala airport.

Excited on the start-up of four new domestic airlines, that should be required to operate to Nacala instead of Nampula.

Nacala is closer to the Mozambique Island (100kms) by road and there is 20kms of beach that can be developed.

Nampula is more developed for air travel but most passengers relate to business and Government trips rather than tourists. Nacala has, however, the biggest industrial investors.

Airlink indicated that it would be considering flights to Nacala during 2018.

Further investments are required to make the airport fully functional for airlines. This includes hospitals and hotel investments. A large project was originally earmarked next to the airport. However, no property investment has taken place there as yet.

Excellent facilities for pax and cargo exist. They are well maintained, clean and manned by friendly airport staff. Some of the departure/arrivals halls can be used for conferences and functions to stimulate demand.

Tete, Tete Province

November 12-13, 2017

**Tete Stakeholder Workshop on 13 November 2017**

**VIP Executive Hotel**

**Attendance Roster**



Name	Company	Tel	Email
Silvia Martins	OLD Condições	849018812	oldcondicoes8@
		ou 843064145	gmail.com
Nelson Mafambane	Hotel VIP Execut.	849290451	Nelson.Mafambane@viphotels.com
MARCELA Mafambane	TETE FERRY SUN	843636927	marcela.muchayo@gmail.com

### **Workshop Summary Notes**

This discussion was organized by the Associação de Hotelaria e Turismo (ASSOTHARQ-Tete) and Federation of Mozambican Tourism (FEMOTUR), which included the executives of the VIP Executive Hotel and the Ferry Bridge Sun Hotel. New hotels of international standards were developed with Government encouragement on the basis that the Tete airport would be open for international scheduled pax. Almost all and in some cases all hotel guests are currently flown in from South Africa via the Tete airport, stay a night and depart the next day to South Africa.

Hotels cater for international standards and are expensive and only affordable to foreign visitors from South Africa. Even Tete based business people make use of the flights from Tete to South Africa in order to then fly to Maputo, due to the very high prices of LAM.

The hotels invested substantial amounts infrastructure and borrowed large amounts of loans, which will be lost if the Tet airport is no longer available for scheduled traffic. LAM is not efficient; delays and flight cancellations occur frequently. This will give rise to problems at the intermediate airport of Beira if traffic is diverted through Beira. There is a lack of hotels to make provision for the overnight passengers every night in Beira.

LAM's cost of tickets is very expensive. Hotel's business will close if the decision is implemented.

## **Pending Tete Airport Hub Decision**

The closure would create a domino effect, as hotels' employees would be reduced for cost savings and local suppliers are dependent on the continued hotel operations.

Vilanculos would experience a similar problem, although hotels there are more focused on touristic than business travelers.

Before such a decision is taken the financial situation of hotels would have to be considered or compensated.

There is a very strong view against the proposed decision.

## **SUMMARY OF INDIVIDUAL MEETINGS AND DISCUSSIONS**

### ***Meeting with Airport Director on 12 November 2017***

Director Tete Airport in Tete Province Mozambique:

#### **In Attendance:**

- Mr Ernesto J Chaúma (Airport Director)
- Rauf Usta
- Fransisco Cabo
- Dr Joachim Vermooten

#### **Tete Airport**

International scheduled traffic relates to the following businesses:

- Mines – coal Vales
- Kapenta fish project
- Iron and steel mining
- Tobacco - Lilongwe
- Relatives friend and relations (VFR)
- Tourists – safari
- wives of expatriates that need to exit for Visa purposes

Vale has its own aircraft based at Nacala for executives. It rotates between Tete, Johannesburg and Nacala and collects pax from Brazil in Johannesburg.

Charter volumes of pax are lower than scheduled international arrivals. Passengers prefer Airlink as its flights are punctual and efficient.

Mining expansion was interrupted by price and demand slump as a result of worldwide economic conditions.

Airlink pays tax in South Africa and LAM will benefit if Airlink cannot operate directly to Tete. Airlink does not feed the domestic airlines as most of its passengers return to South Africa directly. LAM's domestic operations and Mozambique will gain if pax first have to travel to Beira and the commute on LAM's domestic flights to Tete.

## **Pending Tete Airport Hub Decision**

The impact will be to increase the domestic traffic flows for LAM. Hope that domestic competition will drive down local prices and new demand will be created. LAM does charge high prices but it supports airports and pays VAT in Mozambique.

### **Possible further development of Tete Airport**

There were previous proposals by Rio Tinto to move airport (as it is located on a coal resource) and develop a new airport in its place. Some mines and heavy sands projects have closed in the meanwhile. Further development would require road infrastructure to be changed. The apron can handle one large and three small aircraft at a time.

### ***Meeting with local Provincial authority on 13 November 2017***

The Permanent Secretary was not available due to other commitments and discussions took place with Director of Health.

The local authority is opposed to the closure of Tete of International scheduled traffic for the following reasons:

1. Flexibility. Passengers prefer to fly direct and non-stop to South Africa.
2. The cost of ticket prices is lower than LAM.
3. Pax demand will reduce substantially.
4. Onward connection via a third destination will not be regarded as favourable
5. Expats come to Tete due to mining activities, which is dependent on direct flights.
6. From a health perspective, persons can in serious cases be flown directly to Johannesburg to receive proper medical care
7. Many persons prefer to fly via Johannesburg to Maputo due to the higher process and unreliability of LAM.

It is important for Tete that the airport remain open for regular international flights.

### ***Meeting with Agency Zambezi, Mr Leonardo Junior***

Agency Zambezi is a public institution, to study analyses projects and to assist the private sector in planning and regional development. Resorts under the Ministry of Economic and Finance. It identifies potential projects and identify stakeholders for projects and assist the private sector with viability studies.

New projects include the Iron and Steel as well as mining and processing of steel; poultry industry; hotels; hydro energy and other businesses to develop growth.

Connections to Johannesburg are essential for Tete. Lots of partnerships are dependent on direct connections, which also brings people into Tete to projects that create employment. Many foreigners are essential for mining and other projects.

International access to regular flights to Johannesburg is crucial for the development of the province.

The traffic volumes to Tete will reduce substantially if flight routings have to be made via Beira. There are financial implications if people cannot expect to be on time for meetings or operations.

New project financing depends on people that are flown in from Johannesburg. There are a number of projects which are almost at their commissioning and operational phase. Airlink has mostly full flights.

Many international consultants cannot make use of LAM as they cannot get travel insurance on LAM flights until insurance companies have accepted that it is no longer on the EU blacklist.

### ***Meeting with APIEX on 13 November 2017***

AIPEX the Investment and Export Agency of Mozambique

Gerson Nunes and Genor Zombeze

### ***Meeting with CPI Investment Promotion Centre on 13 November 2017***

Direct access to the airport from South Africa is essential for the investment drive for the Tete province.

Discussions with Gerson Nunes and Genor Zombeze of the Tete is a city for mining of minerals. Future projects which are approved and included in the industrial plan are mining and iron and steel companies. Generally, 70% of the output is exported and 30% kept for local consumption projecting an income of \$600 million.

Railway lines are included in the economic development plans Mapuzi in the Zambezi Province and for the Cahora Basa hydroelectric project as well as for the Chioca - Nacala rail for the steel and iron.

Large tourism developments which hold significant potential for local employment include:

- Nawaqua National Park
- South African game farm project

There are many smaller projects that feed into or off large projects like the cement factory and three hydro electrical generators. All of these developments make the Tete province more dynamic.

### **Pending Tete Airport Hub Decision**

This will negatively affect all projects.

Johannesburg link is very important for business

Many companies would like to move their head offices from Maputo to Tete to be closer to their operations. This represents opportunities for Tete which should not be lost.

Direct regular flights from Johannesburg is necessary for hotels and events organised by hotels. Also, flights need to be regular and specifically on time. This also facilitates FDI (foreign direct investments).

There is no advantage for the proposed decision.

Tete needs more flights and cannot move ahead without international scheduled flights to and from Tete.

From an investment perspective, operational head offices at Tete require direct flights to Tete. Beira and Nacala are not situated in the Tete province and it is important for Tete province to have direct flights. Direct Foreign Investment (DFI) may reduce investors cannot access operations directly

Ultimately a new airport would be required to move the aviation activities away from the mining emissions, particles and smoke that may affect aircraft engines.

### ***Meeting with Janneman Britz (Plaza Radisson Hotel) of on 14 November 2017***

100% against the closure of Tete airport for scheduled international flights. 90% of hotel guests are brought by Airlink via the Tete airport. There are no leisure guests. Guests generally stay for two nights and then return to Johannesburg directly from Tete airport. The remaining guests (5% to 10%) are from Maputo. Only about 3% of guests relate to domestic travelers. The partners (wives) of expat managers have to return to South Africa in order to comply with their 30-day visa requirements.

Heavy penalties or free flights or other recourse (consumer rights) have to apply to LAM for delays and cancelled flights. There are many features that should be packaged and promoted which can promote Tete as a destination. These include:

- Tiger fishing a Zambezi Lodge (which will compete with Botswana and Zimbabwe)
- Fly-out drivers assist the local economy and hotels mostly purchase their supplies from local suppliers.
- Conferences or events (e.g. health conferences and seminars) attract foreigners and bring in money to stimulate the economy
- Travel festivals can be arranged
- The Baobab trees are in abundance and can attract international visitors as can birding. This would require some organisation and promotion e.g. competitions.

The airport terminal facilities are workable but Wi-Fi should be added to assist stranded passengers in the event of delays to be able to make alternative arrangements.

The road to Cahora Basa needs to be fixed.

### **Written submission from General Manager and HR Manager of Vale (Coal Mine) on 13 and 15 November 2017**

This proposal regarding the Tete Airport will significantly (mainly negatively) impact Vale's business it has Service Providers and Specialist Technical expertise coming to Vale's site from South Africa on a daily basis. Then there is also the matter of airfreight cargo as part of Vale's logistics chain.

If staff need an urgent medical attendance, access to Johannesburg is faster if there is an international airport.

Vilanculos, Inhambane Province

November 15-16, 2017

**Vilanculos Workshop on 15 November 2017**

**Hotel Massunguine**

***Inhambane Province Tourism Association Agenda***

ASSOCIAÇÃO DE HOTELARIA E TURISMO DA  
PROVINCIA DE INHAMBANE



Horário	Actividades	Responsáveis
14:30	Inscrição dos participantes	Secretariado
15:00		Presidente da AHTPI
15:05		Presidente do Conselho Municipal de Vilanculos
15:10	Discursos de Abertura	Administrador do distrito de Vilanculos
15:15		Director Executivo da FEMOTUR
15:20		Consultor Joachim Vermooten
15:30	Debate: Perguntas e Respostas	Todos Participantes
17:00	Reflexão Geral e Encerramento	Presidente da AHTPI

Attendance Roster

Meeting of AHTPI  
Date: 15 de Novembro, 2017  
Local: Hotel Massunguine

	Name	Cell/email	Position	Business/Institution	Signature
1	Kugh Davis	842836933	manager	Lava da Barra	[Signature]
2	John Lewis	84314746	"	Flamingo bay	[Signature]
3	ANDREW JONES	847272372	MANAGER	VILA DO PARAISO	[Signature]
4	DOKAYA JAKOWICZ	845444111	OWNER	DONA SORAYA LODG	[Signature]
5	Edilio Nhamane	844938228	Funcionario	Autoridade Tributaria	[Signature]
6	Javilto Simoes	847441632	Reporter	FEVC	[Signature]
7	Nola Joao	84-0710792	"	Santoeini	Nola
8	Carlos Heio	847028572	Manager	PARADISE LODG	[Signature]
9	Christ King	842562932	Manager	Vila La Mar	[Signature]
10	John Varte	842596027	Director	Sia Santa	[Signature]
11	Proscadio Guimaraes	842215250	Gerente	casa Bahia L3	[Signature]
12	Faizel Kara	842619851	Assistant Gen	AZURA BENGUESES	[Signature]
13	Jason D. Passos	841053467	Manager	Azura	[Signature]
14	Thys Taljard	844255194	Gerente	Estancia Santana	[Signature]
15	Chris Allison	848395204	Pilot.	Academy of Caseiro	[Signature]
16	Veterano Rafael J. Almeida	846541507	Represent	Archipelago Chater	[Signature]
17	H. GUN-WOODS	827177720	SENIOR	Ponte NOVA	[Signature]
20	SUSANE VIDI	840609333	gerente	Bahia Tr	[Signature]

Meeting of AHTPI  
Date: 15 de Novembro, 2017  
Local: Hotel Massunguine

	Name	email / no.	Position	Business/Institution	Signature
18	USMA JOHNSON	840385196	Manager	Vilanova loda	[Signature]
19	KYANNE JOHNSA	863171683	Director	PROSIDA	[Signature]
20	FABIO SILVA	855925589	Director	CASA PAI	[Signature]
21	MARINA VERGARI	842579008	OWNER	PARADISE LODG. Alway	[Signature]
22	Katerine Anderson - Medico	847190699	Director	Duiz Tofo	[Signature]
23	Sonete Jansen VanRosa		Director	CASA CAPITAO BRAGA	[Signature]
24	KATE JOHNSON	848561788	owner	Kage MAT.	K.T.
25	Megan Duff	842445446	manager	Sunset Lodge, Barra MR.	[Signature]
26	AMERICO MALATE	847010041	Director	SERVICIO BRASILEIRO DE VILANOVA	[Signature]
27	ANTONIO MARATO	843988503	Director	ANANIARA	[Signature]
28	Grupo Maria Limina	849110585	"	Grupo Maria Limina	[Signature]
29	Juliet Lgo.	845774462	Director	ParCo	[Signature]
30	JULIEN SYLVIE	845417118	Director	Papagayo.	[Signature]
31	MARK THOMAS	848033940	DIRECTOR	GRUPO ENT. LBA	[Signature]
32	Jean Jacques Ware	843616644	MANAGER	BAOBAB BEACH	[Signature]
33	BLAKE GRAY	847138640	Director	Connect. loda	[Signature]

	Nome	Email/cell	Profissão	Empresa	Assinatura
34	Amélia A. Mapuzem	844008484	Funcionário	Vilanculos beach Lodge	[Assinatura]
35	GARY ROWAN	842920678	OWNER	Casade Coeos	[Assinatura]
36	Lynn Polson	11	MANAGER	Dagha Home	[Assinatura]
37	SAMUEL CUIHANE	84878367	Funcionário	SAIRLINK	[Assinatura]
38	Cipriano Neto	842928353	PROPRIO	Cipriano & C. Assunção	[Assinatura]
39	Shane May	943003260	SEA		[Assinatura]
40	Gabriel Cora	848361111	AZURE	AZURE	[Assinatura]
41	Osvaldo Guim	843259260	FUNCIONÁRIO	ARLINK	[Assinatura]
42	João Amis de Carvalho	844841360	FUNCIONÁRIO	SIXT CAR RENTAL	[Assinatura]
43	Jose Henrique da Cunha	84220970	ACTOR		[Assinatura]
44	Amina Smoel	841926613	Proprietária	Vilanculista	[Assinatura]
45	Flavinda Neto	847233663	Domestic	"	[Assinatura]
46	Amanda Jane Kellaf	842512910	Island AS	Vilanculo	[Assinatura]
47	Dorinda FOLLWELL	848196111	RECEPTIONIST	VILANCULOS	[Assinatura]
48	Antonio MANINA	828612540	VACANCA	VILANCULO	[Assinatura]
49	MARTINUS JOSUZZO	843591177	OWNER	VACANCA	[Assinatura]
50	Paulo Roda	82237161	SERGEANT	Deson's LASS JOSUZZO	[Assinatura]
51	Mr. BATTIS	82386663	RH	Hotel Massunguine SIVANG Lodge	[Assinatura]

### Workshop Summary Notes

The meeting was chaired by Jose Henrique da Cunha, President of the AHTPI (Inhambane Tourism Association) and took note of the previous submissions by the Federation of Tourism and Hotels.

The history of tourism at Vilanculos and the efforts to develop an international airport at Vilanculos was explained. The airport is a bridge for tourists to visit Vilanculos. Many discussions and submissions were necessary, consultants were relied on in order to obtain the solution of an international airport. Originally accommodation comprised of 50 beds, which have now grown to about 1050 beds employing about 1000 workers directly. The development of tourism in Vilanculos is in line with Government objectives and many hotels have been financed by investors from Maputo and also rely on bank loans. Apart from Johannesburg, a second connection, Nelspruit has started, which is also successful. It is not only the operators that are looking out for their own interests as the economic impact of tourism cannot be underestimated. It has created jobs and economic development for the whole area caused indirect employment of more than 80 000 persons. The tourism offers a better potential for development than the oil and gas (petrol) activities.

Further investments have already been hampered by the mere announcement of the potential closure of the airport for regular international traffic. Instead of the need to discuss the closure of the airport, there should be discussions on how to further develop tourism in Vilanculos and how Government can be more pro-active to develop growth.

The closure of the airport for regular international flights will be a huge mistake that would impact investors and employment significantly and will negatively affect Vilanculos.

Not only would Vilanculos be affected the economy of the Bazaruto islands would be affected negatively.

The Solida hotel project has been cancelled on rumours that the Vilanculos airport may be closed, which would have created 300 jobs. It is a serious matter which affects investments, which drive the economy. One should not play with the matter.

It was claimed that the Prime Minister previously indicated that the Vilanculos airport would not be closed for international scheduled traffic.

Some of the islands have the most luxurious and expensive resorts and hotels that would also be affected.

Tourism is one of the four pillars to develop the economy. Vilanculos would like to continue its contribution to the economy and should not be stopped.

The archipelago of Bazaruto is a world-famous landmark rated as the 6<sup>th</sup> tourism wonder of the world. It should not be eliminated by the closure of the airport as such. Vilanculos is already competing to the Seychelles islands and Mauritius, which are directly accessible. Most foreign visitors come to Vilanculos via South Africa.

The Government encouraged investment in Vilanculos and substantial investments have been made, which bring employment. This will all be lost if the proposed decision proceeds.

Maputo does not have all the attractions and activities offered by Vilanculos.

None of the attendees supports the proposed decision.

Submissions were also made on behalf of Inhambane where a few lodges pioneered tourism for self-drive activities and small airlines like Eagle Air and Charlon until LAM took over in 2010. Passenger numbers have thereafter dropped due to unreliability and high prices. The elapsed time of about 3 hours sometimes extends to 6 hours due to delays. There is an impression that LAM killed the traffic volumes to Inhambane. The elimination of direct international flights to Inhambane will kill all the top lodges in Inhambane.

The Government should consider the impact on communities that were requested to enable tourism at the national marine parks if tourism is eliminated as a result of the decision. These communities have nothing else on which to fall back on as they cannot change their way of life. This impact needs to be taken into account.

There is no other alternative for communities that are dependent on tourism. This is a very sensitive issue.

LAM does not have the capacity to offer direct international flights and cannot replace the Airlink flights. The proposed decision will be extremely negative. The government should forget the proposed decision as LAM's needs will not serve the communities.

This will, in the same way, affect Tete, where hotels have also been developed in the accessibility of international scheduled flights.

The government was fully aware of the objectives and the outcomes that would emerge at the time that airports were opened for international traffic. These outcomes have materialized with great success and created incremental investment and employment. There is no reason to change this approach.

LAM should have focused on its fleet to take advantage of the opportunities. LAM currently does not have the fleet to operate a Hub-and-Spoke operation to cover the whole country to replace the direct flights that are currently operated.

LAM would have to increase its fleet and focus on good and reliable service. Vilanculos and Inhambane are dependent of direct connections to South Africa. The open up of airports to international flights bring more value than diverting traffic via intermediate airports.

Negotiations should be made to Government with regard to taxes and the sell-off of hotels in these circumstances. The investments in hotels and tour operators are dependent on bank finance.

The conditions and certainty should be created to support hotel investments, which are of a long-term (10 years) nature. The conditions should be created not to close activities. More airports should be opened to obtain the same benefits.

The proposed three hub airports differ from how Mozambique's economy has been set up. There is no airline based in Nacala and Beira. As a result, the proposed decision relates to something that is not possible. There is no airline that serves the routes that will serve the current needs of passengers by the adoption of the three hubs and connection decision.

A number of possible new lodges were identified, despite the current economic crises. Conditions would have to be developed that investments can be made for at least a 10-year period.

If the direct routes are cancelled, the same tourists cannot be accommodated. Many tourists come from the EU. Many of the investors in hotels advertise and promote the destinations in order for tourists to visit their establishments. Direct flights are necessary to attract these tourists. LAM does not have enough aircraft available to offer the same connections that are currently operated.

Many tourists cannot get medical insurance for LAM flights, which is necessary to travel to far off unknown destinations.

Some aspects of the developments at the Vilanculos airport can be improved. These include the extension of the runway, fencing a tower.

Xai Xai airport development appears to be a political decision. Nacala development appears to be too much too soon. There is concern that the whole disruption is the result to serve the debt for Nacala, but the impact of many other investors and employment is of more concern.

Local Government representatives should communicate the concerns to Government and convince the central Government not to close the airport for international traffic.

LAM has operated for 35 years and not been able to operate the services that are at risk of being closed as a result of the proposed decision. LAM cannot provide the services required to support tourism in the same manner.

Tourists have many other options to alternative destinations of a similar type of experiences, which will gain at the expense of Vilanculos if the proposed decision is proceeded with. The catalytic effect of the closure has to be considered.

A horse riding activity of 104 horses would be in dire straits if the decision is proceeded with. There would be no option to put down the horses if the proposed decision is proceeded with.

There were questions of whether the airport can be concessioner to the private sector instead of closing it down to accommodate the proposed decision. It was noted that Lanseria in Johannesburg is a private airport that is very successful.

LAM failed and Nacala was messed up now everybody has to suffer.

There are two Universities in Vilanculos that specialize in tourism. What will happen to the youth that graduate if the tourism industry is destroyed by the proposed decision.

No EU based tour operator will send tourists if the only service is through LAM as LAM is still blacklisted by the EU.

LAM should be given away or privatized instead of maintaining bad decisions and inadequate management.

Vilanculos is the gateway to the most beautiful coastlines with warm welcoming people. If this can be promoted then everyone wins. This area is an advertisement for Mozambique for the rest of the world.

## **SUMMARY OF INDIVIDUAL MEETINGS AND DISCUSSIONS**

### ***Meeting with President of the Municipal Council of Vilanculos and the Administrator of the District of Vilanculos on 16 November 2017***

The President of the Municipal Council of Vilanculos and the Administrator of the District of Vilanculos were informed of the proposed decision and the scope of the project was introduced. Inhambane Province was designed with a focus on tourism. When the proposed decision was announced in December 2016 about 400 tourists cancelled their bookings. Concern was expressed on the additional time and cost that will be incurred by passengers. They decided to consider the submissions of the interested parties before considering the matter.

### ***Meeting with Director of Vilanculos Airport***

Mr David Banze (Airport Director): There would be a negative impact on tourism if the proposed decision is implemented.

### **Impact**

- Travel will become more expensive and take longer via connecting flights
- Tourists will choose other (cheaper) destinations
- South Africa is taking over air system network with direct flights
- However, South Africa only allow 3 entry points (This is factually not correct as South Africa has 10 international airports)
- Hotels will close down but national economy will develop
- There is a choice of two alternative scenarios
- The development of national interest (aviation industry) national airlines
  - Negative impact on tourism and the local community
  - Inhambane will be concessioner
- Vilanculos will remain State-owned
- Vilanculos has more modern infrastructure than Inhambane

- There is no confidence in connecting times of LAM's flights
- Flight time will be 40 min from JNB to MPM and then 1.5 hours MPM to Vil.
- Airlink flights are twice a day and LAM once a day
- Sasol has a large housing set-up and a hospital and operates their own aircraft
- Otherwise, Sasol employees fly Vilanculos-Johannesburg-Maputo for meetings as they do not fly LAM between Vilanculos and Maputo.
- Local non-scheduled flights are:
  - CR Aviation = helicopter charters in the region
  - Archipelago Aviation = Islands
- New road to Inhambane will not affect things
  - Inhambane = 320 Kms to Vilanculos
  - Inhambane = 465 Kms to Maputo

# ANNEX K: SOURCES AND REFERENCES

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U.S. Agency for International Development  
1300 Pennsylvania Avenue, NW  
Washington, DC 20523  
Tel: (202) 712-0000  
Fax: (202) 216-3524  
[www.usaid.gov](http://www.usaid.gov)