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Democratic Socialist Republic of Sri Lanka
Development of Domestic Airports - PPP

Options Study for Private Sector Participation in the Development of the Domestic Airpiort Sector in Sri Lanka

Final Report

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Options Study for Private Sector Participation in the Development of the Domestic Airports Sector in Sri Lanka – Final Report

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Executive Summary

ES1 Purpose of the Study

In order to guide the Government of Sri Lanka's (GoSL) development of its domestic aviation sector, and to determine the potential for involvement by the private sector into the industry, this "Options Study for Private Sector Participation in the Development of the Domestic Airports Sector in Sri Lanka" (the Study) has been commissioned by the Public-Private Infrastructure Advisory Fund (PPIAF) of the World Bank (the Client). The study has been carried out by a team consisting of members from the World Bank and ICF Consulting Services Hong Kong Ltd with active participation from the Government of Sri Lanka.

A key aim of the Study is to assess whether there is a strong rationale for developing domestic airports in Sri Lanka. Such rationale is meant to be independent of the availability of funds, the institutional and regulatory constraints and industry challenges. Instead, the rationale is expected to be formulated based on market analysis, including the estimate of demand for investments in domestic airports to support tourism development plans, and the potential contribution to tourism growth.

In this Study, the review of the domestic aviation market provides an understanding of existing challenges and constraints impacting the level of current and future demand, the tourism market study and the aviation traffic forecast for the coming 20 years together establish the link between tourism growth and airport development. On the basis of all the above, opportunities for developing domestic airports in Sri Lanka are assessed.

Adopting a market driven approach for airport developments, the Study reviews the provision of national airports to identify and select sites where the traffic forecast would justify further investments, if any. The analysis identifies whether or not existing airport facilities are likely to be sufficient to meet unconstrained growth of traffic demand in the future and if not, what additional investments would be required. The selection of domestic airport locations has taken into account the integrated transport network across the country.

To determine the potential for private sector participation, the Study considers the size of the domestic aviation market, the market need for investments and key factors affecting the appetite for private sector investments. There are two groups of factors:

- the first group includes the overall enabling environment for private sector participation, in terms of institutional, legal framework, and the current role of Airport and Aviation Services (Sri Lanka) (AASL) and Sri Lankan Air Force (SLAF) in the aviation market; and
- the second group is the financial viability of specific investments, which depends on project economics and drives the target investment returns a private operator would seek.

Both groups of factors have been reviewed in the Study and the implications for private sector participation are outlined.

The last objective of the Study is to review the operations of AASL to provide insights into its competitiveness, and to identify potential options for operational or financial improvements.

The Study is structured as follow:

- Market Analysis: which provides a review of the domestic aviation market, the analysis of tourism development plans and the development of air traffic forecast for 20 years.
- Prospect for Investments in Domestic Airports: which assesses the need for infrastructure investment in existing and future airports and identifies concerns of the public sector and the private sector regarding investments in the aviation sector.
- Key conclusions and recommendations are provided drawing on evidence from both the market Study and the analysis of domestic airports.

Findings and recommendations of this Study are based on quantitative and qualitative analysis and a review of issues in domestic aviation in Sri Lanka with a view to supporting the GoSL in making strategic decisions in the aviation sector for improving the sector's efficiency and contribution to tourism development and economic growth.

ES2 Key Findings and Conclusions

ES2.1 Market analysis

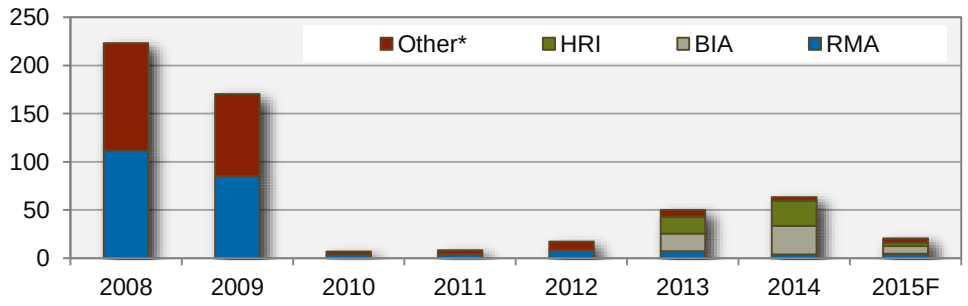
Domestic Aviation Market

Despite its relatively small land area, Sri Lanka has a large number of airports which theoretically serve the domestic aviation market at present. These range from Bandaranaike International Airport (BIA) through to airports that are a little more than landing strips.

With the exception of Mattala International Airport (MIA) (which was only commissioned in 2013), the remaining 14 domestic airports were previously owned and operated directly by the GoSL, before being transferred to the Civil Aviation Authority, and subsequently AASL. These airports were all utilised by the SLAF during the country's civil conflict. The SLAF is the operator of most of these airports, there are also civilian aviation services run by private sector operators, albeit on a small scale. There are a number of companies offering plane and helicopter charter services to a variety of airports, such as Cinnamon Air, Helitours, Simplify, and Air Senok.

Since the end of the conflict in 2009, the domestic aviation market has progressively grown and accounted for nearly 60,000 airport passengers in 2014 (the total of arrival and departure at each of the airports). This was a significant increase from 2010-2012; when domestic passengers averaged lower than 10,000 per year.

Figure ES2.1 Domestic Passengers at Sri Lankan Airports, 2008-2015F (thousands)



MIA = Mattala, BIA =Bandaranaike RMA = Ratmalana, Other is estimate for airports not reporting
Source: AASL statistics

A number of factors have caused these varying levels in domestic traffic. During the civil conflict, surface access to several parts of the country was not possible, in particular road access between Colombo and Jaffna being considered unsafe. Domestic aviation was therefore used to provide an 'Air Bridge' between the two cities. Once peace was declared within the country the majority of air traffic switched back to roads, resulting in a very significant decline in aviation traffic in 2010.

More recently, the opening of MIA has boosted domestic passenger numbers once again, as both SriLankan Airlines and FlyDubai began using the new airport to stop off long haul flights either before arrival or after departure at BIA, offering domestic flight tickets for spare capacity on the planes. However the costs of offering this service, particularly for SriLankan were found to be too high for demand levels, and as a result this routing was suspended shortly after the presidential election in January 2015. Domestic passenger numbers are therefore expected to show a significant year on year decline in 2015.

Tourism growth is expected to continue to generate an increasing demand for domestic aviation services, and to be the primary contributing factor – even if not the only one – to growing traffic volumes. However, the relationship between tourism growth and demand for domestic air services is

not direct and factors such as the nature and characteristic of Sri Lanka's tourists, their preference for tourist destinations, the supply of domestic air service and the availability of alternative transport options. These factors together have an impact on how much and how fast tourism growth translates into demand for domestic air services in Sri Lanka.

Overall the market is fairy underdeveloped: the limited tourist demand for some of the domestic routes, limited availability of schedules seats and perceived high cost of air tickets from private operators are some of the key factors leading to the low levels of traffic. **A key consideration from the analysis of the domestic aviation market is that the low traffic volume limits the opportunities for private sector participation and, more in general, for profitable operations.**

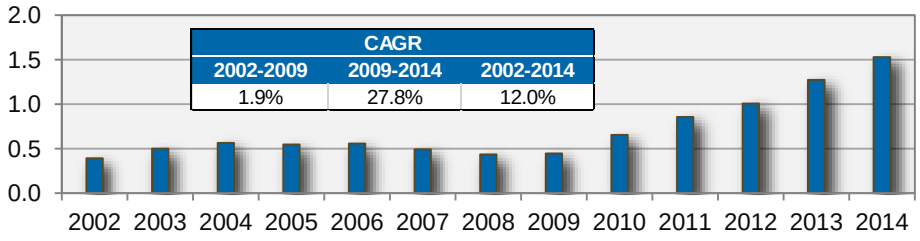
On the supply side a key observation is that the GoSL subsidizes the market through the SLAF's involvement in the management of domestic airports and in the provision of commercial air services. Helitours plays a relevant role in the market as it contributes to serve and to generate demand for air services which might not be available otherwise. It must be noted though that the price distortion created by the subsidized fares makes it harder for private sector operators to enter the market and to compete effectively, and therefore retards the development of the domestic aviation industry.

In order to prepare the market for a level playing field and more open competition, it is recommended to clarify the role of the SLAF as operator of domestic airports and of air services and to address market distortions created by Helitours' business model.

Tourism Development Plans and transportation network plans

Sri Lanka has experienced rapid growth in inbound tourism since the end of its civil conflict in 2009. In the past five years, annual visitor arrivals grew from under 450,000 in 2009 to over 1.5 million in 2014. This represents an average annual growth rate of 28% which is well ahead of global or regional averages for the same period. The strong growth of tourist arrivals in recent years has corresponded with strong economic growth from Sri Lanka; since 2009 Sri Lanka's economy has grown at 7.5% CAGR in real terms[1].

Figure ES2.2 Annual Tourist Arrivals to Sri Lanka, 2002-2014 (Millions)



Source: UNESCAP, Sri Lanka Tourism Development Authority (SLTDA)

Latest available data suggests that this strong growth is continuing; albeit at a slightly decelerating rate. Visitor arrivals to Sri Lanka grew by more than 250,000 in 2014 year on year; a growth rate of 20%, while tourist arrival volumes have so far increased by 14% for the first 6 months of 2015.

Going forward, it is expected that the nature and characteristics of Sri Lanka's tourists will change. While traditionally dominated by visitors from Europe in search of beach holidays, primarily on the South Coast of the country, Sri Lanka's tourism market is increasingly being characterised by visitors desiring broader holiday experiences including cultural, heritage, shopping and beach elements. This is leading to the emerging of multi-destination and circular tourism routes as more popular alternatives to the single destination beach holiday.

An important remark is that the improvement of Sri Lanka's transport connectivity networks will also facilitate and support the growth of both circular tourism networks within the country and tourism developments in locations away from the South Coast such as in the Ancient Cities area, the East Coast, or in the North:

[1] World Development Indicators

- Current planned surface access improvements including the Central Expressway and Southern Expressway Extension will provide strong support to the ongoing development of the Sri Lankan tourism market.
- From the perspective of future demand for air services, improved surface transport to destinations is expected to slow down the growth of air traffic volumes to some tourist regions and to the South Coast and Ancient Cities regions.

Lastly, the importance of a national tourism plan is emphasized. It is an important tool to guide and develop Sri Lanka's tourism market, and to ensure that the country avoids the pitfalls of over developing tourist destinations. Some destinations have witnessed very rapid growth and over development has led to a decline in the standard of tourism offer. When this Study was conducted such a plan was not available and it was understood that the plan is under preparation.

We highly recommend the development a national tourism plan and its use to support decisions that extends the strong growth period of its tourism development lifecycle, as well as maintains and grows visitor expenditure levels.

For the purpose of this Study, the Consultants relied on data and information provided by the Sri Lanka Tourism Development Authority (SLTDA) and on a review of existing development plans in key tourist regions: High Country, the East Coast, the West and South Coast and the Northern Region.

Traffic Forecast

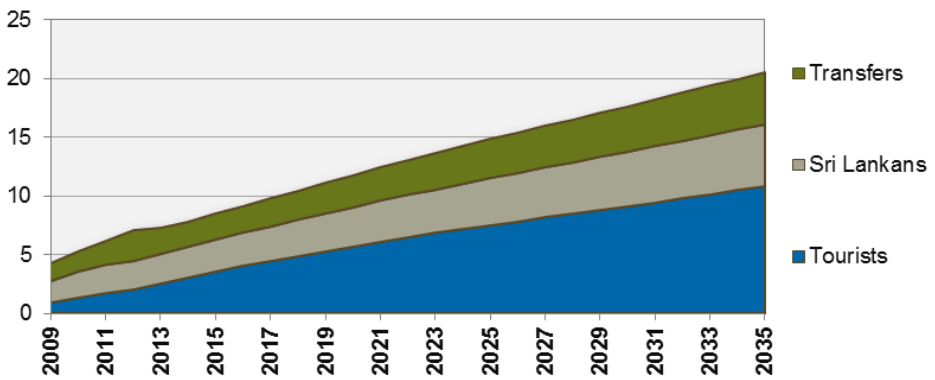
The tourism development potential in the key tourist regions in Sri Lanka has been used as the basis for preparing national and regional tourism forecast from 2015 to 2035. Taking into account factors such as travel time and costs, a traffic forecast for each identified domestic airport was developed. The forecast was developed under an unconstrained scenario, meaning no constraints by the capacity and quality of existing domestic airport facilities and current and future tourist infrastructure and not by existing ownership or institutional arrangements which could impact on the potential of domestic aviation development.

Key forecast outputs are set out below.

1 .Forecast for Sri Lanka's International Aviation Traffic

Inbound tourism is expected to grow from 1.5 million in 2014 to 5.4 million in 2035, and translated into number of tourist passengers (counting in and out airport movements) at BIA airport of 3.1 million (in 2014) and 10.8 million (in 2035). Further growth is expected from Sri Lankans travellers and passengers in transit.

Figure ES2.3 International Aviation Traffic Forecast



Source: ICF

The majority of growth is forecast to be driven by tourist demand. Demand from Sri Lankan nationals is expected to grow from 2.5 million in 2014 to over 5.2 million in 2035 which is in line with projected growth in GDP per capita in Sri Lanka. Demand from transfer passengers is expected to remain strong and stable.

2. Forecasts for Sri Lanka's Domestic Aviation Sector

Inbound tourism growth is expected to generate an increased number of visits in each of the key tourist regions: combined numbers of arrivals in each region is forecast to grow from 4.5 million in 2014 to 16 million by 2035. Such increasing demand for inter-regional travel services shall be served by a combination of surface transport options and air services. The choice of travel is affected by air connectivity as well as by the availability of surface transport, journey time and cost of traveling. Taking into account these factors into econometric modelling, the Consultant developed a 20 year traffic forecast for domestic aviation in Sri Lanka.

Some key considerations impacting on the traffic forecast include:

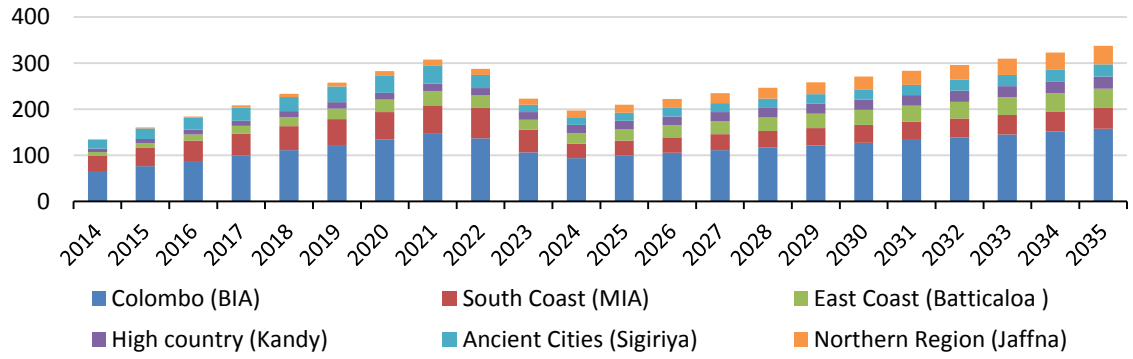
- Sri Lanka is a relatively small island in aviation terms and as a result internal flight distances are relatively small. The longest domestic flight leg is between Colombo and Jaffa at approximately 275 km, with all other airports being under 200 km. Average sector distance in comparable countries is between 250 and 300 km, approximately 60% longer than Sri Lankan average flight distance. These are considered short journeys in aviation terms and suggest a limited opportunity to use air transport compared to surface access.

- The other key factor is the increasing strength of competition from road transport, the better the road network the stronger the competition. Sri Lanka is in the process of upgrading its road network with new expressways and this will significantly reduce road transit times and costs, and therefore eroding the advantages of air travel. In essence, improving the road network has effectively increased the minimum distance at which aviation becomes attractive. For example, time saving from air travel is expected to reduce to as low as less than 2 hours for travels from Colombo to Ancient Cities or to the South Coast.

- Lastly, air travel is not more expensive than private car hire but is significantly more expensive than bus/ coach services which are often used by tour operators.

Domestic aviation traffic forecast is presented in Figure ES2.4 below. Sri Lanka's domestic aviation sector is expected to grow in the future; albeit from a very low base at present and as a tiny share of total transport demand, this domestic segment appears to be relatively small.

Figure ES2.4 Unconstrained Domestic Aviation Forecast (thousands of passengers in & out per region)



Source: ICF

The potential domestic aviation activity is expected to rise from a base level of 135,000 airport passengers in 2014 to 307,000 in 2021, before declining to approximately 198,000 in 2024 as improvements in road networks come in place. Thereafter, the Consultants forecast that domestic aviation growth will resume, providing there are no further significant improvements in surface connectivity towards some 350,000 passengers by 2035.

Overall, the consultants caution that the total demand for domestic aviation services through the forecast period remains relatively low. Total forecast demand for domestic seats by 2035 is

250,000[2] across the entire country, compared to the 450,000 and 713,000 seats within the current Cambodian and Laotian domestic aviation markets respectively. Furthermore, if additional surface transport improvements are implemented beyond those assumed within this Study, demand for domestic aviation services is likely to be significantly lower than this.

Summary of Forecast and key conclusions on market analysis

A key output of the market analysis carried out in this Study is the 20 year forecast, which was prepared using econometric modelling, taking into account key factors driving the demand for domestic air services in Sri Lanka. Figure ES2.5 below summarizes the forecasts of key variables employed in the Study.

Figure ES2.5 Summary of forecast

variable	unit	2014	2035
Inbound Tourism	number of tourists	1,5 million	5.4 million
International Air Traffic	arrival & departure	7.8 million	21 million
Tourist Visits across regions	number of visits	4.5 million	16 million
Domestic Air Travel demand	arrival & departure	137,000	337,000

Drawing on the tourism market study and the analysis of tourism development (inbound tourism), the Study prepares the forecast for international air traffic. Inbound tourism is forecast to grow from 1.5 million to 5.4 million:

- This will translate into a growth in tourism traffic (arrival and departure) from 3 million to over 10 million passengers,
- Tourism will contribute to nearly 50% of total demand whilst total international air traffic is forecast to grow from 7.8 million to 21 million passengers by 2035.

On the basis of the expected tourism behaviour of visitors to Sri Lanka, key destinations were selected for the analysis of inter-regional travel. The analysis of inter-regional travel suggests an increasing number of visits (cumulative for each region) from 4.5 million to 16 million over the forecast period. The last step of the forecast consisted of evaluating travelling choices – surface transport versus air travel – and the Study reveals that there is a strong relationship between surface transportation network and the demand for air services and only a portion of inter-regional tourism travels will be served by air services. Domestic air traffic will remain relatively low compared to the growth of international air travels. It is forecast to reach 335,000 passengers (arrival and departure) by 2035.

The key conclusion for all the above forecast is that domestic aviation connectivity is not a constraint to tourism growth: since only a relatively small portion of regional tourism will be served by air services, the implementation of tourism development plans does not require an

[2] Refers to seat capacity which is counted on a route basis whilst domestic aviation activity is counted at the arriving and departure airport

expansion of domestic airports and the contribution of domestic air travels to tourism development is limited.

In other words, tourism development does not justify additional investments in domestic airports. There are no significant market needs for additional domestic airports to support tourism growth.

ES2.2 Prospects for Development of Domestic Airports

In the second part of the Study, the Consultants assessed the quality and capacity of existing infrastructure in selected airports (one in each region) in comparison to the estimated traffic forecast at each airport. A key purpose of the analysis was to test whether there is a need for additional investments in existing domestic airports, should demand for air service grow at the estimated growth rate in coming years.

Screening and developing options

The analysis on the development of domestic airports was carried out for six domestic airports which were selected through a screening process based on the following criteria: (1) short and long term demand, (2) location within region and (3) importance to tourism market.

For the six selected airports[3], options for investment were developed taking into account:

- A minimum level of demand which is required for viable airlines services;
- The infrastructure investment required to support such level of demand in the coming years; and
- Prospects of financial viability from air service operators' perspective.

The analysis suggested that five airports have the highest level of development potential:

- Bandaranaike International Airport – in order to facilitate direct transfers for international passengers arriving into Sri Lanka;
- Mattala International Airport – in order to capitalise on existing infrastructure assets and to enable continued growth within Sri Lanka's most popular tourism region;
- Sigiriya Airport – in order to provide easier access to key tourism destinations within the Ancient Cities region; Hingurakgoda has been identified as alternative airport in the region, should Sigiriya not be a suitable site for environmental issues.
- Batticaloa Airport – in order to provide quicker access to Sri Lanka's east coast and upcoming tourism destinations in the region; and
- Jaffna Airport – in order to provide quicker access to the north of the country.

Field visits were conducted to each airport to confirm the results of the desk-based analysis, including the estimation of some input variables of the domestic aviation traffic forecast - such as surface traveling time – which impact on the portion of tourists which travel by air compared to road/ railways. Field visits also served the purpose of estimating the infrastructure developments needed to provide for the forecast traffic.

The field visits found that the amount of investment required to serve the future traffic demand is not significant[4].

This has a significant impact on the prospects for domestic airport development, additional investments in those selected airports are not justified.

[3] Bandaranaike International Airport, Mattala International Airport, Sigiriya Airport, Batticaloa Airport, Palavi Airport Jaffna, and Diguna (Kandy).

[4] If higher demand and therefore larger planes were assumed, then the investment required would be substantial, except at BIA and MIA that are equipped to handle such crafts. The use of small aircraft means that only minor upgrades are required to Sigiriya and Jaffna airports.

Financial viability and prospects for private sector participation

Notwithstanding the limited need for infrastructure investments in coming years, it is worth suggesting some considerations on private sector participation in the aviation market, taking into account that the majority of the domestic airports are currently operated and managed by the SLAF and alternative options to such arrangement are under consideration by the GoSL.

A private sector investor seeks a target level of return and profitability. The existing level of traffic and the domestic aviation forecast for coming years might not be sufficient to justify viable investments from a private sector perspective.

The operation of regional airports is a key challenge for private sector participation in Sri Lanka's domestic aviation sector, assuming the forecast demand is realised. Small airports face high operating costs per passenger and revenues opportunities are limited. They typically suffer from diseconomy of scales as fixed costs are spread across a small volume of passengers.

BIA is a profitable airport with revenue charges per passengers in the range of USD 12, which are sufficient to cover a cost per passenger of USD 7.75. In contrast, the domestic airports face financial challenges, even if the cost per passenger is expected to be lower than that at BIA, revenue charges are also lower than those at BIA and might not be sufficient to cover the costs, especially taking into account that non-aeronautical revenues at domestic airport are significantly lower than those at an international airport like BIA.

From the accounting perspective, domestic airports are not managed on a 'stand alone' basis and actual costs for operations and maintenance are never produced. The GoSL bears costs for SLAF activities and labour force, including those related to the operations and maintenance of the domestic airports. Given the limitation on data availability, further quantitative analysis could not be performed.

In the future, the GoSL may consider transferring the management of domestic airports to AASL or to a private operator, as well as to continue to fund the domestic airports through the role of the SLAF. Bundling selected airports with BIA might be an option to fund operations of smaller airports with profit from BIA activities. In order to make informed decisions, the Consultants highly recommend developing an accounting mechanism which allows the estimate of operating costs on a 'stand alone' basis. Improved transparency on costs would be beneficial in different ways, including:

- to understand and monitor the actual impact on public resources of funding the domestic airports; and
- to evaluate the potential for private sector involvement, being mindful of the required expected returns of a private operator.

In conclusion, the limited size of the domestic aviation market leaves limited room for private sector participation, the potential to achieve sufficient economies of scale to generate profitable business is unclear both in the short and in the medium-long term.

PPP enabling environment

In addition to financial viability issues, involving the private sector entails other challenges and some steps can be taken by the GoSL to facilitate and promote such participation in the aviation sector. This Study recommended actions to define a clear route to PPP and to strengthen the legal and regulatory framework as well as the institutional arrangements required to promote private sector participation in the aviation sector.

PPPs and PSP within Sri Lanka have not been supported in recent years, and as a result there has been little PPP activity, there are no active PPP programs, and there are no institutions publicly responsible for originating and developing a PPP project pipeline. Going forward, the new government appears to be open to the concept of increased private sector participation. If this is indeed the case, we would recommend the following actions to promote the development of PSP across Sri Lanka in general, and specifically within the domestic aviation and airports sector:

- Establish a robust and complete PPP framework including a PPP policy which lays out the objectives and principles to guide private sector investment going forward;
- Clearly identify roles and responsibilities for PSP amongst public sector institutions;

- Build institutional capacity within public sector institutions to support the development of PSP including through project design preparation and execution, and financial management of funded and contingent obligations;
- Promote, disseminate and enforce the new PPP policy to ensure that its implications are clearly understood at all government levels;
- Clarify the role of the SLAF in domestic airports going forward in order that this significant uncertainty is removed for potential private sector investors;
- Address the market distortion activities of Helitours.

Key conclusions on development of domestic airports

Based on the screening and analysis of domestic airports and viability issues highlighted above, the following considerations are made with regards to the development of the domestic airports:

1. Domestic transfers are facilitated and supported at Bandaranaike International Airport

To improve the attractiveness of domestic aviation services to tourists, this Study has found that it must be possible for passengers to transfer directly from international to domestic flights within BIA. Plans are currently in place to introduce a single domestic gate within the current terminal building, and, if this is found to be successful, then the feasibility for a full domestic terminal may be explored.

Given the large number of international passengers and the infrastructure provided to service them, the marginal cost to service each additional domestic passenger could be expected to be relatively low and it may therefore be financial viable for AASL to meet this demand.

2. Maximize use of existing facilities at Mattala International Airport

The domestic routing that appears to be most viable in the short term is for a regular flight from BIA to MIA on the south coast, with projected demand for this route driven by the high proportion of tourists visiting the South Coast, and the location of Mattala in the vicinity of certain tourist destinations which are still some way from the Southern Expressway (e.g. Yala).

However, due to the size of the facility, the small amount of domestic passengers are unlikely to produce enough revenue to cover the operating cost of a new facility. The infrastructure and facilities at Mattala are already suitable for the provision of both domestic and international services, and therefore consideration of how to rationalise the existing facilities and the viability of promoting domestic services through MIA should be considered further.

3. Development of Sigiriya or Hingurakgoda Airport

Sigiriya Airport in the Ancient Cities region was found to be the third highest ranked airport for developing the domestic aviation market in Sri Lanka, with the high proportion of tourists visiting this region and Sigiriya's proximity to the major tourist areas contributing to its high ranking. As shown above however, Sigiriya is likely to have a reduced ability to support a regular direct service to Colombo from 2022 onwards as the construction of the Central Expressway will decrease the demand for aviation services. It may therefore be appropriate to look at the feasibility of developing an airport in conjunction with the operation of 'tag' flights calling at a number of different airports, instead of direct flights only.

4. Development of Batticaloa Airport

Batticaloa Airport on the East Coast was found to be the fourth most attractive airport for further development, considering the long sector distances from Colombo to the East Coast, and the development of additional tourist infrastructure within the region. Demand appears to be sufficient to sustain a direct service from 2020 onwards. It is noted that improvement works are currently underway at Batticaloa Airport. Subject to further details regarding these improvement works, further development might not be required.

5. Development of Jaffna Airport

Jaffna in the north of Sri Lanka is forecast to become a strong contender for airport development in the medium to long term. Tourist demand today and even with current tourism infrastructure upgrades is

unlikely to warrant dedicated air service for several years, but given the relatively long road/rail journey times a viable market size is expected to emerge for a domestic operator in the medium to long term. It is therefore suggested that the viability of developing Jaffna Airport in the medium to long term (might be suitable for direct flight services from 2025 onwards) is assessed.

ES2.3 AASL's Operational and Financial Performance

AASL is the government owned company with the remit of managing and developing civilian airports in Sri Lanka. AASL manages all the main airports in Sri Lanka (BIA, MIA, RMA) and is responsible for the development of these facilities.

As the entity with the regulatory remit for overseeing the development of domestic airports, AASL is likely to be a crucial player in the development of the domestic aviation sector in the future. As a result, a situational analysis of AASL, including its operations, business environment and industry structure, as well as identification of opportunities for revenue growth and operational improvements, is relevant to the purpose of the Study and was carried out on the basis of the information made available during execution of the assignment.

Analysis of AASL's operations has identified a number of potential areas for future improvements, including scope to increase both aero revenues and non-aero revenues. In additions, key remarks include:

1. Opportunity for growth. Aeronautical revenue is likely to increase with volumes but they could experience additional growth if charges are restructured. BIA has significant scope to increase non-aero revenue per passenger and in particular with the building of a second terminal.

2. Scope to expand capacity of existing runway at BIA. It is understood that operational measures could be introduced to improve the declared levels of capacity which is currently lower than level of capacity of peers international airports operating with a single runway. It is common for airports to adjust their capacity declaration and as part of best practice is often undertaken as part of a master plan. Any decision to build a new runway should consider the relative benefits and costs as well as viable alternatives offered at least in the medium term.

3. Update the Master Plan. Airport operators typically create new masterplans approximately every 5 years, with regular monitoring and updates to ensure that the latest traffic and planning developments are captured. If applicable a master plan should be linked to wider Government objectives such as national aviation and transport policies. Master plans are most applicable for airports likely to undergo strong demand growth requiring new or extended terminals or runways and BIA should be considered in this category for prioritisation. Understanding which binding constraints will be the most important barrier to growth as well as putting in place a well thought out plan for future development will provide BIA with a clear focus and enable them to prioritise accordingly.

4. Solid financial performance. AASL's financial performance is positive and profitability has grown over the last year, mainly driven by volume growth. Future borrowing capacity will be constrained by the financing of the second terminal at BIA.

ES2.4 Summary and Key Conclusions and Recommendations

A key objective of the Study was to assess whether there is a strong rationale for domestic airports developments. The Consultants conducted a market Study of the aviation domestic market in Sri Lanka, including the preparation of a 20 year traffic forecast for international and domestic air services. Given tourism is the main source of demand for air services, tourism development plans and anticipated tourism growth have driven the growth of international traffic and regional demand for domestic air services.

A first remark form the review of the domestic aviation industry, is that the domestic aviation market is fairly underdeveloped and some constraints affecting current demand will continue to limit expansion of domestic air services in the near future.

In addition to that the Market Study confirmed a clear relationship between inbound tourism trend and international air traffic, showing that tourism growth shall generate an increasing demand for domestic air services, however at a lower pace compared to tourism development. This is mainly due to the fact that a large portion of tourism inter-regional travel will be captured by surface transport, given the recent improvements to its network.

Taking the above into account, the underdeveloped domestic aviation market is forecast to achieve a relative small size in the medium/long term, being the traffic forecast by year 2035 less than 350,000 passengers (arrival plus departure). Such growth, from 60,000 passengers in 2014 or even lower in 2015, is significant, however the domestic demand will continue to be relatively small, showing overall a limited contribution of domestic air service to tourism development.

In other words, the limited size of the domestic air services is not a key constraint for tourism development and, in turn, the development of additional domestic airports was not assessed as an instrumental activity to support tourism growth.

In key points:

- Tourism shall drive international aviation traffic growth, contributing to nearly 50% of total forecast traffic of 21 million passengers in 2035
- Domestic aviation market is fairly underdeveloped and is expected to grow to nearly 350k passengers by 2035
- Low levels of demand for domestic aviation forecast, compared to international air travel, signal a small contribution of domestic air service to tourism development
- There is no strong rationale for need of additional airports to support tourism development plans.

In the second part of the Study, Consultants reviewed selected domestic airports with the key objectives: (i) to assess whether, given the demand forecast, these domestic airports provided sufficient infrastructure to serve the expected future domestic air traffic at each airport and (ii) to identify opportunities and challenges for private sector participation in the development or operations of the facilities.

A key conclusion from the analysis is that the forecast demand at each airport can be served by existing facilities and there is no need for immediate infrastructure investments. The limited growth in absolute terms of demand for domestic air service – as set out above- definitely contributes to the lack of need for significant investments in the selected domestic airports.

Another key conclusion from the review of existing airports is that there is significant room for improving runaway capacity and hence throughput at BIA International Airport and therefore investing in the second runway is not required to support traffic growth until volumes are much greater.

In relation to prospects for private sector participation, the Study suggests that prospects are quite limited for the time being, again given the limited size of the market and the relative small size which will be achieved in the medium term. Small airports operations present financial viability issues and for the time being, interventions aimed to create demand for domestic aviation services are worth considering before seeking engagement from private operators. Furthermore, the Consultant recommends the followings as measures to facilitate private investments when demand for air services will be sufficient to generate increased appetite from investors:

- Addressing market distortions with appropriate regulation of Helitour's operations
- Preparing the aviation sector to more open competition and
- Taking steps to improve the environment for private participation

Last, cost transparency in operations and management of domestic airports managed by the SLAF is highly recommended to support informed decisions in use of public resources and to evaluate concrete options for private sector participation in the future.

1 Introduction

1.1 Study Context

After almost 26 years of conflict, Sri Lanka's civil war was brought to an end in May 2009. Since then, the country has experienced acceleration in its economic development and strong growth within its tourism industry in particular.

As an island nation, aviation is of crucial importance to the development of the tourism sector in Sri Lanka, with close to 100% of foreign tourists arriving by air into Bandaranaike International Airport (BIA) near Colombo. Sri Lanka has a further 13 airports; Mattala International Airport (MIA), a new international airport in the south of the country constructed in 2013, and 12 domestic-focussed airports. The majority of these have been operated by the Sri Lankan Air Force since the onset of the civil conflict, although civilian aviation services have also been permitted. Domestic passenger flows between airports are relatively limited however, and the domestic aviation industry is in very nascent stages of development.

As Sri Lanka's tourism industry matures and tourist preferences evolve from single-destination, beach resort style holidays to multi-destination, experience-rich holidays, there is increasing interest in the extent to which development of the country's domestic aviation sector has the potential to serve as an enabler for continued tourism growth, particularly amongst higher end visitors seeking convenient and comfortable connectivity solutions between destinations within the country.

Airport & Aviation Services (Sri Lanka) Ltd (AASL) is a government-owned company under the Ministry of Civil Aviation with statutory powers to manage and develop civil airports in Sri Lanka. It is responsible for the management and operation of Sri Lanka's two major international airports; BIA and MIA, and in addition, AASL manages the operations of Ratmalana Airport (RMA), a predominantly domestic airport located near Colombo.

In order to guide the Government of Sri Lanka's (GoSL) development of its domestic aviation sector, and in order to determine the potential for involvement by the private sector into the sector, this "Options Study for Private Sector Participation in the Development of the Domestic Airports Sector in Sri Lanka" (the Study) has been commissioned by the Public-Private Infrastructure Advisory Fund (PPIAF) of the World Bank (the Client). This Study ws being undertaken by ICF (the Consultants).

1.2 Study Objectives and Scope

This Study has two primary objectives:

- To review and screen Sri Lanka's domestic airports and the likely development of Sri Lanka's tourism industry in order to strategically identify and select national airports most suitable for development within an integrated transport network across the country.
- To review and appraise the operations of AASL in order to determine insights into the body's competitiveness, and to identify potential options for operational or financial improvement.

In order to achieve the twin objectives of the Study, there are four key components to the Scope of Work:

- Task 1: Creation of an Enabling Environment Conducive to Private Sector Participation
- Task 2: Market Analysis of Sri Lanka's tourism and aviation markets
- Task 3: Operational Analysis of AASL
- Task 4: PPP Options Analysis

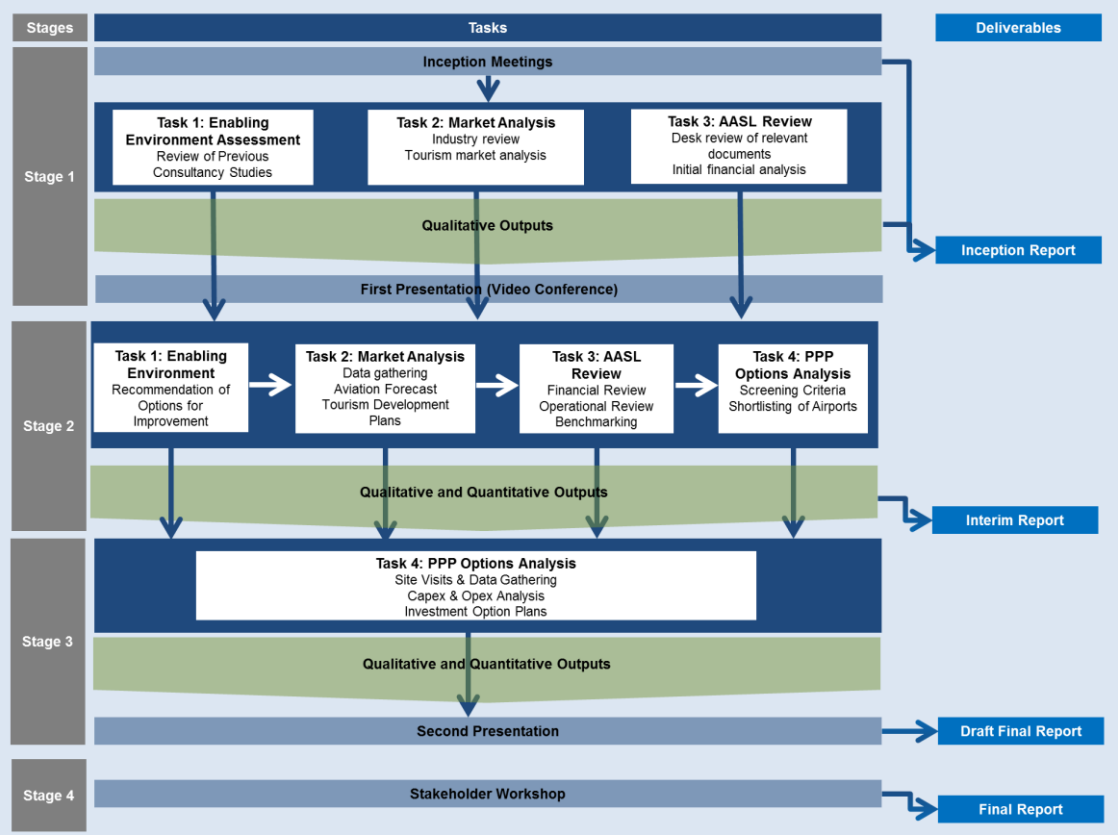
1.3 Study Approach and Study Progress

The work plan summarising the Study Approach as agreed with stakeholders is shown below in Figure 1.1. The Study commenced with an inception mission by the study team from 2-4 December 2014 during which the Terms of Reference for the Study were agreed with stakeholders. Desk reviews of the enabling environment for PPP, Sri Lanka's tourism and aviation markets, and AASL's operations was subsequently carried out, and key findings submitted to stakeholders within the Inception Report.

A second field mission was undertaken by the study team from 15-19 June. During this visit the inception report was presented to stakeholders, and extensive consultation and data collection was undertaken. A full list of the meetings held during this visit is included in Annex 1. This mission, and the subsequent analysis that has been completed since, comprises Stage 2 of the work plan, as shown in Figure 1.1.

Stage 3 involved a field visit to the shortlisted airports from 15-21 October 2015 to gather information on current operations and infrastructure requirements. This was followed by analysis of the capex and opex requirements of each airport and the development of investment options.

Figure 1.1 Work Plan



1.4 Objectives and Content of this Report

This Final Report serves to summarise the key findings of the Study to date, including insights gained from the desk-based inception review (Stage 1), further analysis stimulated by the data and stakeholder views collected during the second field mission (Stage 2), and the airport site visits with the resulting financial analysis and investment options (Stage 3). Specifically the Report provides the following:

- An analysis of the enabling environment for Public-Private Partnerships (PPP) within Sri Lanka, and particularly with regards to the Sri Lankan domestic airports sector. This

includes an assessment of the potential feasibility for PPP within the domestic airport sector, discussion of key issues impacting the potential development of PPP within the sector, and potential options to improve the enabling environment.

- An assessment of the Sri Lankan tourism market, including analysis of current characteristics and discussion of key plans and options for tourism market development going forward.
- An analysis of the Sri Lankan aviation market, including analysis of the current market, discussion of key drivers and constraints for growth, and forecasts for both international and regional aviation demand over the next 20 years.
- Review and screening of Sri Lanka's domestic airports providing a recommended shortlist of those deemed most suitable for further development.
- An operational review analysis of AASL, including identification of options for actions which may improve the financial or operational performance of the company.

This Report has been structured as follows:

- Section 2 presents an analysis of the enabling environment for private sector participation in the Sri Lankan domestic airport market, together with recommendations for improvement of this environment,
- Section 3 presents an analysis of the tourism market in Sri Lanka,
- Section 4 outlines Sri Lanka's current tourism and transport strategies, which may be expected to impact on where and how inbound tourists travel within the country
- Section 5 presents an overview of the aviation market in Sri Lanka;
- Section 6 details the methodology and assumptions used to forecast aviation activity at a national and domestic level within Sri Lanka for the period 2015-2035;
- Section 7 lays out the forecast of national aviation for Sri Lanka for the period 2015-2035;
- Section 8 presents the domestic aviation forecast by region for 2015-2035;
- Section 9 details the approach and screening of domestic airports to produce a shortlist of airports suitable for development;
- Section 10 presents further analysis and considerations on selected airports aimed to assess infrastructure needs and financial viability issues;
- Section 11 presents an analysis of AASL, including identification of options for operational improvement of the company; and
- Section 12 provides key conclusions and recommendations

2 Analysis of Enabling Environment for Private Sector Participation in Sri Lanka

2.1 Introduction

Interaction between the public and private sectors of the Sri Lankan economy has varied over the last 35 years. The privatization of State-Owned Enterprises (SOEs) from 1977 onwards marked a shift away from socialist policies for the country, while privatization became a state policy in 1987[5]. However, the previous government (in place up to January 2015) appeared to move away from this policy; privatizations were halted in recent years[6], and the Sri Lankan Supreme Court cancelled several large previous privatisations of SOEs during the previous government's term. In addition, the GoSL bought back shares in SriLankan Airlines in 2010.

Nevertheless, private sector participation in infrastructure development is not a new concept to Sri Lanka. Between 1993 and 2009 it was estimated that about US$3.3 billion of private capital was invested into Sri Lanka's infrastructure sectors[7]. The majority of this investment was made into the telecommunications sector, which accounted for 80% ($2.6 billion) of this total, and to a lesser extent in the energy sector with 13% of the total ($448 million). Investment into the transport sector by the private sector comprised only 7% of the total ($240 million), and this has been predominantly in the port sector where there is a proven track record of growth and thus an established risk profile.

In January 2015 the incumbent president, Mahinda Rajapaksa was defeated by Maithripala Sirisena, of the United National Party. A large number of political appointments have since changed as a result, and new policy development processes and plans are currently in development across a number of sectors. The new Government appears to be open to and supportive of the concept of private sector participation (PSP) in the Sri Lankan economy, particularly in relation to infrastructure development, and there is clear interest in increasing the involvement of the private sector in Sri Lanka's domestic airports. The strength of the enabling environment for PSP in Sri Lanka is therefore of interest and has been reviewed as a core component of this Study. This chapter summarises the key findings and conclusions of this review.

2.2 Review framework and structure

The review of the enabling environment for PPP and PSP has been carried out in two steps:

1. Desk-based review of secondary sources, such as previous assessments and publicly available information and;
2. Consultations with the public and private sector in Sri Lanka to test and corroborate the findings from the desk-based review.

Findings and conclusions on the enabling environment in Sri Lanka for PPP and PSP are set out below. In addition, a number of recommendations for improvements in the enabling environment have been identified should the government be keen to promote PPP and facilitate PSP in infrastructure investments in general and in the aviation and airport sectors in particular.

[5] Knight-John., M. and Wasantha Athukorala, P.P.A (2002) Assessing Privatization in Sri Lanka: Distribution and Governance

[6] 2014 Investment Climate Statement – Sri Lanka, US Department of State

[7] Workshop on Public Private Partnerships in Sri Lanka: Sri Kumar Tadimalla Colombo Dec 2010

A strong enabling environment for PSP and PPP typically includes a set of laws and regulations which facilitate project development and execution, in addition to strong and capable institutions, ad hoc processes for the establishment and management of public-private partnerships (PPPs), and clear roles and responsibilities within the government.

In conducting the review, the Consultant focused on assessment of the following aspects of the PPP enabling environment:

- The institutional framework: covering institutional set-up and capabilities to develop projects and bring them to market as well as to negotiate with investors; and
- The legal and regulatory framework: as a set of rules, laws, and policies and procedures both at country level and in the aviation sector.

2.3 Institutional Framework

2.3.1 Overview of Institutional framework

There are a number of institutions that are theoretically involved in private sector investment and PPPs in Sri Lanka:

- **Ministry of Finance and Planning (MoFP)**

The Ministry of Finance and Planning is the government body responsible for fiscal policy, public finance, trade and investment planning, and the national budget. MoFP is also largely responsible for national planning, in particular the creation and administration of national development plans such as the Mahinda Chintana Vision for the Future, issued by the previous government.

Historically, MoFP also supervised the Bureau of Infrastructure Investment (BII), which was established as part of the Bureau of Investment (BoI) in order to support the development of private sector infrastructure projects through vetting of proposals and formation of project committees to review and sign implementation agreements. However, the BII was disbanded a number of years ago. The BOI continues to play a primary role in supporting private sector development and foreign direct investment in Sri Lanka, and seeks to act as a one stop shop providing services for foreign companies or individuals looking to invest in the country.

- **Ministry of Policy Planning (MoPP)**

The Ministry of Policy Planning, Economic Affairs, Child, Youth and Cultural Affairs (MoPP) was created in 2015 following the election of President Maithripala Sirisena. The Ministry has a broad remit of responsibilities including:

  - Formulation of national economic and monetary policies and strategies
  - Preparation of national development and public investment programmes
  - Coordination of public and private sector activities and facilitation of the private sector for economic development

The establishment of the Ministry is one of the clearest indicators to date of the increased interest in the promotion of private sector investment within the Sri Lankan economy by the current government. Furthermore, consultation with the MoPP revealed that there are plans by both the Ministry, and the National Planning Department that it oversees, to review best practice for managing and supporting the development of PPPs within Sri Lanka. This is expected to include analysis of PPP-structures, legal and institutional frameworks to support PPPs, and planning to integrate private sector participation into national development plans.

- **Cabinet Appointed Negotiating Committee (CANC)**

In 2006, a document entitled the Guidelines on Private Sector Infrastructure Projects (the Guidelines) was issued by the Ministry of Finance. This was intended to serve as a key document for the PPP process, outlining the roles and responsibility of institutions involved in PPPs going forward. Under these Guidelines it was proposed that matters pertaining to individual BOO/BOT projects should be channelled through a Cabinet Appointed Negotiating Committee (CANC). The composition of this committee would be determined by the Cabinet, (the proposed approving authority for award of BOO/BOT projects), and after approval at key stages by the Cabinet, the CANC would be responsible for managing the tendering process, negotiating contracts with successful bidders, and then authorizing implementation agreements.

While the role of the CANC outlined in the Guidelines appears to conform with international norms within PPP processes, and it is understood that such CANCs would be a useful institutional support within the PPP enabling environment, the Guidelines have not been followed within Sri Lanka in recent years owing to the low prioritisation of private sector involvement in the economy by the previous Government. Such CANCs have therefore not been established, and their proposed responsibilities in relation to PPPs have not been followed.

- **Board of Investment (BOI)**

As noted above, the BOI is the main government body responsible for attracting and enabling investment, particularly foreign investment. The BOI promotes certain priority sectors for FDI, manages 'foreign investment friendly' export processing zones and grants incentives for foreign investors.

Consultation discussions revealed that there is currently some interest in re-establishing the BII as a centre for PPP within the BOI. It is not clear how such a unit, which would be under the overall purview of the MoFP would work in relation to the MoPP, where there is also interest in the development of PPP capacity.

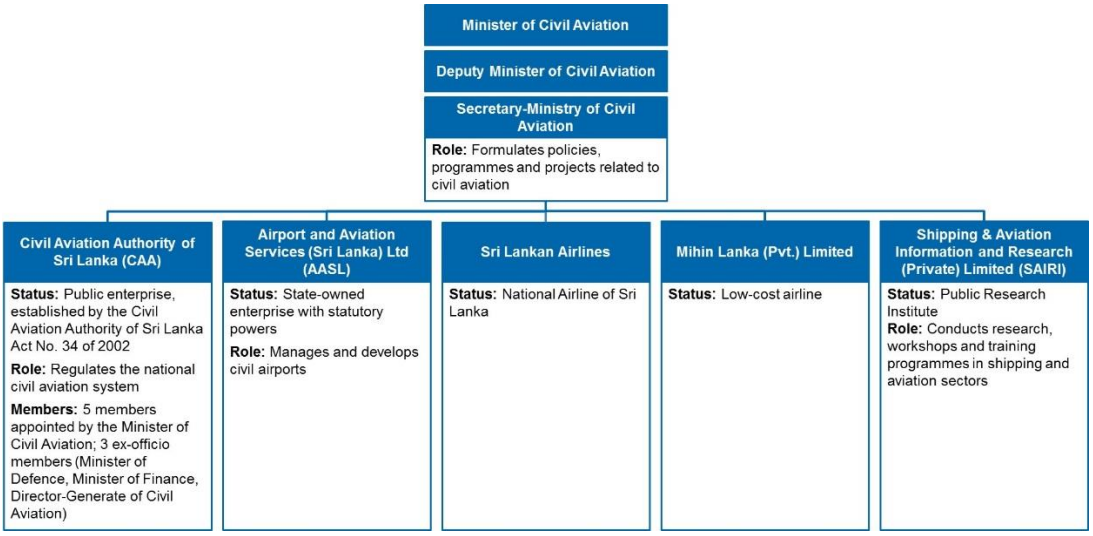
- **Line Ministries/Line Agencies**

According to the Guidelines described above, Line Ministries (such as the Ministry of Aviation) are initially responsible for identifying potential PSIP projects and preparing financial and technical viability reports to support PPP proposals. While the Guidelines are no longer in use, line ministries are likely to play a central role in the development of PPPs in the future owing to their proximity to and understanding of sector development needs, funding requirements and private sector interest.

2.3.2 Institutional framework for PSP in domestic airports in Sri Lanka

There are a number of key institutions which will impact and play a role within the institutional framework for PSP in domestic airports in Sri Lanka, as shown in Figure 2.1. Civil aviation is overseen by the **Ministry of Civil Aviation** which is responsible for the strategic development of aviation in the country. In recent years the Ministry has adopted an increasingly liberalized approach to the aviation sector, entering into or expanding air services agreements with numerous countries.

Figure 2.1 Civil aviation institutions in Sri Lanka



Source: Ministry of Civil Aviation

Directly under the Ministry of Civil Aviation is the **Civil Aviation Authority of Sri Lanka** (CAA), whose primary functions are to guarantee the safety and security of civil aviation and to develop aviation's role as a prime contributor to the growth of the national economy. The CAA existed as a government department from 1946 until 2003, before being converted to an authority in 2003 by the Civil Aviation Act (2002). The CAA's powers were expanded under the second Civil Aviation Act (2010)

The primary function of the CAA is to undertake activities that promote civil aviation safety and security in keeping with International Standards and Recommended Practices adopted by International Civil Aviation Organization (ICAO) and to steer the aviation sector in Sri Lanka as a prime contributor to the growth of the national economy and enhancer of quality of life for its citizens. Its membership comprises five members appointed by the Minister of Civil Aviation and three other ex-officio members (Minister of Defence, Minister of Finance, and Director-General of Civil Aviation). The CAA itself falls under the jurisdiction of the Ministry of Civil Aviation.

Under the two relevant government Acts, the CAA is clearly given responsibility for the regulation of all civil aviation within Sri Lanka, including any civil aviation services managed by military units. However, to date stakeholders noted that there have been practical limitations of the extent to which the CAA is able to exert power and to implement regulations over military offerings of civil aviation services. For example:

- The CAA requires all aircraft purchases to be accompanied by statements of air worthiness by manufacturers. Previously, the Sri Lankan Air Force (SLAF) has purchased aircraft directly without registering such statements with the CAA.
- The CAA requires all aircraft modifications to be registered with and approved by aircraft manufacturers. These procedures are not always adhered to by SLAF where direct modifications and repairs are often made.

Separately, the CAA has expressed an interest in supporting the development of the domestic aviation industry, particularly with regards to increased involvement by the private sector. However, it has been noted that private sector development of domestic aviation has been limited in the past by the provision of domestic aviation services by Helitours, the commercial branch of the SLAF (see below), at subsidised, below-market pricing levels. The CAA has regulatory powers to set and control pricing policies within the civil aviation industry, and setting of minimum pricing levels has been identified as one way to limit the current undercutting of market pricing by Helitours. However, the Director-General of the

CAA has noted that there are no plans to implement this in the near term due to the difficulties in monitoring and regulating pricing levels.

The **Airport and Aviation Services (Sri Lanka) Ltd** is a fully government-owned company under the Ministry with statutory powers to manage and develop civil airports in Sri Lanka. It is responsible for the management and operation of the two major international airports – Bandaranaike International Airport (BIA) in Colombo and the newly developed Mattala Rajapaksa International Airport (MIA) in the south of the island – as well as the domestic Ratmalana Airport (RMA) located in Colombo. Of these, the airport sites at BIA and RMA are operated jointly by both AASL and SLAF, with AASL having control of all civil aviation operations.

AASL is run and managed on a profit-seeking basis, with management of BIA having traditionally taken up the majority of the organisation's focus and time, and having provided the majority of AASL's revenues and profits. In comparison, AASL's operations at RMA are small scale in nature, with the airport's operations focussing on relatively low numbers of corporate jets, charter services and aviation training services. Since its construction in 2013, MIA has also been under the purview of AASL, and AASL took on substantial debt commitments of USD190m from the Export-Import Bank of China to fund MIA's construction. However, demand and operations at MIA have been very poor, and the airport served just 72 flight movements in May 2015. As a result, the airport is operating at a very significant loss at present, and it has been noted that this is putting pressure on AASL's appetite and ability to invest in additional opportunities.

Despite its statutory powers to manage and develop civil airports in Sri Lanka, there are a large number of air fields in the country (see Chapter 5 and Annex 2) which are currently managed and operated by the Sri Lankan Air Force. This is a legacy of the civil war, and means that although many have both civil and military operations occurring concurrently, AASL's involvement at present is limited.

Going forward, it has been noted that AASL would be responsible for engaging with and managing any new private sector agreements regarding operations at domestic airports. This may involve formalisation of role and responsibility splits with SLAF, something which has not been formally documented to date. In addition, the nature of any private sector operations at domestic airports in the short to medium term will likely be affected by ongoing developments at MIA. This is because while the airport incurs losses at current levels, management have suggested that appetite for involvement in new domestic airport operations would likely be limited to provision of air traffic control and oversight of private sector investment.

As noted above, the **Sri Lankan Air Force** (SLAF) currently manages and operates the vast majority of domestic airports in Sri Lanka. Many of these currently have both civil and military operations occurring concurrently, with relatively low numbers of domestic charter and scheduled aviation services occurring at the same time as the air fields are used for military purposes. This dual usage appears to cause some complications including security issues, priority differences and divided responsibilities. In particular, private aviation operators have noted that securing passenger access to some domestic airports is arduous as it involves prior registration of passengers with the SLAF. Domestic air traffic in Sri Lanka is controlled by the SLAF, and this has also resulted in issues for the private sector due to restrictions on aircraft movements if certain military or VIP traffic is airborne. Going forward, it has been suggested that unless that an airfield is specifically required for military purposes, it may be appropriate for SLAF to relinquish control of any airfield selected for development for civilian/domestic use, in order to remove conflicts of interest associated with shared usage.

The SLAF is also involved in the domestic aviation sector through its commercial domestic aviation arm, **Helitours**. This provides charter and scheduled domestic services for civil passengers on a number of routes, but primarily between Ratmalana, Trincomalee, Jaffna, Weerawila and Batticaloa. Pricing of tickets on Helitours services are widely regarded as being very low; reflecting operating costs of the service only and without consideration of fixed and sunk costs of the unit's operations. As a result, Helitours has been blamed for

pricing out private sector operators of domestic aviation services. Looking forward, it has been suggested that if private sector participation in the domestic aviation and airports sectors is to increase, market distorsions created by Helitours' operations are to be addressed. This can be achieved in more than one way:

- By exiting the market entirely through cessation of all commercial operations;
- Through corporatisation, which would lead to fuller recognition of total service costs and higher ticket pricing; or
- Through limitation of its services to a small number of routes where competition with private sector operators is minimal.

It has also been noted that there may be plans to increase Helitours' current domestic operations; possibly through a joint venture with SriLankan Airlines to create a new public sector domestic aviation operator. Such a development may well contribute to stimulate and support demand growth, it would be likely to also have a significant impact on the scope of private sector development within the domestic aviation sector. Options are to be evaluated balancing short and long term goals and taking into account priorities for the industry.

Finally, the **Road Development Authority (RDA)** has also previously been involved in the domestic aviation and airport sector through the management and commissioning of renovation works of the runway facilities at several domestic airports. This appears to have been a technical involvement only; owing to the overlap in skills and technology required for runway renovation as for road renovation, and stakeholders provided no indication that the RDA's involvement in the domestic airports sector was likely to be significant going forward.

2.3.3 Key observations

The enabling environment and 'readiness for PPP' in a country and in a sector is highly dependent quality of institutions involved in the PPP process and by the clarity and transparency of PPP processes. Some observations on the institutional framework in Sri Lanka, as outlined above, are set out below:

- Currently, there are no active PPP programs promoting PPP projects in infrastructure sectors in Sri Lanka and no institutions are publicly responsible for originating and developing a PPP project pipeline.
- Even at the individual Line Ministry level, there is no evidence of initiatives aimed to increase private sector participation in infrastructure development and even less to make PPP happen.
- Key institutions and their roles and responsibilities in the involvement of private sector in investments are defined within national policy documents. The key source for such allocation of responsibilities and functions is the set of Guidelines of private sector participation in infrastructure projects, although this has not been recognised or utilised in recent years.
- Overall, given the limited track record in PPPs across infrastructure sectors, the institutional capability to originate, develop and negotiate PPP projects within Sri Lanka has not yet been developed. There is no evidence of any institution which may have more experience than others with PPPs and could take a leading role in the implementation of a PPP program. There is however, appetite from both the BOI and the MOPP to play such a leading role and to develop capabilities and experience.
- Nevertheless, these observations suggest that the enabling environment for PPP is at very 'early' stage and is fairly underdeveloped at present.

2.4 Legal and Regulatory frameworks for PSP

A robust legal framework which incorporates and is favourable to PSP contributes to a strong enabling environment. Core PSP-enabling legislation can comprise single or multiple PPP laws, which are accompanied by sector-specific rules, laws, policies and procedures

which discipline activities in various sectors. Taken together, the legal framework must clearly specify private sector investment rights, clear and transparent procurement processes (including approaches to deal with unsolicited proposals), contractual arbitration processes and remedial actions for bankruptcy/payment defaults amongst others.

There also needs to be a clear delineation of the capacity for different institutions to enforce contracts.

In many countries, certain types of PPPs, particularly concessions, can rely on pre-existing privatisation legislation. Sometimes a series of secondary laws and regulations can be taken together to provide the necessary authorities to enter into PPP contracts and to undertake transactions in a timely manner. These can include availability of employment permits for foreign workers, land development/ land use rights, etc.

2.4.1 Legal framework for PSP in Sri Lanka

To date, the only law that directly governs private sector participation is the Electricity Act of 2009, which was passed under the Public Utilities Commission of Sri Lanka (PUCSL) Act of 2002. The PUCSL was set up to regulate the electricity, petroleum and water service industries but the PUCSL will have no authority to regulate the latter two sectors unless corresponding industrial acts have been enacted.

- **Guidelines for PPP**

The legal framework in Sri Lanka includes certain PSP-related legislation, namely the Guidelines on Private Sector Infrastructure Projects (the Guidelines) issued by the Ministry of Finance (MoF) in 2006. This document sets out the roles and responsibilities of the institutions involved in public private partnerships (PPPs), PPP processes and PPP target sectors (which includes airports).

These Guidelines are discussed in more detail in Annex 3 and are broadly found to be consistent with international norms. However, as noted above these Guidelines have not been used in recent years. Where PSP projects have been pursued, it appears that these most commonly originated as unsolicited proposals, and were then developed outside of the framework outlined within the Guidelines. There appear to be no other legislative documents governing cross-sector PSP within Sri Lanka.

- **Other aspects of legal framework**

As summarised in the report “Democratic Socialist Republic of Sri Lanka Support for Post-Crisis PPP framework development in Sri Lanka” produced for the World Bank in 2013, by the absence of legislation stating otherwise, the GoSL has a degree of flexibility with regards to the nature and terms of PPPs that can be entered into by its Line Ministries. This includes:

  - No legal restrictions on the types of clauses or terms which can or cannot be included in PPP contracts;
  - Neither express provision nor prohibition of step-in rights for lenders. Step-in rights have been included in PPPs in other sectors, notably the renewable energy sector;
  - No legal restrictions on the ability of lenders to take security over payment streams or assets of a PPP Contractor; and
  - No legal restriction on the ability of lenders to provide guarantees, although current policy appears to permit Government guarantees only on projects where GoSL owns at least 51% of the project company.

2.4.2 Legal framework for PSP in aviation sector in Sri Lanka

The aviation sector as a whole is currently dominated by the public sector, principally through the Ministry of Civil Aviation (MOCA) which is responsible for the implementation of the national civil aviation policy through the various organizations under its control (see Figure 2.1).

The Ministry is not only responsible for the main airports and the two major national airlines, but also for the overall regulatory control of the aviation sector through its subsidiary organization the Civil Aviation Authority (CAA). The Civil Aviation Act No 34 of 2002 established the CAA and defined its responsibilities requiring the CAA to assist in the formulation of the National Aviation Policy, prepare an aviation development plan, provide the strategic direction for the development of civil aviation, issue certificates, licences, permits and any other legal authority or document required, enter into contracts for the supply of goods, services or materials or for the execution of works or any other contracts as may be necessary. It was also tasked with making recommendations to the Ministry on the charges and fees to be levied for certificates, licences, permits or any other legal authorities or documents issued. The Act essentially established the CAA's governance in relation to civil airports and their future development.

The Act transferred and vested airport property to the CAA, as well as all contracts, leases or tenancy agreements entered into by, with or for the Director-General of Civil Aviation. The Ministry is authorized in consultation with the Authority to make regulations prescribing guidelines for determining the charges to be made in respect of the different services and facilities provided by the CAA. The Act in Schedule 2 listed fourteen domestic aerodromes/ airports covered by the legislation.

The other primary legislation consists of the Civil Aviation Act No 14 of 2010 that covers all activities relating to civil aviation within Sri Lanka and in particular, in respect of the regulation, administration and safety oversight of activities relating to civil aviation carried out within the territory of Sri Lanka, including the provision of aeronautical services. It authorises the Minister to be responsible for the development, regulation and control of civil aviation. This includes establishing, promoting, developing, maintaining and providing aeronautical services and other facilities and services relating to civil aviation and the right to specify charges and fees relating to the granting of any certificate, licence, permit or authorization or for the rendering of any services under the provisions of the Act and the Civil Aviation Authority of Sri Lanka Act.

The two Civil Aviation Acts (Act No 34 of 2002 and Act No 14 of 2010) appear to provide the Civil Aviation Authority with the necessary authority to negotiate and agree service provider contracts and possible concessions. This is contained in Chapter II Service Providers of the Civil Aviation Act 2010. The Ministry, in consultation with the CAA, has the responsibility for the appointment of service providers. Statutory Service Providers shall be appointed as the Service Provider for the purpose of providing for the development, operation and maintenance and provision of facilities at both international and nominated domestic airports. The Authority will make available where necessary to any Service Provider appointed airport facilities for the purpose of enabling the Service Provider to discharge its functions in the provision of such aeronautical services covered by the Service Provider license. The Director General has to issue the licence for the airports and these are period licences with an annual charge. The Act allows the Service Provider to enter into service agreement with others who hold a permit of licence for that type of service, such as for ground or cargo handling, catering, equipment maintenance etc. The license covering the operation of an airport includes those activities that secure the take-off and landing of an aircraft and the related movements of the aircraft on ground, the protection and care for the aircraft; and the maintenance and improvement of the airport.

In order for the expansion (or development) of an airport, the licensee has to submit a Master Plan indicating any development of physical facilities (aviation and non-aviation), a land use plan including around the airport, an environmental impact assessment, an access plan, a security plan and a cost/financing plan. The establishment or expansion may not commence until the Master Plan has been approved by the Authority. An approval granted shall be subject to such terms and conditions and to the payment of a fee as determined by the CAA and a copy of the Master Plan must be made available to the public for inspection. The CAA may from time to time where it considers necessary, require the Master Plan to be reviewed or evaluated and appropriate modifications or adjustments made to address any changes that may have taken place since the approval of such Master Plan.

Furthermore, the 2010 CAA Act provides the ability for the Ministries of Aviation or Defence to approve SLAF to take possession of any airport operated by a private sector party in the case of national emergency, imminent or actual armed conflict. This may act as a deterrent to any private sector operator from seeking to invest in the development and operation of one of the airports.

2.4.3 Regulatory framework for PSP in domestic airports in Sri Lanka

In Sri Lanka, the PUCSL regulates only the utilities industries, while the aviation industry is regulated by the Civil Aviation Authority of Sri Lanka (CAA). However, with the exception of the ability of the CAA to enter into service provider contracts, as laid out in the 2010 Civil Aviation Act, there is no clear regulatory framework governing the involvement of the private sector in domestic airports.

2.4.4 Key observations on the Legal and Regulatory Framework for PPP in Sri Lanka

To date, the only law that directly governs private sector participation is the Electricity Act of 2009. The legal framework for PPP has not been established:

- PPP laws / concession law not enacted. To establish a clear legal framework for developing, procuring and implementing PPPs, or to give priority to a process of developing, procuring and reviewing PPP projects, governments typically enact PPP laws/ concessions.
- Lack of PPP policy. A PPP policy framework which sets out the objectives, scope and key principles for development of PPPs in Sri Lanka has not been established. It appears that a PPP policy is not under development either, although interest in establishing such a policy has been expressed by the MOPP.
- The Guidelines appear to be drafted in line with international standards (see Annex 3), however they are currently not in use and there is no evidence of any enforcement rule to apply those guidelines. If deals are processed according to the Guidelines in the future, it will become clear where the existing legislation falls short and need adjustments.
- Fair degree of flexibility in existing legal framework. Notwithstanding the lack of PPP legal framework, the existing set of rules and laws do not appear to be against PPP and PSP and are not particularly restrictive. Practical cases will identify the need for any legislative improvements.
- The Government is legally able to provide guarantees, and stakeholders' feedback suggests that there is precedent for the GoSL to have provided guarantees in the past. However, according to the available documentation, this type of guarantee has typically only been provided in circumstances where the Government owns over 51% of the company whose payments are being guaranteed. A change in Government policy may therefore be required in order for Government guarantees to be granted for projects where GoSL has a lower shareholding.

Specifically within the aviation sector:

- The two Civil Aviation Acts (Act No 34 of 2002 and Act No 14 of 2010) appear to provide the Civil Aviation Authority with the necessary authority to negotiate and agree service provider contracts and possible concessions
- Although the CAA has the power to enter into all types of service provider contracts, there have been no PPP projects undertaken or implemented to date in the airport sector (although unsolicited proposals for the development and operation of two airports were received by the GoSL in recent years).

In conclusion, the existing legal and institutional framework is untested as far as the implementation in the sector is concerned. Whilst this does not introduce any legal restrictions on the implementation of a PPP or private sector arrangement in the domestic

airport sector at this stage, it will require the Government to ensure that the CAA and the other relevant bodies and agencies have a clear understanding of the basis of any service provider concession arrangement, be it on the basis of a PPP or a private party provider.

2.4.5 Evidence and Recent Experience

In the 2013 budget, the Government of Sri Lanka reaffirmed its commitment to a halt on the privatisation of SOEs, while in 2011, the "Underutilised Assets" Act was passed which resulted in the seizure of 37 companies and related assets that the Government claimed had breached the terms of their land leases. There have also been several instances of privatisation cancellations. As a result, there may be concerns amongst the private sector regarding the commitment of the GoSL to future private sector investments, particularly in strategically important sectors such as the aviation industry.

However, with the introduction of the new President and new political structures in 2015, the interest of the GoSL in PSP appears to have increased. There appears to be renewed interest amongst both the BOI and the MOPP in pursuing and encouraging PSP (as discussed above) and this interest may encourage the private sector to consider investments into public infrastructure or related projects. However, the expressions of interest heard to date will need to be converted into concrete actions and supportive measures for PSP by the Government if the private sector is to commit to significant involvement.

Private sector involvement in Sri Lanka's airport sector is presently limited, with the main activities being in the retail sector. At Bandaranaike International Airport (BIA), SriLankan Cargo Services, a public company, is the sole cargo handler and is responsible for baggage handling. Traffic levels at this size of airport would normally involve several competing operators. It is understood that private sector involvement at MIA and the domestic airports is currently minimal, though some self-handling by the domestic airlines may be permitted. Proposals by a private sector operator to develop and run two airports (Ratmalana and Palaviya) were submitted to the previous Government but were not approved.

Consultations have revealed that a Memorandum of Understanding (MoU) was signed between Hybrid Airports (Pvt) Limited and the former Government to enable Hybrid to undertake feasibility studies regarding the upgrading and development of three domestic airports; Ratmalana, Palaviya and Koggala, and to assess the feasibility of development of a new airport at Nuwara Eliya. Subsequently, Hybrid Airports has completed assessments of Ratmalana and Palaviya Airports, and subsequently submitted an unsolicited proposal to the Ministry of Civil Aviation to develop, own and operate Palaviya Airport. This proposal was noted by the Ministry of Civil Aviation but has not been pursued to date.

As discussed above, the vast majority of domestic airports are currently managed and operated by the SLAF. SLAF provide assurance that domestic aviation operators are able to utilise the airports, although stakeholders report current issues regarding access rights to the airports for civilians due to the ongoing military use. Going forward, it is unlikely that private sector airport operators would be willing to co-manage airports with the SLAF, and therefore SLAF would need to relinquish control to any new private sector operators. However, it is also noted that there is provision in the Civil Aviation Act (2010) for SLAF to take possession of any airport operated by a private party in times of national emergency or conflict. This may act as a deterrent to private sector operator from investing in a domestic airport.

Finally, the commercial arm of SLAF; Helitours, which provides domestic aviation services, also impacts the likely involvement of the private sector into this sector. Helitours' activities, including its below market pricing levels is argued to distort the market; resulting in a difficult competitive landscape for the private sector. Going forward Helitours have noted that they do not want to restrict the development of the private sector within the domestic aviation industry. However they have also noted an interest in expanding their current operations, potentially through the creation of a new joint venture partnership to provide domestic aviation services with SriLankan Airlines.

2.4.6 Key observations

Key observations on recent experience with the private sector regarding the legal and regulatory framework for PPP include:

- The government has not been facilitating or promoting PPP recently in the country. This is likely to have contributed to the limited experience across sectors so far and concerns by the private sector regarding the government's commitment to increase participation in infrastructure investments by private investors in the future;
- The operations and pricing strategy of Helitours is a deterrent for private investors. Such deterrent is emphasized by the lack of clarity on the amount of discretion the SLAF will continue to have in the management of existing airports and in the management of Helitours going forward. Appropriate regulations of Helitours activities may address some of the concerns private operators have.
- Notwithstanding the above, there has been some manifestation of interest to invest in airport sector and such interest may increase with an improved regulatory frameworks.

Overall there may be concerns amongst the private sector regarding the commitment of the GoSL to future private sector investments, particularly in strategically important sectors such as the aviation industry.

2.5 Summary, conclusions and recommendations

2.5.1 Key challenges to PPP and PSP involvement in Airports and Aviation

Overall key challenges to the development of PPPs and PSP in the airports and aviation sector in Sri Lanka have been identified that are driven by issues from both from the public sector and the private sector side. These are discussed in turn below.

Public sector

- Unclear Government support for PPPs in the country

Strong support and sponsorship from a government is required to successfully implement PPPs initiatives and programs within a country. Until now, PPP and PSP have not been identified as a key priority within Sri Lanka, or at least actions have not been taken yet to send clear signals of such priority to the private sector.

The new Government appears to acknowledge the contribution that the private sector may bring to infrastructure investment, and that an adequate PPP policy would clarify the key objectives for PPP and would provide guidelines on key principles. However, a PPP policy has not yet been drafted.

- Underdeveloped legal and regulatory frameworks

The underdeveloped legal and regulatory framework both at country level and at sector level does not facilitate the involvement of the private sector in infrastructure investments. However, it is also noted that the existing framework also does not impede the development of PPPs or PSP.

Given the limited recent experience of PPP within Sri Lanka, the overall framework is untested. Going forward, only practical experience will lead to the identification of the need for legislative amendments to facilitate deals with the private sectors. As a result, the process to close deals with the private sector in the interim is likely to take longer and to be less linear than expected.

- Institutional capacity has to be built

Public sector experience of PPPs and PSP to date is insufficient for the public sector to have developed expertise and capacity with regards to the origination and screening of PPP projects, PPP procurement or in negotiations with the private sector. The majority of the

institutions do not have any direct experience in PPP nor in dealing with the private sector other than traditional procurement options.

Private sector

In addition to the above, potential challenges to successful implementation of PPP and the involvement of PSP in domestic airports development from the private sector side are set out below. These mainly relate to private sector appetite and funding capacity for PPP, as opposed to public sector arrangements, such institutions and frameworks. Clearly all these aspects are related and influence each other.

- Limited appetite from the private sector

Appetite from private investors to invest in airport development appears to be low; indicated by the limited number of unsolicited proposals that have been received to date or are currently known about. This limited appetite seems to be related to the institutional and legal set- up (see above) but also to project economics. Particular factors limiting appetite may include:

  - Concerns regarding the limited project viability of potential investments;
  - Concerns regarding the lack of support for PPPs and PSP by the Government in recent years; and
  - The role of the SLAF has the dominant operator of domestic airports at present – this may have signalled that the sector is not open to private investment;
  - Concerns regarding the potential for domestic aviation sector development due to the current commercial activities of Helitours.

However, had private sector participation been encouraged, it would still be unlikely to occur easily, due to the limited prospect for profitability when investment in domestic airports are considered. The existing level of traffic and the uncertainty about future growth have a strong impact on financial viability of the investment, from the perspective of a private sector investor who will seek a target level of return and profitability.

- Limited local experience of risk allocation for PPPs in aviation sector

In order to attract private investors, be it individually or as part of a PPP arrangement, the level of technical and operational risk that underpins the project must be reasonable and therefore the project should not be overly complex in nature. On the other hand, the project needs to be of sufficient scale, so that it is economically viable for the private partner/participant to adequately invest in it, as well as to operate it effectively. The project needs to have sufficiently strong traffic flows or prospects such that potential revenues can contribute towards the positive funding of the project. One of the key reasons for failed PPP or concessions in many developing countries has been a lack of clear understanding as to the needs of the private sector investor and overestimating of 'value' of the public sector component. A PPP is a partnership and there should be similar benefits to both parties to make it attractive.

Given the limited previous experience of private sector involvement specifically within the aviation sector in Sri Lanka, the experience and understanding of risk allocations and management amongst investors may be lacking. This may lead to unsuitable risk allocations, poorly structured entities and unrealistic deals which will carry long term performance issues.

- Limited local finance capacity for PPPs

There is limited history of locally sourced private finance being made available for PPPs as opposed to private sector projects. The number of local banks is small and therefore the availability of non-government funding in the local currency is likely to be limited. Local lenders are more familiar with corporate relationship-led lending to local businesses for relatively short timescales and are relatively inexperienced in project finance lending arrangements. Local lenders are more familiar with an exposure of approximately US$5m per transaction. Whilst in theory local lenders may have the ability to lend more to a project,

in relation to the overall scale of the financing requirement for the proposed projects, their contribution is likely to be small. India has a larger number of lending institutions that have experience of lending on infrastructure projects and the principal of the private sector funding infrastructure improvements is an established concept in that country. Some of the larger Indian banks may be interested in funding projects in Sri Lanka.

2.6 Recommendation for Improvement of Enabling Environment

Our discussions with key government officials has provided us with the view that the new government is open to private sector participation and the role the private sector can play in infrastructure development has been acknowledged. A desire to undertake some initiatives from the public sector side such as the development of institutional solutions to promote and facilitate PPP deals has also been mentioned. However, our immediate observation is that the government has not yet publicly and wholeheartedly committed to PPP. Strong support and sponsorship from the central government is a key factor in the success of PPP programs and initiatives, and therefore until such commitment is received, PPP development is likely to be, at best, subdued. Overall, the capacity of the public sector to develop and execute PPP projects is also constrained by a lack of experience amongst public sector institutions.

Should the government wish to support PPP in Sri Lanka, we recommend that the following key actions are undertaken with regards to the PPP framework, legal, regulatory and institutional arrangements:

- Establish a robust and complete PPP framework

  Such a framework would commence with a PPP policy which clearly lays out all objectives and key principles to guide private sector investment going forward. It is noted that:

  - A number of institutions need to feed in to the development of such a PPP policy. Policy ownership should be broad based with widespread acceptance.
  - It is insufficient just to enact a PPP policy. It is important that its implications are understood widely, thus dissemination is especially important, especially to the line ministries and contracting authorities who will be expected to deliver the policy.

- Clearly identify roles and responsibilities among institutions and define a clear and distinct PPP route for project procurement that is separate from the traditional route for public-funded projects[8]. Best practice encourages a clear distinction and attribution of roles and responsibilities that is informed, among other factors, by the core competencies, the degree of ownership, and the level of independence of each institution involved in the PPP process.

- Build Institutional Capacity. The more challenging the PPP, the greater the likelihood that the role of the public partner will be significant in terms of the need to provide direct and contingent support to projects. Depending upon this, there is a corresponding need for capacity on the public side to design and transact projects. Required competencies might be grouped into the following three broad, but separate, groups:

  - Policy development, dissemination, monitoring and enforcement.
  - Individual project sponsorship, design, preparation, execution and monitoring.
  - Financial management of funded and contingent obligations.

- Promote, disseminate and enforce PPP policy. It is important that PPP policy implications are well understood, particularly but not only, at the Line Ministry level, as they are the contracting authorities for PPP arrangements. Lessons learnt from international best practice certainly recognize that some degree of PPP enforcement might be necessary for successful implementation. Depending on the local and institutional context, there are different solutions. For example, in the UK, the Treasury

[8] The existing PPP guidelines cover the PPP route to some extent.

enforces the government sponsoring authorities to pursue PFI as a basis of capital expenditure across sectors. India also has recently enforced policies and regulations to integrate identification of potential PPP projects at the planning and design stage itself, by the relevant national and sub-national line departments. The policy development and dissemination function is distinct from the project development function. It requires different skills and different responsibilities. We would recommend that the role is not confused with other key PPP functions.

- Clarification of the role of SLAF in domestic airports. SLAF presently manages and operates the majority of domestic airports, despite AASL having theoretically been granted the legal rights to do so. This has led to uncertainty with regards to potential role of private operators within the sector. The Government therefore needs to clarify the role of the SLAF, and, if private sector participation is desired, to publicly note the role (if any) that SLAF would have in such airports going forward.
- Address market distortion activities of Helitours. By offering domestic aviation services at subsidised pricing, Helitours is currently distorting the market, making it harder for private sector operators to enter the market and to compete effectively, and therefore retarding the development of the domestic aviation industry. This serves to reduce the likely project economics of investing in domestic airports, and therefore deters private sector operators from investing. To address these issues, the Government should address the current Helitours activities, such as by:
  - Mandating the corporatisation of Helitours so that cross-subsidisation by military activities can no longer occur
  - Mandating economic regulation of domestic aviation pricing by the Civil Aviation Authority.

3 Sri Lanka's Tourism Markets

3.1 Introduction

Tourism is a significant and important sector within Sri Lanka. The sector is estimated to have directly contributed 4.8% to Sri Lanka's GDP in 2014, or 11.1% if wider, indirect and induced effects are included[9], and successive governments have been eager to support and promote the growth of the tourism sector.

This chapter provides an overview of the current state of tourism within Sri Lanka; recent and current trends and patterns within the sector, and consideration of where Sri Lanka is at present in relation to typical tourism market development lifecycles. This base case analysis of the current market is fundamental for subsequent components of this Study; understanding the inbound tourism market today is critical to producing any forward-looking projections of international aviation demand, while knowledge of current tourist behaviours is critical to establishing forecasts of future regional tourism development. Finally, there is specific interest amongst key stakeholders in the potential for domestic aviation to serve as an enabler for tourism, and the extent to which an improved domestic aviation network will lead to increased levels of spending and length of stay amongst Sri Lanka's tourist visitors.

3.2 Overview of Current Tourism Sector in Sri Lanka

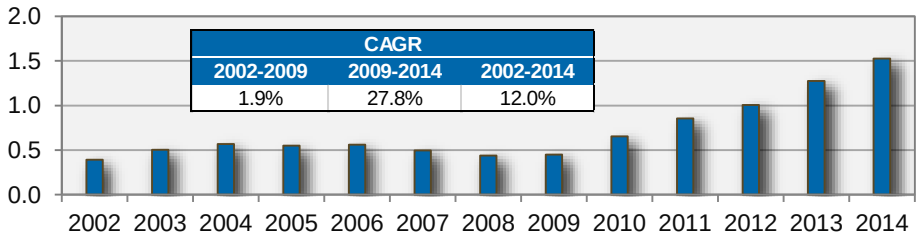
3.2.1 Global Context

Having largely recovered from declines following the global financial crisis, the global tourism market has undergone strong growth in recent years with annual tourist arrivals increasing by 5% in 2013 driven by higher growth rates in the number of tourists visiting emerging markets[10]. Asia posted the highest growth in tourist arrivals of 6% and tourism to and within Asia now accounts for 20% of global tourist arrivals. Of particular importance to this strength are markets such as China where outbound tourism spend grew by 24% in 2013. Current global forecasts estimate that Asia will continue to grow by around 5% per year until 2030 by which point the region will hold a 30% share of global tourism.

3.2.2 Recent Tourism Growth within Sri Lanka

Sri Lanka has experienced rapid growth in inbound tourism since the end of its civil conflict in 2009. In the five years since; annual visitor arrivals grew from under 450,000 in 2009 to over 1.5 million in 2014. This represents an average annual growth rate of 28% which is well ahead of global or regional averages for the same period. In contrast, prior to this strong growth period, tourist arrivals grew just 3% in the 10 years from 1999 to 2009 (see Figure 3.1). The recent strong growth therefore represents significant pent up demand for tourist travel to Sri Lanka that built up during the civil conflict.

Figure 3.1 Annual Tourist Arrivals to Sri Lanka, 2002-2014 (Millions)



Source: UNESCAP, Sri Lanka Tourism Development Authority (SLTDA)

[9] World Travel and Tourism Council: Sri Lanka Country Report 2015

[10] UNWTO 2014

Latest available data suggests that this strong growth is continuing; albeit at a slightly decelerating rate. Visitor arrivals to Sri Lanka grew by more than 250,000 in 2014 year on year; a growth rate of 20%, while tourist arrival volumes have so far increased by 14% for the first 6 months of 2015.

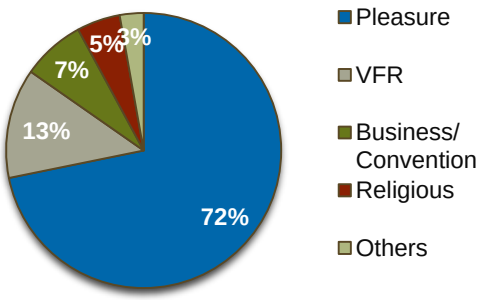
Targets for the development of the Sri Lankan tourist market issued by the previous Government included a level of 2.5 million tourist arrivals per annum by 2016. For this to be achieved the sector's current growth rate would need to accelerate to over 30% per annum providing growth of 500,000 tourists per year. This growth alone is more than the total tourists visiting the country per year in 2009.

Nevertheless, the strong growth of tourist arrivals in recent years has corresponded with strong economic growth from Sri Lanka; since 2009 Sri Lanka's economy has grown at 7.5% CAGR (in constant prices)[11].

3.2.3 Types of Visitors to Sri Lanka

Whilst all inbound visitors to the country are classed as tourists it should be noted that visitors come to Sri Lanka for a variety of reasons. As Figure 3.2 shows, the largest segment of visitors arriving to the country relates to those travelling for leisure purposes, accounting for 72% of total arrivals. Over the last 5 years the proportion of inbound demand traveling for leisure has fluctuated between 70-80%.

Figure 3.2 Sri Lankan Tourist Arrivals by Purpose of Visit



Source: Sri Lankan Tourist Development Authority, 2013

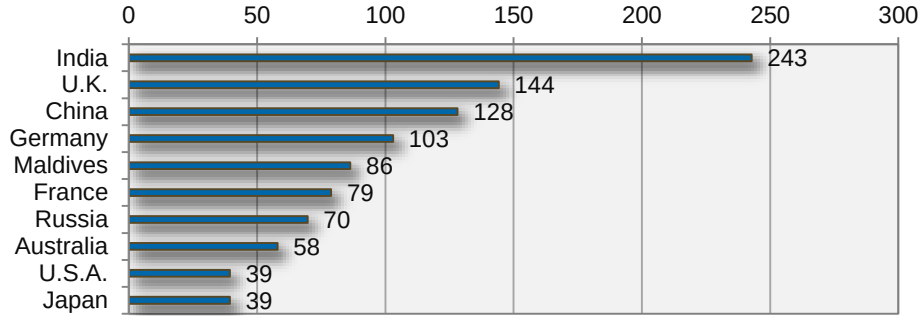
Of secondary importance, travellers arriving to visit friends/relatives (VFR) accounted for 13% of total foreign arrivals, while inbound business travellers accounted for 5%. It is worth noting that the relative proportions of these categories do vary by source market; with 80% of long haul visitors from Europe travelling for pleasure compared to under 60% for Indian visitors. For the Indian market in particular, VFR traffic is notably more important than for other markets.

3.2.4 Source of Visitors to Sri Lanka

Unsurprisingly given its proximity, India is the largest inbound tourism market for Sri Lanka generating over 240,000 arrivals in 2014; equating to 16% of the total inbound market (see Figure 3.3). Also in the top 6 were the Western European countries of the U.K., Germany, and France which all benefit from non-stop flight services to Colombo.

[11] World Development Indicators

Figure 3.3 Top 10 Inbound Tourism Markets for Sri Lanka, 2014 (thousands)



Source: AASL Annual Report 2013, Sri Lanka Tourism Development Authority Monthly Statistical Bulletin December 2014

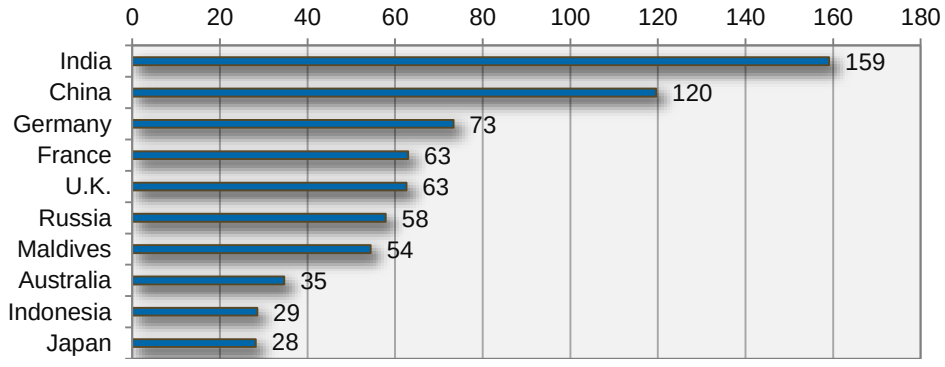
While visitor growth to Sri Lanka has been significant from all world regions, Asian markets have provided the largest contribution to the growth of this inbound demand, accounting for almost half of total growth since 2009, with a regional growth rate of more than 30%. As Table 3.1 shows, Asia has now overtaken Europe as the largest source region for visitor arrivals to Sri Lanka, making up 43% of demand. This compares to Europe's 41% share, which has declined from 45% in 2009, and has been driven by the high growth in visitor numbers from both India and China (see Figure 3.4).

Table 3.1 Growth of Tourism Markets by Region for Sri Lanka, 2009-2014 (CAGR %)

Region	2014 Tourists	2009 - 2014 CAGR
Americas	77k	24.6%
Europe	633k	26.4%
Asia	650k	30.1%
Other (Africa / Middle East etc.)	166k	26.5%
Total	1,527k	27.8%

Source: AASL Annual Report 2013 & SLTDA Tourism Reports

Figure 3.4 Growth of Top 10 Tourism Markets for Sri Lanka, 2009-2014 (thousands)



Source: AASL Annual Report 2013 & SLTDA Tourism Reports

Whilst many of these growth rates are very strong, they should be viewed in the context of the pent up demand for travel to Sri Lanka prior to 2009. In addition, it is also important to note that some of Sri Lanka's strongest tourist arrival growth has been from countries providing significant growth in outbound tourism volumes on a global basis. For example, whilst Chinese visitors to Sri Lanka have grown from under 10,000 arrivals in 2009 to 130,000 in 2014, the total outbound tourism market from China has grown from 24 million

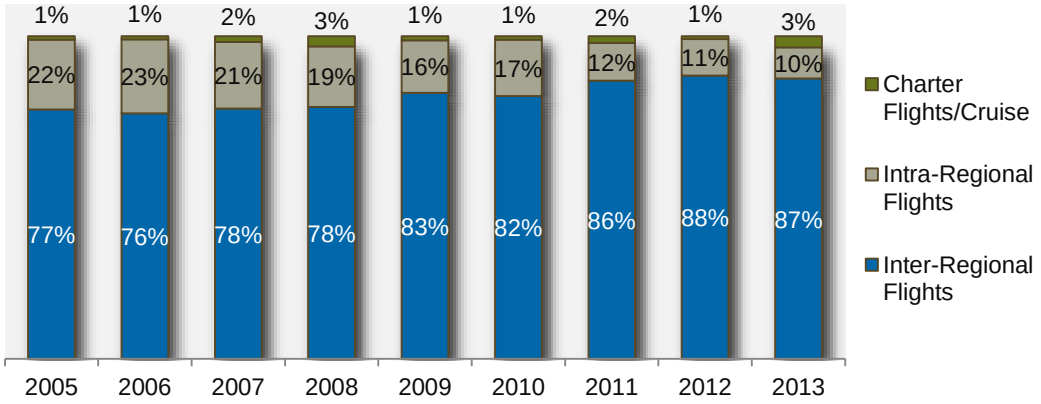
trips to over 50 million in the same time period[12]. Furthermore, it is generally regarded that the Sri Lankan market for Chinese tourists is still relatively underdeveloped compared to other competing markets for Chinese tourists and that there is significant growth potential ahead. This will be further analysed in subsequent sections of this report.

3.2.5 Arrival Modes of Visitors to Sri Lanka

Air travel is the dominant mode of arrival for international tourists to Sri Lanka, with virtually all visitors arriving by international air travel to Bandaranaike International Airport in the period from 2002-2013, and less than 2% of visitors arriving by sea[13].

Of the international traffic arriving at BIA, the majority came from outside the region via inter-regional flights (see Figure 3.5). This category accounted for 87% of all arrivals in 2013, a notable increase from 2005 to 2007 when the level was relatively stable level at approx. 77%. In contrast, intra-regional flights have declined in importance; from 23% in 2006 to 10% in 2013. The proportion of visitors arriving by sea; traditionally dominated by Indian nationals, is expected to see increased diversity going forward as Sri Lanka targets growth in its cruise industries.

Figure 3.5 Tourist Arrivals Modal Split at Bandaranaike International Airport



Source: Sri Lanka Tourism Development Authority Annual Report 2013

3.2.6 Spending by Visitors to Sri Lanka

Total official tourist receipts for 2014 were US$2.4 billion, a notable increase of 42% from $1.7 billion in 2013, and which compares to a 20 per cent increase in tourist arrivals. This is a continuation of previous trends of revenue growth outgrowing tourist volumes.

Tourism spend is a function of both average spend per day, and average length of stay per tourist. As Figure 3.6 shows, average spend per tourist per day experienced year-on-year growth in the majority of years since 2002. This growth averaged 6.5% up until 2009 but, mirroring the strong growth in inbound volumes seen since 2009, average spend has now increased significantly. In the period from 2009-2014 the average spend per tourist per day has increased by over US$70 (Rs 10,000) representing an annual growth rate of 21%. The overall trend is likely to be driven by a growth in high end establishments and an evolving mix of inbound tourists from budget travellers to higher-end tourists.

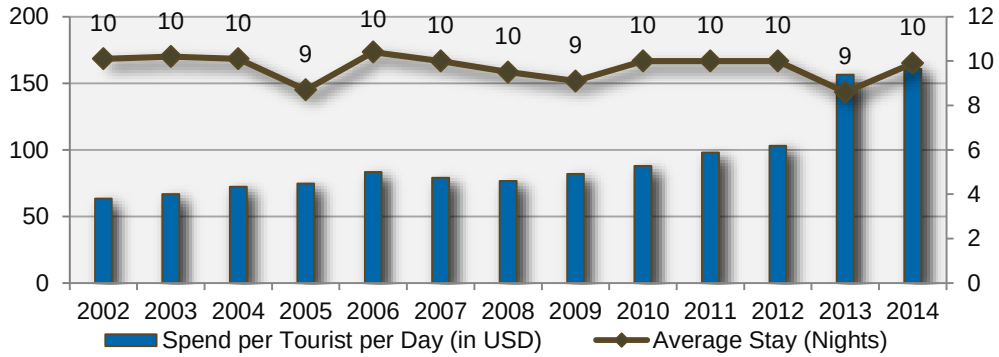
In contrast, the average stay per tourist has remained relatively constant in recent years, averaging approximately 10 days since 2002. In 2013 this declined to under 9 days which may have reflected the increasing ease with which tourists can access Sri Lanka. However it has since returned to the long running average in 2014. Typically the inbound market mix of

[12] This relates to the Chinese outbound tourism market which is approximately half the size of the total outbound market

[13] Sri Lanka Tourism Development Authority Annual Report 2012

tourists can influence the length of stay since shorter stays are often favoured by those markets found closer to Sri Lanka.

Figure 3.6 Annual Spend per Tourist per Day (USD) and Average Stay (right hand axis)

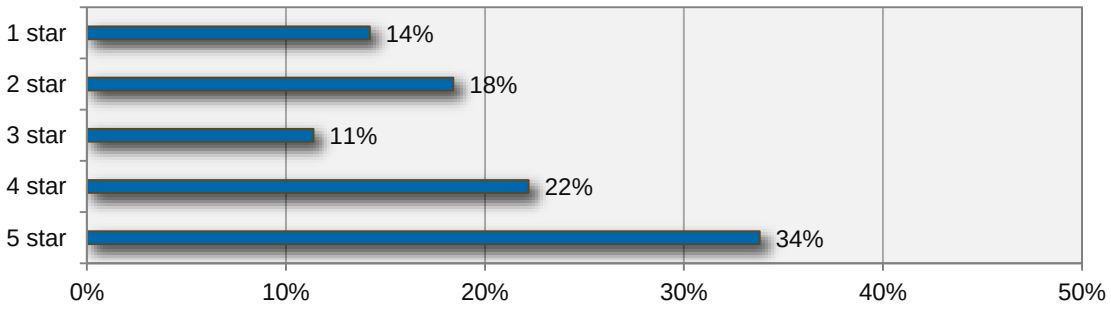


Source: Sri Lanka Tourism Development Authority Tourism Growth Trends 1973 - 2014

3.2.7 Visitor Accommodation

Sri Lanka has a range of different accommodation offerings for inbound tourists. These range from classified options such as one to five star accommodation as well as unclassified options which are mostly made up of smaller units that cater for a specific guest niche. Four and five star rooms had a 56% share of classified hotel rooms in 2013. This mix of accommodation and the development in new high end establishments is aligned with Sri Lanka's goal of continuing to grow average spend per visitor night in the country.

Figure 3.7 Accommodation by Class in 2013 (exc. unclassified accommodation)



Source: Sri Lanka Tourism Development Authority Capacity & Nights in all Accommodation Establishments by Class 2013

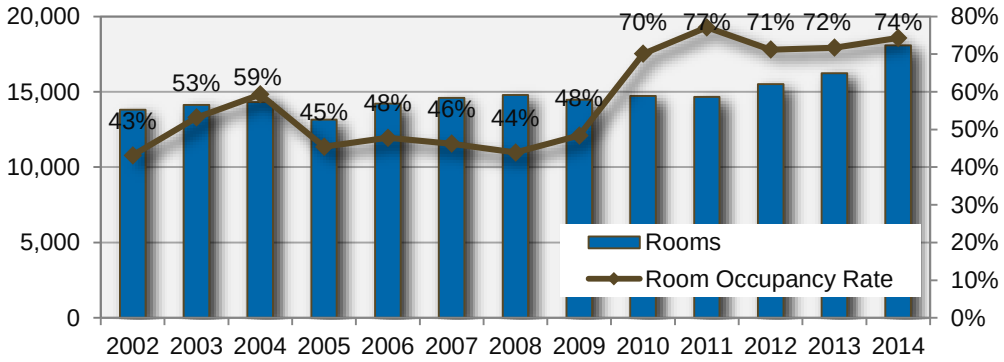
Supplementary accommodation forms an important and growing part of Sri Lanka's tourist accommodation portfolio. These offerings consist of home stay units, bungalows, rented homes and apartments. It is believed that a number of supplementary accommodation units are not registered with the Sri Lanka Tourism Development Authority (SLTDA) and consequently they remain unregulated[14]. Such units are referred to as 'informal accommodation' and accurate data regarding the scale and growth of this sector is not easily available. However, the SLTDA estimates that up to 36% of current tourist night stays are within the informal sector.

After year-on-year increases in room occupancy rates and the number of rooms from 2002-2004, both experienced a sharp decline in 2005 following the Indian Ocean tsunami in 2004. Thereafter, occupancy rates held relatively steady up to 2009 – after which there was a 22% increase in 2010. The ending of the civil conflict goes someway to explain this significant increase. In contrast, room numbers remained relatively flat from 2006 to 2011. Room numbers have increased since 2011 as new developments have been completed and an annual average growth rate of 4.6% from 2009-2014 has been observed. Data for 2014

[14] Ensuring Sustainability in Sri Lanka's Growing Hotel Industry, International Finance Corporation.

currently shows a further increase in room occupancy to nearly 75%, this is primarily due to the growth of tourists continuing to outpace the growth of hotel bed stock as the number of available rooms only grew 11%.

Figure 3.8 Accommodation by Class in 2013 (excluding unclassified)



Source: Sri Lanka Tourism Development Authority Tourism Growth Trends 2012/13

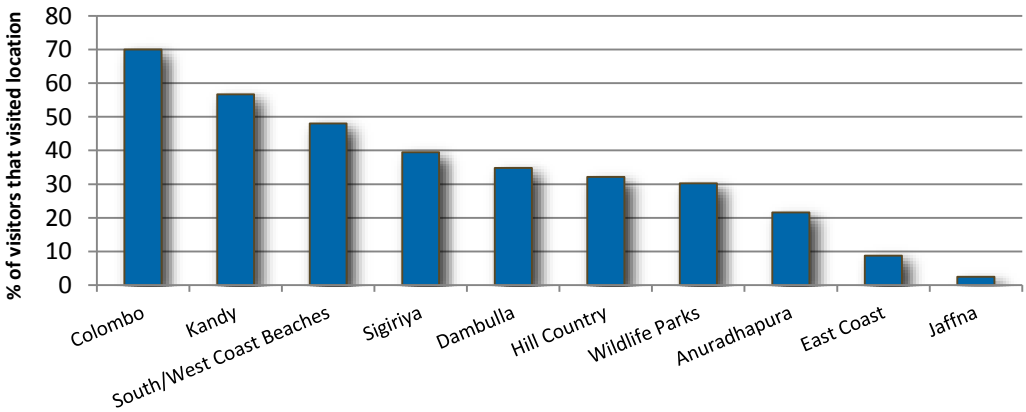
It should also be noted that stakeholders suggested that a large proportion of the growth in accommodation supply in recent years has been through the informal sector; this is not reflected in these growth statistics.

3.2.8 Tourist travel patterns within Sri Lanka

Tourist travel patterns within Sri Lanka have evolved in recent years. Traditionally, tourist activity in Sri Lanka was primarily dominated by single destination holidays, largely based around beach holidays on the west and south coasts. However, as the tourism market has matured, tourism opportunities have developed elsewhere in the country, and tourist travel patterns have evolved to feature multi-destination/circular trips and to include cultural, historical and experience-based holidays as well as beach holidays.

In 2013, Colombo and Kandy were visited by the highest proportion of foreign tourists, with 70% and 57% of tourists visiting each respectively (Figure 3.9). The beaches of Sri Lanka's south and west coasts, Sigiriya, Dambulla and the Hill Country were the next most popular locations.

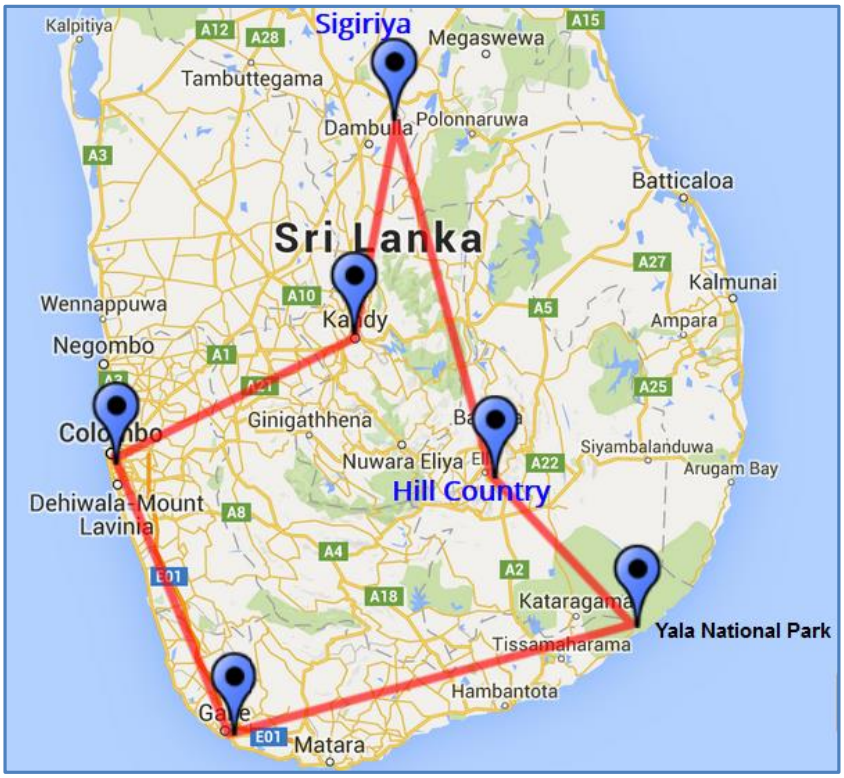
Figure 3.9 Places of attraction visited by foreign tourists, 2013



Source: SLTDA

This data supports stakeholder suggestions that amongst the most popular routes for tourists currently visiting the country is a circular route starting and finishing in Colombo and including Kandy, the Highlands, Yala National Park and the beaches of the South/West coast, as shown in Figure 3.10. With an average tourist trip duration of 9.9 nights in 2014 (SLTDA), this suggests stays of 1-3 nights per location.

Figure 3.10 Popular circular tour route visiting some of Sri Lanka's major sites



Source: Scribble Maps/ICF

It has also been suggested that an alternative trip itinerary that is gaining popularity is to start and finish in Colombo, visiting the Cultural Triangle (including Sigiriya), the east coast beaches, and Kandy in between. However the very low proportion of visitors to the east coast (<9%) in 2013 suggest this itinerary is not yet well developed.

Looking forward, it is broadly expected that this trend of declining focus on single destination and resort focussed holidays in favour of multi-destination and circular route based holidays will continue. This is expected to be partly driven by a changing tourist visitor mix; visitor numbers particularly from China have seen the strongest growth over the last 12-18 months (tourists from China increased by 80% in the period January to May 2015 over the same period the year before, having increased 136% in 2014 over 2013), and it is widely understood that multi-destination trips with a mix of activity types are preferred by Chinese tourists compared to the single destination beach and resort style holidays historically preferred by European tourists.

Data from SLTDA and consultations with stakeholders have identified a number of other characteristics and trends within the current tourism market; as discussed below.

3.2.9 Domestic travel modes

While close to all tourists visiting Sri Lanka arrive into the country by air at BIA, the majority do not remain within the Colombo area for the duration of their holiday, instead travelling to one or more other areas and attractions as discussed above. Travel mode options, depending on routes travelled, include road, rail and domestic aviation, with road comprising the dominant mode by some margin; as discussed below.

- **Road Transport**

To date, the majority of tourist transport within Sri Lanka has been by road, predominantly through car hire (with or without driver), group tourist buses or public buses, depending on tourist preference and budget. A key development with regards to road transport has been the construction of the Southern Expressway from Kottawa to Matara, which reduces the

travel time from Colombo to Galle from approximately 4 hours to 1-1.5 hours. Stakeholders have noted that tour bus organisers frequently build in excursions or shopping trips to longer road transits, providing important commissions to the tour operators and breaking up otherwise lengthy journeys for the tourists.

- **Rail Transport**

Sri Lanka's rail network is well established, with 1,420km of track nationwide and daily passengers of 290,000. While the vast majority of these passengers are Sri Lankan nationals using the rail network for commuting, some tourist travel also occurs by rail. Two private operators, ExpoRail and Rajadhani Express have partnered with the government owned Sri Lanka Railways to offer premium services on major routes including Colombo to Kandy, Colombo to Badulla, Ella, and Haputhala in the Hill Country, and Colombo to Matara on the south coast. These two companies have refitted luxury cars within scheduled Sri Lanka Railways trains and offer air conditioning, comfortable seating and on board services.

According to stakeholder consultation, train travel is believed to be a small, but important mode for tourists within Sri Lanka.

- **Domestic Aviation**

As described in Annex 2, Sri Lanka has a broad network of 15 airports around the country which have current or potential for domestic aviation services. These services are discussed in more detail in Chapters 4 and 8, but include scheduled and charter flights by a number of operators on a variety of different routes. In total however, domestic aviation remains a very small travel mode within the country at present; domestic passengers at the three main airports of BIA, RMA and MIA totalled under 60,000 in 2014 (the majority of which will have been flying from BIA to MIA and therefore are counted twice within this figure), while the two leading domestic aviation operators Helitours and Cinnamon Air carried 9,500 and 3,800 passengers respectively in 2014[15]. For 2015, it is worth noting that domestic passengers in March and April at MRIA have declined by 98% from 2014 as airlines have cut flights due to lack of demand.

3.2.10 Tourist holiday organisation

The majority of tourists currently visiting Sri Lanka are independent visitors who book their travel without use of a tour company. According to the SLTDA's 2013 survey of foreign departing visitors 84% of visitors had not used package tour services, while just 16% had. For these visitors, the internet and advice from friends or relatives were cited as the dominant sources of information which influenced their visits.

However, stakeholders have suggested that this pattern may be changing, and that the use of package holidays and visit organisation by tour companies may be increasing. Reasons given for this included the increasing number of visitors from China and the rest of Asia, many of whom prefer to travel within packaged itineraries, and the increasing preference for circular, multi-destination holidays versus the traditional, single destination beach resort style holidays.

3.3 Sri Lanka within the Tourism Lifecycle

In order to analyse and forecast the development of Sri Lanka's tourism market going forward the hypothesis of a 'tourism life cycle'; an average development cycle for tourism markets as they progress through early development, growth and maturity is a useful tool through which Sri Lanka's place within such a cycle and its likely development going forward can be assessed. As a result, we set out below the typical pattern and characteristics of a tourism lifecycle, review relevant regional case studies of the development of alternative

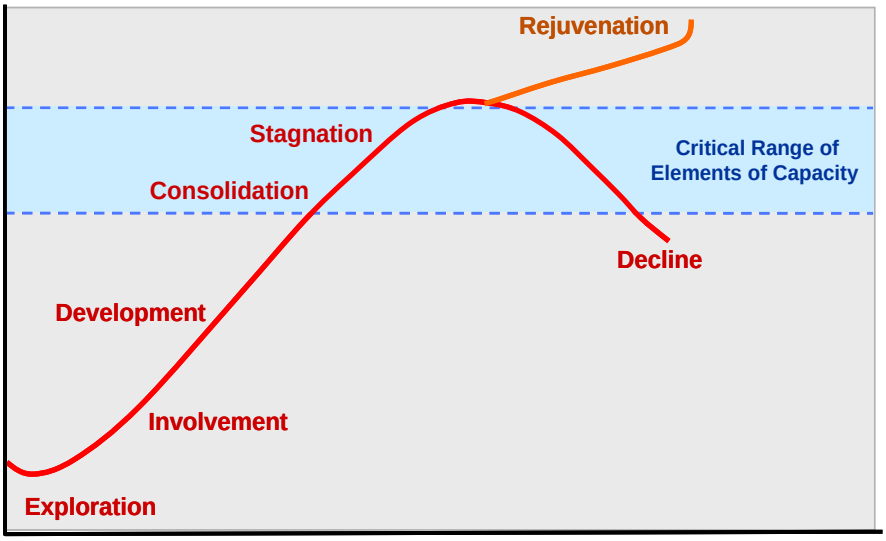
[15] The majority of flights by Helitours and Cinnamon Air start or finish in BIA or RMA and these figures will therefore also be included in the previous figures.

tourism markets, and assess the implications of the lifecycle and these case studies for Sri Lanka's tourism market.

3.3.1 The Tourism Lifecycle Concept

In studies of tourism development, the concept of the life cycle is well-known and widely researched, if not universally accepted. This concept suggests that after a period of rapid growth, from initial growth to full sector maturity, tourism markets will be predisposed to stagnation and possibly decline, unless an external stimulus is introduced. In the event that they are, such stimuli lead to rejuvenation and further growth. A more controlled, and thus gradual growth in the early phases of development may also help to prolong the upward phase of the tourism cycle. Figure 3.11 below illustrates one example of the tourism lifecycle model, as provided by Butler (1980).

Figure 3.11 Hypothetical Evolution of a Tourist Destination



*Source: Richard W Butler (1980), "**The Concept** of a **Tourism Area Cycle of Evolution**: **Implications for** the Management of Resources". Canadian Geographer*

According to the tourism lifecycle model, after a period of minimal tourism during the initial stages of development, destinations typically experience a positive feedback cycle for a number of years, when tourists discover a location and begin to arrive in large numbers, motivating local and international providers to invest in infrastructure, which stimulates and facilitates further increases in arrivals. During this so-called ***Development Phase***, the number of tourist arrivals increases rapidly and consistently and during peak periods can outweigh the size of the local population in certain markets. Tourism is seen as a wholly positive development, due to its substantial economic effects and the increase in tourist arrivals is typically helped by improvements in accessibility to resorts through the road network and transport providers.

The ***Consolidation Phase*** sees continued growth leading to further reduction of space available to local residents and business in the most popular tourist destinations, and often beach or town space is further eroded to make way for desirably-located hotels. This exclusion typically results in the marginalization of traditional economic activities such as farming or industry, as most of the economic population is tied to the tourism industry in one form or another. As the tourism infrastructure takes over an area, it begins to lose some of its appeal, particularly to those who seek a unique or unspoilt experience. Due to the over-supply of hotels and other tourist facilities, price competition becomes fiercer and the target market may decrease in value towards the lower-paying mass segment. During this stage of the cycle, tourist arrivals continue to increase, although at an increasingly slower rate, and revenues can begin to suffer considerably.

Stagnation is said to occur when most of the original character of the resort or attraction is lost to international style and standardized development, and the area becomes highly urbanized. Few new establishments open and facilities depreciate in value, resulting in the destination losing appeal for both local and international investors.

Beyond this stage, ***Decline*** is said to be probable, unless some exogenous factor is introduced such as the creation of a new tourist attraction, the development of alternative tourism products (e.g. business tourism such as conferences, or sports tourism such as golf courses etc.). Unless investment is made, the long term future of over-developed resorts is bleak. Popular examples cited of this cycle are parts of Mexico, Malta, and Menorca.

3.3.2 Life Cycle Case Studies from various markets

Thailand

Thailand is one of the more mature tourism destinations in South East Asia. The country is large, with an area of 513,000 sq. km, comparable in size to Spain or Kenya, and has a long coastline along the Gulf of Thailand, the Andaman Sea and the Strait of Malacca. The country's population is around 67 million and 8.6% of Thailand's GDP was directly generated by tourism in 2014[16]. Although much less visible, Thailand's manufacturing industry is a considerably larger generator of GDP in the country than tourism.

Figure 3.12 Map of Thailand

Source: CIA World Fact Book

Thailand is best known for its beaches and holiday resorts of Phuket, Pattaya Beach, Krabi Beach and more. However, the country also has a number of impressive cultural and natural heritage sites, including five which are listed by UNESCO.

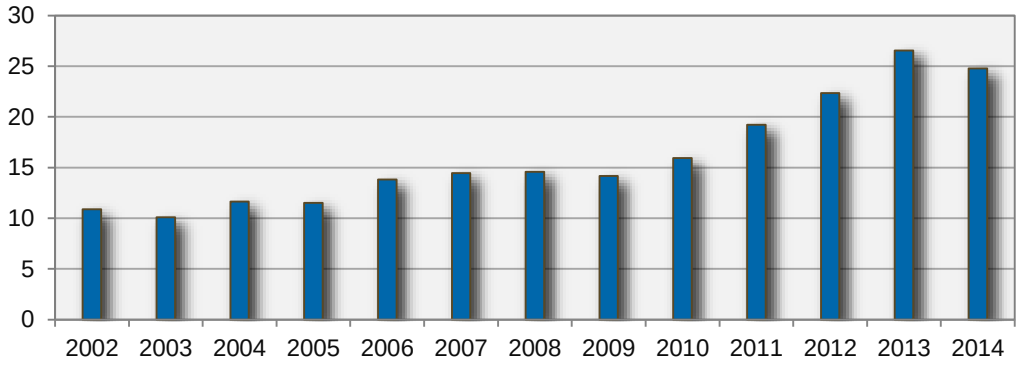
The history of development of Thailand's tourism industry stretches back to the country's strong support for US policy in South Vietnam during the Vietnam War, providing bases for US troops and airfields for strikes. As a result, Thailand initially became a tourist hotspot for US soldiers and veterans. This kick-started the development of Thailand's tourism industry, and sector growth was subsequently fuelled by a number of specific events. In 1974 'The Man with the Golden Gun' featured the southern Phang-Nga National Park and visitors subsequently flocked to 'James Bond Island' Kho Tapu. Between 1980 and 1987, the number of visitors increased by more than 10% per year, reaching 3.5 million in 1987. Subsequently, Alex Garland's 1997 bestselling novel The Beach glorified the backpacking trail and brought further international attention to Thailand. In 2000 a film of the book was

[16] World Travel and Tourism Council, Thailand Country Report 2015

released, with Maya Bay, near Phuket, as the eponymous beach. A rapid rise in tourist arrivals to Phuket can be closely traced to this period.

A number of events have also had negative impacts on tourism within Thailand, including SARS in early 2003, the Indian Ocean Tsunami of December 2004 and an outbreak of Bird Flu that started in the same year. Each of these had significant effects on the number of international arrivals, and more recently the political turmoil in 2013/14 has impacted tourist arrivals by 7%, as shown by Figure 3.13. Looking forward, visitor arrivals are expected to start recovering in 2015.

Figure 3.13 Annual Tourist Arrivals to Thailand, 2002-2014 (Millions)



Source: Thailand Tourist Board

The largest source market for tourist arrivals is now China providing 4.6m tourists in 2014 compared to just 1.1m in 2010 representing a fourfold increase in just 4 years. Previously Malaysia was the largest contributor to Thailand's tourism market which has also been growing but at a much slower rate than the Chinese outbound market.

Cambodia

Cambodia is also a useful example to consider, as another country within South East Asia that has also undergone a tourism boom, albeit a more recent one. This is helping the country emerge from its troubled past and to develop from its position as one of the poorest countries in the world. The country's rich and varied cultural heritage, as well as its diverse natural assets, make Cambodia an attractive tourism destination, and over the last decade, tourist arrivals have grown fourfold, from around a million a year in 2004 to over 4 million in 2014.

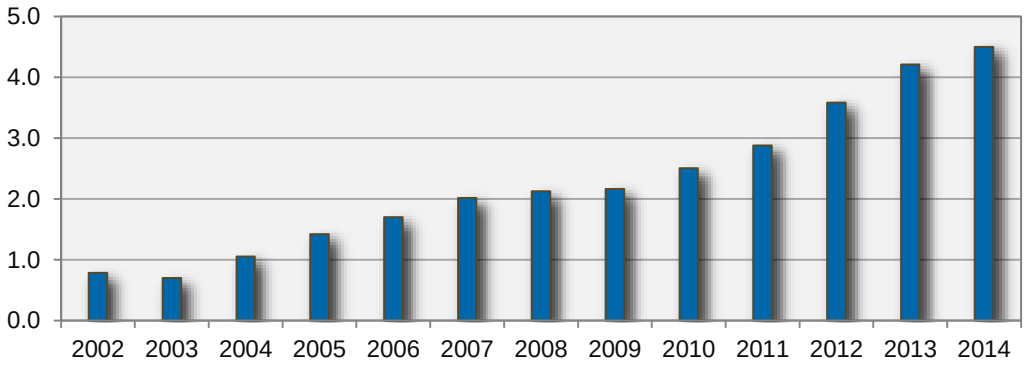
Figure 3.14 Map of Cambodia

Source: CIA World Fact Book

Tourism is focused heavily towards Angkor Wat and other surrounding temples ("Angkor Park"). These monuments are a key symbol of the country and its heritage, and under UNESCO protection they look set to remain so for many years to come. Other attractions include:

- Sihanoukville: A port city and beach resort on the Gulf of Thailand, the big attractions are the white sand beaches and undeveloped tropical islands
- Tonle Sap Lake: is the largest freshwater lake in South East Asia and home to many ethnic Vietnamese and numerous Cham communities who live in in floating villages
- Phnom Penh: Cambodia's diverse capital offers a range of cultural and historic sites

Figure 3.15 Annual Tourist Arrivals to Cambodia, 2002-2014 (Millions)



Source: Cambodian Ministry of Tourism

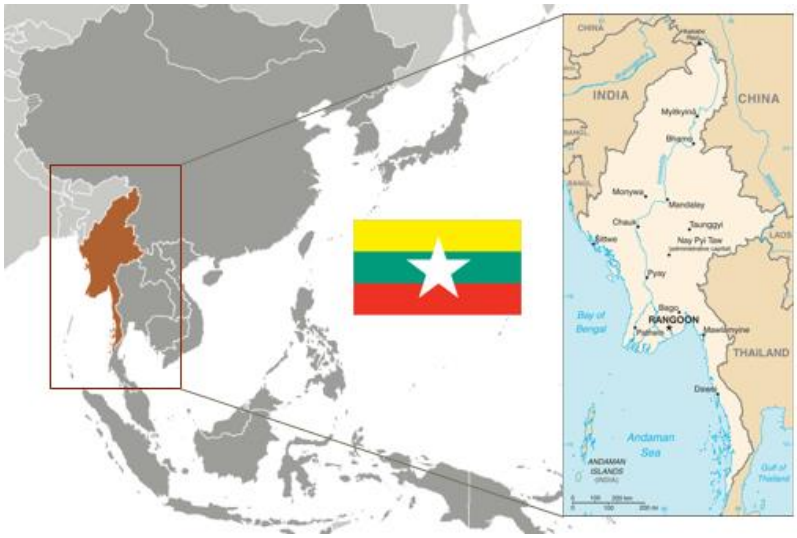
The largest source market for tourist arrivals is Vietnam providing 900,000 tourists in 2014. However the Chinese market is growing rapidly and at its current growth rate of >30% per year it is likely to become the largest source market within 5 years.

Myanmar

Myanmar (Burma) is a mid-sized country located in Southeast Asia bordered by Bangladesh, India, China, Laos and Thailand. The country has a land area totalling 677,000 square kilometres; 20% larger than Thailand but with a population that is 25% smaller (51 million

people). Myanmar was previously ruled by a military junta for approximately 50 years, during which time the country was subject to a series of sanctions by the European Union, the United States and other countries, and both economic growth and tourism development were subdued during this period as a result.

Figure 3.16 Map of Myanmar

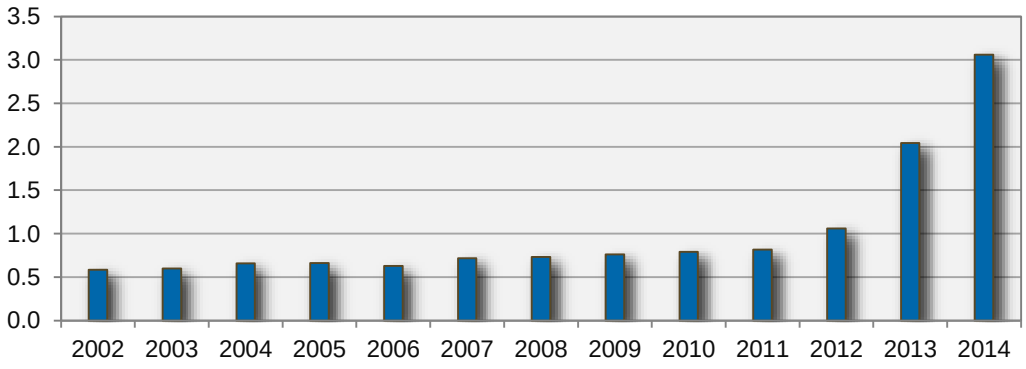


Source: CIA World Fact Book

The military junta was officially dissolved in 2011 when power was transferred to a new civilian government, and this resulted in the country opening up for trade and tourism development. Nevertheless, while the country is currently undergoing rapid growth in these sectors, Myanmar remains one of the poorest nations in the region.

The strongest indicator in the significant growth in the tourism market since the country began to open up in 2011 is visitor arrivals. Inbound volumes grew threefold from 2012 to 2014, when over 3 million visitors arrived into Myanmar as shown in Figure 3.17. In 2013, a Tourism Master Plan was created which targets 7.5 million arrivals by 2020; if achieved this will represent a compound annual growth rate of 16.5% for the period 2013 to 2020.

Figure 3.17 Annual Tourist Arrivals to Myanmar, 2002-2014 (Millions)



Source: Myanmar Tourism Board

Burma offers a wide selection of attractions to the tourist market including:

- Bagan: A large ancient city for temples within the 'Bagan Archaeological Zone' which occupies 26 square miles and represents the largest draw to the country
- Inle Lake: A large lake offering beautiful scenery, culture and wildlife attractions
- Yangon: The country's largest city offering a wide selection of temples and historic sites.

- Beaches: A developing beach industry on the Bay of Bengal offering white sand and clear water sites

Thailand is currently the largest source market for tourists to Myanmar; accounting for 17.5% of total arrivals whilst 71% of arrivals are from within Asia. This highlights the importance of intra-regional travel and is in line with global patterns. Visitors from Europe are the next largest group accounting for a similar share to Thailand.

3.3.3 Summary of Tourism Market Case Studies

While Sri Lanka is a unique tourism market both geographically and in terms of the range of attractions it offers in a relatively small area, the case studies presented nevertheless present useful insights into the rates and patterns of growth achieved through various stages of the tourism lifecycle by different countries in the region.

Firstly, it is important to note that there are clearly a number of factors that impact a country's tourism lifecycle, including differences in starting numbers (fast growth is much easier to achieve from a very low base), general economic conditions (recessions will dampen growth in even emerging, booming markets), air services and holiday fashions (more managed growth versus free-for-all by many competing suppliers).

In addition, the above case studies show that the growth periods of each of the tourism markets have varied widely, both in the length of time and the rates at which arrivals increased; Thailand has seen the prolonged growth and development of its tourism market over a period of four decades, while Myanmar has witnessed significant growth in its tourism market only over the last three years.

However, as a general rule, it may be deduced that double digit growth tends to last for a few years only (typically five years or so) and tends to be associated with markets in their infancy. As volumes increase, although additional arrivals each year will continue to grow, the rate of change will fall. For markets which have reached maturity, growth rates around 1-2% are not unusual, and negative growth can also occur due to over-development or changes in tastes and fashions.

Implications for Sri Lanka

The Sri Lankan tourism market is still in its relative infancy, having only begun large-scale development and growth of the tourism sector in the last five years since the cessation of civil conflict in 2009. As a result, the country's lifecycle is likely to still be in the early phases of growth; marked as Involvement and Development on the Butler illustration of tourism area evolution cycle (see Figure 3.11). This suggests that in the short to medium term Sri Lanka could expect at least continued strong growth in its tourism market through the development stage of the cycle, and perhaps longer if careful management and successful diversification of the country's tourism assets is undertaken. Global opinion of Sri Lanka is such that it still retains its exotic and desirable status, even after the rapid growth in tourism of recent years, and this is a very valuable asset in today's maturing outbound tourism market.

4 Tourism and Transport Development Plans

4.1 Introduction

In addition to understanding the current state of the Sri Lankan tourist market as discussed in the previous section, an understanding of current plans and strategies for the development of the market is also crucial for the development of robust aviation and tourism forecasts within this study.

As a result, this chapter reviews current policies, plans and strategies for the development of the tourism sector, as well as specific tourism product development efforts that are being pursued by government departments. In addition, because the development of domestic aviation by tourists must be considered in concert with alternative transport mode options, national transport strategies and plans are also considered.

4.2 National tourism and transport strategies

Presidential elections were held in Sri Lanka on 8th January 2015, through which the incumbent president Mahinda Rajapaksa was defeated by Maithripala Sirisena. Following this election, President Sirisena formed a new cabinet and appointed Ranil Wickremesinghe as the Prime Minister, and in the intervening period a number of new political appointments have been made at the majority of state owned enterprises and state organisations.

As a result of the political changes, a number of new political strategies are currently in formation. Of key importance for this Study, a new ministry, the Ministry of Tourism and Sports (MoST) was created in January 2015, replacing the Ministry of Development under the previous government. MoST is currently developing a **new tourism development policy** for the period up to 2020. This will replace the tourism development strategy of the previous government for the period 2011 to 2016, whose key objectives were:

- Increase tourist arrivals from 650,000 in 2010 to 2.5m by 2016;
- Attract USD3,000m as foreign direct investment by 2016;
- Increase tourism related employment from 125,000 in 2010 to 500,000 in 2016;
- Distribute the economic benefits of tourism to a larger cross-section of the society and integrate tourism to the real economy;
- Increase foreign exchange earnings from USD500m in 2010 to USD2.75 bn by 2016; and
- Contribute towards improving the global trade and economic linkages of Sri Lanka.

The new tourism development policy is being drafted with the aim of using a more integrated approach to include inputs from a variety of other sectors including aviation, culture, local governments and the environment, and is therefore intended to be more comprehensive in nature than the previous strategy. Funding for development of the policy will be provided by the World Trade Organisation, and once internal approvals for the project are secured it is anticipated that the policy will be completed within 3 months.

While the new tourism policy will be a crucial tool to guide and inform the development of the tourism sector, there is, in the meantime, an absence of clear policy direction and reduced policy visibility. This is similarly the case in the context of the transport sector; stakeholders cited a need for an integrated transport development plan for the country, but as yet such a plan is not yet in existence. As a result, this Study has assumed continuation of historical trends and the status quo; driven by bottom up sector developments that are currently underway in relation to both tourism and transport development. These are discussed in more detail below.

In addition to the tourism development policy, 2 other key policies are currently being undertaken:

- A Western Region Megapolis Plan. This has been commissioned by the Prime Minister from the same team that undertook a similar previous Megapolis study for the region in 2003.
- Master Plan for Bandaranaike International Airport. This is being commissioned by AASL to replace the previous plan completed in 1983, and which is still currently being used. It was noted that it would be preferable for this master plan to be created in co-ordination with a national aviation master plan, but that such a plan is not currently in consideration.

4.3 Key tourism development plans

The Sri Lanka Tourism Development Authority (SLTDA) reports to the MoST and is responsible for the development of tourism products and services within Sri Lanka. As such, SLTDA is involved in the development of a number of key tourism products which are impacting both the supply and demand of tourism infrastructure services around the country. Consideration of these plans is crucial to inform forecasts of tourism developments within the country, and subsequently the demand for domestic aviation services by tourists within Sri Lanka.

4.3.1 Pasikudeh

Pasikudeh is a coastal beach resort on the east coast of Sri Lanka, 35 km northwest of Batticaloa, the location of the closest airport. The area includes a long shallow coastline with a sandy beach, and in previous years had been an important tourist resort for Sri Lankan nationals. In recent years SLTDA has coordinated a series of new developments in the area, encompassing 13 large hotel developments comprising 850-1,000 rooms, targeted at attracting foreign tourists to the region. The development is currently approximately 75% complete, with the majority of hotels operational at the end of 2014.

However, performance of the resort developments has, to date, been poorer than expected. This has been attributed to a number of factors including the lack of a coherent development plan for the region, involvement of investors and stakeholders with limited tourism experience, and, importantly for this Study, poor connectivity between the east coast of Sri Lanka and Colombo.

4.3.2 Kalpitiya

Kalpitiya is a land spit and series of 14 islands in Puttalam district, on the North West coast of Sri Lanka. The area is approximately 150km north of Colombo, and approximately 43km from Palaviya Airport (see Annex 2). SLTDA has initiated plans to develop Kalpitiya into a Maldives-resort style area, with high end individual island resorts supplemented by additional tourism offerings and resorts around the Kalpitiya lagoon area. SLTDA's development plans include 4,000 rooms over 19 islands and land plots, and the feasibility studies and strategy for the SLTDA development have been completed.

To date, three 30 year leases have been issued for hotel developments within the SLTDA's development plans, with the concessions being awarded to an Indian Company and a Maldives company. The concession bidding process was managed by SLTDA and the Ministry of Development, and key selection criteria for the winning bidders were proposed investment plans and environmental considerations. Developers will be responsible for providing all required infrastructure to the islands (such as desalinisation, waste disposal and power).

According to SLTDA, potential improvements to Palaviya Airport are mentioned in bidding concession documents for the Kalpitiya. However, it is not known whether these improvements have been promised to developers on condition of their investment, or whether these were proposed as theoretical options only. Furthermore, stakeholders consulted during the Study have expressed diverse opinions as to whether improvement to Palaviya Airport is required for the development of Kalpitiya given that the area is only 150km from Colombo and that the Airport Expressway already ensures high transit speeds for a proportion of this journey.

Finally, stakeholders also noted that performance of this development has also been weaker than anticipated. This was attributed to a variety of reasons, including the unsuitability of the area to the island-resort development style due to poor water visibility and rough seas.

4.3.3 Kuchchavelli

Kuchchavelli is a 500 acre high-end beach resort style development being led by SLTDA located 18km north of Trincomalee on the north east coast of Sri Lanka. Kuchchavelli consists of a spit-beach with lagoon area, and 3 of a total of 12 land blocks have to date been secured by private investors for development on the basis of 99-year concession leases. Of these, one is now open to the public. When fully developed in approximately 5 years the area is expected to provide 700-1,000 hotel rooms, stimulating further lower budget hotel developments within the surrounding area.

In similarity with Pasikudeh, poor connectivity has been cited as a potential hindrance to demand for the Kuchchavelli development, with road transport times from Colombo being approximately 4.5 to 6 hours. Improved domestic aviation services at Trincomalee Airport, just 18km to the south of the resort area, therefore has the potential to significantly improve connectivity, and potentially tourism growth potential for the resort. It was noted that Trincomalee Airport has recently undergone some improvement works, and that it already has a civil aviation terminal building.

4.3.4 Mannar Island

Mannar Island, located to the north of Kalpitiya on the north east coast of Sri Lanka has been reviewed as a tourism development opportunity in recent years. A World-Bank funded team undertook a Tourism Development Strategy for the area in 2014, and in particular the opportunity to develop Mannar as part of a new tourism circuit encompassing the north of the island was reviewed. Specific development plans for the area are still in concept stage, and the scale of potential developments (for example by number of rooms) has not yet been identified. The nearest domestic airport to Mannar Island is Vavuniya Airport, 102km to the south east, while Jaffna (Palali Airport) is 148km to the north east.

4.3.5 Other SLTDA developments

SLTDA additionally have a number of further tourism plans that are currently in various stages of development:

- **Hill Country**: Support for development of additional homestay-type accommodation capacity in order to increase available rooms from 1,500 at present to more than 4,000 in the future. These plans are in recognition from SLTDA that more centralised, coordinated development plans are required to fulfil the area's tourist destination potential.
- **Jaffna**: Lagoon style resort concept plans with potential for 1,000 to 1,500 rooms in early stage of concept development.

4.3.6 Summary of tourism development plans

In summary, the SLTDA is involved in a number of regional development plans to create new tourism products in various regions around the country. If fully developed as planned these will provide in the order of 10,000 formal hotel rooms, a significant total considering there were estimated to be approximately 24,000 formal rooms in the country at the end of 2013. However, given the slower than expected progression of some of these developments to date, these forecasts should also be regarded with some caution.

4.4 Key transport development plans

With the exception of the Airport Master Plan for BIA that is expected to be commissioned in the near future, there are no comprehensive transport development plans or policies. However, a number of individual developments have been discussed with stakeholders, as outlined below and as shown in Annex 4.

4.4.1 Road Network Developments

A number of major expressway developments are currently under consideration or at varying stages of development:

- **Extension of Southern Expressway**

The Southern Expressway is a 125km highway linking Kottawa, to the south of Colombo, with Matara on the south coast. Construction of the road began in 2006 and was completed, via two stages, in March 2014 at a total cost of Rs107 bn. At current exchange rates this corresponds to a unit cost of US$6m per kilometre.

It was proposed under the previous government that this expressway should be extended; initially to cover an additional 94km to Mattala, near to where MIA is situated. According to the Road Development Authority, a feasibility study for this extension is currently underway, and that this development is likely to occur in the medium term.

While no expected dates for completion of the expressway could be given by stakeholders, it has been assumed for this Study that the extension of the Southern Expressway to Mattala will be completed by the end of 2022.

- **Outer Circular Highway**

A 29km, 4-lane expressway that will serve as a ring road around Colombo through Colombo and Gampaha Districts has been under construction since 2009 and when completed will link the present Airport Expressway with the Southern Expressway; dramatically decreasing transit times from BIA to the south coast.

Although no expected dates for completion of this Highway were provided by stakeholders, it has been assumed for this Study that it will be completed by the end of 2017 (in line with initial plans contained within Mahinda Chintana strategy document of the previous Government).

- **Proposed Central Expressway**

Following on from the successful improvement in national connectivity that was achieved following the construction of the Southern Expressway, a new Central Expressway has been proposed. It is envisaged that this may eventually run from the Outer Circular Highway at Kadawatha outside Colombo to Dambulla in the Cultural Triangle, but that in the near term a 75km stretch to Kurunegala would be prioritised. The feasibility study for this stretch has been completed, and the Study Team were advised that a conceptual funding note is currently being prepared.

Completion of this stretch of road will significantly improve connectivity to the Cultural Triangle, Vavuniya and Trincomalee, even though the expressway will not reach all of these locations directly.

While no expected dates for the completion of this road were provided by stakeholders, it has been assumed for this Study that the section to Kurunegala will be completed by the end of 2020.

- **Proposed South – East Expressway**

In addition to current plans to extend the Southern Expressway to Mattala, longer term plans to extend this highway further to Batticaloa have also been proposed. This would significantly improve connectivity to the east coast of the country, particularly to the new MIA airport at Hambantota. However, it was noted by the RDA that road network speeds within the Eastern Province are already significantly better than the national average (in the region of 70km/hr versus national average of 30-35km/hr), and that there is insufficient demand to justify this extension at present.

As a result, this proposed expressway development has not been assumed to occur within the forecast period for this Study.

- **Proposed Ruwanpura Expressway**

Finally, plans for an additional expressway from Kahathuduwa on the Southern Expressway just to the south of Colombo, via Ratnapura to Palmadulla in the central southern region of Sri Lanka have also been developed. A feasibility study for the portion of this route to Ratnapura is currently underway. However, there are no immediate plans to develop this expressway, and as a result its development has not been assumed to occur within the forecast period for this Study.

In summary, the following assumptions for expressway development have been utilised for this Study:

Table 4.1 Assumed Road Development Plans

Route Name	Origin & Destination	Distance	Assumed Completion
Outer Circular Highway	Kerawalapitiya – Kottawa	29km	End 2017
Central Expressway	Kadawatha - Kurunegala	75km	End 2020
Extension of Southern Expressway	Matara – Mattala	94km	End 2022

It is noted that the anticipated speed limit on all these expressways is 100km/hr. Average travel speeds along these expressways of 90km/hr have therefore been assumed.

4.4.2 Railway Network Developments

As noted in Section 3.2.8, Sri Lanka currently has an extensive rail network, with rail connectivity from Colombo to the south coast, the Hill Country, the Cultural Triangle, and the Northern provinces. However, although well developed, the rail network is aging, and travel times and conditions are currently slow in many areas of the country. As a result, stakeholders have advised that the present Government is in favour of promoting a high speed rail system, with initial priority being placed on upgrading the Colombo to Jaffna rail line. Proposed upgrades would comprise both electrification and new track, and would eventually enable travel times of just 2 hours between Colombo and Jaffna, a significant reduction from the 7 hours that the journey currently takes.

However, no further details regarding this transition to a high speed rail system for Jaffna to Colombo are currently available, and the Consultants note that full conversion to high speed rail is a very ambitious project. As a result, it has been assumed for this Study that while improvements to the route take place, the scale of improvements envisaged are not immediately achieved. Instead it has been assumed that average rail network speed on the Jaffna to Colombo route increase from approximately 48km/hr at present, to 70km/hr in the future, reducing the journey time to 4 hours and 20 minutes. This will be assumed to occur as a phased benefit over the period 2020-2030.

In January 2016 Consultants were informed that investment plans for a High Speed railway to connect Colombo to Jaffna are fairly advanced and project completion might be achieved by 2018. This information appears to be consistent with the assumption that journey time may reduce to 4 hours and 20 minutes in the long term.

5 Overview of Aviation in Sri Lanka

5.1 Introduction

In order to provide a base level from which the development of Sri Lanka's domestic and international aviation sectors can be assessed going forward, this chapter serves to provide an overview of the current state of these markets within Sri Lanka and their recent and current trends, patterns and characteristics. The international and domestic aviation markets are reviewed in turn, and key factors affecting their likely future development are discussed.

5.2 International Aviation

5.2.1 International Airports

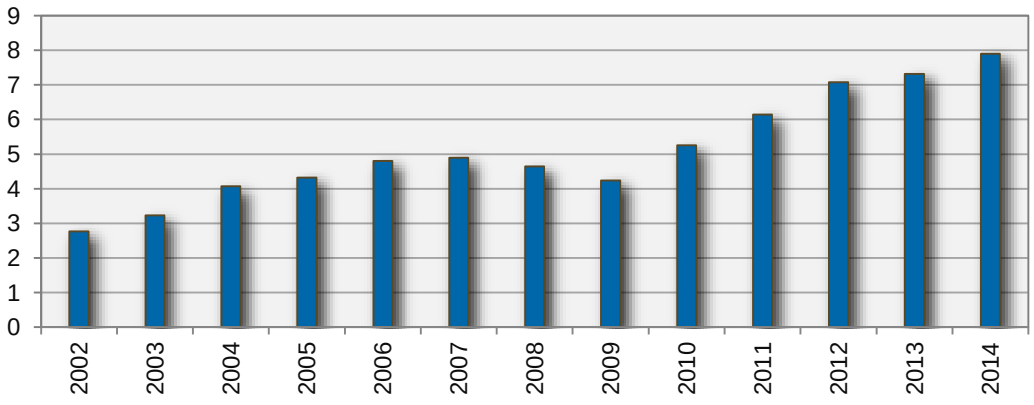
As an island nation, Sri Lanka relies almost exclusively on international aviation for the arrival of international visitors to the country, and Bandaranaike International Airport (BIA), 35km to the north of Colombo, has handled the majority of international visitors to the country in recent years. BIA was commissioned in 1967, and is operated by AASL.

While BIA handled 99% of international traffic in 2014, two other airports are also equipped to handle international aviation. Ratmalana Airport, situated just to the south of Colombo and the country's main international airport prior to the opening of BIA, serves as a landing facility and airport for small commercial and private jets. Mattala International Airport, located near Hambantota in the south east of Sri Lanka was recently constructed to be Sri Lanka's second international airport, and was opened in March 2013. The airport has a capacity of 1 million passengers per year and the runway has been sized to enable large modern aircraft such as the Airbus A380 to land.

5.2.2 International Aviation Market

Sri Lanka's airports handled 7.8 million international passengers in 2014 representing an increase of 6% over 2013. As noted above, the vast majority of these were handled by BIA, with MIA handling just 14,000 international passengers. Over the last 5 years, Sri Lankan air traffic growth has averaged 9% per year as passenger volumes have surged from 4.6 million to 7.8 million in 2014. For comparison, other markets in the region such as India averaged growth of less than 8% for the same period highlighting the strong performance of the Sri Lankan market.

Figure 5.1 Annual Passengers at Sri Lankan Airports, 2002-2014 (Millions)



Source: ACI Historic, 2014 Forecast incorporates IATA PaxIS data & SriLankan Airlines statistics

During the last 5 years, air transport movements (ATMs) have grown at 10% per year on average. This is just ahead of the growth in passengers, indicating a slight decrease in average passengers per aircraft, which now average 144.

International traffic at BIA is dominated by 'local' traffic which does not connect at the airport, as shown in Figure 5.2. However, owing to its geographic location and the network and strategy of the home based carrier SriLankan Airlines, approximately 23% of total traffic is estimated to connect. Markets such as India to the Middle East dominate these connection flows. Away from Colombo a significant volume of traffic is known to connect at other carriers' bases. For example services to Dubai on Emirates are known to carry significant onward volumes to markets such as Europe. In addition to tourists and connecting passengers, there are significant amounts of Sri Lankan nationals travelling with a high proportion of them being overseas workers.

Figure 5.2 Colombo Passenger Breakdown, 2014

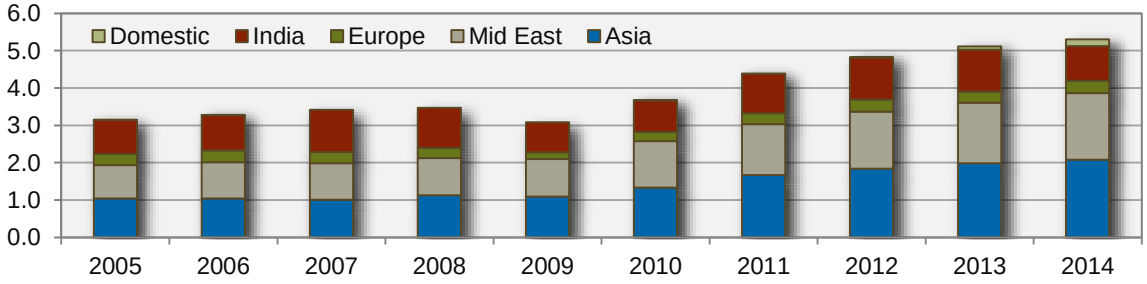
Source: IATA PaxIS, 2014

With regards to international passengers at MIA, while the airport has a capacity for 1 million passengers per year and there were initially high hopes for significant traffic when the airport first opened, volumes and performance to date have been disappointing. Passenger volumes were low at the time of opening of the airport, although some SriLankan Airlines' flights were re-routed to provide capacity at the airport. These flights were however loss making due to low demand, and following the presidential elections in early 2015 all SriLankan services to/through MIA were cut in order to minimise losses. At present FlyDubai is the only scheduled airline to operate at MIA which had just 72 flight movements and 196 passengers at the airport in May 2015.

5.2.3 International Services

Today Sri Lanka is served by 27[17] airlines connecting 25[18] countries to the region. Seat capacity has expanded rapidly since 2009, achieving a compound annual growth rate of 13.7% in the five years since 2009, as shown in Figure 5.3.

Figure 5.3 Seat Capacity at Sri Lankan Airports by Region of Origin (Millions)



Source: OAG, one way seats, 2005-2014

Total seat capacity has grown on a year-on-year basis in all years apart from 2008-2009 reflecting the global market downturn as well as the political situation in the country at the time. From 2005-2009 total growth was relatively slow but what growth there was, was led by

[17] Scheduled Airlines, OAG 2014

[18] Daily services or greater considered

the Middle East region where seats grew at 3% during the period. Capacity on European flights saw the most significant decline of -12% on average per year at this time.

From 2009 onwards growth has accelerated substantially with Asia (excluding India) – sourced travellers growing at an average rate of 14% per year. This strong growth rate was also reflected by markets in the Middle East and Europe which grew at 12% and 13% respectively.

Indian residents are the largest group of visitors to Sri Lanka, with significant numbers of visitors travelling for business, tourism and Visiting Friends/Relatives (VFR) purposes. This market had the lowest average annual growth in seats from 2009-2014 of 3.0% and has seen its share of total seat capacity to Sri Lanka's airports diminish from 29% in 2005 to just 18% in 2014.

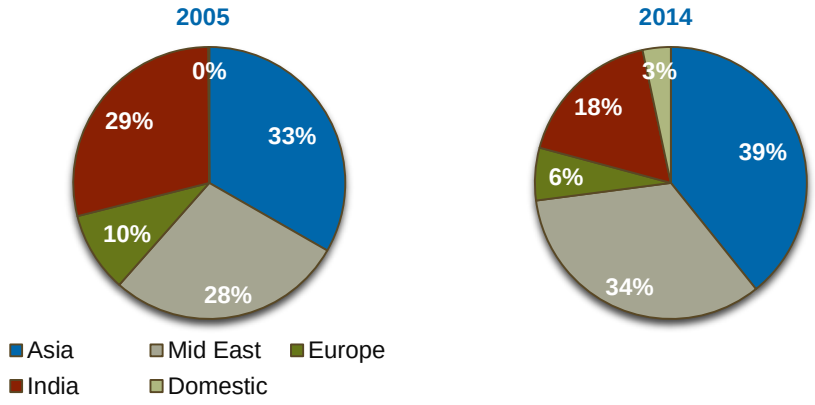
Table 5.1 Seat Capacity Growth at Sri Lankan Airports by Region (CAGRs)

Region	CAGR		
	2005-2009	2009-2014	2005-2014
Asia	1.2%	13.6%	7.9%
Middle East	3.0%	12.3%	8.1%
Europe	-11.8%	12.7%	`1.1%
India	-3.0%	3.0%	0.3%
Domestic	-	-	54.5%

Source: OAG, one way seats, 2005-2014

Overall, from 2005-2014, international growth has been driven by the Middle East and Asia both with 8% average annual growth. Collectively, Asia and the Middle East accounted for 61% of seat capacity in 2005 and in 2014 this share has increased to 73%.

Figure 5.4 Share of Seat Capacity at Sri Lankan Airports by Region, 2005 & 2014



Source: OAG, 2005 & 2014

Domestic seat capacity has grown by 54% since 2005 but remains a small market segment with just 3% of total seats today. The underdeveloped domestic market has potential for growth in the short-term due to the Government's efforts to promote tourism, the improved security situation and the opening of new facilities in the country.

The Indian market has continued to grow, albeit more slowly than other markets. This explains the declining seat share capacity at Sri Lankan airports, from 29% to 18%.

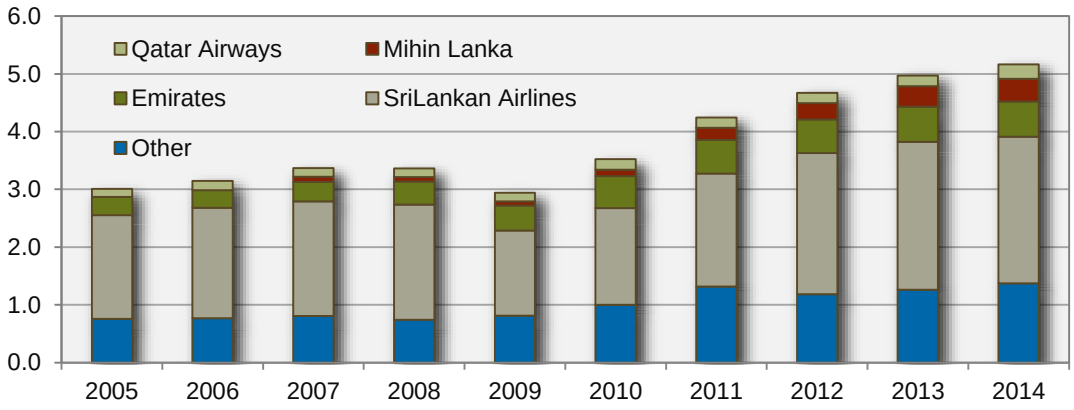
5.2.4 International Seat Capacity by Airline

SriLankan Airlines, the flag carrier of Sri Lanka is the largest airline by all operating measures in the country. SriLankan Airlines has 50% of seat capacity as of November 2014

and operates almost exclusively international services to destinations in Asia and Europe from its base and hub at Bandaranaike International Airport in Colombo.

SriLankan has grown seating capacity by over 70% in the last 4 years representing an annual growth rate of over 15% between 2010 and 2013. In 2014 SriLankan's capacity remained relatively constant as the carrier switched from growth to optimisation of their current network. Markets such as Russia and China were developed whilst cut backs were made to other markets including Thailand and the UAE.

Figure 5.5 Share of Seat Capacity at Sri Lankan Airports by Airline (Millions)



Source: OAG, 2014. One way seats

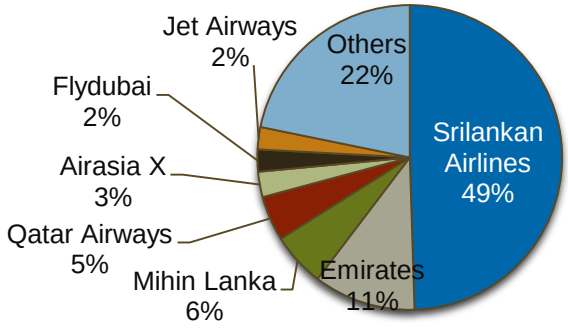
Despite this recent strong growth, SriLankan's dominance of scheduled passenger traffic has declined over the last few years as other airlines have been growing at an even quicker pace. Historically SriLankan's share of capacity was 58%, nearly 10% points higher than today.

Mihin Lanka, the Sri Lankan low cost carrier launched in 2007 and is already the third largest carrier in the Sri Lankan aviation market in terms of seat capacity. Mihin Lanka operates services to destinations in Southeast Asia, India, and the Middle East.

Airlines from the Middle East now make up 25% of capacity to/from Sri Lanka having added 40% more seats in the last 4 years. Emirates is the largest carrier from the Middle East accounting for over 10% of total seat capacity but with just 6% of movements.

Full service Asian carriers such as Cathay Pacific and Singapore Airlines have seen their share of capacity decline to less than 10% as their growth rates to Sri Lanka have been well behind the market average.

Figure 5.6 Share of Seat Capacity at Sri Lankan Airports by Airline, 2014



Source: OAG Schedules 2014

5.2.5 International Services: Airline Profiles

Today, Sri Lanka is served by a wide mix of airlines and business models operating a mix of fleet types from many world regions. For all carriers the inbound leisure market is a clear

focus though the business market segment is well catered for with many of these airlines offering service levels for all market segments.

Since Sri Lanka's tourism arrivals are so heavily dependent on aviation, and each year more and more of these passengers are being carried by non Sri Lankan companies, it is important to understand the nature of the markets these carriers serve as well as the future outlook for these airlines based on factors such as growth plans (such as fleet deliveries and infrastructure) as well as their financial performance and strategic plans.

SriLankan Airlines

SriLankan Airlines is the state-owned national flag carrier of Sri Lanka based at Bandaranaike International Airport. It is the dominant airline of Sri Lanka, with 49% of seat capacity at Sri Lankan airports and operates an expansive route network with direct services to Asia and Europe. With its codeshare partners, the route network expands to offer additional European, African and North America cities.

SriLankan Airlines has grown passenger numbers from 2.6million in 2010 to 4.3million in 2013 representing an annual growth rate of 13%. The airline's load factor gradually increased from 2011 to 2013 to around 81% which is in line with other network carriers operating a wide range of markets across multiple continents.

SriLankan's strongest presence is in East and South-East Asia; it is the largest airline with services to the Maldives, and India is its top destination in terms of seat numbers. In May 2014, Sri Lankan became a member of the Oneworld alliance to improve and expand its overall route network. This development should allow Sri Lankan to actively target and sell additional markets that were previously beyond their network reach.

SriLankan Airlines currently operates a fleet of 24 Airbus aircraft, with 11 Airbus widebody aircraft on order. The aircraft on order are reported to be predominantly for replacement rather than expanding the existing fleet. Sri Lankan's oldest aircraft are its Airbus A340s with an average age of 17 years and a total fleet average age of 11 years. Deliveries of Airbus A330 aircraft are expected to continue through 2015 and A350s are anticipated from 2016 onwards continuing to replace their older aircraft.

Since 2005, SriLankan has consistently been loss making on an EBITDA basis, although its operating margin has varied considerably. In FY2013/14 the company incurred an EBITDA loss of LKR 29billion, which represents an operating margin of -24%. Like its network size, total revenue has experienced strong growth from 2009 with an 18% average annual growth rate, however operating costs have continued to outpace revenue growth. The re-fleeting should improve financial performance with improved efficiency gains going forward.

Prospects for route network expansion are noted in North Asia, especially China. Flights to China have increased strongly since commencing in 2011 and load factors on Chinese routes were recently reported to exceed 90%. In December 2014 a fourth Chinese destination to Kunming was added to Sri Lankan's network.

Following the presidential elections in January 2015, a new board was appointed for SriLankan. One of the first actions of this board was to publicly state that the company was essentially insolvent, and that the new board had been given a clear mandate to achieve profitability as soon as possible. A restructuring plan has been drawn up as a result, and this is currently being reviewed by the Government. Although details have not been released yet, it is understood that this plan is likely to include route rationalization; where loss making routes are cut from the network and an increased focused on medium haul and high load factor routes to China and the Far East. It was also noted by stakeholders that this restructuring plan may also consider future merger opportunities with Mihin Lanka (see below).

Mihin Lanka

Mihin Lanka is a hybrid/ low cost focused airline based in Colombo; which, in similarity with SriLankan Airlines it is also owned by the Sri Lankan government. The airline operates scheduled flights from its hub at BIA to a number of cities in the Indian subcontinent, the Gulf

States and Southeast Asia. The airline code-shares with its partner SriLankan Airlines on several routes. Currently Mihin operates just four aircraft and is not expected to grow significantly in the short to medium term.

Since its launch in 2007, Mihin Lanka has undergone many phases of change including ownership, a focus on secondary markets, as well as product and business model changes towards its current position. Mihin Lanka is known to be loss making, although losses are much smaller in magnitude and margin than those at SriLankan.

The board of Mihin Lanka is shared with the board of SriLankan Airways, and was recently replaced as noted above. A restructuring plan for both airlines has been drafted by the Board and is currently under review by the Government. This is understood to have considered a number of potential options for Mihin Lanka going forward, including potential merger with SriLankan due to the sizeable areas of overlap/competition between the two firms on some routes.

Foreign Airlines

- **Gulf Carriers**

Sri Lanka has benefited from the strong growth of carriers such as Emirates and Etihad as they have grown their fleet and global networks. Aviation in the Middle East is a booming market which is just 4-5 hours flight time away from Sri Lanka. During the last 5 years the Middle Eastern market has nearly doubled in size, for example the UAE's airports have grown to over 100m passengers in 2014 up from 55m in 2009.

The benefit of this growth to the Sri Lankan tourism market is clear; services to their respective hubs enables these airlines to connect Sri Lanka to hundreds of worldwide destinations. Historically Sri Lanka was more reliant on airlines with much smaller networks and this growth in connectivity has supported Sri Lanka's ambitions for greater inbound tourist volumes. For example European visitors to Sri Lanka have shown significant growth despite the levels of direct service to European airports showing limited growth. These airlines' networks have supported the growth to 'new' markets that otherwise Sri Lanka would not have been able to reach.

Table 5.2 Middle East Carriers Fleet and Orders

Airline	Aircraft Type	Fleet today	Firm Orders
Etihad Airways	Narrowbody Jet	29	44
	Widebody Jet	67	160
Emirates Airline	Widebody Jet	215	291
Qatar Airways	Narrowbody Jet	41	50
	Widebody Jet	83	155
Turkish Airlines	Narrowbody Jet	165	179
	Widebody Jet	53	30
flydubai	Narrowbody Jet	37	97
Total		690	1,006

Source: ACAS 2014

This rapid expansion is set to continue as these airlines continue to expand their fleets to serve the growing demand for aviation in the region and to connect many other regions together via their transit hubs. These airlines' volumes are forecast to double again in the next 5 years providing potentially greater traffic opportunity for flights to Sri Lanka.

Other Carriers

- **Indian Carriers**

Today Sri Lanka is served by four Indian carriers operating a mixture of business models from full service airlines such as Jet Airways with previous growth driven by low cost carriers. Despite the number of Indian carriers now flying internationally and their bases in many Indian cities, SriLankan Airlines still dominates flows to this region with an 80% share of seats. However the future growth of these Indian carriers is expected to be significant, they have hundreds of typically narrow body aircraft on order which will be well suited to serve the Sri Lankan market.

- **Chinese Carriers**

Like India, this market is dominated by capacity from SriLankan Airlines (five destinations). However, China Eastern commenced operations in 2010 adding Kunming services, reducing the reliance on SriLankan Airlines. Their Kunming hub will enable connections to many other Chinese markets. Again, China is forecast to undergo strong growth in air traffic and future services from other carriers/hubs should be expected to serve the large outbound tourist market that is also being targeted by many other countries.

- **European Carriers**

Despite European visitors being one of the largest markets, relatively few airlines actually serve Sri Lanka direct since most of these passengers travel on SriLankan airlines or route over other hubs such as those in the Middle East. Historically Sri Lanka was served by as many as four European airlines but only British Airways, with a service via Male remained in the market in 2015. However, this service ceased operations in April 2015 whilst Austrian Airlines are due to commence services to Colombo in October 2015.

5.2.6 Bilateral Agreements

Sri Lanka has negotiated bilateral agreements with many countries ranging from fully 'open skies' agreements to markets constrained by frequencies. For example the services to the UK are limited to 14 services per week which are in this instance predominantly used by SriLankan Airlines serving London 9 times per week[19]. Other countries such as Thailand and the US have open skies agreements with Sri Lanka. In the case of Thailand services are offered by airlines from both countries but no airline has yet to take up services between the US and Sri Lanka, even without any bilateral limits.

Bilateral air service agreements are common between countries, and are typically used to balance interests between enabling growth in visitors by permitting increased number of foreign airlines to land, while protecting a home airline by controlling competition in its home market. For example, limits to the number of flights that Etihad is permitted to operate into Sri Lanka serves to provide SriLankan Airlines with breathing space on similar/competing routes, albeit at the expense of limiting potential growth to Sri Lanka's inbound tourism markets.

In recent years Sri Lanka has been taking steps to increasingly liberalise its bilateral agreements, and stakeholders suggest that this is likely to continue going forward. According to the Ministry of Civil Aviation a committee has been formed to review advantages of progressing to a fully open skies policy at BIA, while a recommendation for open skies at MIA has already been submitted to the Government. This has been recommended at MIA in an attempt to increase demand to use the airport, while a more liberal approach is being considered at BIA in order to facilitate continued tourism and visitor growth going forward. While it is understood that this may result in increased competition for SriLankan Airlines, it is hoped that their restructuring plans will serve to reduce their exposure to highly competitive routes.

[19] Note: This services has now been reduced to a daily service

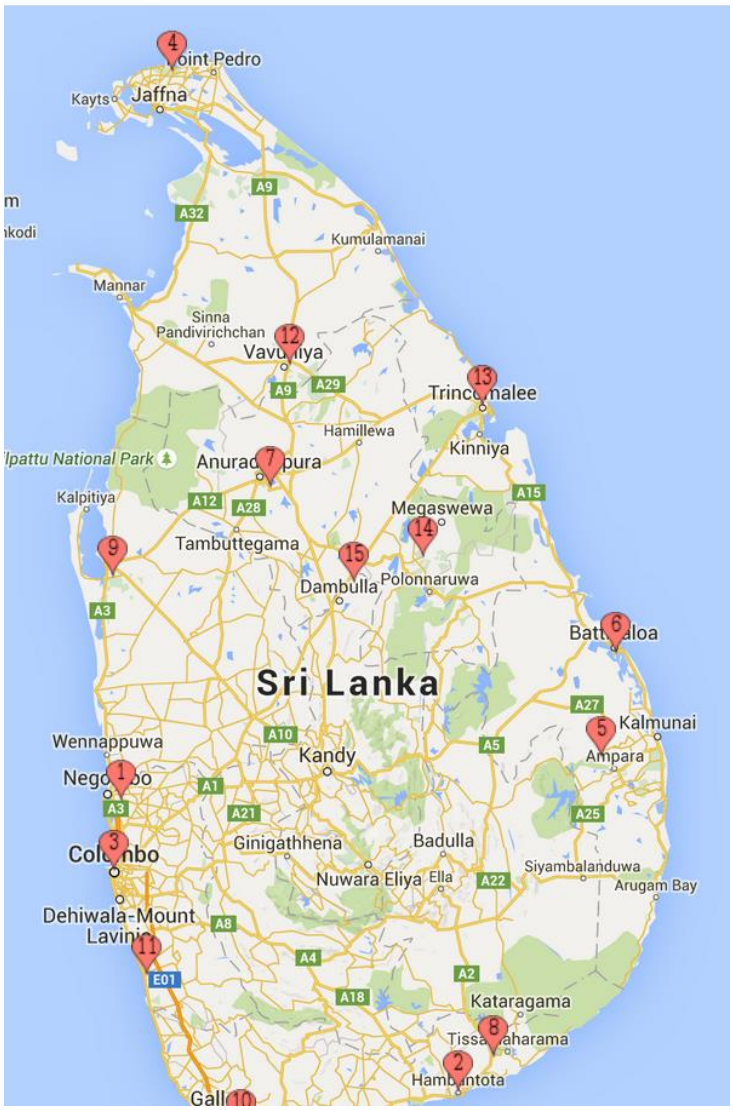
5.3 Domestic Aviation

5.3.1 Domestic Airports

Despite its relatively small land area, Sri Lanka has a large number of airports which theoretically serve the domestic aviation market at present. These range from BIA, from which a small number of domestic flights are currently operated; through to airports that are little more than landing strips.

The 15 airports considered as part of this Study are shown in Figure 5.7, and are each described in more detail in Annex 2.

Figure 5.7 Map of Sri Lankan Airports offering domestic aviation capability



Source: MapCustomiser/ICF

With the exception of Mattala International Airport (which was only commissioned in 2013), the remaining 14 domestic airports were previously owned and operated directly by the Sri Lankan Government, before being transferred to Civil Aviation Authority, and subsequently AASL. AASL is therefore the nominal owner and operator of these airports. However, these airports were all utilised by the Sri Lankan Air Force during the country's civil conflict, and the SLAF remains the de facto operator of the majority of these airports to the present. Exceptions to this are:

- BIA; where operations are split between both AASL and SLAF;
- RMA; where operations are split between AASL and SLAF; and
- MIA; where AASL is solely responsible for the airport's operation.

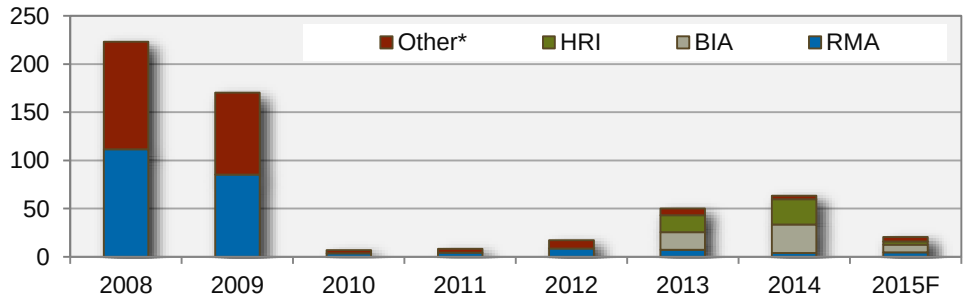
Although SLAF is the operator of most of these airports, civilian aviation services run by private sector operators are nevertheless in operation, albeit on a small scale. This includes scheduled services between Colombo and Sigiriya, Trincomalee, Kandy, Batticaloa, Dickwella, Koggala and Bentota operated by Cinnamon Air, a private company, and scheduled services run by Helitours, the commercial arm of the SLAF, run between Ratmalana, Trincomalee and Jaffna. In addition, there are a number of companies offering plane and helicopter charter services to a variety of airports, such as Cinnamon Air, Helitours, Simplify, and Air Senok.

A number of issues were raised by stakeholders regarding civilian use of the domestic airports that are fully operated by SLAF. These include administration issues regarding civilian access to the airports which means that passengers need to register and book tickets several days in advance, reducing flexibility. This also results in high cost and poor availability of transfer services from the airports to nearby towns, as taxi services have reduced access to the terminal buildings.

5.3.2 Domestic Aviation Market

The domestic aviation market accounted for nearly 60,000 airport passengers in 2014; split approximately evenly between BIA and MIA as shown in Figure 5.8. This counts passenger arrival and departure at both airports so the total number of trips is only half the amount shown. This was a significant increase from 2010-2012; when domestic passengers averaged fewer than 10,000 per year. However, it is a decline from 2009 and previous years, when domestic traffic was in excess of 80,000 passengers per year.

Figure 5.8 Domestic Passengers at Sri Lankan Airports, 2009-2014 (thousands)



*MIA = Mattala, BIA =Bandaranaike RMA = Ratmalana *Other = Domestic volumes at other airports that do not report data*
Source: AASL statistics

A number of factors have caused these varying levels in domestic traffic. During the civil conflict, surface access to several parts of the country was not possible, in particular road access between Colombo and Jaffna being considered unsafe. Domestic aviation was therefore used to provide an 'Air Bridge' between the two cities. Once peace was declared within the country the majority of air traffic switched to roads, resulting in the very significant decline in aviation traffic in 2010.

More recently, the opening of Mattala airport acted to increase domestic passenger numbers once again, as both SriLankan Airlines and FlyDubai began using the new airport to stop off long haul flights either before arrival or after departure at BIA, offering domestic flight tickets for spare capacity on the planes. However the costs of offering this service, particularly for SriLankan were found to be too high for demand levels, and as a result this routing was suspended shortly after the presidential election in January 2015. Domestic passenger numbers for 2015 are therefore expected to show a significant year on year decline in 2015.

The current very low levels of domestic passengers are of significant importance for this Study and have been attributed to a number of reasons during stakeholder consultations including:

- **Limited numbers of scheduled seats currently available**. Lack of availability or awareness of flights is believed to deter a number of potential customer groups from considering domestic flights including tour groups, who require services to be bookable 6-8 months in advance. Awareness of available services is low, particularly amongst tourists who arrange their holidays independently and through the internet.
- **High perceived cost of Cinnamon Air tickets**. Cinnamon Air charge passengers an average of US$200 per sector for domestic flights. This is notably higher than average fares currently offered by Helitours and previously offered by SriLankan Airlines under their Air Taxi line (now closed), but reflects required revenue to recover actual costs on the service. In contrast, the fees charged by Helitours are widely understood to cover variable operating costs of the service only, and the service therefore represents a subsidised travel mode by SLAF. Owing to the cost differential, Cinnamon Air tickets are often seen as overpriced; deterring potential customers from using the service.
- **Limited tourist demand for certain domestic routes**. One of the busiest domestic routes is currently between Colombo and Jaffna, which Helitours dominate through their charter service. However, there is limited demand for tourists to fly this route as tourist infrastructure in and around Jaffna is limited. In contrast, the south coast; which has traditionally been the most popular region for tourism in Sri Lanka, has recently seen a significant improvement in its connectivity to Colombo through the opening of the Southern Expressway. Looking forward, increased tourism developments in other areas of the country (for example Passikudeh, Kuchchavelli etc.) are expected to result in increased demand for domestic travel options such as aviation.

5.3.3 Domestic Carriers

As noted above, there are a number of carriers who currently offer small volume scheduled or charter services using planes, seaplanes or helicopters.

5.3.3.1 Helitours

Helitours, the commercial arm of the SLAF, offers schedule and charter domestic aviation services to civilians on board its existing air craft. The operation was established in 1972, but grew substantially during the civil conflict at the request of the Government to provide an air bridge for civilians between Colombo and Jaffna.

Helitours currently provides a number of scheduled services, with its most regular being a triangular trip from Colombo to Trincomalee to Jaffna and back to Colombo three times per week. Less frequent services are also offered to Batticaloa and Ampara. Availability on flights may be impacted by requirement for seats to transport military personnel. A number of key issues regarding the services provided by Helitours were noted by stakeholders as having a significant impact on the market for domestic aviation in Sri Lanka:

- Ticket prices offered by Helitours are substantially below those offered by private sector operators due to the requirement to cover operating costs only, and Helitours are therefore seen by some stakeholders as offering a public/social service providing subsidised routes that some passengers may not be able to afford otherwise. This has impacted the development of the market for domestic services by private operators as they are unable to compete effectively. In particular, this was cited as the main reason for FITS Air to suspend its scheduled domestic passenger services and focus on provision of pilot training services instead. Going forward, SLAF have noted that they will only continue to run the service as long as they are requested to do so by the Government.
- Helitours' operations do not appear to be fully compliant with civilian aviation regulations. While the CAA theoretically imposes the same regulatory controls over Helitours as for private operators, in reality stakeholders identified a number of areas where this does not

occur, including processes for modifying aircraft, flight manoeuvers and flight records. This puts the status of Sri Lanka's Civil Aviation Authority at risk of non-compliance with international procedures and standards.

- The Government is currently considering establishing a joint venture between Helitours and SriLankan Airlines to offer increased domestic aviation services on a commercial basis. Two new 40-seater aircraft would be procured for the services, and flights would be operated under SriLankan Airlines codes out of BIA. This would mean that it would be possible for international tourists to directly book their onward domestic services at the same time as their international flights to Sri Lanka; substantially increasing the visibility of the services to tourists. Likely routes for the new venture would be to Jaffna, the Cultural Triangle and the east coast (Batticaloa, Ampara or Trincomalee). While it is possible that such a service may stimulate demand for domestic aviation (by addressing the lack of scheduled flight capacity and low international awareness as discussed above) within Sri Lanka, this could be at the expense of private sector market development if pricing is set at below cost recovery levels.

5.3.4 Cinnamon Air

Cinnamon Air is a private operator that launched in July 2013 to offer domestic flights to tourists travelling between Colombo, Kandy, the Cultural Triangle, the east coast and the south coast. The company has 2 amphibious planes capable of landing on both land and sea and 1 traditional wheeled plane, and all three have passenger capacity of 8 persons. Cinnamon Air operates out of a small domestic terminal that it has constructed at its own cost at BIA, and the company transfers passengers arriving from international destinations to BIA from the main terminal to their own building. Cinnamon has a codeshare and joint marketing agreement with SriLankan, although noted that they have received less business than expected via this channel, and as a result have invested heavily in their own online marketing in addition.

Overall, Cinnamon's performance since launch appears to be weaker than anticipated. The company notes that it requires passenger load factors of 75% in order to breakeven and that they are currently achieving under this level. In addition, it was noted that while using larger planes would result in lower seat costs per passenger, demand levels are currently insufficient to fill planes larger than their current 8 seat capacity.

With regards to routes, Cinnamon Air noted that their dominant route is currently to the East Coast (Batticaloa), while previously Kandy was the most popular. Stakeholders attributed the shift to the increased use of the train as a transport option from Colombo to Kandy by tourists. Sigiriya was cited as the airport most suitable for tourists visiting the Cultural Triangle, but it was noted that the condition of the landing strip is now so poor that Cinnamon's amphibious aircraft are unable to land without incurring significant damage.

5.3.5 Air Taxi

SriLankan Airlines previously operated a domestic subsidiary; Air Taxi, offering domestic flight services on seaplanes. This ceased operations in 2013, and the codeshare agreement between SriLankan and Cinnamon Air was signed to replace the offering. Lack of financial viability was cited as the reason for the service closing down; with the high operating costs associated with float planes given as being a major cause of the lack of profitability.

5.3.6 Other domestic carriers/charter operators

While Cinnamon Air and Helitours account for the majority of domestic seats currently available, a number of other domestic carriers and operators are also known to be active within the market:

- **FITSAir** – FITSAir is a domestic aviation operator that previously offered scheduled and charter services from Ratmalana Airport to various locations around Sri Lanka, with its primary service being a scheduled route to Jaffna. The company ceased all scheduled

services in 2014, citing an inability to compete with pricing by Helitours, and is now focussed on provision of pilot training services.

- **Simplifly** – With a fleet of planes, helicopters and sea planes and in operation since 2004, Simplifly is a private operator offering charter services and sightseeing tours around Sri Lanka. The company does not run a scheduled service.
- **Air Senok** – A domestic operator offering charter helicopter services for a variety of purposes. The company does not run a scheduled service.

5.3.7 Private Jet Market

Another market segment that makes use of Sri Lanka's airports is the private jet market which accounts for a small share of total demand. This market typically transports small groups of people around the country or inter-regionally. Typically this market serves the high end business/leisure traveller as well as public or government bodies.

In Sri Lanka this market segment is very small today and not a segment that is forecast to impact the domestic aviation forecasts owing to the nature of the typical passenger and operating characteristics of these carriers.

6 Aviation Activity Forecast Methodology

6.1 Introduction

A crucial component of this Study is to forecast likely future aviation demand at both the international and national level for Sri Lanka for the period 2015-2035. This is in order to inform estimates of future demand on domestic airports within the country, and, as a result, to assess the viability or otherwise of development of a shortlist of these domestic airports.

This chapter describes the basis and approach by which the international and national level forecasts are undertaken, building on the current state and strategy analysis undertaken in Chapters 3, 4, and 5. This Chapter includes:

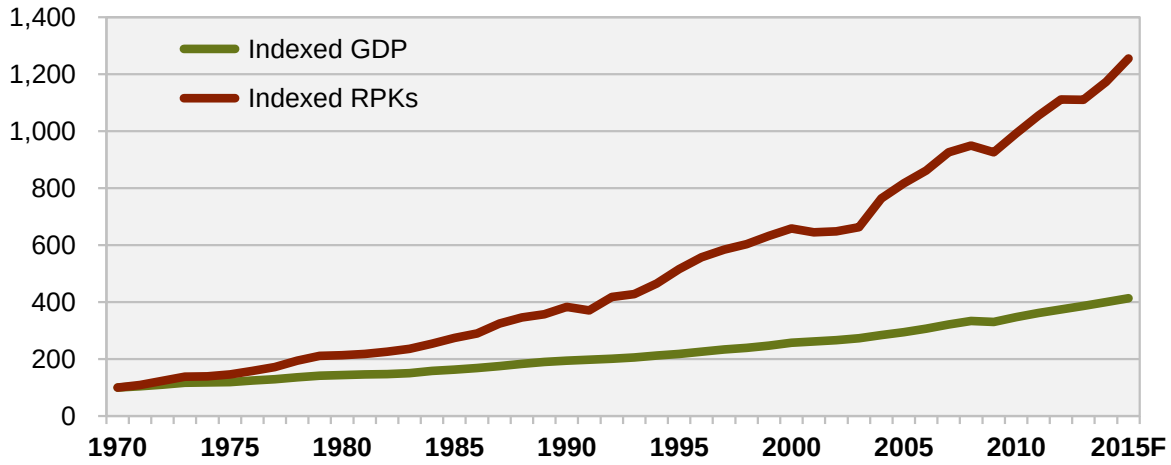
- Analysis of drivers of aviation demand at the global and national level
- Analysis of constraints on aviation demand at the global and national level
- Discussion of potential forecasting methodologies and recommendation of approach for this Study.

6.2 Drivers of Aviation Demand

6.2.1 Drivers of demand at the global level

Aviation demand is growing globally. Passenger numbers more than doubled to 2 billion in the 20 years to 2005 and were set to reach 3.3 billion in 2014, as shown in Figure 6.1. The latest forecasts from IATA show that in the next 20 years global demand for air travel will reach over 7 billion air passengers annually. Worldwide, there are now millions of first generation flyers. In particular, economic expansion in Asia (e.g. China & India) is making air travel accessible to these large new markets. China is forecast to overtake the United States as the largest air travel market in the world by 2030 reflecting a global shift of aviation activity towards Asia.

Figure 6.1 World Traffic (RPKs) and Global GDP Growth, 1970-2015F (Indexed 1970 = 100)



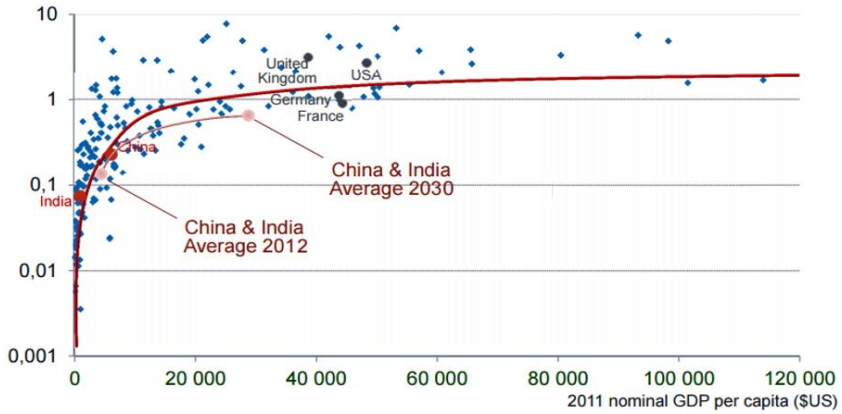
Source: ICAO; International Air Transport Association ("IATA") Forecast as of December 2014; International Monetary Fund ("IMF"), World Economic Outlook, April 2015.
RPKs 'Revenue Passenger Kilometres' is a measure of passenger demand and the distance flown

The key demand drivers typically considered for aviation demand at the global level include:

- **Economic / Living standards (e.g. GDP per capita)**

Global economic conditions which link to living standards are known to have a clear link to the propensity to fly of a nation. Countries on a growth curve up to approximately US$20k per capita are known to see correspondingly faster increases in the number of flights taken per person per year as shown in Figure 6.2. Countries such as China and India are expected to see a significant rise in their average propensity to fly by 2030.

Figure 6.2 Propensity to Fly, Air Trips per Capita



Source: IMF, ACI, ICF Analysis

- **Population and demographics**

Population and demographics trends are a primary driver of aviation demand, and this is expected to continue over the next 20 years. Whilst some countries such as Japan and Russia are expected to undergo population decline, other nations, such as those in Asia or Africa are set for relatively rapid population growth. Typically, the countries with growing populations will also have younger populations, and these working-age groups are more likely to fly than those over e.g. 65.

- **Price and availability**

Price and availability is also a driver of aviation demand; the unit cost of air travel has fallen by a factor of four since 1950; enabling part of the significant increase in passenger numbers over the same time period. Over the past decade price declines have started to bottom out; largely due to an increasing oil price. Looking forward, the downward trend in the real cost of air travel is expected to resume, though at a much slower rate of around 1% per year due to the addition of new longer-range, more efficient mid-size aircraft.

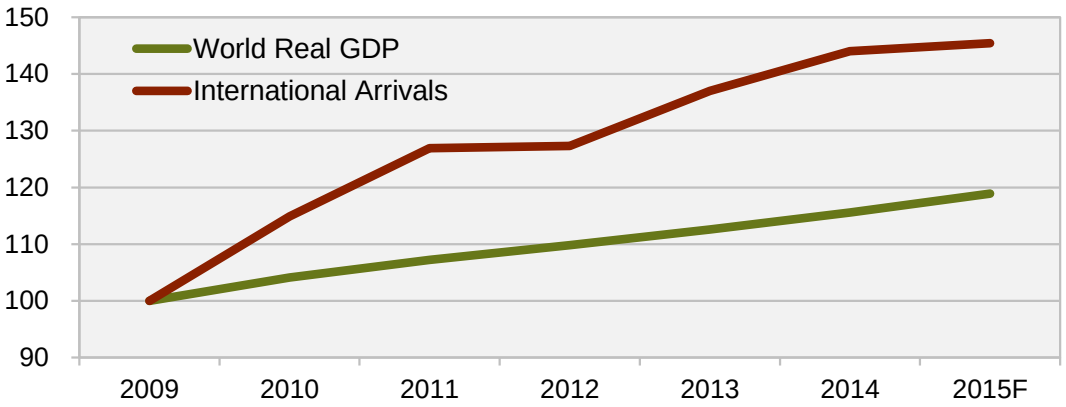
- **Regulation and Policy Controls**

Air market liberalisation can be seen to have had a smaller, but still important impact in the growth of aviation passengers in recent years. Going forward, greater liberalization of air markets will be required by governments around the world to support future demand growth as well as enabling greater freedom within the skies for efficient navigation.

- **Sector Trends**

Leisure demand is responsible for the largest segment of air travellers and recent travel patterns have shown that international visitor arrivals have grown consistently faster than GDP. For example, over the last 5 years international tourist arrivals have grown by over 40% whilst the global economy has grown by approximately 20% (see Figure 6.3).

Figure 6.3 International Arrivals and Global GDP Growth, 2009-2015F (Indexed 2009 = 100)



Source: International Monetary Fund ("IMF"), UNWTO

6.2.2 Drivers of demand at the national level

A number of drivers of demand specifically impacting aviation demand to/from individual countries such as Sri Lanka must also be considered. These include:

- **Availability and Price**

The availability of aviation services, particularly direct services, to a location from an origin market is a primarily determinant of demand for that service. For example it is no coincidence that recent growth in Chinese visitors to Sri Lanka has coincided with new services from airlines to/from China and Sri Lanka. Looking forward, increasing services to China would be likely to fuel additional demand. For example, just 4 destinations are served in mainland China from Colombo today (Kunming, Shanghai, Beijing & Chengdu), these airports all generate over 30 million passengers per year. In 2014 there was a further 4 airports in China with over 30 million passengers and in the next 20 years there likely will be over 25 airports of this size, just in China. Growth on established and new markets will offer significant potential for future market growth.

It is also important to consider the extent to which demand today is 'turned off' by the absence of direct services from some of the origin markets. When considering holiday options, the time spent travelling is an important factor, alongside price, product, regularity of service etc. therefore, the availability of direct services is likely to stimulate demand further. It is important to remember that not all destinations have enough demand to justify direct services. However, the fact that the direct flights are so much more attractive also suggests that when tourists choose between destinations, they are likely to pick the ones with direct service (subject of course to relative price differences).

- **Market Development**

Demand for aviation services to a country will also be impacted by specific drivers impacting the traveller types within a country's aviation demand. As discussed earlier, the three main categories of demand for aviation to Sri Lanka are tourists, Sri Lankan nationals and transfer passengers, and as described in section 3.3.1, changes to numbers of tourist arrivals to a country are likely to be heavily influenced by the country's location on the tourism development lifecycle. As concluded above, Sri Lanka is likely in the relatively early phases of this cycle, and therefore its tourism market growth (and therefore aviation demand by tourists) is likely to continue to be strong in the short to medium term.

- **Airline Strategy**

Clearly the home carrier's strategy can have an impact on the aviation market, some carriers have grown the size of their network reach well beyond the local catchment by operating large hub structures to provide additional feed to their network. This can result in an operation significantly bigger than would be forecast by only considering the local traffic opportunity.

- **Other factors**

Several other factors will be considered in the demand forecast section, these relate to the competitiveness of aviation in relation to other modes of transport. For example, rail often provides an effective competitor to air travel, also the local geography where mountain ranges or water bodies may impact journey times by surface transport and can be significant.

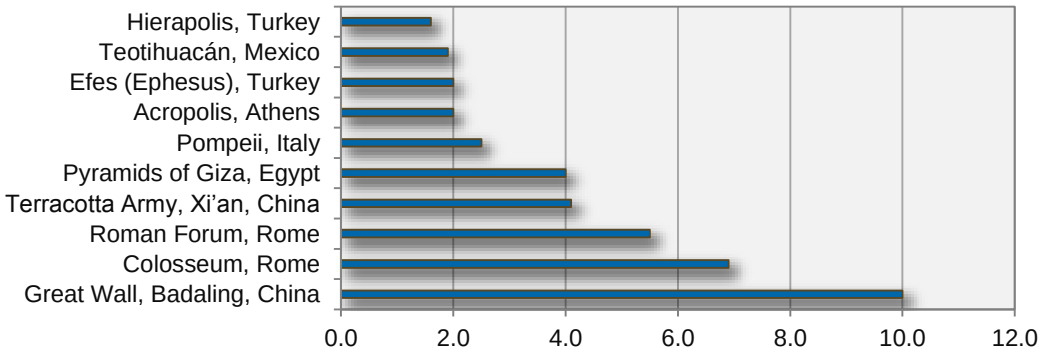
6.3 Constraints for Aviation Demand

In addition to the overall drivers of aviation demand at both the international and Sri Lankan level, any long term forecast for Sri Lanka must also consider factors which have the potential to constrain aviation demand. In this instance this is most likely to be supply side factors relating to overall tourism development, as discussed below

6.3.1 Physical Capacity of Tourism Sites

The physical capacity of natural or historic sites may require the imposition of restrictions on the number of visitors in order to protect the physical fabric of historic sites or the visitor experience. If imposed, this could serve to deter potential visitors from coming to a country if it will not be possible for them to visit key tourism destinations. However, as Figure 6.4 shows, some historic ruins sites are able to receive a substantial number of visitors, given proper infrastructure, organization and care for the historic buildings. Further, even if some sites do reach saturation point, this can be used as an incentive to further develop other attractions within the country in order to minimise the risk that the saturation leads to reduced visitor numbers to the country in total.

Figure 6.4 Most Visited Ancient Ruins



Source: Travel & Leisure 2014

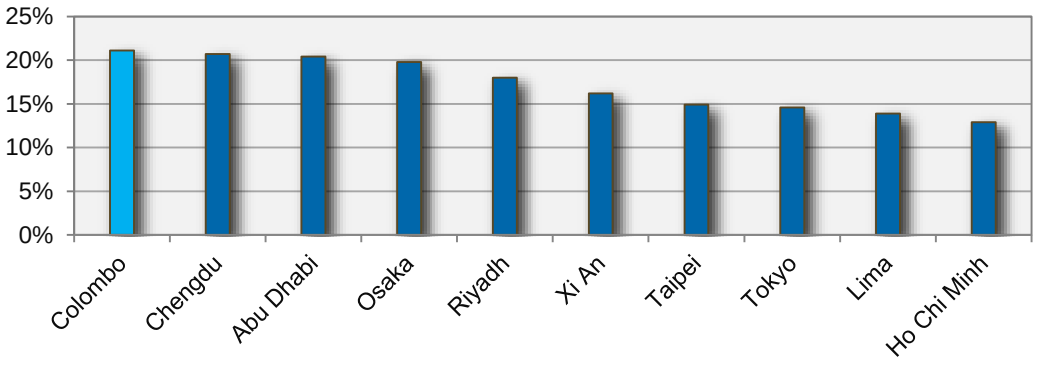
6.3.2 Hotel Supply

Hotel accommodation availability can provide a limit to tourism growth when high levels of occupancy are achieved and demand is lost to competing markets as a result of the lack of supply or increased price due to supply constraints. At present, occupancy levels in Sri Lanka are approximately 72% in the formal sector. This is in line with other tourist markets and is a typical annual level given the year round travel patterns (peak season occupancy levels may average around 90% whilst off peak levels drop to ~ 60%).

Accommodation supply growth rates have been strong, particularly in Colombo where hotel supply growth from 2009-2015 average over 21% putting Colombo ahead of other fast growing markets such as Chengdu and Abu Dhabi to become the fastest growth destination

city during the time period[20], as shown in Figure 6.5. At present, it is therefore unlikely that hotel supply is acting as a constraint to growth.

Figure 6.5 Fastest Growing Cities by International Overnight Visitors, 2009-2015 CAGR



Source: 2015 Global Destination Index

Looking forward, information gathered by the SLTDA and various hotel associations provides insight to the short term development of hotel infrastructure. As Table 6.1 shows, 3,800 rooms are expected to be added to the formal sector in 2015, a 20% increase over the 2013 level. Of this, the vast majority (59%) of new capacity is being added in the South Coast region.

Table 6.1 Formal Sector Hotel Rooms Today (2013) and Planed for 2015

	2013 Actual	2015 New	Share 2013	Share of New	Share 2016
Colombo City	3,149	579	19%	15%	19%
Greater Colombo	2,896	145	18%	4%	15%
South Coast	5,639	2,266	35%	59%	39%
East Coast	588	312	4%	8%	4%
High Country	815	120	5%	3%	5%
Ancient Cities	3,115	245	19%	6%	17%
Northern Region	21	180	0%	5%	1%
All Regions	**16,223**	**3,847**	**100%**	**100%**	**100%**

Source: SLTDA

Beyond 2016, limited visibility and uncertainty around construction projects and their timings, mean that the likelihood of hotel supply acting as a constraint to growth is hard to determine. However, it should be noted that the future development of the East Coast, with different weather patterns to Colombo and the south, may lead to a 'smoothing' of year round demand and ability for the country to support higher levels of average annual occupancy.

6.3.3 Aviation Supply

As an island nation Sri Lanka is almost exclusively dependent on aviation for tourist arrivals, and as a result the development of tourism within the country is more heavily linked to the aviation sector than countries with land borders. This is particularly crucial during the development phase of a tourism cycle since significant pent up demand may exist but is not physically able to get access to the market due to limited aviation supply. As shown in Table 6.2, Sri Lanka's tourist growth of 1m over a 5 year period is lower than that of some

[20] 2015 Global Destination Index

comparator markets, but should be considered as high considering that none of the growth was attributable to land borders.

Table 6.2 Market Growth Comparisons

Market	Tourist Growth	Period	Share of growth due to land borders
Cambodia	2.3 M	5yr (09-14)	62%
Burma	2.5 M	7yr (07-14)	53%
Laos	3.0 M	9yr (06-14)	90%
Sri Lanka	1.0 M	5yr (09-14)	0%

Source: SLTDA, Various Tourism Authority reports

Looking forward, the extent to which aviation supply is likely to limit tourism and aviation demand growth can be assessed through the consideration of 3 factors:

Airport Capacity

Over the long term, without any investment in an airport's facilities, capacity constraints may result in limitations to flights. However, airports are typically able to plan and phase their developments to ensure they are able to provide the appropriate capacity to accommodate the rising demand.

In Sri Lanka, it is not expected that the air passenger market will be constrained by airport capacity. While BIA operates with a single runway, analysis suggests there are numerous methods through which the airport's capacity can be increased, including upgrades/changes to infrastructure and operations, expansion and construction of new terminals, runways, and taxi ways, and adjustments to Air Traffic Control procedures. For example, Mumbai currently operates with one available runway and generates over 35 million passengers or 280,000 aircraft movements per year compared to Colombo's current 7.7million passengers and under 60k movements per year. Further discussion around the airport and operations will be discussed later in this report.

Bilateral Agreements

International air services between countries operate under the terms of bilateral air service agreements (ASAs) which typically specify which airlines can operate between the two countries, the routes carriers can operate (e.g., which airports they could fly to), whether carriers can offer beyond services (fifth freedom rights), limits on the frequency and capacity (seats) that the carriers can operate, and on occasion, controls over airline pricing. As a result, the development of international air service is as much a function of government policy as it has been a function of commercial considerations.

Over the last two decades there has been a trend towards the liberalisation of the international air market as governments recognise the benefits of allowing market forces to determine the development of air services. For example greater levels of air service are seen to facilitate:

- **Tourism/Trade**: Greater trade and tourism flows as a result of increased air service
- **Aviation Sector**: Additional economic activity in the aviation sector is generated by the servicing, management and maintenance of the additional air services
- **Catalytic Impacts**: Facilitates growth and productivity in the general economy by increased trade, business activity and greater personal productivity

However the benefits to the wider economy may need to be balanced with the interests of a home flag carrier; in this instance SriLankan Airlines. For example increasing levels of competition may serve to weaker the home carrier's performance through over capacity and the associated reduction in average fares and hence profitability.

Whilst aviation traffic in Sri Lanka has grown strongly in recent years and the Sri Lankan Government has being moving towards a more liberalised air service market, there are still many restrictions in place with certain markets. For example, whilst some carriers in the

Middle East have recently been granted additional traffic rights, it is unclear whether they will be able to continue growing their capacity at such a rate in the future. A summary of the latest Air Service Agreements is provided in the appendix.

It is our understanding that a committee will be appointed to provide greater clarity and future guidance through its main stakeholders (the CAA, Government, and SriLankan Airlines). The main considerations being discussed relate to the following:

1. Protecting SriLankan Airlines
2. Reflecting an 'unlevel playing field' since some of the carriers in the Middle East are perceived to receive significant financial subsidy. Other markets such as China were assumed to be less of a threat despite their Government's support and strong current growth rates
3. Providing enough inbound demand growth to support the wider Sri Lankan economy

In the longer term it appears that Sri Lanka will continue to move towards greater market liberalisation whilst SriLankan Airlines is likely to undergo a restructure to ensure it can compete in a more competitive and liberalised air travel market. As a result, it is considered less likely that bilateral agreements will play a significant role in limiting aviation demand over the forecast period.

Aviation Supply

Due to Sri Lanka's reliance on air travel for access, airline performance, and its subsequent impact on aviation supply, is also a factor that should be considered, as poor airline performance on a route is likely to lead to reduced services.

SriLankan Airlines currently accounts for approximately 50% of arrivals into the country, and as a result there is a strong reliance on the national carrier to be able to provide for the future growth of the Sri Lankan travel market. However, in the short term it is understood that the upcoming restructuring of the airline will lead to a period of consolidation and potential route cessation. Unless other carriers are able and allowed to growth their capacity in the Sri Lankan market, significant growth in aviation supply may therefore be restricted.

In the longer term, it is assumed that SriLankan Airlines will return to a period of growth more in line with the total market in future years, and thus that this potential constraint of growth will be limited.

6.4 Determining the appropriate passenger forecast approach

Multiple forecasting methodologies exist and are commonly used in airport forecasting. These are typically qualitative and/or quantitative and include:

Table 6.3 Forecasting Approaches

	Methodology
1	Applying Historical Trends
2	Strategic Simulation
3	Regression (Econometric) Analysis
4	Market Driver Analysis - Tourism

Source: ICF

Choice of forecast methodology varies from project to project and depends on data availability as well as forecaster preference. In addition to utilising one of the forecast methodologies listed above, an airport forecast also requires expert judgment to ensure that results are reasonable and both in line with broad industry trends as well as sensitive to market particulars.

Method 1: Applying Historical Trends

Historical analysis of an airport's passengers and service is vital to understanding a market's future. Historical trends (as measured by compound average annual growth rates) provide an indication of how a market will behave in the future. For example, an airport that experienced 5% average annual growth over the last 10 years could be assumed to then experience 5% average annual growth over the next 10 years. However, changes to the market environment may cause future traffic growth to differ widely from observed historical patterns.

This is the simplest (and least rigorous) methodology discussed in this paper. Applying historical growth rates requires the fewest external inputs and does not consider potential alterations to the market environment.

Method 2 - Strategic Simulation

Strategic simulation involves creating airport-level forecasts from the bottom-up (i.e. route-level). An event is categorised (strategic, external, or contingent) and then the effect of the event on a route's traffic is analysed. Depending on the type of event, there are multiple methods for determining its impact. Examining historical route data and observing the experience of other routes under similar conditions are two of the most helpful methods. . By summing over all routes, an airport level forecast is created.

This approach is typically only suitable for short term forecasting where detailed carrier performance and trends/plans are known.

Method 3 - Regression (Econometric) Analysis

An econometric approach is useful for quantifying the importance of the underlying economic factors (such as GDP and fares) that influence aviation demand. As discussed earlier in the report, air traffic has grown in parallel with the prevailing economic activity.

Economic activity, in turn, is measured by GDP, which is the broadest indicator that measures the impact of economic, demographic and income factors. For shorter time horizons the relationship between passengers and GDP can be measured using an equation where GDP and fares are the explanatory variables and passenger numbers is the dependent variable and the elasticities (i.e. the coefficients of the explanatory variables) are maintained constant over the forecast horizon.

Once statistically significant relationships between passengers and the independent variables are determined, exogenous forecasts of the independent variables (such as a GDP forecast from the IMF/EIU,OECD etc.) can be used as inputs into the equation. The result of the equation is then the forecast of future passenger traffic.

Econometric analysis is one of the most accepted forecasting methodologies. However, econometric analysis by itself is often limited by a lack of historical data, an inability to quantify all of the factors that may influence air traffic levels, and the unavailability of objective forecasts for certain explanatory factors. Furthermore, an econometric relationship between historical passenger levels and various explanatory factors may not hold constant over the forecast period.

This is often the case for immature or rapidly developing air travel markets where the income elasticities often decline over time. In such cases, the study team applies a judgmental approach to the regression results and adjusts future elasticities to reflect likely changes in market characteristics. In general, it is expected that global traffic will level off to a rate equal to that of world GDP growth as markets reach maturity, i.e. an elasticity of 1.0.

Given the data available and long term nature of these forecasts, this approach is deemed the most suitable for the high level Sri Lankan aviation market forecast

Method 4 - Market Driver Analysis – Tourism

When an airport's traffic is driven by an innate characteristic of the market, it is often useful to use a forecast of the underlying driver to predict passenger traffic. The most common example of such a market driver is when an airport is the gateway to a tourist destination. In such cases, growth in the region's tourism industry spurs aviation traffic growth. The addition of new hotel and resort facilities induces growth in visitors, which in turn encourages airlines to add more service. For example, the corresponding annual increase in passengers to the construction of one additional hotel room can be calculated using historically observed assumptions.

Although extremely informative, tourism market driver analysis is often difficult to implement due to the weakness of historical data on the tourism industry and the lack of a coherent tourism development plan. If a country/region does not have a detailed tourism development plan which specifies the number of new hotel rooms to be opened each year, then growth in the local tourism industry cannot be used as a forecast model input. Even when a development plan or master plan is available, judgment must often be applied regarding the realism of government forecasts and targets, and the ability of private developers to deliver the forecast additions of capacity.

This approach will be used to provide an overlay to the econometric based forecasts to ensure reasonableness in the early years where market data is available at a suitable level of detail. It will also provide guidance on the development of different regions within Sri Lanka for the tourism and hence potential aviation market.

Other forecast approaches such as Trip Generation and Airport Choice models exist but are not appropriate for the level of forecasting undertaken for Sri Lanka

6.5 The Forecast Approach

For this study two distinct forecast models have been developed:

- **National Demand Model**

This model forecasts national aviation demand for the whole of Sri Lanka for the period 2015-2035 and is discussed in more detail in Chapter 7.

- **Domestic Aviation Model**

This model forecasts regional aviation demand within Sri Lanka for the period 2015-2035 and is discussed in more detail in Chapter 8.

7 Sri Lankan National Aviation Forecast

In this chapter the study presents its passenger forecasts for the period 2015-2035. This includes a review of the assumptions made by the study, the baseline of current demand that has been assumed and a presentation of the projections for the period mentioned above. In the initial outputs the study has prepared passenger forecasts for the three main components of aviation demand within Sri Lanka; tourists, Sri Lankan Nationals, and Transfer passengers.

Sections of this Chapter therefore include:

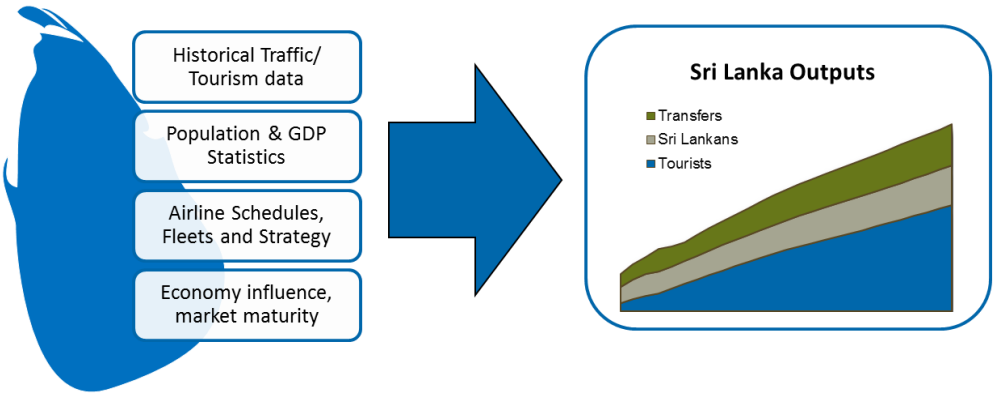
- Discussion of methodology selected for the forecast
- Discussion of assumptions used for the forecast
- Discussion of the current state of international aviation in Sri Lanka used as the basis of the future forecasts
- Presentation of the forecast by passenger type
- Discussion and evaluation of results, including comparison with alternative forecasts

7.1 Methodology

As discussed in Chapter 6, a regression (econometric) analysis, overlaid with guidance from a tourism market analysis will be used to forecast national aviation demand for Sri Lanka.

As shown in Figure 7.1, the national demand model is primarily driven by longer term macroeconomic relationships with some bottom up inputs used to inform the short term.

Figure 7.1 National Demand Overview



Source: ICF

7.2 Assumptions

7.2.1 Assumptions for Top-Down Econometric Forecasting

Economic Outlook

The current short term outlook for global GDP is broadly positive with growth rates for mature/advanced economies increasing to over 2% in 2015-2016 following 4 years below this level (see Table 7.1). This is largely driven by forecasts for the Euro Area improving as the area continues to emerge from a sustained downturn. The emerging economies such as China and India will continue to drive global growth rates, although their growth is expected to slow from the 6-10% rates seen in the last 5 years.

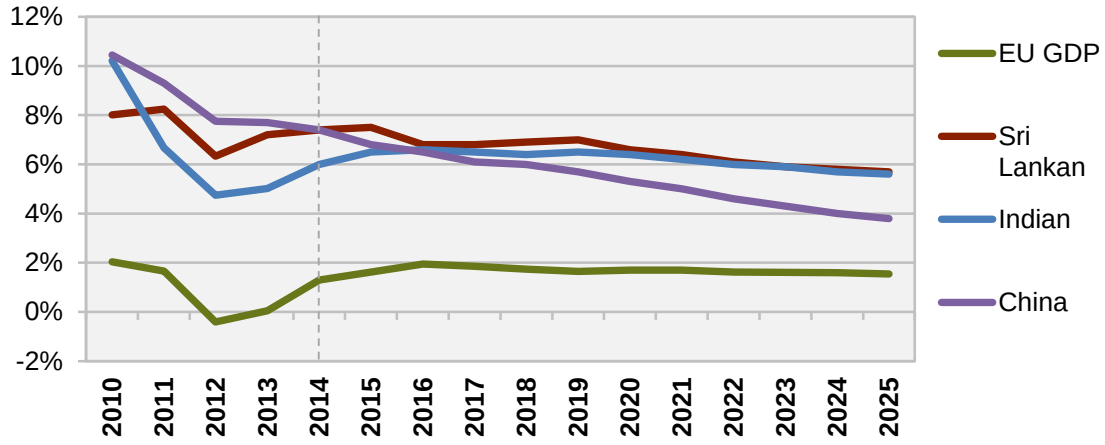
Table 7.1 Real GDP Growth rates, 2010-2016

Region / Country	Historical					Forecast	
	2010	2011	2012	2013	2014	2015	2016
World	**5.4%**	**4.2%**	**3.4%**	**3.4%**	**3.4%**	**3.5%**	**3.8%**
Advanced Economies	**3.1%**	**1.7%**	**1.2%**	**1.4%**	**1.8%**	**2.4%**	**2.4%**
United States	2.5%	1.6%	2.3%	2.2%	2.4%	3.1%	3.1%
Euro Area	2.0%	1.6%	-0.8%	-0.5%	0.9%	1.5%	1.6%
United Kingdom	1.9%	1.6%	0.7%	1.7%	2.6%	2.7%	2.3%
Emerging/Developing Economies	**7.4%**	**6.2%**	**5.2%**	**5.0%**	**4.6%**	**4.3%**	**4.7%**
Developing Asia	9.6%	7.7%	6.8%	7.0%	6.8%	6.6%	6.4%
China	10.4%	9.3%	7.8%	7.8%	7.4%	6.8%	6.3%
India	10.3%	6.6%	5.1%	6.9%	7.2%	7.5%	7.5%
Sri Lanka	8.0%	8.2%	6.3%	7.3%	7.4%	6.5%	6.5%
Latin America / Caribbean	6.1%	4.9%	3.1%	2.9%	1.3%	0.9%	2.0%
MENA	5.1%	4.5%	4.9%	2.3%	2.4%	2.7%	3.7%

Source: IMF

In the longer term, GDP forecasts for Sri Lanka's key travel source markets are shown in Figure 7.2. This shows that the long term outlook for the Euro area is for growth to return to long term average levels of around 2% whilst growth in emerging economies will mature towards 4-5% by 2025.

Figure 7.2 Selected GDP Growth Rates for Key Source Markets, 2010-2025



Note: EIU (Economic Intelligence Unit) was chosen due to the length of time series data available.
Source: EIU

Global Air Traffic Outlook

For the near term the International Air Transport Association (IATA) predicts that global air traffic will continue to grow strongly, with a short term boost due to the recent reduction in fuel prices. This growth is expected to occur due to lower fares and increased numbers of routes.

This year commercial airlines will take delivery of more than 1,700 new aircraft, representing an investment by the industry of around $180 billion. Much of this growth is coming within Asia and the Middle East. Carriers such as those in the Middle East already have orders for over 700 new aircraft to be used for a combination of growth and replacing older, less efficient fleets.

Industry stakeholders such as Airbus and Boeing routinely make future traffic growth projections, and both currently expect present trends to continue with traffic forecast growing at 4-5% until the mid-2030s. The study shares these views subject to:

- A stable environment for global security;
- Continued growth in the global economy; and
- Long term fuel prices of around $100 per barrel.

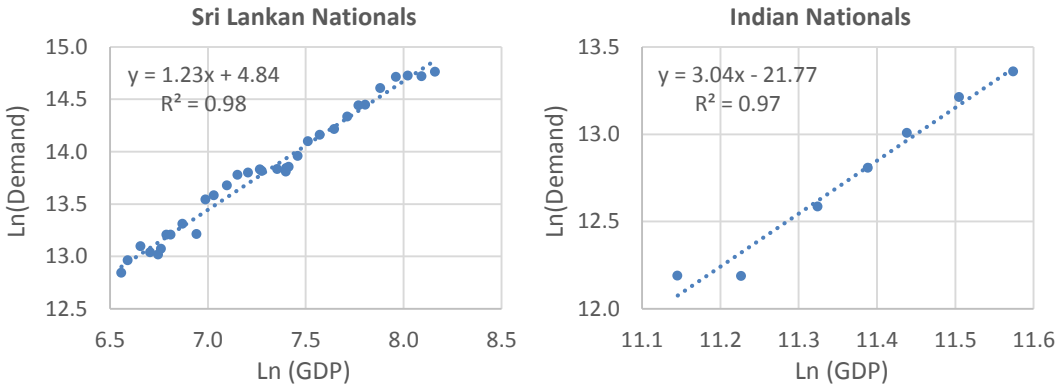
Air Traffic Market Maturity

Forecasting future aviation using an econometric approach requires assumptions regarding the future relationship between GDP and travel patterns for individual source markets. Overall, this has been built into the forecasts by assuming declining income elasticities between the two factors. Full maturity is assumed to occur when income elasticity is unity or below.

Depending on the geographical market, long-run income elasticity for maturing markets such as Europe, have historically been in the range of 1.4 - 1.8 over the last 10 – 20 years, particularly in long-haul markets. While income elasticities have declined to some extent in certain long-haul markets, full maturity remains some way off.

Elasticities for the Sri Lankan market since 2008 are considered high since much of the growth relates to pent up demand. Nevertheless there is good correlation between the source markets' GDP and growth in travel to Sri Lanka. A selection of these are presented in Figure 7.3 below whilst other market segments are included in Annex 9.

Figure 7.3 Regression Analysis for selected Markets



Source: EIU

Looking forward, market maturity for Sri Lanka's source markets is not assumed to occur until at least the mid-2020s, although European markets will then mature ahead of Asian countries. As a result, this econometric analysis suggests the potential for organic market growth (i.e. income and wealth driven as opposed to price driven) remains high for Sri Lanka and other tourism markets over the medium term.

Table 7.2 Market Maturity Inputs for main source markets

Market	Historic Elasticity	Correlation	Period	Maturity reached	Level assumed
Europe	3.3	0.97	L5 years	1.2	2025
India	3.3	0.97	L5 years	1.2	2025
China	6.5	0.93	L5 years	1.4	2025
Other Asia	3.5	0.98	L5 years	1.5	2030

Source: SLTDA, IMF

Capacity (Airport, Airline, Agreements)

As discussed above, capacity issues relating to Sri Lanka's airports, airlines and bi-lateral agreements have the potential to limit aviation growth. Our assumptions for the impact of these factors going forward are detailed below:

- **Airport** infrastructure is not assumed to be an inhibitor to growth in the Sri Lankan market. Developments relating to terminal expansion are already underway which will relieve current bottlenecks whilst future market growth will occur with sufficient time to plan to provide for these levels of demand.
- The restructuring at **SriLankan Airlines** is expected to limit some growth in the short term. However in the long run SriLankan Airlines is expected to grow again in line with total market demand.
- **Air Service Agreements** (ASAs) are not assumed to limit growth as Sri Lanka is assumed to gradually move towards an open skies policy with more countries.
- **Hotels and related infrastructure** has not been assumed as a barrier for growth. There is clear evidence that ample accommodation is being provided in the short term as Sri Lanka's presence rapidly grows on the international stage. Also supporting the evolving mix of inbound tourism will be the informal sector which has recently shown its ability to deliver significant growth in regions such as the highlands adding an estimated 1,000 beds in the last year alone.

7.2.2 Assumptions for Bottom-Up Overlay

In addition to the top down methodology already described, the study's 2015 forecast is further supported by bottom-up, supply side inputs for each of the carriers operating to Sri Lanka in 2015. This analysis is based on seat capacity information provided by the Official Airline Guide (OAG). In addition we have considered the latest route developments as discussed with AASL and SriLankan Airlines to gain greater understand into route performance by region.

The main inputs driving the short term supply side are:

- Chinese services have recently started or are cycling over the start of operations in 2014. For example Shanghai and Beijing capacity has grown whilst services to Chengdu started in early 2015
- Middle Eastern carriers have added extra services in 2015 focused on Dubai
- Indian services to Mumbai and Delhi both had significant capacity increases

The combined impact of these and other capacity changes is expected to represent the addition in seats of approximately 10% which is equivalent to around 1 million seats in 2015.

7.3 Sri Lanka's Aviation Market Demand Today

Following analysis of inbound/outbound flows to/from Sri Lanka, the study has produced a baseline of aviation demand from which the passenger forecasts for the Sri Lankan market will be projected.

7.3.1 Baseline of Passenger Types

As previously discussed, Sri Lankan airports accommodated nearly 8m passengers in 2014. As Table 7.3 shows, 33% of passengers were Sri Lankan nationals, 39% were tourists and 29% were transiting passengers. It was only in 2013 that the proportion of tourists overtook Sri Lankan nationals as the largest passenger group. Transfer flows, consisting of passengers making use of Colombo to connect to other markets rather than leaving the airport to stay in the country, are primarily travelling with SriLankan Airlines.

The market segments that were forecast are defined as follows:

- **Tourists:** Someone who travels to Sri Lanka (which is not their usual residence) for purposes of 'leisure'. This market also includes the MICE[21] market and overseas Sri Lankan nationals visiting the country for VFR[22] purposes. The VFR market segment is reflected in the bed night and regional forecasts since this market segment does not use facilities related to tourism so intensely.
- **Sri Lankan Nationals:** Those living in Sri Lanka travelling for business or leisure purposes (e.g. outbound tourism/VFR)
- **Transfers:** Those using Sri Lanka's airports to transfer between flights, they do not stay in the country

The breakdown of these market groups is provided in the following table.

Table 7.3 Split of Sri Lanka Aviation Passengers by Type, 2014

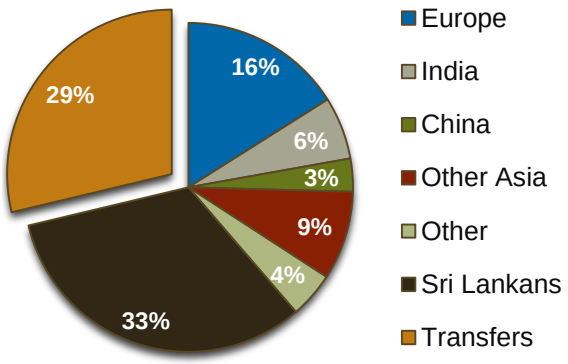
2014	Passengers	Share
Tourists	3.1m	39%
Sri Lankans	2.6m	33%
Transfers	2.3m	29%

Source: IATA PaxIS, SLTDA, AASL

7.3.2 Baseline of Passenger Source Markets

As Figure 7.4 shows, the most important source markets for Sri Lanka's tourism arrivals are currently Europe, India, China, and other Asian passengers. Looking forward, Sri Lanka will face competition from alternative tourism destinations for all its tourist arrivals, particularly from its regional peers. In total, the number of arrivals to Sri Lanka as a whole will be a function of the total demand pool of all outbound holidaymakers, as well as Sri Lanka's share of each origin market's tourists.

Figure 7.4 Sri Lankan Air Passenger Market Breakdown, 2014



Source: AASL, Sri Lankan Tourist Development Authority, IATA PaxIS, 2014

In order to inform our forecasts for passengers from Sri Lanka's key origin markets, the dynamics of each market have been considered individually with the main regions discussed below.

India

India is the individual market which provides the greatest inbound tourism volumes today. However, it is a market which still has enormous future potential, owing to the economy's

[21] Meetings, incentives, conferences, exhibitions

[22] Visiting friends & relatives

healthy outlook, the large population and growing middle class, as well as the close links between India and Sri Lanka.

As the country's economy has grown over the last two decades, a sizeable pool of relatively well-off individuals has emerged. These groups are able to spend on discretionary goods and services, including consumer goods such as cars and mobile phones, and services and leisure activities, including air travel for business or leisure. Nevertheless, since GDP per capita in India is still considerably below that in more developed countries, the potential flying population represents a smaller proportion of the total population than in for example the US.

As a result of economic growth, we expect a rapid rise in the number of outbound tourists from India in coming years and decades. This is supported by the UNWTO which predicts that outbound volumes will grow at 10-20% in the coming 5-10 years.

For the purposes of this Study, we have reviewed the share of Indian tourists that Sri Lanka currently accounts for, as shown in Table 7.4. Looking forward, we expect that the share visiting Sri Lanka will remain constant or slightly above that seen previously driven by increased direct air services between India and Sri Lanka, and continued tourism marketing efforts to support this trend.

Table 7.4 Indian outbound Tourism Volumes, 2008-2014

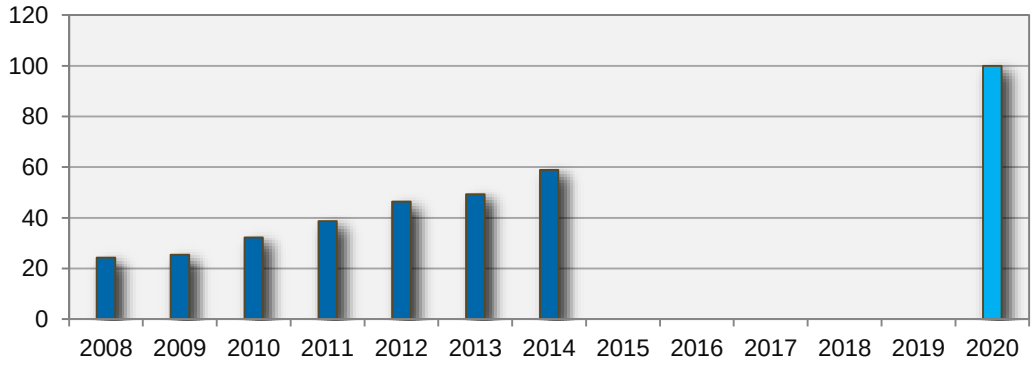
	2008	2009	2010	2011	2012	2013	2014
Indian Arrivals to Sri Lanka	85k	84k	127k	171k	176k	209k	243k
Total Indian Tourists	6.7M	6.4M	7.9M	10.6M	9.4M	n/a	n/a
Sri Lanka Share	1.3%	1.3%	1.6%	1.6%	1.9%	n/a	n/a

Source: UNWTO, SLTDA

China

Outbound leisure tourism by Chinese nationals started in the 1980s and has grown very rapidly since the late 1990s; between 1995 and 2012, outbound tourists from China increased from 4.4 million to nearly 50 million, a CAGR of 15% per annum. In 2014, this figure is estimated to have been nearly 60 million. The World Tourism Organization (WTO) forecasts 100 million outbound tourists from China by 2020 – this is another 40 million tourists per year compared to today, but equates to a relative 'slowdown' to an average of 9% growth per annum.

Figure 7.5 Historical & Forecast Outbound Tourism from China (Millions)



Source: UNWTO

At around 0.2% (see Table 7.5), Sri Lanka's share of total Chinese tourists has considerable scope to increase. However, this will occur only if the Sri Lankan tourism product is appealing to Chinese travellers and they (and their instrumental tour operators) increasingly choose Sri Lanka over other destinations. A conservative assumption would be for Sri Lanka to maintain its share of Chinese tourists compared to other markets at today's level– i.e. not gain or lose to other countries – in which case we may expect Chinese tourist arrivals to grow at 5-10% per year. However, with relatively modest increases in market share, this rate

could quite easily be significantly higher, and double digit growth, at least in the near term, could be expected.

Table 7.5 Chinese Tourism Volumes, 2008-2014

	2008	2009	2010	2011	2012	2013	2014
Chinese Arrivals to Sri Lanka	10k	9k	10k	16k	26k	54k	128k
Total Chinese Tourists	24.2M	25.4M	32.2M	38.7M	46.4M	49.3M	58.9M
Sri Lanka Share	0.04%	0.03%	0.03%	0.04%	0.06%	0.11%	0.22%

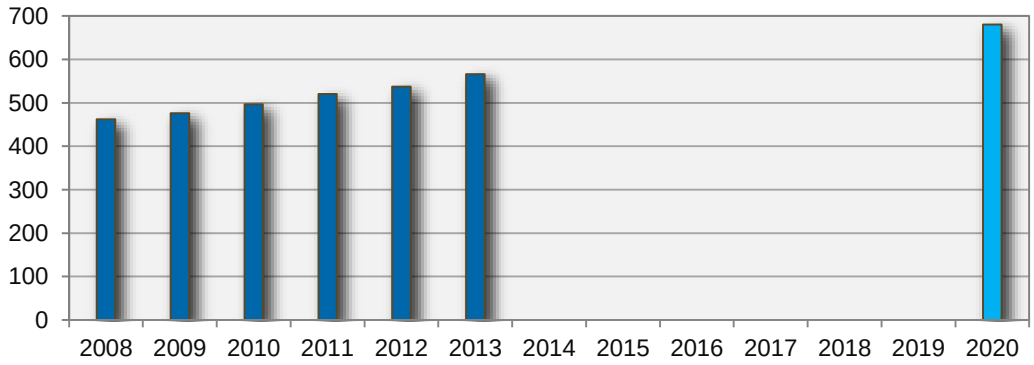
Source: UNWTO, SLTDA

Western Europe

In contrast to the rapidly growing markets described above, Europe is considered largely mature, both in terms of its economies and its tourism markets. As shown in Figure 7.6, growth in outbound tourism has recently averaged around 3-4%.

However, it should be noted that growth to countries outside Europe and North America has outpaced the market average, as travellers have ventured further afield for their holidays, facilitated by the liberalization of markets, better awareness through marketing and decreases in the cost of travel relative to incomes. These trends are seen across the largest European outbound markets such as the UK, Germany and Scandinavia.

Figure 7.6 Historical & Forecast Outbound Tourism from Europe (Millions)



Source: UNWTO

Looking ahead, growth in outbound tourism is forecast to continue to mature, as the proportion of people taking overseas trips reaches even higher levels. In theory, once all demand is satisfied, growth will be in line with population growth only, although in practice, some increases will always take place as additional trips are taken by frequent travellers.

For Sri Lanka, growth rates for tourists from Western Europe have been declining from over 20% to ~10% in the last couple of years. The most recent figures for 2015 showed this trend to be continuing as limited new air capacity was forecast to be added in the year

Sri Lanka will need to target an increasing share of this outbound market to maintain the strong growth rates it has experienced to date. Increasing its competitiveness to other competing markets should be considered a priority through marketing designed to appeal to travellers who would have not previously considered Sri Lanka. Sri Lanka has more than doubled its share of the largest source markets in Europe since 2008 (see Table 7.6) but significant potential still exists in relation to the total outbound market size.

Table 7.6 European Tourism Volumes, 2008-2014

	2008	2009	2010	2011	2012	2013	2014
W. Eur Arrivals to Sri Lanka	123k	127k	183k	211k	243k	287k	326k
Total W. Europe Tourists	178M	168M	170M	173M	175M	178M	182M
Sri Lanka Share	0.07%	0.08%	0.11%	0.12%	0.14%	0.16%	0.18%

Source: W. Europe Considers UK/German/France, UNWTO, SLTDA

Summary of Tourism Origin Market Outlooks

From the above analysis, it is clear that some markets are likely to generate considerably faster tourism growth than others for the Sri Lankan market. For example, the source markets for tourists which are the largest today (e.g. Europe, North America) are likely to be those that grow most slowly going forward. Nevertheless, their large current size means that even low growth rates will generate significant additional outbound tourists each year in the short to medium term. In addition, due to the relative novelty of markets such as Sri Lanka, growth at above market average rates may be expected in the near to medium term provided no binding constraints are in place to inhibit this growth.

The fastest growth in outbound tourism will arise from markets which are today less developed but are on a faster trajectory towards maturity. The populations in these markets currently have a considerably lower propensity to take foreign holidays, largely due to average incomes; but growing middle classes in countries such as China, India, Russia, etc. will drive strong and sustained growth in outbound travel demand going forward. Sri Lanka can reasonably expect to capture a share of this rising demand, provided suitable travel links, hotel accommodation and tourism services are made available.

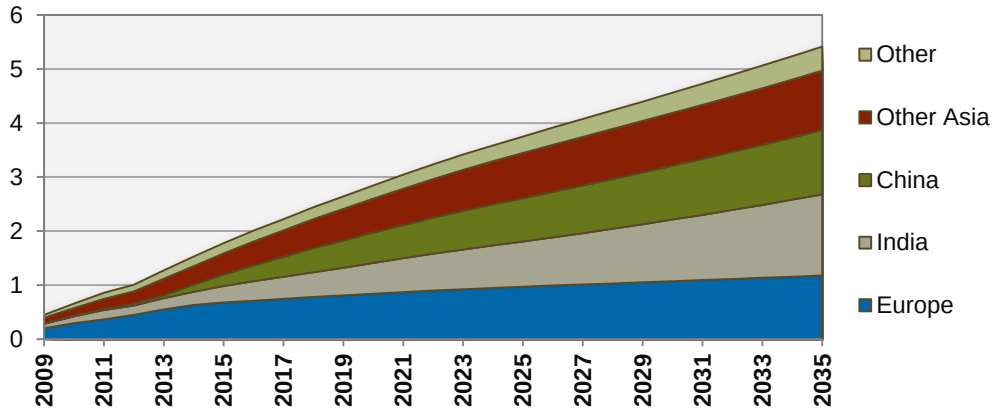
7.4 National Aviation Forecast

From the assumptions and methodology previously discussed, the study has forecast aviation demand from the three main passenger segments; Sri Lankan nationals, transfer passengers and tourists.

7.4.1 Tourist Passengers Aviation Forecast

The study forecasts that the inbound tourism market will grow from 1.5m visitors in 2014 to 5.4m visitors by the end of the forecast horizon in 2035 representing a CAGR of 6%. In the short term the very strong growth rates we are currently seeing today (>20%) are set to decline towards longer term sustainable levels with significant growth coming from markets such as China.

Figure 7.7 Forecasted Inbound Tourism (Millions)



Tourists	2014A	2015F	2020F	2025F	2030F	2035F
Europe	0.6	0.7	0.8	1.0	1.1	1.2
India	0.2	0.3	0.6	0.8	1.1	1.5
China	0.1	0.2	0.6	0.8	1.0	1.2
Other Asia	0.3	0.4	0.6	0.8	1.0	1.1
Other	0.2	0.2	0.2	0.3	0.4	0.4
Total	**1.5**	**1.8**	**2.8**	**3.8**	**4.6**	**5.4**

Source: ICF

The growth from the European market is expected to continue to slow as has been witnessed in the last few years. Overall the share of demand from established markets such as Europe is forecast to decline from 40% today to under 25% in 2035.

The Chinese market alone is forecast to grow from 54,000 in 2013 to 2.4m by 2035 representing a 44-fold increase. This is due to a combination of continuing rapid economic growth, increasing outbound tourism, as well as the enormous absolute size of the market (which means that a small increase in market share will have very significant implications for arrivals). In addition we considered that the Chinese market will expand due to increased tour operator efforts and possible switching from other regional markets. Whilst Sri Lanka is not situated as close to China as many of the competing tourism markets (e.g. Thailand, Malaysia), it will still benefit from the expected rise in independent travel and the significant orders of new aircraft from Chinese airlines.

Today inbound tourism accounts for 39% of international passengers having already grown from just 25% in 2010. This share is forecast to increase to over 50% by 2025 as tourist numbers are forecast to grow at an average of 12% in the first 5 years of the forecast. This means that visitor arrivals are forecast to reach 2.6m in 2019; as a result the previous Government's original target of 2.5m inbound tourists in 2016 is forecast to be met 3 years later than originally planned.

These forecasts were prepared in mid-2015 and the first year full year of inbound tourism demand was forecast to grow 16% from 1.53 to 1.78m. Upon finalising the report in early 2016 the actual number of inbound tourists was found to be comparable to the forecast and represented a difference of only 1%[23]. As a result of the immaterial difference no action has been taken to update the baseline.

7.4.2 Sri Lankan Nationals Aviation Forecast

The growth in demand for air travel by Sri Lankan nationals has recently slowed down with volumes reaching 2.5 million in 2014. This represents growth of just 2% since 2011 having averaged 9% in the previous decade, this relative slowdown came at a time when the Sri

[23] Actual inbound tourist in 2015 were 1.798m compared to the forecast of 1.78m

Lankan economy continued to grow at over 6%. It is assumed that growth rates will return to levels more in line with economic growth as Sri Lanka's economy continues to diversify and trade increases with regional partners. Outbound leisure volumes will also grow as average GDP/Capita increases providing further demand growth. The introduction of new services will support further economic activity and trade links to countries such as India, China and the UK which are already some of Sri Lanka's largest trade partners, new services to unserved regions will further support this. As a result future volumes from this segment are forecast to more than double by 2035 to over 5.2m.

7.4.3 Transfer Passengers Aviation Forecast

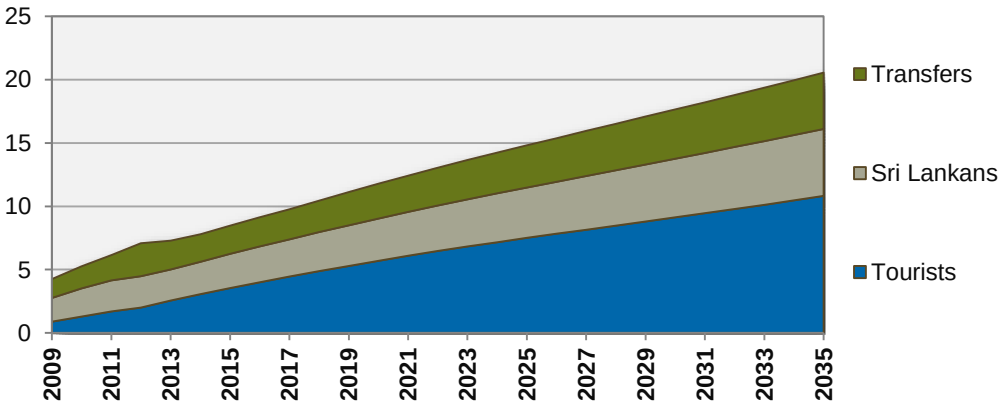
It is assumed that transfer traffic will continue to be a key traffic segment for SriLankan Airlines as the airline continues to grow and benefit from its location in the Indian Ocean providing connectivity between other world regions. However, this demand will remain a minority in relation to the airport's local O&D (Origin & Destination) demand for travel to/from Sri Lanka. Furthermore, as the local market continues to grow it will enable SriLankan to become less reliant on these transfer flows which are becoming heavily competed from carriers in the Gulf and through the addition of new non-stop services.

By 2035 the share of transfer demand is assumed to decline from over 25% today towards 22% in 2035 but the absolute demand in transfers at Colombo will still post significant growth.

7.4.4 Total Aviation Forecast

Based on the above three segments, passenger demand for Sri Lanka is forecast to grow from 7.7 Million in 2014 to nearly 21 Million by the end of the forecast in 2035, as shown in Figure 7.8. This is equivalent to a 20 year CAGR of 4.7%. These passenger numbers count arrivals and departures separately, hence the 5.4m tourist arrivals shown in Figure 7.7 becomes 10.8m passenger movements in Figure 7.8.

Figure 7.8 Forecast International Aviation Demand (Millions)



Airport Volumes	2014A	2015F	2020F	2025F	2030F	2035F
Tourists	3.1	3.6	5.7	7.5	9.1	10.8
Sri Lankans	2.6	2.7	3.3	4.0	4.6	5.3
Transfers	2.2	2.2	2.7	3.3	3.9	4.4
Total	**7.8**	**8.5**	**12**	**15**	**18**	**21**

Source: ICF

7.5 Evaluation of Forecast

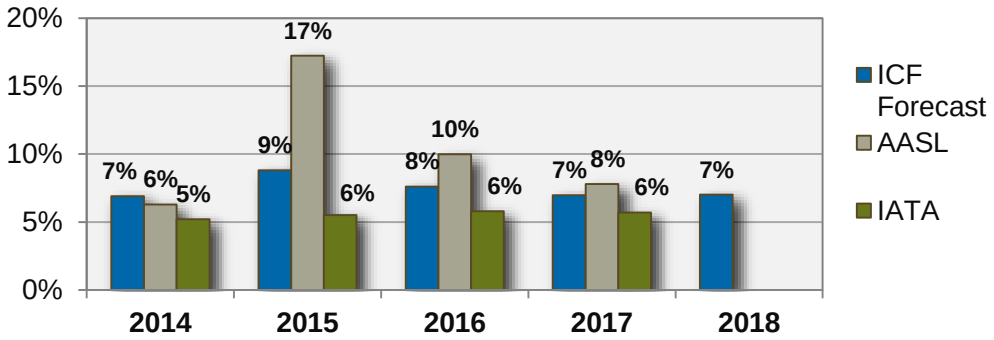
7.5.1 National Forecast: Comparisons to other forecasts

The study has compared the short term growth rates of the overall national aviation forecast to other predictions available for the Sri Lankan market including:

- **IATA**: Forecast growth rates for Sri Lanka in the short term average under 6% with the highest growth rates to markets in the Middle East and North Asia
- **AASL**: Forecast passenger volumes to increase at an average 12% driven by growth of 17% in 2015 which would represent an additional 1.3 million passengers in one year.

In comparison, the the study forecast growth rate until 2017 averages 8%. This is between the AASL and IATA predictions however these other forecasts are only available for the short term (see Figure 7.9).

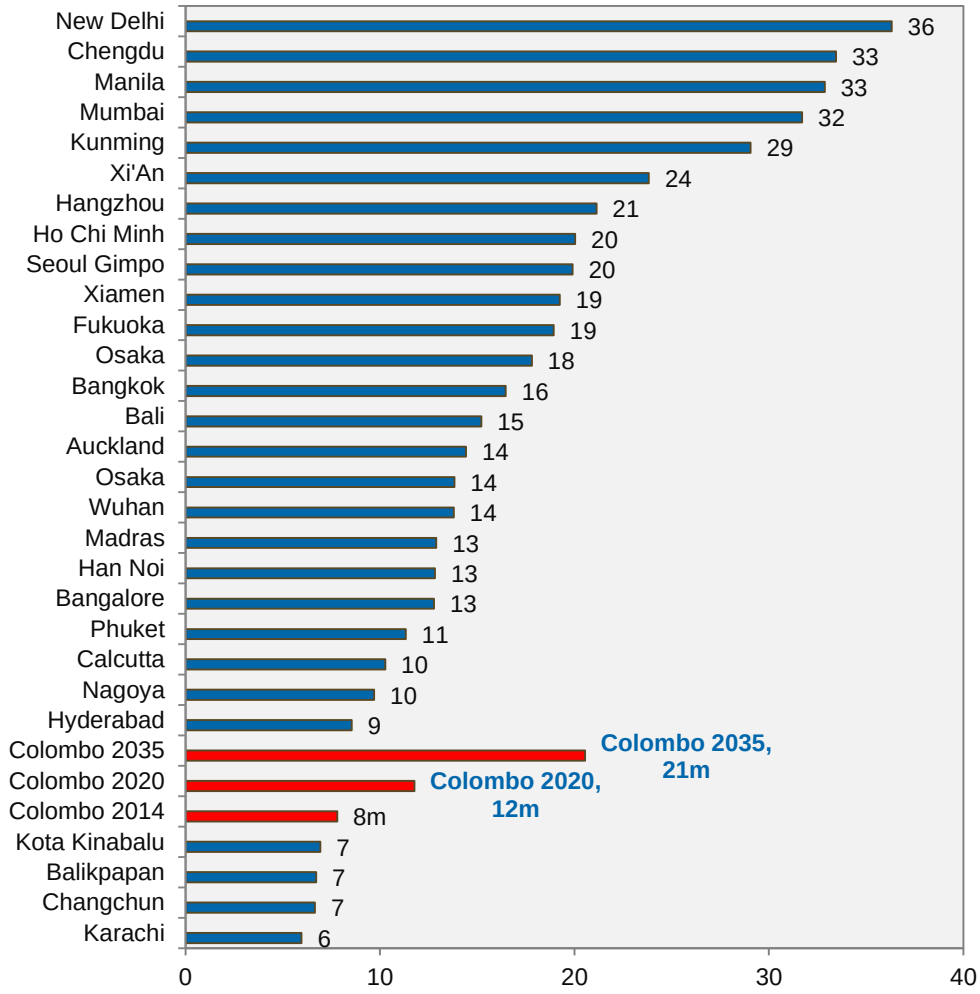
Figure 7.9 Comparison of Sri Lanka Aviation Market Growth Rates



Source: ICF

As a further comparison the study has considered the forecast volumes for Sri Lanka in relation to other air passenger markets today. As shown in Figure 7.10, other airports in Asia today (2013) with between 7-10 million passengers includes Hyderabad and Kota Kinabalu. By the end of the forecast horizon Colombo is forecast to be handling 21m per year. This would put it close to the volumes currently achieved at airports such as Xian and Ho Chi Minh today.

Figure 7.10 Sri Lanka Aviation Market Ranking 2013, Millions



Source: ACI 2013

7.5.2 Tourism Forecast: Comparisons to other Forecasts

The study has also compared its forecasts of the tourism aviation passenger component to other available forecasts, in order to provide a sense check on the projections given.

UNWTO Forecasts

The latest forecasts by the UNWTO predict that the number of international tourist arrivals worldwide is expected to increase by an average of 3.3% a year over the period 2010 to 2030 (Table 7.7). Over this time, growth will gradually slow but this is on top of growing base numbers. In absolute numbers, international tourist arrivals will increase by some 43 million a year, compared with an average increase of 28 million a year during the period 1995 to 2010.

The strongest growth by region will be seen in Asia and the Pacific where arrivals are forecast to increase by 331 million to reach 535 million in 2030 (+4.9%). Within the region, South-East Asia and South Asia are forecast to show the highest growth rates. In comparison, the the study forecasts for Sri Lanka are approximately in line with the UNWTO forecasts; with a slightly higher rate of growth than that expected for South-East Asia but slightly lower growth than South Asia.

Table 7.7 International tourism by region of destination, 1980-2030F, Millions

	1980	1995	2010	2020	2030	'10-30
World	**277**	**528**	**940**	**1360**	**1809**	**3.3%**
Advanced Economies	**194**	**334**	**498**	**643**	**772**	**2.2%**
Emerging Economies	**83**	**193**	**442**	**717**	**1037**	**4.4%**
Asia & Pacific	23	82	204	355	535	4.9%
South-East Asia	8	28	70	123	187	5.1%
South Asia	2	4	11	21	36	6.0%
Sri Lanka (ICF)	**0.10**	**0.46**	**0.65**	**2.8**	**4.6**	**5.6%**

Source: UNWTO, ICF

The future share of the large outbound markets with significance for Sri Lankan arrivals is also shown to increase, for example the share of outbound travel from China was just 0.2% in 2014 but is forecast to increase to 0.6% by 2020.

Figure 7.11 Forecasted Inbound Tourism Shares of selected Source Markets

	2010A	2014A	2020F
India	1.6%	2.0%	2.2%
China	0.0%	0.2%	0.6%
Europe	0.2%	0.3%	0.4%
Global	0.1%	0.1%	0.2%

Source: UNWTO considers total outbound market, ICF considers Sri Lankan arrivals

SLTDA Forecasts

Under the previous Government, the SLTDA issued a target of 2.5m inbound tourists by 2016 and 4m by 2020. This would have represented a 10 year growth rate of 15% (2010-2020). The study forecast is for growth that is 20% to 30% below these predictions with a large driver of this variance being in the base year; SLTDA forecast approximately 20% more demand in the the study base year of 2014 compared to actuals.

Figure 7.12 Forecasted Inbound Tourism Market

	2014	2016	2018	2020
ICF	1.5m(A)	2.0m	2.4m	2.8m
SLTDA	1.9m (F)	2.5m	3.25m	4.0m
Diff	-20%	-20%	-25%	-29%

Source: SLTDA, ICF

7.5.3 Demand Sensitivities

As with any forecast, there is a degree of uncertainty inherent in the projection, which increases for the more distant forecast dates. In the current climate (global economic uncertainty, ongoing Eurozone troubles, rising oil prices, political/government elections, etc.), even near term projections are subject to substantial risk due to exogenous, unforeseen shocks which could substantially decrease forecast growth. Similarly, if the political situation

is stable and tourism policy is supportive of continued investment in infrastructure and air services, the forecasted growth in tourist arrivals could occur sooner than currently forecast in these outputs.

Even near-term assumptions regarding new services from current published schedules are not completely reliable, and performance of new markets is not guaranteed to succeed. These factors can result in a range of more optimistic or more pessimistic outputs for the market. Figure 7.8 gives several examples of typical factors that could influence the forecast either positively or negatively.

Table 7.8 Summary of plausible negative and positive forces to consider

Negative Forces	Positive Forces
Political or civil unrest deterring tourists	More robust growth in luxury tourism segment increasing demand for top-end holidays
Lower than expected arrivals growth from e.g. China/India	Even faster growth in arrivals from China, driven by rising Middle Class
Bottlenecks in the construction and operating of planned resorts slow addition of hotel capacity	Delivery of hotel capacity arrives ahead of forecast adding more capacity sooner
One or more international carriers reducing capacity to Sri Lanka	Earlier conversion of air service development targets to Sri Lanka

Source: ICF

8 Sri Lankan Domestic Aviation Forecast

In this chapter the study presents its passenger forecasts for the period 2015-2035 for domestic aviation by region within Sri Lanka. This includes a review of the assumptions made by the study, the baseline of current demand that has been assumed and a presentation of the projections for the period mentioned above. It is assumed that the principal demand for aviation will come from the tourist segment.

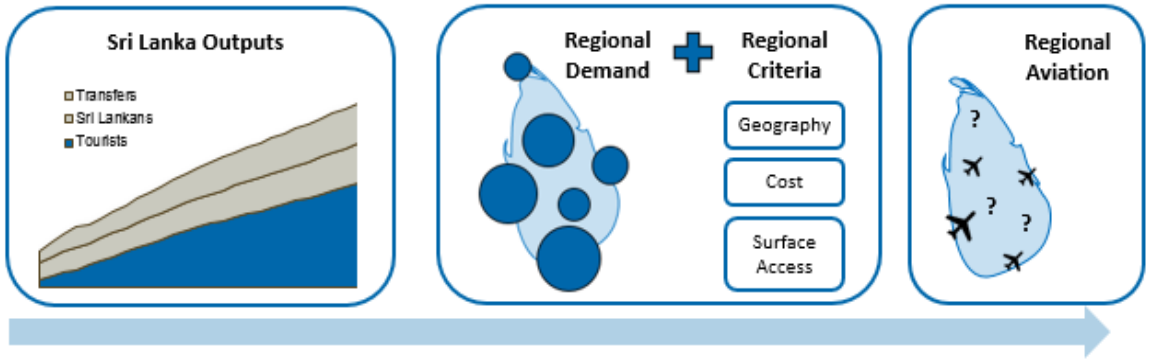
Sections of this Chapter therefore include:

- Discussion of methodology selected for the forecast
- Discussion of assumptions used for the forecast including discussion of the current state of domestic aviation in Sri Lanka used as the basis of the future forecasts
- Presentation of the forecast
- Discussion and evaluation of results, including comparison with alternative forecasts and sensitivity analysis.

8.1 Methodology

As discussed in Chapter 6, domestic aviation demand is forecast on the basis of econometric modelling overlaid by supply side inputs where available. The forecast has been created based on a regional demand model taking into account the likely levels of market penetration the aviation market could expect to achieve.

Figure 8.1 Domestic Aviation Model



Source: ICF

More specifically, the forecast of regional aviation demand has been produced according to the following process:

1. Tourist bed nights by region are forecast based on current infrastructure in both the formal and informal sectors, assumptions for regional development as described in Chapter 4, inbound tourist numbers and average length of stay by tourists.
2. Number of travel trips by region are forecast based on tourist bed nights by region and average length of stay by region
3. The number of aviation trips by region are forecast based on total trips and adjusted for trip distance, surface access options, journey times, cost of travel and local demand to provide aviation shares.

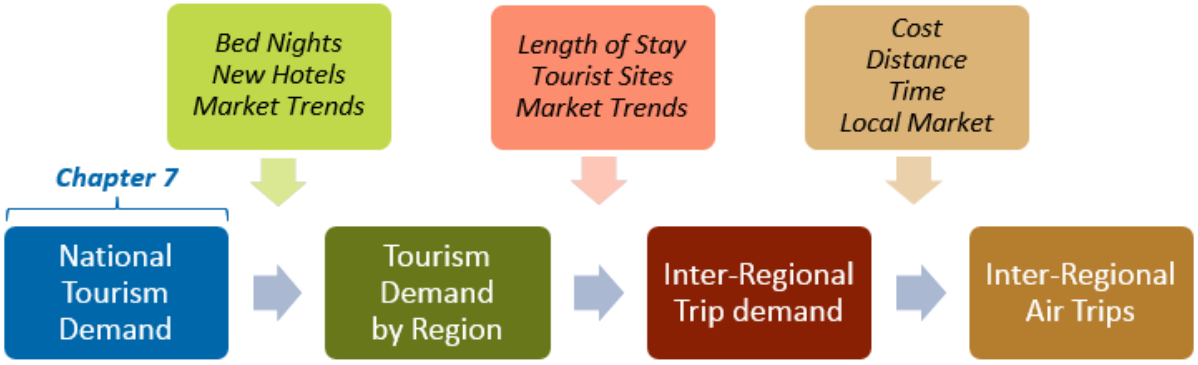
This methodology reflects the following factors:

- Forecast mix of origin markets is expected to change, resulting in evolving visitor types with different activity and length of stay preferences.

- Regional development within Sri Lanka will lead to evolving tourism destinations and varying travel patterns within the country.

The overall approach to the forecast process is shown in Figure 8.2 below. In summary the national demand is converted to demand by region which is then converted to the number of inter-regional trips within Sri Lanka. From these demand flows, assumptions relating to air travel share are used to inform the forecast for potential domestic airline activity.

Figure 8.2 Approach to Estimating Demand by Region



Source: ICF Analysis

8.2 From National Tourism demand to Inter-Regional Trip demand

In the following section the key assumptions and modelling processes that have been used to generate the individual components required for the domestic aviation forecast are detailed.

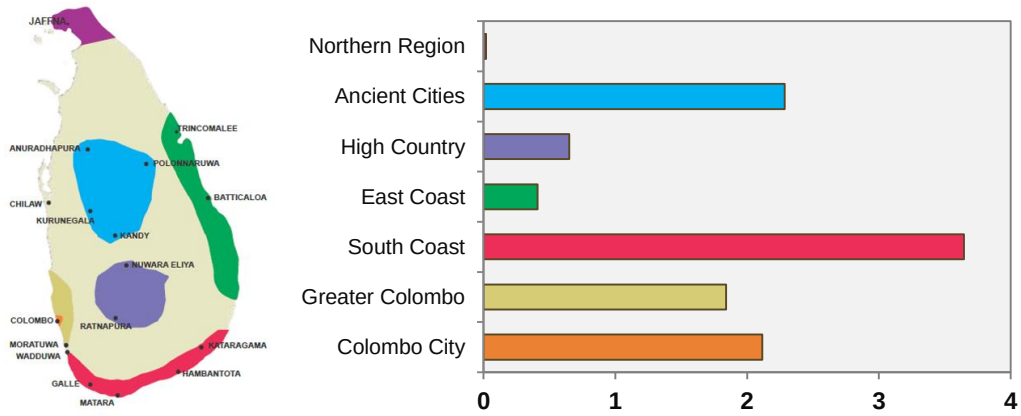
8.2.1 Tourist Bed Nights by Region

Tourist bed nights by region in the future is expected to be a function of current availability, regional development assumptions, inbound tourist numbers and average length of stay by visitors. Underlying this forecast is the central assumption that suitable supply will be provided to meet forecast demand.

Current Bed Nights by Region

The study have calculated estimates for bed nights currently available by region, as shown in Figure 8.3. This is based on SLTDA's data for the formal sector, together with the SLTDA estimate that 36% of current accommodation capacity is within the informal sector.

Figure 8.3 Estimated Bed Nights By Region, 2013 (Millions)



Note: Total is 11 million, equivalent to total tourist nights in country

Source: SLTDA, ICF Analysis

The data shows that the greatest demand for bed nights in Sri Lanka today is on the South Coast, accounting for nearly 4 million bed nights in 2013 or 35% of total nights spent in the country by tourists. Colombo City accounted for 2 million bed nights which is comparable to the Ancient Cities as well as those visiting the coastal and surrounding area around Colombo. This data highlights the lack of development and relatively small market sizes to markets on the East Coast and the North. For example the demand to the East Coast is estimated at just 4% of total tourist nights in the country or one tenth the size of demand for the South Coast and its surrounding area.

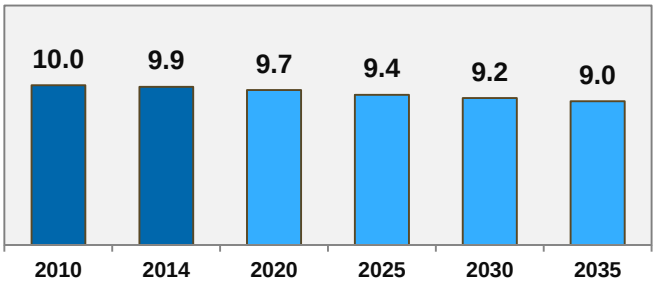
Forecast Trip Length

In the future the average trip duration is forecast to decline modestly. This is a result of the evolving mix of passengers with a larger share from Asia who already spend less time in the country compared to other markets such as Europe today, for example:

- Europeans typically spend 13 nights in Sri Lanka on average
- Indians typically spend 7 nights
- Chinese spend around 8-9 nights

As the visitor mix varies going forward (as described in the previous Chapter), average trip length is forecast to decline from 10 in 2014 to 9 by the end of the forecast, as shown in Figure 8.4.

Figure 8.4 Average Nights per Tourist spent in Sri Lanka



Source: SLTDA, ICF Analysis

Forecast Total Tourist Bed Nights

Combining the inbound tourist volumes with the evolving length of stay provides the forecast of total bed nights in the country. This is forecast to increase from 15 million in 2014 to 49 million by 2035 whilst inbound tourists increase from 1.5 million to 5.4 million in the same period.

Table 8.1 Tourist Volumes and Bed nights forecast

Airline	2014	2035	CAGR 2014-2035
Inbound Tourists	1.5M	5.4M	6.2%
Avg Nights in country	9.9	9.0	-0.4%
Foreign Bed Nights	15M	49m	5.7%

Source: SLTDA, ICF

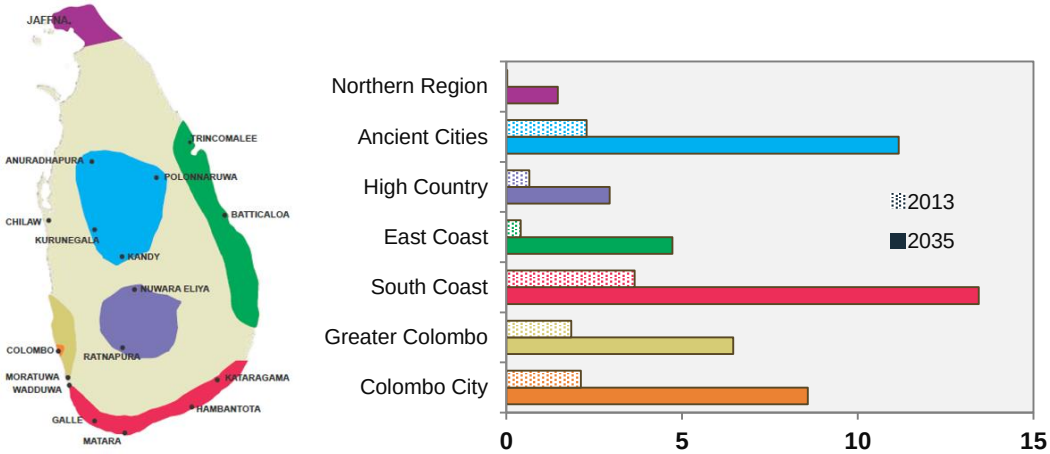
This means that in the forecast period the total bed stock in the country will need to increase more than threefold assuming similar occupancy levels are attained close to today's levels. Assuming this demand is met through the formal hotel sector (which has typically 120 beds per establishment); this would represent approximately an additional 1,000 establishments across the country.

Given the recent hotel developments discussed with the SLTDA for the hotels being developed within Colombo or the resorts on the East Coast or Kalpitiya having significantly higher levels of beds per establishment may mean that the number of individual sites required may be reduced. The informal sector is also likely to contribute to significant growth of supply but these establishments typically have much lower levels of capacity per unit.

Forecast Bed Nights by Region

The outputs of total bed nights in Sri Lanka have been combined with the current trends around regional tourism growth and the planned development of tourism infrastructure on a regional basis. This provides a breakdown of tourist nights by region for future years. The current development plans were discussed in section 6.3.2 focusing on Hotel Supply. In summary demand and supply growth is assumed to be greatest in the less developed markets such as the East Coast.

Figure 8.5 Forecast Bed Nights By Region, 2013 & 2035 (Millions)



Note: Total is 49 million, equivalent to total tourist nights in country in 2035
Baseline data from SLTDA only available up to 2013

This forecast shows that although the South Coast is expected to experience slower growth than other regions over the forecast period, it will continue to be the largest region for tourism by some margin. Furthermore, although accommodation in the East Coast is expected to increase 8-fold, compared to the 3-fold increase across the rest of the market, total bed nights for this region remain small in comparison to other areas due to its currently very small size. Finally, this forecast shows that tourist bed nights in the northern region are likely to continue to be relatively small on a national scale throughout the forecast, although significantly larger than today by 2035.

8.2.2 Number of Travel Trips by Region

Whilst the number of bed nights by region is a useful metric for tourism demand, it does not provide a breakdown of the number of arrivals/departures at a regional level. This is because arrivals/departures, and therefore trips, depends on average stay by region. For example, tourists visiting Sri Lanka typically tend to spend less time in Colombo compared to those visiting the beaches where the length of stay is often twice that of stays in Colombo. This means that for every million bed nights in Colombo there will be a significantly greater number of visitor arrivals/departures than a million bed nights on the South Coast where visitors typically stay for longer.

As a result, the study have forecast the expected number of travel trips by region by tourists for the period 2015-2035 based on assumptions around average nights per tourist by region in combination with the above forecast of tourist bed nights.

Base line of Inter-Regional Trips by Region

Based on stakeholder consultation and analysis of SLTDA data, the study has generated estimates of average trip length by region. The results are shown in Table 8.2 which highlights shorter trip lengths in the Colombo/Greater Colombo area, the longest trip length is the South Coast where holidays focus on beach stays, and intermediate trip lengths in Sri Lanka's other tourist regions.

In the future the introduction of domestic aviation alongside road and rail upgrades as well as the emerging tourist trends favouring multi stop visits results in the average stay per site decreasing slightly.

Table 8.2 Tourist Nights & Arrivals/Departures per Region

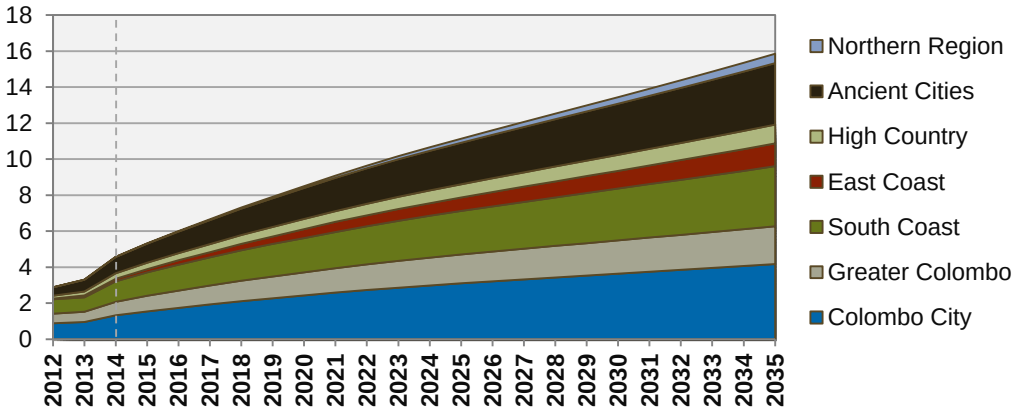
		Colombo/ West Coast	South Coast	East Coast	High Country	Ancient Cities	Northern Region
2014	Nights/ Region	2 - 3	4 - 5	3.5 - 4.5	2.5 – 3.5	3 - 4	2.5 – 3.5
	Inter-regional trips	4.1M	2.3M	0.3M	0.6M	1.8M	<0.1M
2035	Nights/ Region	2 – 2.5	4	3-4	<3	3	<3
	Inter-regional trips	12M	6.7M	2.5M	2.0M	6.9M	1.0M

Source: SLTDA, ICF

8.2.3 Forecast of Inter-Regional Trips by Region

Combining the forecast bed nights with the average length of stay by region produces the future demand profile of tourism demand on a regional level, as shown in Figure 8.6. As this shows, total inter-regional travel is forecast to grow from 4.5 million trips in 2014 to 16 million trips by 2035.

Figure 8.6 Forecasted Inter regional trips (Millions)



National Total	2014	2035	CAGR 2014-2035
Inbound Tourists	1.5M	5.4M	6.2%
Foreign Bed Nights	15M	49M	5.7%
Inter-regional trips	**4.5M**	**16M**	**6.1%**

Source: SLTDA, ICF

8.3 From Inter-Regional Trip Demand to Inter-Regional Air Trips

The above forecast of inter-regional travel by region is then used as the available demand 'pool' for domestic aviation. Forecast aviation trips are derived as a subset of this pool based on factors such as location, journey times and the associated costs of travel.

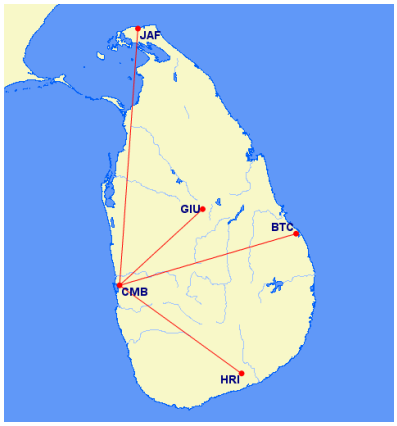
8.3.1 Factors affecting air travel choice

The following section reviews the inputs considered in generating the forecast air travel demand by region including geography and trip distances, surface access options, air travel shares, and local use of domestic aviation services.

- **Geography & Trip Distances**

Sri Lanka is a relatively small country with a surface area of just 65,610 km^2. The distance across the country from Colombo to the East Coast is just over 200km whilst the distance from the North (Jaffna) to the South (Mattala) is around 400km. The typical intra-island distances for some potential markets would range from 130km (Colombo-Sigiriya) up to a maximum of 400km to cross the whole island (north to south).

Figure 8.7 Direct Flight trip distances (km)



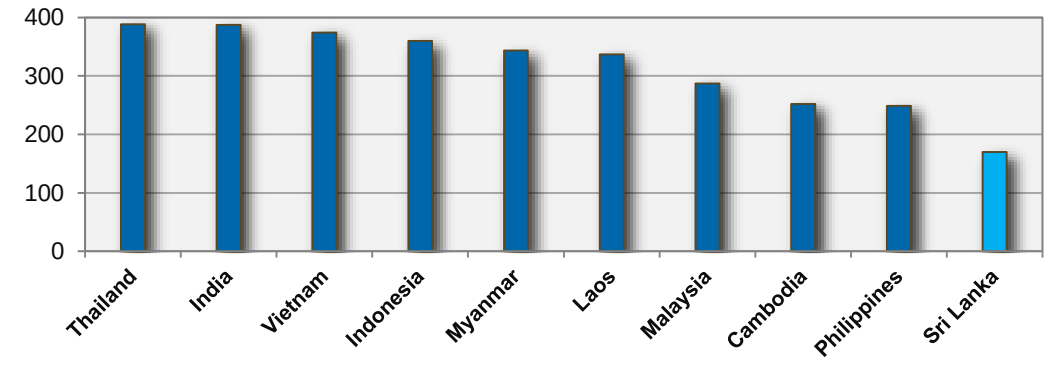
Route	Distance
Colombo-Jaffna	290 km
Colombo-Sigiriya	127 km
Colombo-Batticaloa	206 km
Colombo-Mattala	169 km
Jaffna-Mattala	405 km

Source: GCMapper, OAG, ICF

Countries of this size typically have relatively limited domestic aviation connectivity owing to the short travel distances involved, while larger countries tend to have more established domestic markets.

Assuming a small-medium sized propeller aircraft, such as the ATR model, as the most suitable option for developing air services within Sri Lanka, the study has benchmarked the typical distances of the potential domestic aviation market in the country with other domestic Asian operations today that utilise these aircraft types (see Figure 8.8). Assuming an average sector distance of 170km for Sri Lanka would put it 50% below the average of other markets today. For example ATR sector distances in Thailand average nearly 400km whilst Cambodia and the Philippines are the closest comparators at around 250km. The Philippines has a significant number of routes that cross water whilst Cambodia is a better comparator considering the domestic market is also accessible by road transport.

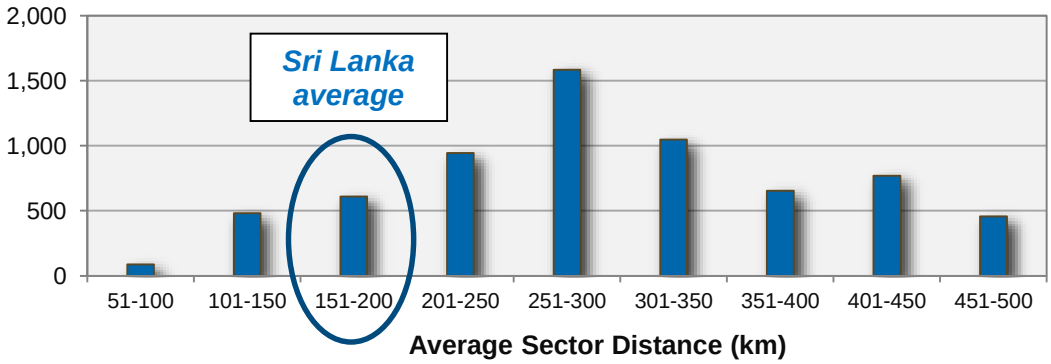
Figure 8.8 Average Sector Distance of Domestic ATR Aviation Market (km)



Source: OAG, Weekly Flights June 2015

For this analysis the average distance flown by ATRs was over 330km but within this total nearly 30% of all flights operated on sectors less that 250km long. The most common range for these aircraft was found to be between 250km and 300km which is 60% further than that assumed for the average Sri Lankan sector (170km).

Figure 8.9 Distribution of Domestic ATR Sector lengths within Asia by # of Flights



Source: OAG, Weekly Flights June 2015

This analysis highlights the limited nature of air connectivity that can be expected in a country of Sri Lanka's size. Given the small distances involved, it is fair to assume that only a small number of routes are required in order to provide suitable air connectivity.

- **Surface Access**

As discussed in Chapter 3, the majority of tourist transport within Sri Lanka is currently by road, predominantly through car hire (with or without driver), group tourist buses or public buses, depending on tourist preference and budget. In addition, a small number of tourists also travel to selected destinations by rail.

Looking forward, key factors affecting the proportion of domestic trips that are completed via domestic aviation as opposed to road and rail will be the time and cost differentials between the alternative transport modes. As discussed in Chapter 4 a number of transport development plans are currently in place that will likely affect both the time and cost differentials of each transport mode.

- **Journey times**

Whilst flying offers the potential to reduce the time spent travelling it is important to consider the total journey times that the typical tourist would experience including flight connection times as well as surface access times from the regional airport to the final destination.

Minimum connection times (MCT) are set by the airport operator and airlines to determine the minimum allowable time for passengers to transfer between flights. Airports will often permit connections between flights with as little as 45 minutes ground time and SriLankan

currently operate with these levels on many of their international flows. In reality, most connecting passengers will experience longer ground times since not all flights will coincide with this minimum. Consideration should also be given for domestic flows and further ground time may also need to be factored in for immigration requirements.

Whilst a ground transfer from Bandaranaike will typically take the traveller to their final destination, a passenger flying to a regional airport will still require surface access transport incurring further time and costs. For those markets close to the regional airport (e.g. Sigiriya) this could be minimal but for others it may be considered more significant (e.g. Yala National Park, where Tissamaharma the typical access town to the national park is >30kms away).

The total journey time upon arrival has been considered for each modal share according to the following inputs:

- **Road:** Exiting Airport + Ground Access
- **Air:** Connection time + Flight Time + Exiting Airport + Ground Access

The time saving offered has been considered for the situation today as well as in the future when further road / rail upgrades are assumed to reduce the journey times.

The current and likely future savings of air travel over road travel for journeys from Colombo to proxy destinations within each region have therefore been evaluated and are summarised in Figure 8.10. The future journey times are assumed to have all occurred by 2022, as this is the date by which each of the three key road upgrades (the Outer Circular Highway, the Central Expressway and the Extension of the Southern Expressway) are assumed to occur by. Rail improvements (not shown below) are assumed to have a phased introduction from 2020 to 2030.

Figure 8.10 Typical Journey times assumed to/from Colombo

	Road Today	Road Future	Air Assumed	Saving Today	Saving Future
South Coast	05:45	04:15	02:55	02:50	01:20
East Coast	06:45	05:15	03:05	03:40	02:10
High Country	05:45	05:15	02:45	03:00	02:30
Ancient Cities	05:15	03:35	02:50	02:25	00:45
Northern Region	09:45	08:55	03:20	06:25	05:35

Note: Journey times consider the arrival time in Colombo to arrival time at final destination. Road upgrades discussed in previous chapter for individual projects.

Source: OAG, ICF

As this summary shows, surface access to all the regions is expected to improve significantly over the next 7 years. By 2022, although travel by air will continue to be faster than surface travel to all regions, the differential is likely to have narrowed significantly, with time savings for air travel versus road to the Ancient Cities being only 45 minutes. The change in time saving for some markets is considered significant. For example, travel from Colombo to Yala currently takes over 5 hours by road, however in the future assuming the completion of the Circular Highway, and the Southern Express way this is expected to fall to around 3½ hours. This would mean that the likely time saving offered by flying would fall from around 3 hours to just 1½ hours. For a relatively time insensitive market segment this would reduce the attractiveness of flying in relation to taking a ground transfer which would also offer cost savings.

It should also be noted that many tourists have travelled long distances before arriving in Sri Lanka with flight times to Europe being over 10 hours excluding travel to and waiting time at the airport. Therefore a saving of 1–2 hours becomes even less significant on total journey times of typically over 15 hours.

Whilst the same saving offered by flying will range from around 2-6 hours depending on the region of travel within Sri Lanka, it should be recognised that these time savings will only decrease as surface access options become more competitive due to infrastructure upgrades. Also, these time savings are typically smaller than other comparable tourist markets where air travel competes with ground alternatives for tourist flows owing to the longer sector distances experienced in these other markets.

- **Journey Costs**

Estimated journey costs to each region using the different transport modes have also been estimated, as shown in Table 8.3. Road transport costs have been estimated based on the cost of hiring a private car and driver for the journey (with an average of two passengers per car), while rail transport costs are based on travel in tourist-class carriages where available (to the Hill Country and South Coast) and based on regular trains for other destinations.

Today domestic air travel is small and those tourists that do make use of it are considered high end. With the limited service and small aircraft utilised by Cinnamon Air, typical fares are understood to be approximately $200 per person per sector. In contrast, fares charged by Helitours are significantly lower, but are not assumed to represent the market due to their very low levels of market penetration and market subsidies. Neither of these fare levels are considered representative of likely fare costs for a more developed, regular air service around the country. As a result, the study has estimated illustrative seat costs for a domestic operator in Sri Lanka assuming larger ATR or Bombardier planes with 40-50 seats and taking into account average sector lengths and typical unit costs. It should be noted that depending on the operator, aircraft and airport charging structure any out turned costs could be materially different.

Table 8.3 Estimated current and future journey costs from Colombo to regions

Region name	Proxy Destination	Estimated Journey Cost (USD)		
		By road	By rail	By air
South Coast	Mattala	$64	n/a	$60
East Coast	Batticaloa	$63	$6	$65
High Country	Nuwara Eliya	$40	$17	$65
Ancient Cities	Sigiriya	$41	$5	$55
Northern Region	Jaffna	$82	$7	$75

Source: ICF
Note: Air fares are approximate estimates per seat
NB – Road transport assumed to be via private car with driver, with 2 passengers per vehicle. Pricing is based on a cost per km; hence no change despite road improvements in future.

As this shows, while rail is by far the cheapest travel option, transport by private car and driver by road (assuming two passengers per car) is currently cheaper than air transport (assuming reasonable operating costs and profit margins for air operators) by between 18% and 45% depending on the destination region. This differential is smallest for journeys between Colombo and Jaffna (the longest sector), and largest for journeys between Colombo and the High Country or Ancient Cities (the shortest sectors). It must be noted though that a large portion of tourists do not hire a private car and other means of surface transport (buses – coaches etc) are cheaper than air fares

- **Air travel shares**

Another factor that will affect the proportion of inter-regional trips that are conducted via air versus other transport modes is the level of air service; namely the availability and penetration of domestic aviation as a transport choice. Insights into this factor can be gained by analysing the share of tourists travelling by air in other comparator markets, as shown in Figure 8.11. This shows the penetration of the domestic air travel into the tourist market for several countries where high proportions of tourists travel by plane as well as specific sites within these countries to provide greater region specific information.

Figure 8.11 Comparison of Tourist Markets and Air Service, 2014

Tourist Country/Site	Domestic Seats	Annual Tourists	Seats per Tourist arrival
Cambodia	450k	4.5M	0.10
Angkor Wat (Cambodia)	450k	2.6M	0.18
Burma	3,300k	3.1M	1.07
Bagan (Burma)	481k	1.9M	0.24
Laos	713k	4.1M	0.17
Sri Lanka	12k*	1.5M	0.008

**Considers Cinnamon Air & Helitours (which carriers local Sri Lankan traffic in addition to the tourist volumes)*

Source: OAG, ICF, Tourism bodies

As this shows, the **Sri Lankan** ratio of 0.008 seats per arriving tourist is extremely low compared to the 0.1-1.1 seats per tourist arrival demonstrated in other markets. This suggests that there should be scope to increase air service development in Sri Lanka; application of the average seats per tourist arrival for Ankor Wat (Cambodia), Bagan (Burma) and Laos) to Sri Lanka's 2014 tourist numbers suggests that domestic seats of almost 300,000 per year may be feasible.

Clearly within Sri Lanka some regions will still be suited to the roads for certain passenger segments. For example the time saving may not be deemed sufficient in relation to the additional cost. Also, travelling by road enables greater flexibility to visit other sites en-route (e.g. Pinawalla is en-route to Kandy) or the service frequency/timing may not be deemed appropriate. The large group travel market may still prefer coach travel since it can offer more flexible and tailored itineraries to the tour operator's requirements.

- **Local Use of Domestic Aviation Services**

Whilst the demand from foreign tourists will be the main driver of domestic aviation volumes it is important to also consider the potential contribution to this market from the Sri Lankan traveller. For this analysis the study has considered the regional population as well as economic contribution alongside experience of work in other tourism/aviation markets.

Full details of this analysis are provided in Annex 7 but the key findings highlight the concentration of population and economic activity on the Colombo area whilst areas such as the East and North are relatively less developed with a combined GDP contribution of just 10%.

The study has experience of working for airline/tourism studies in other markets where air traffic flows are dominated by tourist traffic. On these services some level of demand from the 'local' market is also attained from business travellers or those travelling for leisure purposes. For example:

- Asia (South East Asian tourist Market): An airline flying regionally typically carriers in excess of 90% of tourists on certain intra-regional flights between large tourism markets on medium sized jet aircraft
- Africa (Southern African Market). A national operator serving the leisure segment for safari traffic typically attains at least 80% of traffic due to foreign tourists. The remainder is due to traffic that supports the tourist industry or other more industrial sectors.
- Africa (East African Market). A small operator serving safari and beach traffic carries in excess of 90% of traffic due to foreign tourists

For the purpose of this Study, we assumed that the local domestic market will provide incremental traffic volumes of 10-20% depending on the scale of economy at a regional level.

8.3.2 Forecast Aviation Shares and Volumes by Region

Having considered each of the factors affecting air travel choice described above, a model has been created to calculate the annual proportion of journeys to each region that would shift to aviation if sufficient supply were available.

For example, for a destination on the South Coast in 2025, the following inputs, assumptions and outputs are obtained:

- 2.4 million visitors to the region (as per section 8.2.2), which could result in 4.8m trips (since the visitor will arrive and depart the region)
- Contestable market estimated at 25% since the Southern Express Highway will be used by the majority of demand due to convenience. For example, today only 15% of the South Coast tourism market typically visits destinations such as Yala which is significantly further away from Colombo than the established beach resorts on the south coast
- Potential time saving offered by flying reduces from ~3hours to under 1.5 hours by 2025
- Typical air fare likely to be around $60 which is considered comparable to private vehicle hire and relatively small compared to a total holiday package
- Forecast aviation share of 2.5% based on input criteria (decreases from 5-6% before road upgrades)
- In 2025 this results in a forecast of 30,000 passenger trips to/from the region per year

Table 8.4 Summary of Assumptions

Region	Visitors to region (2025)	Time Saving Today	Time Saving Future	Typical Air Fares	Aviation Shares
MIA/South Coast	2.4M	<3hrs	<1.5hrs	$60	5-6%
Batticaloa/E. Coast	0.7M	<4hrs	<2.5hrs	$65	7-8%
High Country	0.7M	<3.5hrs	<2.5hrs	$65	6-7%
Sigiriya	2.3M	2.5hrs	1hr	$55	<5%
Palali/Jaffna	0.2M	<7hrs	<6hrs	$75	>10%

Source: ICF

On the basis of all of the above inputs and assumptions, these domestic aviation forecasts were generated. Forecast results are presented and discussed in section 8.4.1 below

8.4 Domestic aviation Forecast

8.4.1 Domestic Aviation Forecast –Summary of approach

In this section the study presents the breakdown of forecast domestic aviation demand by region based on the above assumptions, methodology and present day baseline situation.

Thresholds and the potential timings for the introduction of services are also discussed whilst capturing the impact from infrastructure upgrades across the country's road network.

Converting the national/regional tourism demand outputs into a domestic aviation forecast is the final part of the traffic forecasting process. To do this, the study has considered the relevant supply side factors that drive domestic aviation traffic in a market such as Sri Lanka where distances are relatively small.

Unlike the macro level demand forecasts the methodology used to forecast domestic aviation demand is a lot less quantitative. This is a result of the lack of established trends and theories since the demand at this level of detail is significantly more influenced by each market's own individual characteristics. Many of these market dynamics such as local

geography, culture, traveller base and aviation environment support the need for a different approach.

For this reason the study has used a combination of judgment and experience from relevant markets and forecasting in many different regions to prepare a demand forecast that still stands up to scrutiny. As a result the study has derived inputs relating to factors including price, travel distance and most importantly total travel time for each of Sri Lanka's main travel regions to forecast the potential for domestic air connectivity across the country.

The aviation demand forecast was developed with a two-step approach:

- 'Preliminary' scenario – based on desk based analysis and benchmark data, the study first developed a domestic forecast for each site. This exercise and its results allowed the identification of sites for field visits and issues to be further explored;
- 'Recommended' scenario – which was developed after the site visits and based on confirmed and revised assumptions from the site visits.

The same methodology was used to develop both scenarios, the two scenarios are different only in some of the selected assumptions and in the forecast results.

In the sections below, firstly the methodology for the 'Preliminary' scenario is outlined with its results, we then highlight the feedback from the site visit and how we have incorporated such feedback into the 'Recommended' forecast scenario.

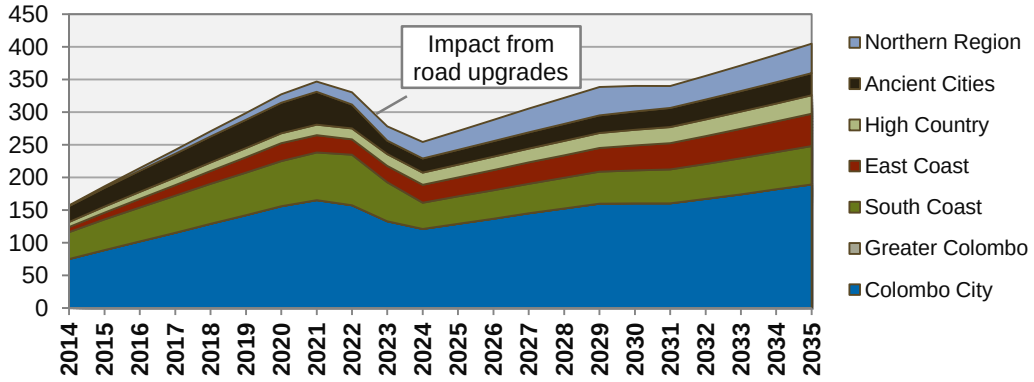
8.4.2 Preliminary scenario – Domestic Aviation Forecast

8.4.2.1 Domestic Aviation Activity by Region

Measuring domestic aviation activity means that each passenger trip is counted at the arrival and departure airport. This effectively means that each passenger trip is counted twice and this should be recognised when considering the market demand for trips. Whilst domestic activity is a useful metric, the number of trips is the key determinant for market sizing and is discussed in the subsequent section 8.4.2.2.

In Figure 8.12 domestic aviation forecast is expressed in term of number of trips per year to/from each region.

Figure 8.12 Preliminary Forecast Domestic Aviation Activity by Region (number of passengers per year)



Note: Number of passengers is equivalent to twice the number of trips in measuring aviation activity

From 2021 onwards the impact of upgraded surface access to the South Coast and Ancient Cities is significant as the benefit of air travel becomes neutralised and journey times by road fall by as much as 1hr 40 minutes (over 30%) offering less incentive to fly. As a result, Figure 8.12 shows that demand for air travel to these regions declines; total demand falls from 345k passengers in 2021 to around 250k passengers in 2024.

Table 8.5 Potential Domestic Aviation Activity, 2014-2035F

Airport Demand (# passengers, '000s)	2014F	2015F	2020F	2025F	2030F	2035F
Colombo	75	89	156	129	160	189
South Coast	41	47	69	42	50	59
East Coast	8	10	27	29	39	50
High Country	8	9	15	20	24	28
Ancient Cities	24	29	47	23	28	34
Northern Region	1	2	13	29	39	45
All Regions	**157**	**186**	**327**	**271**	**340**	**405**

Source: ICF

In terms of number of passengers the potential demand for domestic aviation is assumed to be 157,000 in 2014[24]; this is equivalent to 5% of tourists taking one flight per visit to Sri Lanka. This is forecast to grow to over 325,000 in 2020 representing a CAGR of 13%, as shown in table 8.5.

Beyond 2024, the planned road investments are completed and the aviation demand forecasts return to a period of steady growth, but from a slightly lower base whilst market demand is starting to mature. As a result total market demand is forecast to rise to over 400,000 by the end of the forecast which represents growth of 4.3%. This is in excess of forecast growth in tourist arrivals to the country and is supported by the faster growing markets of the East Coast and the North where air service will maintain a distinct advantage over any planned surface access upgrades owing to the greater distances and/or more challenging geography involved.

It is worth noting that if the planned road projects are delayed, then the domestic aviation market potential would likely be significantly greater. Without the surface access improvements demand would be over 700k by 2035 compared to around 400,000 considering the improvements planned.

It should be noted that three road upgrade projects are assumed to be delivered before 2023. Whilst this is considered realistic by the responsible stakeholders we would note that delivery of such complex projects has inherent risks and delays may result in greater potential for domestic aviation.

Other markets such as Kalipitiya and Bentota were discussed as having potential for air service but these are likely to be relatively niche markets requiring smaller aircraft such as those used for dedicated water taxi operations. Also they are both situated relatively close to Colombo meaning that road transport will remain a competitive option in the future which is assumed to limit the potential scale of operations considerably.

8.4.2.2 Domestic Inter Region Trips

The number of inter region trips were forecast based on the projections for domestic aviation activity. As discussed above, trip numbers are equal to half that of aviation activities due to double counting passengers at the arrival/departure airports. As Table 8.6 shows, the demand for trips is therefore forecast to grow from 80,000 in 2014 to around 200,000 by the end of the forecast following the same profile as that displayed in the airport activity outputs discussed above.

The ranking of markets is comparable to the aviation activity but some inter regional flows that do not touch Colombo have also been assumed. For example there is likely to be some demand for flights that fly from the Ancient Cities to the East Coast via tag flights or

[24] NB – Forecast aviation trips are 50% of airport passenger forecasts since one passenger is counted at both the departure and arrival airport

triangular routings which do not go via Colombo. These are discussed in more detail later in this Chapter.

Table 8.6 Preliminary Scenario - Forecast Domestic Inter-Region Trips (thousands)

Route Demand	2014F	2015F	2020F	2025F	2030F	2035F
Colombo - South Coast	41	47	69	42	50	59
Colombo - East Coast	4	6	20	22	29	36
Colombo - High Country	8	9	15	20	24	28
Colombo - Ancient Cities	21	24	39	16	18	21
Colombo - Northern Region	1	2	13	29	39	45
Other*	4	4	8	7	10	13
Total	**79**	**93**	**164**	**136**	**170**	**202**

**Other is assumed to represent routes that do not touch Colombo, for example a 'tag' flight*
Source: ICF

8.4.3 Recommended Demand Forecast

The site visit to Sri Lanka's domestic airports (discussed in more detail in Annex 11) has enabled the study to perform a 'robustness' check on the assumptions used in the previous section's domestic aviation demand forecast.

8.4.3.1 Evidence from field visit

The onsite time enabled the study to travel around the country gathering further detail relating to the core inputs and form a more robust view on the assumptions used for current and future demand estimates. The main areas of focus which have an impact on the demand forecast relates to:

- the integration of domestic connectivity at BIA.
- revisions to the assumptions used for surface access times.

The feedback for those passengers transferring at BIA is, at least in the medium term until a dedicated transfer product is in operation (or clearly defined as part of an updated masterplan), assumptions around transfer times between international and domestic flights should be lengthened. In the short-medium term the study has assumed a further buffer of 15 minutes which assumes the average domestic connecting passenger is likely to take twice as long as the quickest international transfer (1hr 30m vs 45m).

Surface access times have had some minor revisions, most notably to Jaffna where the estimated road access times today have been reduced from 9 to 8 hours and a more substantial reduction in the future when the new highways are assumed open. Other revisions were relatively minor on the other markets but were again slightly more optimistic for current and future journey times by road.

It became clear during the course of the site visit that there was uncertainty in some of the main assumptions relating to travel times today, and in the future. For example this could relate to the timing of upgrades being introduced as well as the potential promised time savings varying due the final routing of the highways along with average speed gain assumptions.

Table 8.7 Revised Assumptions

Assumption	Market Relevance	Preliminary Forecast	Revised Forecast
Flight Connections	All Markets	1hr 15	1hr 30
Future Drive Times	Colombo – South Coast	3hr 30	3hr 15
Current Drive Times	Colombo - Jaffna	9hr	8hr
Future Drive Times	Colombo - Jaffna	8hr	6hr 15

Source: ICF Main assumptions revised

In this section we present the updated forecast as well as a sensitivity capturing some of the potential downsides to domestic aviation connectivity that were discovered on the site visit. For this sensitivity we have assumed travel time gains by road were at the more optimistic end of the levels that have been discussed with the study through the course of this project with various stakeholders and views gained on the site visit.

8.4.3.2 Domestic Aviation Forecast Activity by Region

The traffic forecast has been updated to reflect the updated inputs and the high level output is shown in the following chart as the total market for aviation demand has reduced by around 10-20% throughout the forecast horizon. In the short term total airport demand across the country remains under 150,000 trips by 2020 which is just before several road upgrades become operational. Table 8.8 shows the demand at each airport over the forecasts period. This counts both arrivals and departures and therefore there are twice as many passengers compared to the trips in Figure 8.13.

Figure 8.13 Recommended Scenario - Domestic Aviation Trips (thousands trips per year)

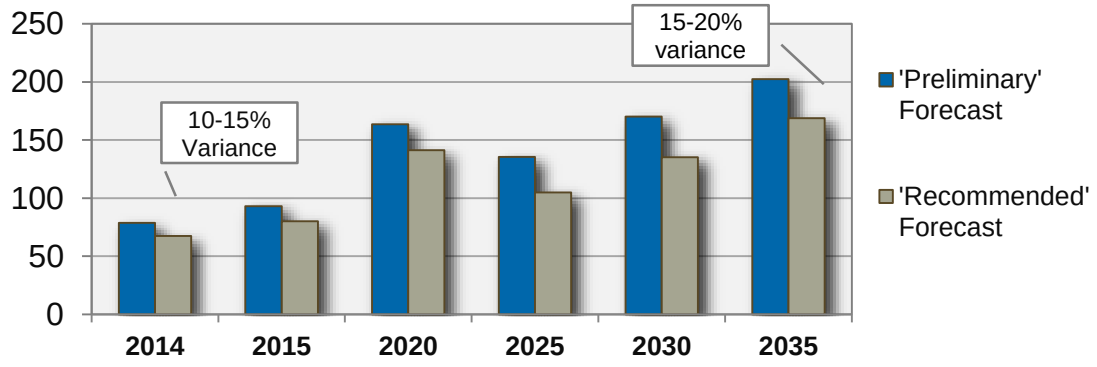


Table 8.8 Revised Airport Demand Forecast, 2014-2035F

Airport Demand (# passengers, '000s)	2014F	2015F	2020F	2025F	2030F	2035F
Colombo	64	76	135	100	128	158
South Coast	35	40	59	32	39	45
East Coast	8	10	27	25	33	42
High Country	8	9	15	18	22	26
Ancient Cities	19	22	37	18	22	26
Northern Region	1	2	11	17	28	40
All Regions	**135**	**160**	**283**	**210**	**271**	**337**

Source: ICF

The markets with the most significant impact are those where the time saving offered by plane was smallest i.e. the increased transfer time at BIA along with any reduction in surface access times had a greater proportional effect.

Following the introduction of the road upgrades, demand drops to around 200,000 passengers before recovering to around 340,000 in 2035 which is 17% below the original forecast.

8.4.3.3 *Summary Tourism and Domestic Aviation*

At a summary level the relative ranking of demand by route/airport remains as before with the South Coast market volumes continuing to drive the demand for domestic air connectivity.

Table 8.9 presents the key forecast outputs from the total inbound tourists through to the domestic aviation potential alongside estimates for the levels of air service required to serve this demand.

For example, by 2020 with nearly 3m inbound tourists to Sri Lanka this is expected to generate under 400 passenger trips per day or around 140,000 annual trips. For an airline with a small turboprop this could realistically be accommodated using two aircraft representing a relatively small fleet size in comparison with other aviation markets. This is driven by the relatively low share of tourists forecast to make use of air connectivity be that due to factors around price, trip itineraries, time savings, convenience as well as other factors that need to be considered qualitatively.

Table 8.9 Summary of passenger demand and service frequency

Airport Demand (# passengers)	2014F	2015F	2020F	2025F	2030F	2035F
Inbound Tourists (million)	1.6	1.8	2.9	3.8	4.6	5.4
Aviation Demand (million)	7.8	8.5	12	15	18	21
Domestic Aviation Trips (thousand)	68	80	141	105	135	169
Domestic Passengers/day	185	220	387	287	371	462
Passengers/aircraft	35	35	35	40	45	45
Flights / day	5	6	11	8	11	13
# A/C required (e.g. ATR)	1.0	1.2	2.1	1.6	2.0	2.5
Flights / tourist	0.009	0.009	0.012	0.007	0.008	0.008

Source: ICF

At a total level the number of flights per tourist is forecast to be under one in a hundred making an air trip domestically. From a service perspective we forecast around 10 flights per day across the country by 2020, meaning domestic aviation will remain relatively small compared with the overall demand for aviation in Sri Lanka (<1%). The aviation sector will remain dominated by international flows to/from BIA for the local and connecting markets offered by the airlines.

8.4.3.4 *Sensitivity of Forecasts*

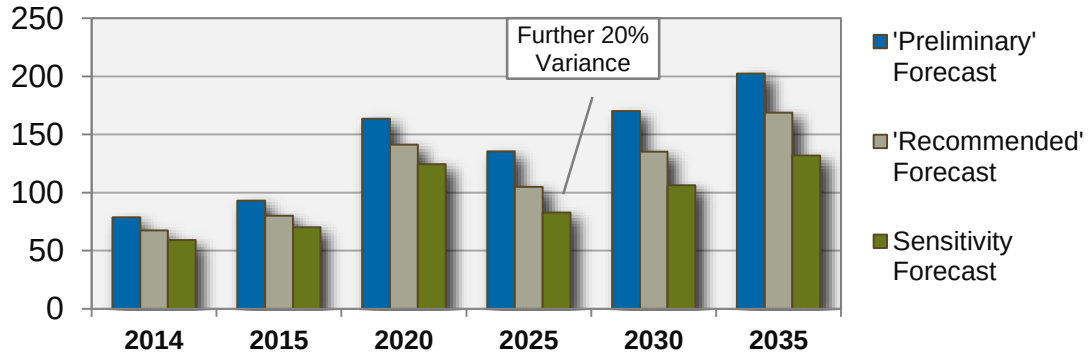
As a result of the wide variance in guidance received around journey times, the study has undertaken sensitivity analysis assuming shorter road travel times. Further time savings of around 30-60 minutes have been assumed across the different markets to reflect uncertainty in the base case assumptions.

In some cases this is highly significant as it would reduce the potential benefit of domestic air travel to the South Coast from around one hour to under 30 minutes. Demand to the ancient

cities also has the potential to reduce further as the current forecast time benefit of using air travel is one hour.

It should be noted that this does not represent a full downside as clearly the assumptions could be more sever or other factors may inhibit the development of domestic aviation. For example regulatory and political factors, or the financial position of the airlines.

Figure 8.14 Total Domestic Aviation Trips (thousands trips per year)



Source: ICF

At a high level the sensitivity assumptions result in the market demand for domestic aviation reducing a further 20-30% throughout the forecast horizon. As a result of these assumptions, demand in 2025 is comparable to that assumed in the updated base case for 2015, a year when 30% less inbound tourism is forecast to exist (1.8m vs 2.9m).

8.4.4 Further considerations on Recommended Domestic Aviation Forecast

8.4.4.1 Contribution to tourism growth

The demand profile has been forecast to grow, from 68,000 trips in 2014 to 169,000 trips in 2035, total demand for domestic aviation services through the forecast period remains relatively low.

The low forecast for aviation suggests that market need, driven by tourism development plans, for expansion of domestic airports is small, and in coming years prospects for contribution of domestic airport/aviation sector to tourism growth are constraint by such small demand and, in turn, fairly limited.

8.4.4.2 Implications for Domestic Aviation Service Development

Based on this forecast, and considering the very early stage of market development, a clear priority list of regions emerges which would be most suitable for the introduction of regular, at-scale air services:

1. **Colombo:** With virtually all tourists arrivals expected to continue to be through BIA it is imperative that facilities are provided to ensure the smooth connection of passengers to domestic facilities and aircraft upon arrival at the airport. As a result, it is evident that domestic transfer facilities at BIA are required. Development of RMA as the domestic airport for the Colombo region is not suitable as the relatively long transfer times from BIA to RMA would obviate the majority of time savings of domestic aviation transfers to other parts of the country over surface access options.
2. **South Coast**: This is Sri Lanka's largest regional tourism market, and will continue to be throughout the forecast period despite slowing growth compared to other 'up and coming' tourist destinations within the country. Although surface access to the region has improved significantly due to the Southern Expressway, and will improve further following this route's planned extension, significant tourist volumes will continue to travel to areas beyond the extent of the Southern Highway. These volumes would benefit from air services to Mattala airport, particularly as new tourist

developments are under construction/expansion in the Hambantota area – e.g. Yala and other national parks). By 2020 demand is forecast to reach nearly 59,000

3. **Ancient Cities**: Like the South Coast this is a large tourism market and air service will offer significant benefit for those tourists seeking to travel directly to the region. By 2020 demand is forecast to reach 37,000
4. **Other markets**: Aviation demand for other markets will remain small to start with, potentially too small to sustain significant air services in the short to medium term. However, the East Coast, the next most significant tourist region due to its relatively strong growth rates is a further contender for consideration for air service whilst the North is likely to be a contender for development by 2025. These markets are both forecast to reach around 40,000 passenger movements by the end of the forecast; notably more than forecast demand for either the High Country or the Ancient Cities.

8.4.4.3 Demand Thresholds

Finally, it is important to consider the forecast demand for air travel relative to the demand to support actual aviation services sustainably and profitably. Table 8.10 shows the typical annual demand required (using industry metrics) for 4 commonly used regional jet/propeller aircraft. This was the aircraft type discussed with Sri Lankan airlines as being the most suited to domestic operations, it is also the aircraft type used in many other comparable markets (e.g. for short sectors, small market sizes, efficient aircraft, proven track record, and operates frequently at similar kinds of airports)[25].

As this shows, 16,000 trips per year is the minimum demand required to sustain a 45 seater ATR plane running 5 flights per week. This suggests that only routes between cities with a forecast demand of 16,000 trips per year are likely to be economically viable for a private operator to offer. Some lower demand routes may still be possible to serve at a lower frequency if no better alternative can be found to deploy the aircraft however passenger volumes around this level have been assumed as a realistic threshold for this analysis.

Table 8.10 Demand Threshold Comparisons

Aircraft	Seats	Load Factor	Flights per Week	Yearly demand threshold
A319	150	75%	5	59,000
Q400	78	70%	5	28,000
ATR72	70	68%	5	25,000
ATR42	45	68%	5	16,000

Source: ICF

An alternative option could be to operate 'tag' flights whereby aircraft fly on a stop-off or circular route calling at a number of destinations. For example a plane could fly from Colombo to Sigiriya and then onto the East or North Coast. The key advantage of this is that one flight aggregates demand from two markets so they are typically used on thinner markets to provide sufficient demand for a market that would otherwise remain unserved. They can also be used to support frequency increases on established routes. These tag services could be used to provide a more joined up network of demand within the country providing tourists with e.g. 'triangular' routings to eliminate the need to return to Colombo to access another part of the Island by air.

Based on these demand thresholds and route options, the the study forecast suggests that up to 2020 an airline could focus on developing 1-2 daily services to each of the South Coast

[25] For size, much smaller than a 40 seater assumptions would move towards a Cinnamon type operation - which would also lead to noticeably higher costs (on a per passenger basis), and this would need to then be reflected in the forecasts. Also, the market segment from around 10 seats (e.g. Cinnamon) to 40 seater sized ATR aircraft is a relatively niche market segment.

and the Ancient City markets. Other smaller markets could be worth testing as 'tag' operations to help build the demand levels to a sustainable position whilst minimising risk. Beyond 2020, when the road upgrades have been implemented, the airline(s) may need to revise their frequency offering or may need to stimulate demand whilst the overall market grows back to more sustainable levels and other markets emerge as viable entities in their own right. In the long term services to the North and East Coast are forecast to establish their own direct services to/from Colombo with enough demand to support daily operations.

8.4.4.4 Evaluation of forecast

The forecasts presented in this report comprise the study independent assessment of the growth potential of the Sri Lankan aviation market and potential for domestic aviation over the next 20 years. A broad and balanced view of the market and its drivers has been taken, considering both the potential upside from the tourism market, as well as some of the risks inherent in the market. The methodology employed is in line with industry best practices, and the use of a number of independent approaches helps to provide greater confidence to the numbers forecast.

As with any projection, unforeseen events and circumstances may result in actual volumes varying from those forecast, sometimes substantially. In this forecast, key risks include:

- **Shocks which affect tourist confidence** will have a significant impact on demand. These would include political instability, war, health scares and natural disasters. For obvious reasons, these have not been explicitly included in the forecasts
- **Shocks in the origin markets** which comprise a large proportion of tourist arrivals to Sri Lanka such as China, India and the UK and Germany within Western Europe.
- **Variations in airline strategy assumptions** due to changes in airline economics, competition for aircraft capacity within airline networks and the rise in oil prices. If operating costs rise significantly, airlines may choose not to add new, direct services to a market such as Sri Lanka but to consolidate their capacity on established hubs, where they can more reliably be filled with O&D passengers from several markets.
- **Variations in local infrastructure assumptions**, such as the availability of hotels, restaurants, utilities etc. Experience in other markets shows that as long as demand grows, supply in hotels will match the increased demand provided that there are no limits on expansion or loss of appetite or funding from investors. If these do occur, a temporary negative impact on volumes is likely as excess demand may lead to increased room rates, which could deter certain market segments.
- **The current lack of a dedicated vision for tourism in Sri Lanka** and how the market should be developed and managed. Whilst it is clear that Sri Lanka's authorities and developers have recognised the potential for Sri Lanka's tourism assets, the current lack of a dedicated vision for tourism in the future may result in unsuitable developments or priorities which subsequently damage the country's longer term tourism growth prospects.
- **Changing tourism tastes or negative impacts to reputation**. These risks are extremely difficult to forecast but over-development, poor management of the tourist experience and degradation in the key sights such as the South Coast, National Parks or the Cultural Triangle may have significant consequences for Sri Lanka.

9 Screening and Selection of Domestic Airports

9.1 Introduction

As discussed in Chapter 5, Sri Lanka currently has 15 airports spread throughout the country. These vary in size and complexity; from the country's leading Bandaranaike International Airport, which handled close to 8 million passengers in 2014, and the newest airport, MIA, with capability for A380 planes to land, to many of the regional domestic airports such as Palaviya, or Vavuniya which may comprise little more than a landing strip and terminal shed. The condition of some of these domestic airports is poor, and stakeholders noted that existing domestic operators are unable to land certain aircraft at some airports due to sub-standard conditions.

There is currently interest in supporting the development of the domestic aviation industry within Sri Lanka. One proposal for such support has been the improvement of selected domestic airports in order to increase the ease at which domestic aviation services could be operated through them. A key objective for this Study is therefore to assess whether there is a need for improvements of existing airports to support forecast traffic in coming years for a selected number of domestic airports.

This Chapter presents the methodology utilised to undertake the screening, and subsequently identifies the airports which appear to be most suitable for further development, taking into account, along with other criteria, the forecast demand in each region.

9.2 Screening Methodology

As discussed in the Inception Report, it was originally envisaged that a two stage process would be used to screen the domestic airports for potential development, as shown in Figure 9.1, whereby a pass-fail test would be applied first of all to identify and rule out any domestic airports unsuitable for further consideration due to either lack of information or requirement of that airport for military activities unsuitable for a civilian airfield, before a qualitative evaluation of the prospects for airport development is undertaken.

Figure 9.1 Proposed Airport Screening Approach

Following stakeholder consultations during the latest field mission, significant information regarding the domestic airports was received in addition to assurance from the SLAF that no airport within the considered list is unsuitable due to military reasons. As a result it has been determined that the first pass-fail stage of the proposed screening methodology is no longer required, and that all airports should be progressed to the second, qualitative evaluation stage. This was undertaken using the criteria for evaluation laid out below.

- **Forecast regional aviation demand**

As summarised in Chapter 8, future aviation demand has been forecast by region for the period 2015-2035. These forecasts were considered for each airport within each region with those airports located in the regions with greater expected future aviation demand being rated higher than those with lower future demand. The same rating was applied to all airports within a region, with the exception of those airports in the Greater Colombo region. This is because it is assumed that aviation demand will be significantly higher if domestic transfers occur at BIA; with international passengers being able to transfer directly to their domestic flight within the same airport, than if domestic flights are routed through one of the other domestic airports in the Greater Colombo region (Ratmalana and Katukurunda).

- **National priorities**

As summarised in Chapter 4, a national tourism development policy is currently being created, and until this process is complete, there is an absence of clear policy direction with regards to national priorities for development of the tourism sector. However, it should be noted that Mattala International Airport has been constructed at significant scale and at the significant cost of USD210 million, but is currently barely utilised, with only a handful of FlyDubai flights landing at the airport each week. Continued operation of the airport with minimal traffic is extremely expensive for AASL and it has therefore been stated that identifying options for the future development and use of Mattala is a key priority for both the Ministry of Aviation and for AASL.

- **Location and existing connectivity**

Although existing connectivity to Colombo was assumed through the use of 1 proxy destination per region within the production of the domestic aviation forecast, local connectivity of each airport within its region and to other regions is also important. As a result, the location and ease of access for the airport to surrounding areas within the region was considered and those airports which are more centrally located within the region rated higher than those at further distances.

- **Importance for tourism development**

One of the primary objectives driving the current interest in development of Sri Lanka's domestic aviation sector is for a more established/available domestic aviation market to act as an enabler for the Sri Lankan tourism market. As a result, it was also important to consider the importance or impact of the development of each airport on tourism within that region. This was done through consideration of the proximity from each airport to the key tourist destinations in that region. This was also overlaid with a consideration of the overall importance of those tourist destinations now, and in the future, compared to other destinations nationwide.

9.3 Qualitative Screening

The above criteria were applied to each of the 15 airports in order to qualitatively evaluate which should be shortlisted for consideration for future development in order to support the growth of the tourism industry. The airports were considered firstly on a regional basis in recognition of the fact that future regional aviation demand is amongst the most important of the criteria above. It was also suggested that two airports within the same region should not be developed simultaneously due to likely cannibalisation of demand for aviation traffic. As a result once the screening criteria have been applied at the regional level, the highest scoring airport from each region was compared and evaluated in order to determine a prioritised shortlist of airports suitable for further consideration for development of the domestic aviation industry.

9.3.1 West Coast/Colombo

There are four airports located along the West Coast and around Colombo; BIA, RML, Katukurunda and Palaviya. Of these, BIA has the greatest potential for future development according to the screening criteria applied, as shown in Table 9.1. This is due to its optimum

location for tourists to transfer directly on arrival via their international flight, which affects both its aviation demand scoring and its location within the region scoring. The airport's connection to Colombo via the Airport Expressway, together with the high interest of tourists in visiting Colombo during their stay also adds to BIA's status as the most suitable of the four airports in the region to be developed as a domestic airport to promote tourism. Qualitative Screening of Domestic Airports in Greater Colombo Region.

Table 9.1 Qualitative Screening of Domestic Airports in West Coast/Colombo Region

Airport	Region	Regional Aviation Demand (2020)	Regional Aviation Demand (2035)	Location within Region	Importance for Tourism Development
Bandaranaike International Airport	West Coast/Colombo	✓✓✓	✓✓✓	✓✓✓	✓✓✓
Ratmalana Airport	West Coast/Colombo	✓	✓	✓✓	
Katukurunda Airport	West Coast/Colombo	✓	✓		
Palaviya Airport, Puttalam	West Coast/Colombo	✓	✓		✓

The remaining three airports all score lower than BIA with regards to regional aviation demand, as transfer demand by international passengers is likely to be significantly lower if they are required to travel from BIA after arrival into the country to one of the other airports in order to be able to take a domestic flight (or vice versa). In relation to the other categories, Ratmalana scores relatively highly for location within region due to its proximity to Colombo, while Palaviya has a low but notable score for 'importance for tourism development' due to SLTDA's plans to develop Kalpitiya resort to the north of the airport. The early status of this development opportunity, together with its relative accessibility from Colombo without a domestic aviation service is the reasons that Palaviya does not score higher for this criteria.

9.3.2 South Coast

Within the South Coast region there are currently three airports; Mattala, Koggala and Weerawila. Regional aviation demand, both now and in the future is relatively significant, due to the South Coast's standing as the most popular tourist region. Of the three airports, MIA has already been developed to an international standard and is currently underutilised. However, despite this underutilisation, the airport scores higher according to the evaluation criteria than the other airports. It scores higher than Koggala due to the regional focus on tourism development in the east of the region at present (i.e. around Yala and Hambantota – in the vicinity of MIA), and due to Koggala's closer location to the Southern Expressway and Colombo. As a large scale, developed airport of international standard, it also scores higher than Weerawila, a small air force landing strip, as tourist services run out of a modern airport facility are more likely to be more attractive and convenient to tourists.

Table 9.2 Qualitative Screening of Domestic Airports in South Coast Region

Airport	Region	Regional Aviation Demand (2020)	Regional Aviation Demand (2035)	Location within Region	Importance for Tourism Development
Mattala International Airport	South Coast	✓✓✓	✓✓✓	✓✓	✓✓✓
Koggala Airport	South Coast	✓✓✓	✓✓✓	✓	✓✓
Weerawila Airport	South Coast	✓✓✓	✓✓✓	✓✓	✓

9.3.3 East Coast

The East Coast shows low near term aviation demand, but this increases markedly over the forecast period due to the relatively long sector lengths from Colombo. Within the region, both Batticaloa and Trincomalee are currently used for scheduled and charter flights[26], and

[26] Batticaloa currently undergoing renovation works which has temporarily suspended use

both are located in relative proximity to SLTDA tourist developments (Passikudeh and Kuchchavelli). Both airports therefore score similarly in relation to regional aviation demand and importance for tourism development. However, with regards to their location within the region, Batticaloa is located more centrally within the region, while Trincomalee is located further north. According to the RDA, surface access throughout the region is generally better than for other regions, and therefore Batticaloa, with its more central location, should be better able to serve region-wide traffic than Trincomalee. Batticaloa therefore scores slightly higher than Trincomalee in this category, and, as a result, scores highest within the region overall, as shown in Table 9.3. By contrast, Ampara is the lowest scoring airport within the region owing to its location in the south of the region and further away from the main tourism development areas.

Table 9.3 Qualitative Screening of Domestic Airports in East Coast Region

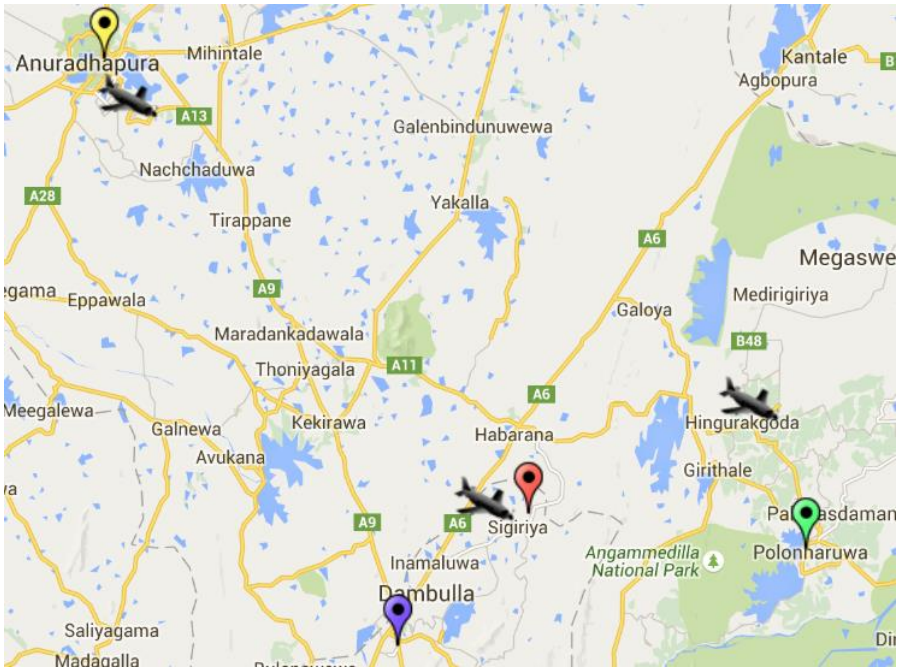
Airport	Region	Regional Aviation Demand (2020)	Regional Aviation Demand (2035)	Location within Region	Importance for Tourism Development
Batticaloa Airport	East Coast	✓	✓✓	✓✓✓	✓✓
Trincomalee Airport	East Coast	✓	✓✓	✓✓	✓✓
Ampara Airport	East Coast	✓	✓✓	✓	

9.3.4 Ancient Cities

While near term demand for aviation services to the Ancient Cities region is relatively significant, near term surface transport improvements will impact significantly on longer term demand as discussed above. Nevertheless, there are three airports within the Ancient Cities region which have been considered for potential suitability for further development; Sigiriya, Hingurakgoda and Anuradhapura. Shortlisting of one of these three airports must therefore be done on the basis of location within the region (i.e. the extent to which the airport is conveniently located to the rest of the region), and importance for tourism development (i.e. proximity to the major tourist sites).

As shown in Table 9.3, all three airports are located close to UNESCO listed world-heritage sites; Sigiriya Airport is very close to both the Ancient City of Sigiriya and the Golden Temple of Dambulla, Anuradhapura Airport is close to the Sacred City of Anuradhapura, and Hingurakgoda is 16km from the Ancient City of Polonnaruwa.

Figure 9.2 Map of Ancient Cities Region showing Airports and Key Sites



Color	Point of Interest
	Anuradhapura, Sigiriya, and Hingurakgoda Airports (Left to Right)
	Sacred City of Anuradhapura
	Golden Temple of Dambulla
	Ancient City of Sigiriya
	Ancient City of Polonnaruwa

Source: Scribble Maps/ICF

However, with regards to proximity to tourist attraction, Sigiriya has been scored highest overall. This is because it is located very close to the two most popular tourist destinations in the region; Sigiriya and Dambulla, and at the same time, a strong argument can also be made for Sigiriya being the most centrally located airport of the three within the region. The relative superiority of Sigiriya over the others is also only likely to improve going forward with the development of the Central Expressway to Dambulla. As a result, Sigiriya has been scored highest of the three airports overall, and is therefore recommended as the preferred airport to be shortlisted within the Ancient Cities region (see Table 9.4). Some concerns about environmental issues have been noted and considered with regards to Sigiriya, hence site visits also covered Hingurakgoda Airport.

Provided that an environmental assessment – not even at high level – has been not been performed, the site visits did not reveal compelling reasons to prefer Hingurakgoda to Sigiriya. In evaluating impacts on environment, we note that small propeller aircraft (so relatively quiet) with low frequency (e.g.few flights per day) are expected to be used so the impact would be relatively minimal. Mitigation measures such as ensuring no flights at certain times of the day could help (e.g. perhaps cultural reasons) as well as only permitting aircraft to fly which have a low decibel/noise rating. These measures could address potential concerns about the impact on tourism and the region.

Table 9.4 Qualitative Screening of Domestic Airports in Ancient Cities Region

Airport	Region	Regional Aviation Demand (2020)	Regional Aviation Demand (2035)	Location within Region	Importance for Tourism Development
Sigiriya Airport	Ancient Cities	✓✓	✓✓	✓✓✓	✓✓✓
Hingurakgoda Airport	Ancient Cities	✓✓	✓✓	✓✓	✓✓
Anuradhapura Airport	Ancient Cities	✓✓	✓✓	✓✓	✓✓

9.3.5 North

The Northern region currently has minimal tourism demand or infrastructure and therefore scores very low with regard to regional aviation demand in 2020. However, this is expected to change going forward, such that demand is more significant by 2035. Of the two airports within the region, Palali Airport in Jaffna appears the most suited to further consideration of development. This is because it is located within the most densely populated area of the region, and it is likely that as tourism develops in the region it will do so within Jaffna first and the SLTDA have identified Jaffna Lagoon as the site of potential tourism developments going forward. Although Mannar Island, an area that has also been suggested as suitable for future tourist development is located closer to Vavuniya (128km) than Jaffna (148km),the difference is relatively slight, and, on balance, is insufficient to justify the selection of Vavuniya over Jaffna as the most suitable airport in the region for consideration or further development.

Table 9.5 Qualitative Screening of Domestic Airports in Northern Region

Airport	Region	Regional Aviation Demand (2020)	Regional Aviation Demand (2035)	Location within Region	Importance for Tourism Development
Palavi Airport, Jaffna	North		✓✓✓	✓✓✓	✓✓
Vavuniya Airport	North		✓✓✓	✓	✓

9.3.6 Hill Country

The Hill Country, including Kandy, Ella, Nuwara Eliya and surrounding areas is a popular tourist area which is currently served by scheduled flights operated by Cinnamon Air on amphibious aircraft which land on Polgolla Reservoir outside Kandy. Amphibious aircraft have also been known to land on water near Nuwara Eliya, but there are no permanent, established airports within the region at present. Under the previous Government initial feasibility plans were considered for a permanent airfield at both Nuwara Eliya and Diguna (near Kandy). However, all planning and consideration of these has now been suspended. Although there are therefore no existing airports within the region for consideration for further development, the Consultants have nevertheless evaluated the relative merits of constructing a new airport at either of Diguna or Nuwara Eliya, as shown in Table 9.6.

Table 9.6 Qualitative Screening of Domestic Airports in Hill Country

Airport	Region	Regional Aviation Demand (2020)	Regional Aviation Demand (2035)	Location within Region	Importance for Tourism Development
Diguna (Kandy)	Hill Country		✓✓	✓✓	✓✓✓
Nuwara Eliya	Hill Country		✓✓	✓	✓

As discussed in the previous Chapter, the forecast for aviation demand to the High Country is very low in the near term due to the relative proximity and ease of access to the region from Colombo. Although this demand is expected to grow going forward, total demand will still be relatively low by 2035. In comparing the two potential locations of a new airport, Diguna (Kandy) scores slightly higher overall. This is due to its greater importance for tourist development (owing to Kandy being one of the most popular tourist destinations in the country).

9.3.7 Summary of Screening Results

The airports identified as scoring highest in each region for potential suitability for development as part of a domestic aviation solution are shown in Table 9.7 below.

Table 9.7 Comparison of highest scoring airport from each region

Airport	Region	Regional Aviation Demand (2020)	Regional Aviation Demand (2035)	Location within Region	Importance for Tourism Development
Bandaranaike International Airport	West Coast/Colombo	✓✓✓	✓✓✓	✓✓✓	✓✓✓
Mattala International Airport	South Coast	✓✓✓	✓✓✓	✓✓	✓✓✓
Sigiriya /Hingurakgoda Airport	Ancient Cities	✓✓	✓✓	✓✓✓	✓✓✓
Batticaloa Airport	East Coast	✓	✓✓	✓✓✓	✓✓
Palavi Airport, Jaffna	North		✓✓✓	✓✓✓	✓✓
Diguna (Kandy)	Hill Country		✓✓	✓✓	✓✓✓

As this shows, each of the airports scores highly and largely comparably overall, with BIA achieving the highest score, and Diguna the lowest score. Each airport is expected to be important for tourism development going forward, while the majority are also centrally located within their regions and thus should be able to serve surrounding areas well. Key differences between the airports arise due to variations in regional aviation demand. In summary:

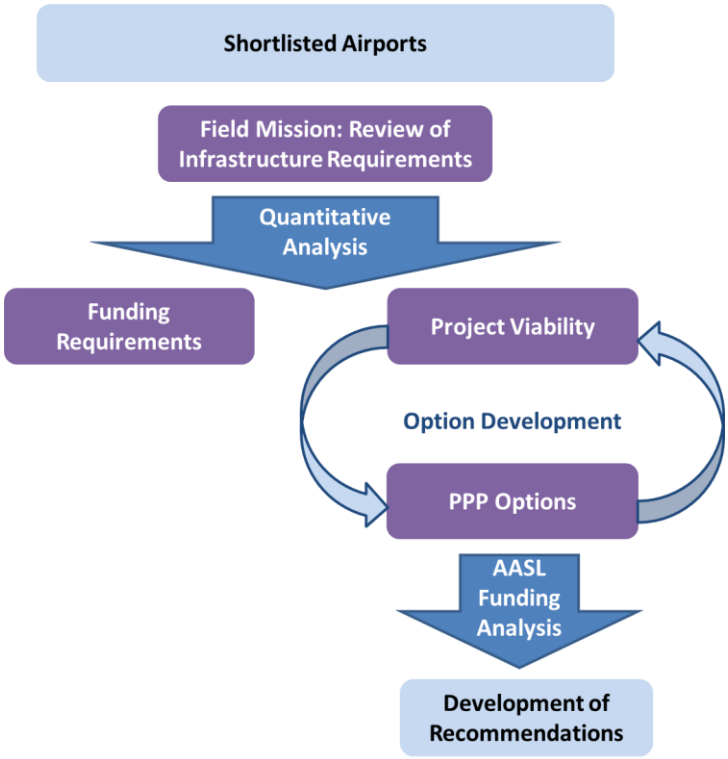
- **Bandaranaike International Airport** – scores highest of all airports within the country due to high aviation forecasts through the West Coast/Greater Colombo region as the arrival point for the vast majority of international passengers.
- **Mattala International Airport** – High scoring due to location within the South Coast region, and the Government's need to identify development options which make use of MIA to reduce its current cost burden. Plans for the development and expansion of tourist developments/attractions in the vicinity of Mattala also improve its rating.
- **Sigiriya/ Hingurakgoda Airport** – Location within Ancient Cities region with high appeal for tourists, and relatively high domestic aviation demand in the near term, although this is expected to decline significantly after surface access connection improvements are complete after 2022. Sigiriya is also the best placed of the three Ancient Cities airports with regards to key tourist destinations.
- **Batticaloa Airport** – While near term demand for aviation to the East Coast is small due to limited tourist numbers and infrastructure at present, this is expected to change as tourism development along the East Coast increases. Batticaloa is located in the middle of the East Coast region, and is also the closest airport to Passikudeh; the most established of the SLTDA tourism developments in the region.
- **Jaffna Airport** – Although near term demand for aviation in the North is minimal, demand is expected to be significant by the end of the forecast period. In addition, tourism developments such as Mannar Island and Jaffna lagoon suggest the area may have increasing importance for tourism demand in the longer term.
- **Diguna (Kandy)** – Minimal near term aviation demand, with steady growth leading to low, but more significant demand by the end of the forecast period. As the epicentre of the tourism market within the Hill Country Diguna (Kandy) scores higher for location within region and importance for tourism development than Nuwara Eliya. However, overall, Diguna achieves the lowest score of all the regionally shortlisted airports.

10 Selected Domestic airports analysis

10.1 Introduction and purpose of analysis for selected airports

The purpose of the analysis was to assess the high level potentials for investments in the selected airports, taking into account the forecast demand level, the investment needs and financial viability issues. These latter point is particularly relevant for the purpose of assessing the prospect for private sector participation in domestic airport developments.

Figure 10.1 Proposed Approach for Option Development, including PPP



10.1.2 Field Mission to Review Infrastructure

Following receipt of suitable approvals from Stakeholders regarding the domestic airports most suitable for future development in order to enable the growth of the domestic aviation industry, site visits were arranged to enable more detailed assessment of these airports.

Operational, financial and investment aspects of the airports and their future development were identified, including capital expenditure requirements of potential developments.

Site visits were conducted for each of the six airports identified (except Kandy) in the previous chapter. The site visits aimed to:

- confirm the assumptions developed for the market study and for the domestic aviation forecast in particular, and
- assess the investment needs for each airport facility, given a forecast level of traffic over time.

The evidence and feedback from the site visits have already been incorporated in Chapter 8 where a ‘recommended’ demand forecast is set out for each region. Please refer to section 10.2.1 for details.

The infrastructure need assessment is set out in this Chapter.

10.2 Investment need assessment

In order to assess the investment needs and prospects for domestic airport development, the quality and capacity of the existing facilities were matched with the infrastructure requirements to serve the demand forecast in each region. Before doing such analysis, it was important to cross-check each of these airports with the forecast aviation demand as detailed in Chapter 8 in order to determine whether the airports are likely to have sufficient demand to sustain an economically viable domestic flight service, and therefore whether it is possible that development may be justifiable.

10.2.1 Demand Forecast for selected airports

To determine the demand for each airport it has been assumed that if one airport in each region is selected, that airport will capture all aviation traffic forecast in that region.

Table 10.1 summarises the forecast aviation trips by year for each shortlisted airport. The cells are then colour coded to indicate whether this level of demand would be sufficient to support the operation of a single ATR42 plane which, as discussed in Section 8 requires demand of approximately 16,000 trips per year. A trip is counted as either an arrival or departure so the combination of the two figures must be more than 16,000 to reach this benchmark.

Table 10.1 Passenger forecast for selected airports – Number of trips (000s)

Airport		2020	2025	2030	2035
Colombo (BIA)	Arriving	67.3	49.9	63.8	78.8
	Departing	67.3	49.9	63.8	78.8
South Coast (MIA)	Arriving	29.5	16.2	19.3	22.5
	Departing	29.5	16.2	19.3	22.5
Ancient Cities (Sigiriya)	Arriving	18.3	8.8	10.9	13.1
	Departing	18.3	8.8	10.9	13.1
East Coast (Batticaloa)	Arriving	13.5	12.3	16.3	21.0
	Departing	13.5	12.3	16.3	21.0
Northern Region (Jaffna)	Arriving	5.3	8.5	13.9	20.1
	Departing	5.3	8.5	13.9	20.1
High country (Kandy)	Arriving	7.4	9.2	11.1	13.2
	Departing	7.4	9.2	11.1	13.2

Source: ICF

Shading indicates whether forecast volume is sufficient to support the operation of an ATR45 with 5 flights per week and a 68% load factor (green – sufficient, red – not sufficient)

Trip numbers reflect Colombo-regional destination legs only and do not include routes that do not touch Colombo

As this exhibit shows, the only airports that are likely to support a direct domestic aviation service from Colombo in 2020 are Mattala, Sigiriya and Batticaloa. However, the forecast surface transport improvements to the Ancient Cities (particularly the construction of the Central Expressway to Kurunegala) are then likely to substantially reduce volumes to Sigiriya for the period 2022 to 2030. Nevertheless, forecast volumes remain above the forecast minimum demand for an ATR42 plane.

In the case of Batticaloa airport, demand is forecast to grow more evenly through the forecast period, as travel to the East Coast is less affected by planned surface transport improvements due to the longer sector distances. Finally, demand for domestic aviation to the north via Jaffna is likely to be below the minimum threshold initially, but is also likely to rise evenly and strongly through the forecast period without impact from surface transport improvements due to the long sector lengths.

As a maximum of 5 airports must be shortlisted for consideration in the later stages of this Study, it is proposed that the 5 highest scoring existing airports above are shortlisted over the concept of development of a new airport at Diguna (Kandy). This is for a number of reasons including the relatively low aviation demand across the forecast period and the need to build a new airport instead of simply to renovate/redevelop an existing air field as for the others shortlisted.

Key conclusions from the above:

- It was concluded that Jaffna and Sigiriya would not provide enough demand in the short-term (2020) to provide what the airlines would consider a minimum schedule (5 flights per week of an ATR45 with a 68% load factor).
- Jaffna has more perceived upside in the long term and was therefore included in the shortlist of five airports for further consideration.

10.2.2 Infrastructure Investment Needs

The Consultant undertook site visits to each of the shortlisted airports to assess their infrastructure requirements to facilitate domestic services.

Aside from a small amount of investment required at Sigiriya and Jaffna, all airports have the necessary hard infrastructure to cope with regular ATR 42 services. Most of the airports do not have well developed commercial facilities but these are not considered required infrastructure. However, the lack of commercial facilities will impact the revenue estimates.

Table 10.2 Required investment and domestic airports

Airport	Findings	Required Investment
BIA	Facilities to handle domestic passengers underway. Construction should be completed by the end of 2015.	No need for further capex to serve current demand
MIA	Poor connectivity has caused most of the flights calling at MIA to be cancelled or changed to BIA. There is also a lack of commercial development	No investment required
Sigiriya	Confirmed potential for upper end tourism market. There is only a 900 metres of usable runway	USD 115,000 investment required to service ATR 42 aircraft
Hingurakgoda (alternative to Sigiriya)	Large runway, terminal building, poor condition of access road	No investment required
Batticaloa	Renovation of the airfield as a domestic airport commenced in 2012. These improvements include a recently constructed terminal building. The SLAF is resurfacing the runway and apron at a cost of approximately $13 million.	None if the resurface work is completed
Jaffna	Military nature of the airport is a major challenge. The runway is 2305 x 45 metres with a central section of 950 metres having been resurfaced courtesy of an Indian grant. The cost of this was estimated at $8 million, though there were substantial additional costs in additional earthworks to correct a side slope. The apron and remainder of the runway are in a poor condition.	USD 760,000

The site visits found that a significant amount of investment is not required in order to service the unconstrained demand forecasts. If higher demand and therefore larger planes were forecast, then the investment required would be substantial, except at BIA and MIA that are equipped to handle such craft. The use of small aircraft means that only minor upgrades are required to Sigiriya and Jaffna.

Details on key findings from site visits are set out in the Field Visit Report included in Annex 11.

In conclusion, the lack of significant infrastructure investment needs in coming years to meet the unconstraint traffic demand, suggests limited scope for domestic airport development to support the tourism development plans in the country.

10.3 Financial Viability of Domestic Airports

Notwithstanding the limited need for infrastructure investments in coming years, it is worth developing some considerations on prospects for private sector participation in the aviation market, taking into account that the majority of the domestic airports are currently operated and managed by the SLAF and alternative options are under evaluation.

A private sector investor seeks a target rate of return and profitability and the market study suggest that existing level of traffic and the domestic aviation forecast for coming years might not be sufficient to justify viable investments from a private sector perspective.

To this regard, assuming the forecast demand is realised, a key issue for private sector participation in Sri Lanka's domestic aviation sector, is related to the operations of the regional airports: small airports face high operating costs per passenger and revenues opportunities are expected to be limited.

10.3.1 Revenue

Current aeronautical revenues for Bandaranaike International Airport are around $6/passenger, although around half of this is from an embarkation levy.

At the smaller airports SLAF have a standard landing fee of SLRs 282 or approximately $2 per aircraft landing irrespective of size and whether rotor or fixed wing. There are no passenger handling charges. While there are ATC charges these are not payable to the airport operators. The reality is that SLAF are providing a public service at minimal cost, based on the premise they require the airport for military purposes.

It is difficult to assume that aeronautical revenue for small domestic airports might be higher than $6 per passenger, given revenue charges at BIA.

Non-aeronautical revenue is comprised of concession revenue, rents and other miscellaneous fees and charges such as parking and ground handling. For Bandaranaike International Airport this revenue is approximately $6/passenger (refer to section 11.2.2).

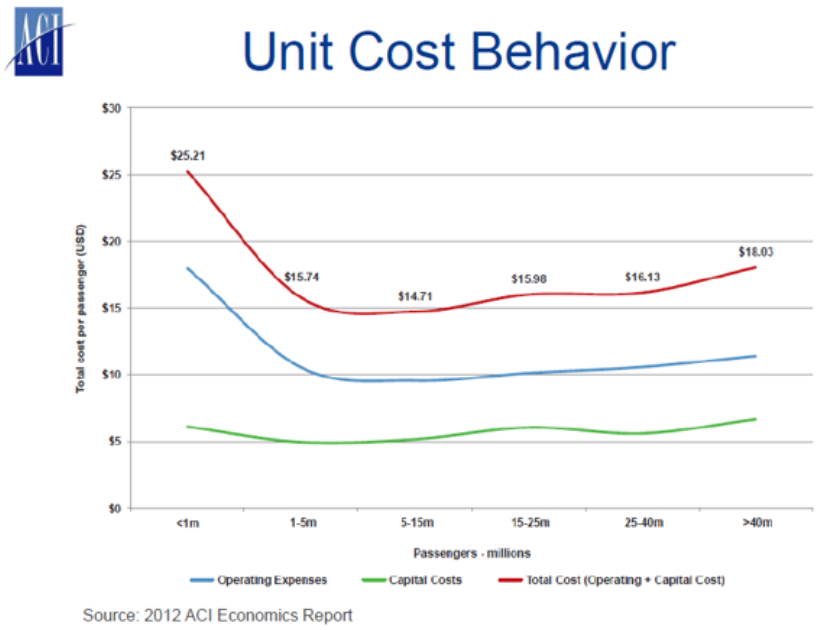
For the smaller airports non-aeronautical revenues per passenger are expected to be lower and in the range of $1 or $2 per passenger due to the limited scope for commercial developments at the airports.

10.3.2 Cost structure

Small airports typically suffer from a diseconomy of scale as fixed costs are spread across a much small volume of passengers.

Figure 10.2 below sets out an indicative benchmark for operating and capital costs per passenger for different traffic volumes.

Figure 10.2 Unit Cost Behaviour



Source: ACI Economics Report

The above data show that operating costs per passengers are highly correlated to volumes until a minimum number of passengers is achieved. In case of larger airports – as in table above-, typically costs per passengers begin to dip below $10/passenger once passenger numbers reach one million passengers or more. Below this level airport operating costs per passenger can rise up to $20/passenger or more depending on the volumes.

BIA costs per passengers are consistent with the above benchmark and around USD 7.75 per passengers.

Given the revenue charges for domestic airports in Sri Lanka, costs per passengers at domestic airports are to be significantly lower than $ 20 per passenger (which is the range indicated in the table above for <1 million volume airports) for operations to be profitable. It is envisaged that costs for the other domestic airports in Sri Lanka might be lower than USD 20 per passenger, however, the cost structure for the domestic airports is not known, since the airports are managed by the SLAF and costs are not accounted on a 'stand alone basis', separately from other costs of SLAF.

Cost information on operations and management of domestic airports managed by SLAF are not produced and at this stage conclusions on the financial viability of each selected airport cannot be reached. This lack of information limits the GOSL in making sound decisions on future management of the domestic airports, including assessing any concrete options for private sector participation.

10.3.3 Considerations on financial viability

Overall, the limited size of the demand forecast for domestic aviation limits options for private sector participation at this stage, and prospect to achieve sufficient economies of scale to generate profitable business are unclear both in the short and in the medium-long term.

In the future, the GOSL may consider to transfer the management of domestic airports to AASL or to a private operator, as well as to continue to fund the domestic airports through the role of the SLAF.

In order to make informed decisions, the Consultants highly recommend the development of an accounting mechanism to allow estimates of operating costs on a 'stand alone' basis

Improved transparency on costs would be beneficial in different ways, including:

- to understand and monitor the actual impact on public resources of funding the domestic airports; and
- to evaluate concrete prospects for private sector involvement, being mindful of expected returns from a private operator.

10.3.4 AASL investment funding options

In terms of the investment, only $760,000 is required to make the shortlisted airports all suitable for the level of domestic passenger demand estimated. As will be analysed in more detail in chapter 11, given AASL's current balance sheet position it could easily provide for this level of investment. This is considering that they have recently secured US$190m in funding from JICA for their terminal expansion and have received similar amounts in the past from the China Exim bank at low interest rates. Relevant

10.4 Development of a domestic airport network

10.4.1 Rationale AASL Managing Domestic Airports

Given the difficulty of the regional airports operating as standalone businesses an alternative arrangement would be for the AASL to manage a network of domestic airports. This would allow any profits from BIA to be used to cross subsidise operations at the smaller airports. It is possible that the network of airports overall is financially viable even if some individual airports are loss-making. Given the large number of international passengers at BIA and the infrastructure supplied to service them, the marginal cost to service each additional domestic passenger would be expected to be relatively low.

The practice of grouping airports together is a common one throughout the world and it is often the case that the smaller airports within any group would be loss making, effectively relying on financial support from the larger airports. Markets such as India, Mexico and European airport authorities (Spain, Portugal etc.) have all operated with such structures and this structure has in some cases been maintained following privatisation in order to protect the smaller airports.

Operating in this way provides a common management structure and operational synergies relating departments such as head office and operations such as ground handling. Further synergies may be possible in relation to centralising important functions such as ATC in the future.

Unlike other airport authorities, Sri Lanka is starting from a position where the small airports are currently operated independently to the main commercial entity (BIA). Given the opportunity to package BIA alongside the smaller airports, some criteria are considered below to provide the 'best' commercial fit, in case this option were further investigated.

10.4.2 Criteria for selection

Criteria for selecting airports to include in a network operated by AASL could be based on the following:

- ***Strategic importance –*** Markets that either AASL or the GoSL view as strategically important to the development of domestic aviation should be recognized. For example, supporting the forthcoming tourism strategy which may target growth in certain regions over others.
- **Long-term passenger demand** - This criteria relates to the ability of the region to support regular scheduled services. The minimum demand level discussed in section 8 is 16,000 passengers per year in order to support 5 weekly flights using ATR42 aircraft. In the case of the two airports with the lowest long term forecast passengers (Sigiriya and Kandy) both could be removed from the network to improve the financial viability as they are relatively close geographically to Colombo and therefore are not expected to capture significant demand or impact the development of domestic aviation significantly.

	Distance
Colombo to Sigirya	127km
Colombo to Kandy	<100km

Source: OAG

- **Required Infrastructure upgrades** - Most of the airports require no significant infrastructure improvements besides Jaffna (USD 760,000) and Sigiriya (USD 115,000) which requires minor improvements. It is important that AASL does not commit to developing significant facilities which are not required or would result in an unacceptable level of subsidy, at least in the short term.

In-line with the selection criteria and in order to cover the country both geographically as well as the major demand locations, we would suggest to prioritize Batticaloa and Jaffna as airports to be grouped under the AASL management: as a result the network would capture the major tourist areas plus the northern region which is expected to increase its development in the next decade.

10.4.3 Ability to cross-subsidise

Assessing the funding need to cross-subsidise regional airport operations is difficult due to the lack of, or wide range of revenue and cost data available for regional airports. Information from AASL shows that BIA revenues (both aeronautical and non-aeronautical) are estimated at USD 12/passenger for international services. After removing the international embarkation levy the revenue that would be received for domestic services is USD 9/passenger[27].

Operating costs for AASL are around USD 7.50/passenger. As all flights are assumed to operate to/from Colombo, the surplus of USD 1.50/ passenger would help subsidise the smaller domestic airport costs.

Revenue per passenger is expected to be lower at the regional airports in part due to the limited scope for commercial facilities. Total operating costs of regional airports are likely to be smaller than costs at BIA, however, given the lack of economies of scale the operating costs per passenger might be higher than revenue per passenger, thus translating into overall operational losses. It is not possible to quantify this further without detailed studies into the levels of service and standards assumed on an individual airport basis and should this option be considered, it is recommended to develop a cost analysis of domestic airport as a first step.

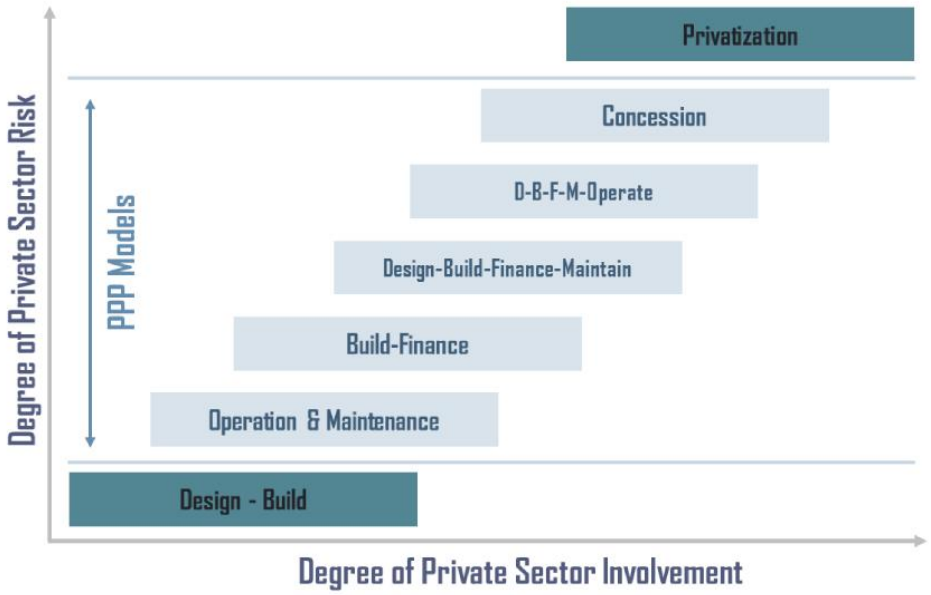
10.5 Alternative ways to engage private sector in domestic airports

10.5.1 PPP forms

Public Private Partnerships cover a wide variety of ownership structures and contracting relationships. The figure below outlines some of the main types of contracting arrangements and their level of private sector participation.

[27] Assumes that the international departure levy is not replaced with a similarly priced domestic levy

Figure 10.3 PPP Forms



AASL is an example of corporatization where a public owned facility is restructured but is still wholly owned by the government. Full divestiture of assets reduces the government's ability to develop the industry and is unlikely to be successful in Sri Lanka's nascent domestic aviation sector. When a high level of capital investment is required private sector expertise and capital can be utilised using Build-Operate-Transfer or Design-Build-Operate structures (although DBO are usually public sector financed). The alternative is for the assets to remain publicly owned and operated with construction services contracted to private companies. Given the limited capital investment required at Sri Lanka's domestic airports to cater for the forecasts patronage demand, private sector participation in infrastructure development is less of a priority.

10.5.2 Options for Sri Lanka domestic airports

As previously discussed it is the operations of the domestic airports that would benefit from private sector participation to improve service quality, broaden the range of services offered to customers and provide a sustainable long-term business model. Within this context, private sector may be engaged with management contract for operations and/or management of airport facilities, some option are considered below:

- Ground Handling (Passenger/Cargo) could be outsourced to private operators and this could provide a benefit to AASL as well as the airline operators. An efficient privately run handling agent could operate at a lower cost giving AASL efficiency gains and some of this benefit could be passed onto the airline customers to support further air service development as well as provide these airlines with a lower cost base for future growth.

- Security is often outsourced at airports driving efficiency gains from companies with international experience and further benefit is realised since these international companies are set up to evolve with ever changing international standards ensuring they are current in regulatory standards, best practices and emerging trends.

- Air Traffic Control / Air field operations have the potential to be contracted out to third party providers, again this could drive a twofold benefit, firstly brining in external international best practice operators would likely lead to a more efficient airfield operations supporting greater annual throughput whilst secondly providing these services more efficiently and at a lower cost than maintaining this function in house.

- Commercial operations already involve the private sector through concession agreements and further work with the private sector should seek to optimise these operations and revenue contributions. AASL should ensure their contracting arrangements are optimised to reflect the retail mix and seek to develop further revenue opportunities through areas such as advertising or car hire which are today understood to be relatively small revenue generators but have the potential to increase in share in the future.

It must be noted, that given the small size of the domestic airports in Sri Lanka, opportunities to involve the private sector in the management of airport services are to be tested, some options might be feasible at BIA.

10.6 Summary and Conclusions

10.6.1 Options for domestic airports

Based on the forecast aviation demand and the screening and analysis of airport viability above, the following considerations are made with regards to the development of the domestic airports:

1. **Domestic transfers are facilitated and supported at Bandaranaike International Airport**

In order for domestic aviation services to be attractive to tourists, this Study has found that it must be possible for passengers to transfer directly from international to domestic flights within BIA. This is currently possible on a small scale through Cinnamon Air and their proprietary terminal located on the far side of the runway at BIA, but in the longer term it would be desirable for formalised domestic transfer facilities to be available within the core airport terminals. According to AASL, plans are currently in place to introduce a single domestic gate within the current terminal building, and, if this is found to be successful, then the feasibility for a full domestic terminal may be explored.

Given the large number of international passengers and the infrastructure supplied to service them, the marginal cost to service each additional domestic passenger could be expected to be relatively low and it may therefore be financial viable for AASL to service this demand.

2. **Provision of domestic aviation services is supported at Mattala International Airport**

The domestic routing that appears to be most viable in the short term is for a regular flight from BIA to MIA on the south coast, with projected demand for this route driven by the high proportion of tourists visiting the South Coast, and the location of Mattala in the vicinity of certain tourist destinations which are still some way from the Southern Expressway (e.g. Yala). However, it should be noted that SriLankan Airlines recently attempted to offer this route and found insufficient demand, resulting in cessation of all flights by the airline through MIA. Nevertheless, the infrastructure and facilities at Mattala are already suitable for the provision of domestic services, and therefore consideration of how to maximise the existing facilities and the viability of actions to promote domestic services through MIA should be considered further.

Current passenger numbers at MIA are low and the airport would be losing money to continue operating. Due to the size of the facility, the small amount of forecast domestic passengers are unlikely to produce enough revenue to cover operating cost of the new facility and additional or alternative options are to be sought, including use of the airport for international /regional flights or for other uses the private sector may suggest, such as training facility. We understand that the AASL is in the process of testing the market and we support such an approach.

3. Development of Sigiriya or Hingurakgoda Airport

Sigiriya Airport in the Ancient Cities region was found to be the third highest ranked airport for development of the domestic aviation market in Sri Lanka, with the high proportion of tourists visiting this region and Sigiriya's proximity to the major tourist sites contributing to its ranking. As shown previously however, Sigiriya is likely to have a reduced ability to support a regular direct service to Colombo from 2022 onwards as the construction of the Central Expressway decreases demand for aviation services. It may therefore be appropriate to look at the feasibility of development of the airport in conjunction with the operation of 'tag' flights calling at a number of different airports, instead of direct flights only. Similar considerations apply to Hingurakgoda Airport which for environmental reasons might be more suitable for development than Sigiriya.

4. Development of Batticaloa Airport

Batticaloa Airport on the East Coast was found to be the fourth most attractive airport for further development, driven by the long sector distances from Colombo to the East Coast, and increase development of tourist infrastructure within the region. Demand appears to be sufficient to sustain a direct service from 2020 onwards. It is noted that improvement works are currently underway at Batticaloa Airport. Subject to further details regarding these improvement works it may be the case that further development is not required.

5. Development of Jaffna Airport

Jaffna in the north of Sri Lanka is forecast to become a strong contender for airport development in the medium to long term. Tourist demand today and even with current tourism upgrades is unlikely to warrant dedicated air service for several years, but given the relatively long road/rail journey times a viable market size is expected to emerge for a domestic operator in the medium to long term. It is therefore suggested that the viability of development of Jaffna Airport in the medium to long term (in order that it might be suitable for direct flight services from 2025 onwards) is assessed.

10.6.2 Other considerations

In conclusions:

- Only one of the five shortlisted airports requires any infrastructure funding and the estimate for Jaffna is only $760,000. Such funding is not needed to support traffic in the short /medium term.
- The major financial obstacle for Sri Lanka's domestic aviation sector, assuming the forecasts demand is realised, is the operations of the regional airports. Small airports face high operating costs per passenger and revenue opportunities are expected to be limited.
- The small size of the domestic airports also challenges suitability of alternative forms of PPP, if options for private sector participation are explored with management contracts.
- Developing a network of domestic airport might be possible by grouping some domestic airports under AASL management.
- Cost transparency of operations of domestic airports would provide useful information for sound decisions on future operations of the facilities.

11 Analysis of AASL

11.1 Introduction

Airport and Aviation Services (Sri Lanka) Ltd (AASL) is a government owned company with the remit of managing and developing the civilian airports in Sri Lanka. AASL manages all the main airports in Sri Lanka (BIA, MIA, RMA) and is responsible for the development of these facilities. This has also included managing investments in new projects such as the construction of the southern international airport at MIA which opened in 2013.

As the entity with the regulatory remit for overseeing the development of domestic airports, AASL is likely to be a crucial player in the development of the domestic aviation sector going forward. As a result, one of the four primary objectives of this Study is to undertake a situational analysis of AASL, including its operations, business environment and industry structure, as well as identification of opportunities for revenue growth and operational improvements, and an assessment of the extent to which contribution to the development of domestic airports would impact AASL's financing plan.

Analysis of AASL's operational performance contained within this report has been based on information gathered in stakeholder meetings and publicly available sources.

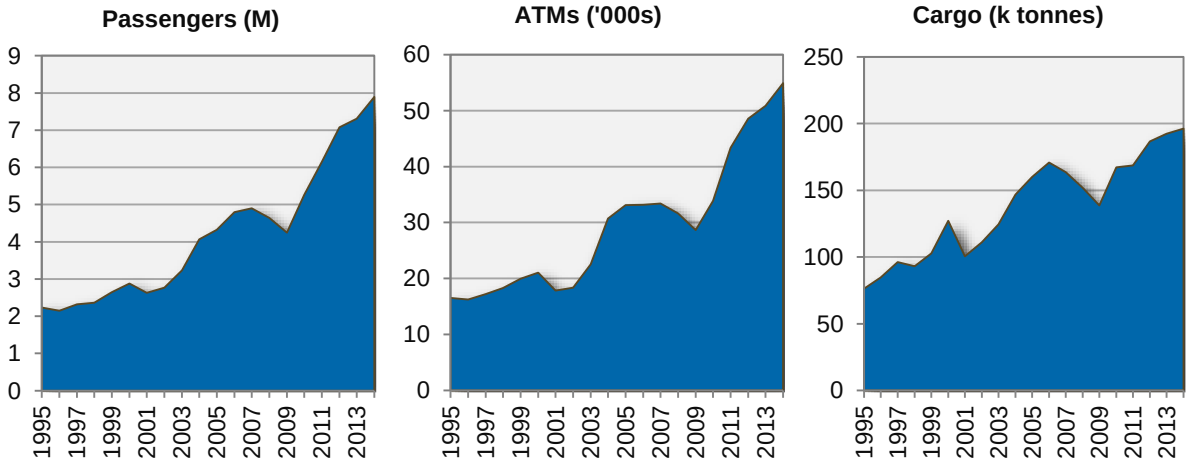
11.2 Overview of Current Operations

Within AASL there are 22 divisions, ranging from typical management functions including Finance/IT/HR as well as other divisions such as Navigation, Engineering and Safety services. AASL works with relevant bodies and organisations including the Civil Aviation, SriLankan Airlines, The Department of Treasury, The Tourism Promotions Bureau and many others to support the development of this sector in the country.

11.2.1 Traffic Development by Airport

Airport traffic at the AASL-managed airports has grown from 2.2 million passengers in 1995 to nearly 8 million in 2014. In the same period ATMs have grown from under 17,000 to over 60,000 today. These traffic statistics put the Sri Lankan aviation market size on par with airports such as Cebu (7 million), Kota Kinabalu (7 million) and Hyderabad (8.5 million).

Figure 11.1 Air Traffic Growth in Sri Lanka, 1995-2014



Source: ACI Historic

In the same period, Sri Lanka's cargo market has also performed well growing from 75,000 to 200,000 tonnes per year. This growth has been mainly supported by growth in Sri Lanka's domestic industries as well as increased imports to the country.

Table 11.1 AASL Traffic by Airport, 2014

Airport	Passengers	ATMs
Bandaranaike International (BIA)	7,771,141	56,793
Mattala Rajapaksa International Airport (MIA)	40,386	2,984
Colombo Ratmalana (RMA)	3,862	1,210
Total	**7,815,389**	**60,987**

Source: AASL

Bandaranaike International Airport, BIA

AASL's financial reports for 2013 show that BIA handled over 7.3 million passengers in 2013. The largest carrier was SriLankan Airlines accounting for 54% of total volumes with 4.0 million passengers, while Emirates was the second largest carrier at BIA having transported 675,000 passengers, equivalent to a 9% share. Growth in passenger traffic at BIA during the year is attributable to the LCC market as well as gulf carriers expanding their services. The LCC segment grew over 50% in 2013 but remains a small share of total traffic.

AASL is currently utilising an airport masterplan completed in 1983. While this has enabled recent and upcoming planned improvements to the airport, it is broadly acknowledged that an updated master plan is required and the tender process to identify bidders to produce such a plan is expected to commence shortly. In the meantime, a number of developments and improvements are underway:

- Expansion of passport control areas;
- Resurfacing and other runway improvements;
- Creation of a trial domestic gate to facilitate domestic aviation;

In addition, it is anticipated that a new terminal will be developed at BIA by 2019. Funding for this has already been secured from JICA, and the terminal, which will include two new piers, will increase the capacity of the airport from its current ~9million passenger limit to 15m passengers per year.

In the longer term it is hoped that a second runway will be developed at BIA. This would serve to address future expected capacity constraints, and the Ministry of Civil Aviation is currently in the process of appointing a runway placement committee to determine the optimal location for the new facility. However, as discussed in more detail below, a number of actions could be taken by AASL to address runway congestion at BIA before a second runway is ultimately required.

Finally, it is noted that use of BIA is currently shared between AASL and SLAF. Neither party appears to see this changing in the near future.

Mattala Rajapaksa International Airport, MIA

MIA was declared open on 18th March, 2013 and is one of the largest infrastructure projects in Sri Lanka's history. AASL was involved in its planning and delivery, and funding for the development of the airport has been obtained through AASL. The airport has an initial capacity for 1 million passengers and 30,000 flights per year, with a second phase providing further capacity growth planned for the future.

Passenger volumes reached over 36,000 in 2013 and 40,000 in 2014. However, since January 2015 passenger volumes and aircraft movements have dropped precipitously driven by the cessation of SriLankan Airlines services through the airport due to poor route economics. FlyDubai is currently the only carrier utilising the aircraft, and passenger movements through MIA were just 153 in April 2015.

Despite the low current usage of the airport, AASL continues to staff and operate it at the regulated levels required for it to be usable as an international airport. Although this is somewhat downscaled from earlier levels, this still results in a very significant cost burden for AASL, with minimal offsetting revenues and thus heavy losses overall.

Both AASL and the Ministry of Civil Aviation have therefore noted that identifying ways to improve the usage and profitability of MIA is one of the highest priorities within Sri Lanka's aviation sector at present, and current plans under consideration include:

- Waiving of bi-lateral agreements for MIA through an open skies policy
- Promotion of airport as entry/exit point for migrant workers through opening of approval counters for foreign employment
- Improvement of public transport and taxi networks to and from MIA
- Development of the 800ha MIA site as a 'Destination Resort City' and 'Adventure Tourism Gateway'
- Development of an Maintenance, Repair and Overhaul facility at MIA
- Development of a flight training academy at MIA

These plans are discussed in more detail, and their viability and evaluated in Section 11.6.

Colombo Ratmalana Airport, RMA

RMA is a domestic airport located to the south of Colombo. Use of RMA is shared between AASL and SLAF, and civilian operations that occur from RMA include its use for corporate and private jets (both domestic and international), scheduled and charter domestic flight services by Helitours, charter domestic flights by several other private operators, and pilot training services. AASL have noted that capacity is currently constrained at RMA; demand for hangar space in particular currently exceeds supply.

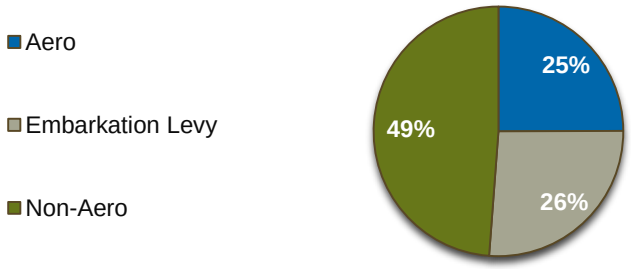
Going forward, a number of options for the continued use and development of RMA are being considered by AASL. These include the promotion of the airport as a regional airport serving the Maldives and India and additional promotion of the airport for use by corporate jets. However, both would require additional space at the airport and would therefore require SLAF to relinquish some of their current facilities.

11.2.2 Review of Revenues

AASL generates its revenues through a combination of aeronautical (aero) and non-aeronautical (non-aero) related revenue streams. Aero revenues typically include a per passenger levy (the Embarkation Levy) to cover the cost of using facilities such as terminals. This fee has been included by AASL in their non-aero revenues, but the Consultants have broken it out in current analysis for more effective comparisons with international peers.

AASL generated over Rs 12.1 Bn in revenue in 2013 which was an increase of 9% on the prior year. This increase was largely driven by growth in passenger numbers contributing to growth in the Embarkation Levy. AASL's total revenues are evenly split between aero and non-aero revenues streams which is considered fairly typical in the airport industry.

Figure 11.2 AASL Revenue Breakdown, 2013

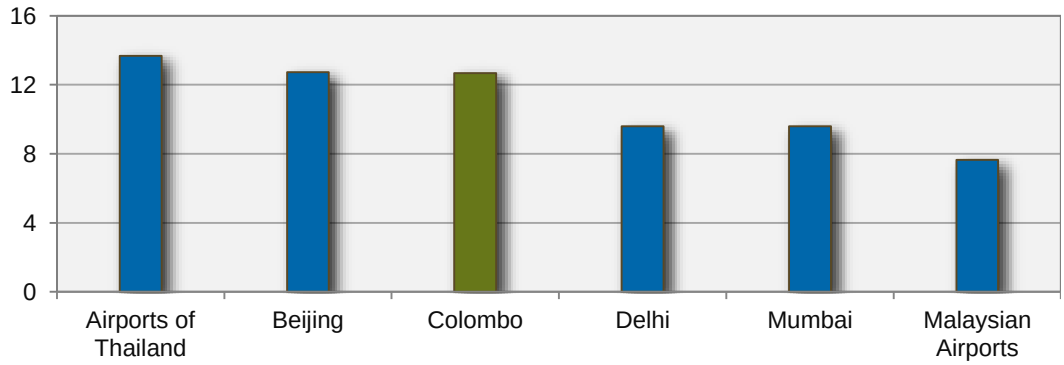


Source: AASL 2013

Alongside revenue gains during 2013, AASL posted the highest profit before tax of Rs 4.7 Bn and profit after tax of Rs 3.6 Bn in its history. These figures represent a 30% and 27% year-on-year increase respectively.

AASL's total revenue has been benchmarked against other airport operators in Asia on a per passenger basis using industry data. Each passenger generated US$12.68 of revenue for AASL and this compares well to its regional peers. It is marginally below Beijing's US$12.72 of revenue per passenger but notably higher than Delhi's US$9.59.

Figure 11.3 Total Revenue per Passenger Benchmark (US$)



Source: Leigh Fisher, 2013

Aeronautical Revenues

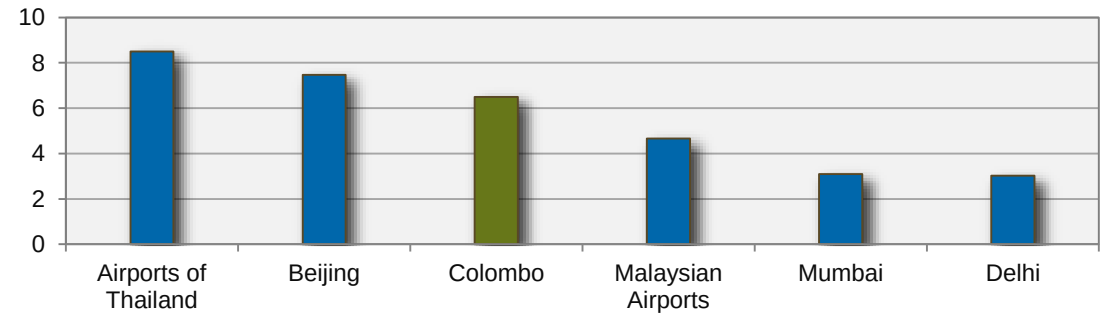
Aeronautical charges generated over Rs 3.0 Bn of revenue in 2013 which includes revenues from landing, terminal and overflying charges. Overfly revenue was Rs 0.72 Bn in 2013, an increase of 19% from 2012. This was a result of increasing frequencies from airlines such as Emirates, Qatar Airways and Cathay Pacific.

The embarkation levy generated over Rs 3.2 Bn in 2013 and has been treated as an aeronautical revenue stream. This levy is collected by the airlines from each departing passenger as directed by the Director General of Civil Aviation (DGCA), and is then passed on to the airport operator through the CAA of Sri Lanka.

In relation to aeronautical charges, it is understood that a form of light regulation is applied within Sri Lanka with the approval and review or charge changes handled by the Sri Lankan Government and the CAA.

With regards to aeronautical revenues per passenger, AASL averages US$6.50. This compares well with Indian airports and is only slightly behind those in other parts of Asia, for example Thailand. This relative performance implies that airports such as Mumbai generate less revenue than the published airport charges database would suggest. This may be attributed to different accounting conventions or the presence of significant discounts.

Figure 11.4 Aeronautical Revenue per Passenger Benchmark (US$)



Source: Leigh Fisher, 2013

Figure 11.5 Aeronautical Revenue Breakdown in 2013 (Rs Bn)

Category	Revenue (Rs Bn)	Proportion of Total Aeronautical Revenue
Landing	2.02	32.2%
Overfly	0.72	11.6%
Aero Bridge	0.31	4.9%
Embarkation Levy	3.21	51.3%
Total	6.25	100.0%

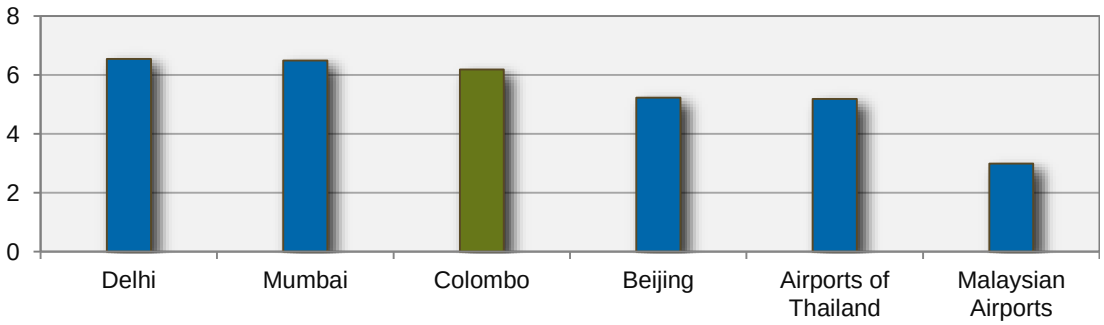
Source: AASL Annual Report 2013

Non– Aeronautical Revenues

AASL's non–aeronautical revenue income was Rs 6.0 Bn in 2013 of which 43% was generated from concession agreements making it the largest individual category. The second largest category was rental income which made up 36% of non-aero revenues and this category was a driver of growth in 2013, up 11% on the previous year. Other non–aeronautical revenue streams include ground handling, vehicle parking and entry permits.

At US$6.19, Colombo's non–aeronautical revenue per passenger benchmarks well amongst its peers and is marginally below Mumbai's yield of US$6.50.

Figure 11.6 Non–Aeronautical Revenue per Passenger Benchmark (US$)



Source: Leigh Fisher, 2013

Figure 11.7 Non–Aeronautical Revenue Breakdown in 2013 (Rs Bn)

Category	Revenue (Rs Bn)	Proportion of Total Non – Aeronautical Revenue
Concession	2.55	42.8%
Rental	2.12	35.6%
Entry Permit	0.15	2.5%
Franchise Fee	0.40	6.7%
Other	0.74	12.3%
Total	**5.96**	**100.0%**

Source: AASL Annual Report 2013

Benchmarking of Revenues

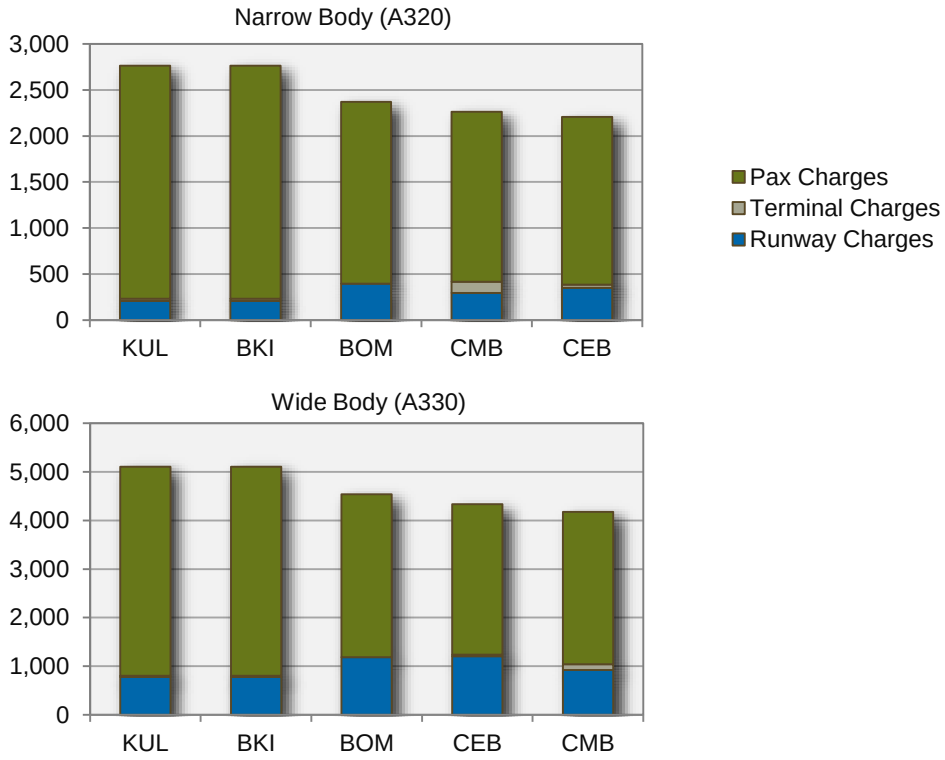
- **Airport Charges**

Sri Lanka's airport charges have been benchmarked against some peer airports of similar size and/or nature in the region. The published charges have been compared to provide a guide as to the typical cost an airline would expect to pay to fly to the airport.

A comparison for narrow body aircraft was prepared and Colombo was found to be comparable or slightly cheaper than its peers. For example a turnaround for an Airbus A320 was found to be 5% cheaper than at Mumbai. For airlines operating longer sectors or choosing to fly wide body aircraft on shorter sectors, Colombo was found to be the cheapest of its peer group at just over $4,000 per rotation.

It should be noted that these results are only illustrative of the published prices since the actual prices airlines pay are not publicly known. For example, airports will often work with their largest airlines in negotiating rates or providing incentives for certain carriers and markets.

Figure 11.8 Airport Turnaround Charges Benchmark, (US$)



Kuala Lumpur (KUL), Kota Kinabalu (BKI) Mumbai (BOM), Cebu (CEB), Colombo (CMB)

Source: Airport Charges Database

Due to Sri Lanka's island nature, long distances are typically required to travel to other countries. For example markets in the Middle East are over 2,000 miles away, whilst the largest markets in Asia average around 1,500 miles. Compared to other airports the average sector distance is considered long, for example it is over 1,500 miles from Colombo which is 50% more than the average of other airports in the region[28]. With these longer trip distances the significance of airport charges to airlines is reduced since other factors such as fuel costs and crew costs become relatively more significant the further you fly.

Airport charges can still be a significant component of an airline's cost base, though the influence that they have on each carriers' planning process can be wide ranging. For example, low cost carriers, and their passengers are typically most price sensitive to high levels or rises in airport charges. On shorter sectors (e.g. <700 miles) they may be as significant as 20% of the carrier's total operating costs and would become even more significant on shorter markets. For example, this may be the case for regional services or domestic flying in Sri Lanka. However, these routes are in a clear minority of total traffic today. In the future if this market segment is to develop further, targeted and regional pricing levels may be able to assist. Differential pricing structures are in place at many airports worldwide to reflect different geographic markets.

For airlines operating widebody aircraft to Colombo on inter-continental sectors the significance of airports charges is significantly reduced since sector costs will typically run well in excess of $100k per flight. Airport charges will often make up just a few percent of total operating costs so therefore play a much smaller role in determining a carrier's aircraft deployment. Other factors such as the market size and yield in relation to total flying costs will be the key determinant.

[28] Mumbai (BOM), Delhi (DEL) and Kuala Lumpur considered

11.2.3 Review of Operating Expenses

Total operating expenses (excluding depreciation) were Rs 7.47 Bn in 2013. At 56% of total OPEX, staff costs made up the largest single component, with 25% of staff being employed in an aviation security based role.

Figure 11.9 Operating Expenses Breakdown in 2013 (Rs Bn)

Category	Cost (Rs Bn)	Proportion of Total OPEX
Staff	4.17	55.8%
Utilities	0.78	10.4%
Repairs and Maintenance	0.44	5.9%
Other	2.08	27.8%
Total	**7.47**	**100.0%**

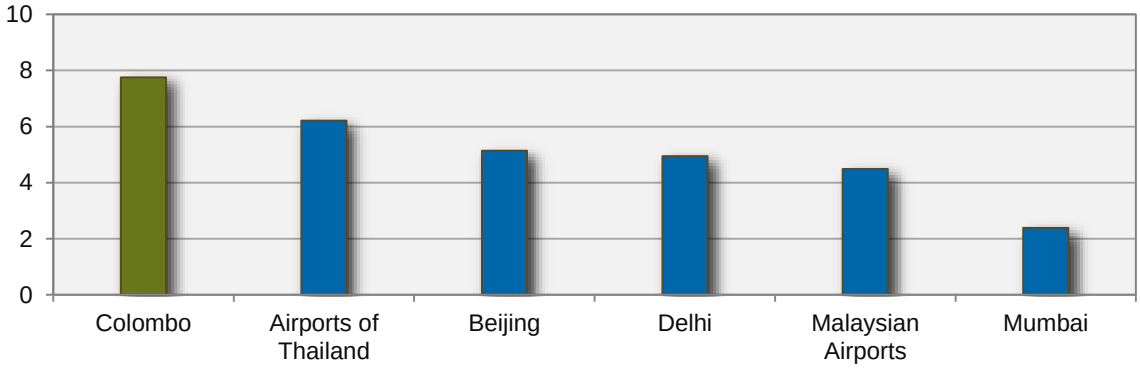
Source: AASL Annual Report 2013

Benchmarking of Operating Expenses

Colombo Airport's operating expenses per passenger benchmarks notably higher than its regional counterparts at US$7.76 for a number of reasons. Owing to Colombo's relatively lower passenger numbers it is less able to take advantage of economies of scale and efficiency gains that larger, privately owned, airports such as Mumbai benefit from. Another reason is that other airports will typically outsource greater numbers of business functions, such as security.

Repairs and Maintenance totalled Rs 0.44 Bn in 2013, an increase of 110% from 2012. This is largely due to extensive work undertaken in preparation for the Commonwealth Heads of Government Meeting held in Sri Lanka in 2013. Other expenses largely consist of legal fees, auditor's remuneration and accounting provisions for doubtful debts.

Figure 11.10 Operating Expenses per Passenger Benchmark (US$)



Source: Leigh Fisher, 2013

11.2.4 Ground Handling at AASL airports

Ground handling at BIA and MIA is currently provided by just one sole supplier, SriLankan Airlines, who are the only operator authorised to provide services such as baggage handling, ramp handling, fuel and oil handling, cargo and mail handling at Bandaranaike and Mattala airports. Despite complaints by some stakeholders that ground handling charges are excessive, there are currently no plans for SriLankan to stop being the sole provider of this service at BIA. In contrast, it is understood that AASL will take over the provision of ground handling services at MIA in the near term in order to reduce costs for airlines and to encourage increased use of the airport.

SriLankan Airlines Ground Handling serves more than 25 regular customer airlines and adhoc carriers at Bandaranaike International Airport (BIA). Annual revenues are over USD35

million per year and the company employs approx. 1,500 employees across the various functions. Like the airline, the ground handling company is fully owed by the Government of Sri Lanka.

Typically only small airports offer such limited choice in ground handling services and in markets such as Europe when an airport reaches a certain size (2 million passengers or 50k tonnes of cargo), it is then obliged to provide competition by tendering for further ground handlers. Typically at least one of the authorised suppliers may not be directly or indirectly linked to either:

- the managing body of the airport; or
- an airport user who carriers more than 25% of total passengers

Freedom to self-handle should be considered an option for those carriers who wish to, however it can be limited to a select few airlines and this decision should be based on relevant, objective, transparent and non-discriminatory criteria.

Also, the managing body of an airport or the supplier of ground handling services must, under the supervision of a designated auditor separate the accounts of their ground handling activities from the accounts of their other activities. This is to ensure transparency relating to the user charges being set by the ground handler and is typically audited on a regular basis.

Airport user committees are typically formed in conjunction with the airlines who wish to participate providing the users of these services to be represented and ensure their best interests are met.

Whilst this may not directly impact AASL's revenue or cost lines, having effective competition or choice would provide the airline community greater scope to tailor services to their requirements.

11.3 Opportunities for Improvement

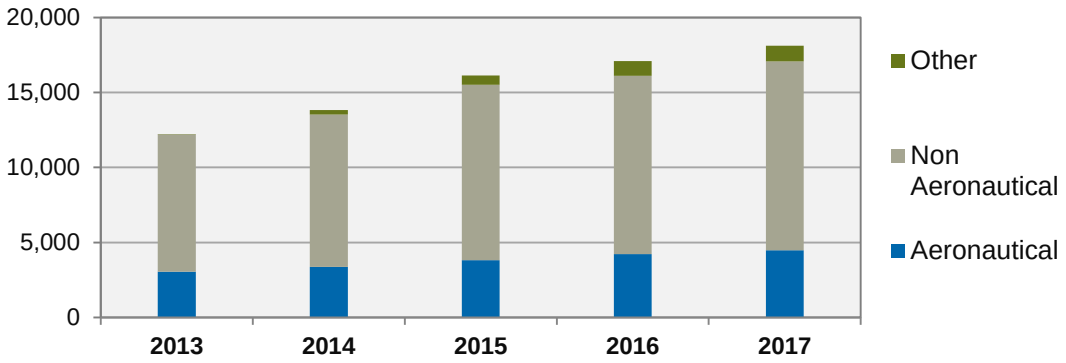
Airport operators typically look to drive operating performance by growing revenue streams and delivering unit cost savings over time. To date, improvements in AASL's financial performance has been primarily driven by strong growth in traffic volumes at BIA. This section considers potential areas relating to revenues and costs where AASL has ability to influence and derive improvements in the company's performance. Typical industry best practice is discussed in relation to how these potential upsides should be evaluated.

11.3.1 Opportunities for Revenue Growth

The latest available forecasts for AASL's revenues show growth from Rs. 13,820 million in 2014 to over Rs. 18,000 million by 2017 representing 30% growth in just three years. Driving this revenue growth is passenger volumes and aircraft movements which are forecast to grow 39% and 24% respectively in the same period.

Aero revenues are forecast to grow 33% in this period whilst non aero revenues are forecast to grow 24%. This results in average non aero revenues per passenger declining 11% in the same period from Rs1,300 to under Rs1,200 per passenger.

Figure 11.11 AASL / Treasury Revenue Forecasts to 2017



Source: OAG, Weekly Flights June 2015

Opportunities for revenue growth are discussed in the categories previously highlighted, namely aero revenues, passenger levies, and non-aero charges.

Aero Revenues

Aero revenues are set by both AASL and the regulator and are understood to have not changed in many years. It is understood that there is no plan to revise or review the current structure giving little potential for AASL to increase their revenues other than through volume growth.

In order to more aggressively pursue aero revenue growth, AASL could consider introducing a more tailored and up to date charging structure which would better match current runway utilisation to the structure of charges. Potential mechanisms for such re-structuring of charges include:

- **Peak Period Structure**
  - AASL could introduce a variable charging structure which reflects utilisation of their runway on an hourly basis. For example, increasing charges at times of the day when demand is strongest whilst offering incentives at off peak hours of the day to encourage demand to spread throughout the day and support greater traffic volumes overall.
  - Pricing could be tailored to provide either a revenue neutral outcome or to increase average revenues per movement. Some carrier types will be more sensitive to the time of day charges than others (hub carrier versus low cost) but this approach can provide revenue and operational benefits to the airport operator.
- **Weighting of ATM element in charging structure**
  - Given the shift to larger aircraft over recent years AASL may wish to further incentivise larger aircraft by putting an even greater proportion of total charges on the ATM element of the pricing structure. This results in those carriers flying larger, fuller aircraft benefiting the most through lower average charges per passenger compared to other airlines who would then be incentivised to increase the size of aircraft on the route should demand permit.
- **Minimum charging:**
  - Over time AASL may wish to revise upwards the minimum levels they have introduced for the use of the runway. This is a common mechanism to ensure scarce capacity is utilised effectively.

However, if the current charging structure was applied to a domestic operator there would be a significant operating cost burden given the increasing significance of airport charges on shorter sectors and the smaller aircraft that would be expected to operate these routes. Clearly charging a 40 seater regional jet comparable levels to a 400 seater widebody would result in significant unit cost penalties. To incentivise domestic aviation AASL could provide clear guidance over costs to any potential operator to ensure a transparent cost base can be understood.

Nevertheless, limited changes to the charging structure are currently anticipated, and as a result AASL is likely to only grow revenues through passenger volume and ATM growth. As average aircraft sizes increase over time the growth in aero revenue will likely lag that of growth in total demand.

Passenger Levies

An embarkation levy of USD25 is currently levied on all departing aviation passengers from Sri Lanka. This is set and collected by the Civil Aviation Authority, and the proceeds are distributed to AASL (40%; $10 per passenger), the Treasury (40%, $10 per passenger) and the SLTDA (20%; $5 per passenger).

This levy is a major source of revenue for AASL. However, both the total level of the embarkation levy and the proportion distributable to AASL are fixed at the current levels and could only be changed through an act of parliament. As a result, AASL is only able to grow this revenue stream through volume growth.

Non Aero Revenues

Generating revenue from non-aeronautical activities has become increasingly important to airports over the past two decades. The evolution of the airport sector from a public utility to a commercialized and, in some cases, privatized industry has given airports greater flexibility and motivation to exploit the commercial opportunities that exist. In addition, given the need to finance future capital expenditure and maximize shareholder value, airports are under pressure to optimize the revenues they generate from commercial sources.

AASL is due to open a new larger terminal at Bandaranaike International Airport in 2019, and this will present potential for AASL to improve their commercial revenues through the addition of new retail space areas. It will be important that BIA adopt strategies that maximise the potential for commercial activities in these areas, and this could provide a key mechanism for non-volume related revenue growth going forward.

Typical strategies to maximise revenues from retail spaces within airports include:

- **Reconfiguration** of current and new space in accordance with contemporary concession planning standards to maximize the retail offers to the most passengers. This can help stimulate higher transaction volumes and revenues.
- Ensuring the **travel characteristics** including the major points of origin and purpose of travel as well as passenger demographics including gender, age and nationality are met effectively within the retail space offerings. Tailoring the retail space to the customer and the developing passenger mix will be key for a fast growing airport such as Bandaranaike.
- Adding **new retail categories** and concepts to fill any gaps which exist based on the existing conditions. For example due to space limitations today, certain retail categories may not be served efficiently or with a very limited presence.
- Increasing the overall footprint of the commercial program to achieve **optimal sizing** given the projected passenger volumes. Making best use of the available space results in unit productivity improvements.
- Negotiation of enhanced **concession fee** percentages at contract renewal schedules should be performed to extract the maximum value for management.
- Enhancing the overall **passenger experience** through innovation and enhanced customer service

Implementing these plans can be relatively straightforward, for example by considering:

- Location of retail in relation to the passenger gates
- Efficient design to minimise passenger processing time to maximise dwell time within the terminal
- Maximising e.g. food sales for LCC passengers or fashion/perfume for premium passengers
- Long haul passenger spend is different to short haul and women are typically higher spenders but typically account for less than half of total volumes

- A strong passenger experience encourages spend; measures such as having ample natural light are known to drive higher volumes

As part of any change in configuration, management should ensure they are accurately tracking the current and historical performance in relation to typical industry measures. These measures often relate to the different revenue streams and measured by sales, sales per square foot, sales per enplanement, capture rates, and total revenues as typical examples.

Summary of Potential

There are currently no plans to develop revenue per passenger for either aero revenues or passenger levies. These revenue streams will therefore growth in line with volume growth going forward; which is expected to be significant, as discussed in previous sections. However, with regards to non-aero revenues, particularly in light of the planned development of a second terminal, there are significant opportunities to growth revenues per passenger, and to therefore achieve revenue growth in excess of volume growth. This is an important opportunity for AASL to improve its financial performance going forward, and, as a result, adopting international best practice to concession planning should be considered a priority.

11.3.2 Opportunities for Cost Savings

The Consultants discussed at a high level potential opportunities for cost savings with AASL during stakeholder consultations. In order to undertake this analysis in full, it was agreed that AASL would share with the Consultants detailed information relating to the company's operational performance and development plans. However, to date, this has not been received. Opportunities for cost savings will therefore be further expanded in subsequent reports once the information has been received.

11.3.3 Opportunities for Operational Improvement

This section focuses on ways in which AASL could seek to grow traffic at BIA through more efficient use of the airport's runway, either in the short or long term. The opportunities for operational improvement through an effective master planning process are also reviewed.

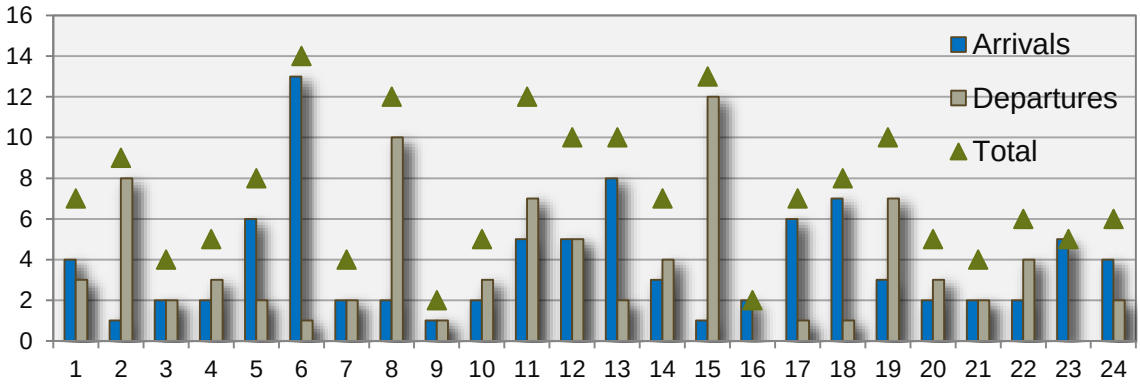
Runway Operations

Runway demand at BIA in 2014 was under 60k annual movements or around 160 movements per day. This demand is expected to continue growing in line with the study's traffic forecasts but at a slightly lower rate as a result of industry trends reflecting increases in average aircraft size. By 2035 when passenger demand is forecast to reach 20.6m, annual runway movements are forecast to reach 130k representing a more than doubling of demand versus today or an average annual growth rate of 4%[29] between 2014 and 2035.

SriLankan Airlines operate over half of total movements, and overall BIA has an underlying demand profile which results in several hours of the day being the most congested. For example, a significant arrival wave of aircraft is seen at around 06:00 which is then followed by the corresponding departure wave in the 08:00 hour.

[29] Passenger ATMs forecast to grow from 57k in 2014

Table 11.2 Hourly Profile of Demand at BIA



Source: OAG, 2015

The current declared runway limits are understood to represent approximately 13 arrivals per hour with a similar number of departures. Whilst total runway movements are currently well below the declared capacity limits, the arrivals and departures are much closer to the declared limits. For example 13 arrivals are currently schedules in the 0600 hour on a Saturday whilst only 1 departure is scheduled in the same hour.

Today BIA operates with a declared hourly capacity of 25 movements which when converted to a potential annual throughput of movements is equivalent to 183k movements (assuming an operating window of 20 hours[30]). Compared to other 1 runway airports this limit is well below its potential, for example annual movement capacities at other airports that significantly exceed this include Gatwick (332k) and Mumbai (438k). Many other 1 runway airport examples exist where total movements as well as the declared capacity limits are well in excess of that at BIA today.

Airports typically start to be considered 'full' when demand approaches annual utilisation levels of 75%. Airports such as Paris CDG and Amsterdam are currently operating around these levels but are known to be considering the addition of further runway capacity in the short-medium term.

Table 11.3 Comparison of Runway Capacity

	# Runways	Capacity (ATM/Hour)	# Hours of operation	Annual Capacity (k)	ATMs Today (k)	Annual Utilisation
Amsterdam	6	108	16	631	471	75%
Frankfurt (2014)	4	120	18	788	472	60%
Paris CDG	4	97	18	620	471	76%
Frankfurt (2013)	3	98	18	644	469	73%
Heathrow*	2	80	18	511	477	93%
Dubai	2	62	24	543	357	66%
Gatwick	1	52	18	332	270	81%
Mumbai	1	50	24	438	280	64%
BIA**	**1**	**25**	**20**	**183**	**57**	**31%**
BIA** (2035)	1	45	20	329	160	49%

** Heathrow operates with a 'planning' cap of 480k ATMs meaning actual utilisation is around 98%*
*** BIA assumes 25 ATMs/hour today but that the airport should be able to achieve 45 in the future*
Note: Not all runways are typically operational at one time, for example Amsterdam has several crossed runways
Source: Various Airports & Slot Coordination bodies

Some airports (e.g. Heathrow, Gatwick) operate well in excess of these levels since demand has filled in the off peak hours or operate very flat seasonal schedules resulting in only

[30] A 20 hour day assumed for an 'operating' day at Colombo

limited peaks throughout the year. However many hours BIA is assumed to be operational for during the day results in supply significantly exceeding demand. For example an annual utilisation figure of around 30% is obtained today when assuming an operating day of 20 hours. In reality BIA can be assumed to be open for longer since it does not operate with any curfews (similar to the Middle East airports) presenting potential greater throughput when compared to some European benchmarks which often operate with strict planning & noise restriction periods.

Even by 2035, if BIA could implement infrastructure and system/process upgrades to achieve 45 movements per hour an annual utilisation figure of under 50% is still forecast. This is shown in the following table along with a sensitivity that considers a scenario where the average number of passengers per movements remains the same as the base year, again the annual utilisation will remain under 50%.

Table 11.4 BIA Potential Runway Utilisation in 2035

	2014A	2035F	2035F sensitivity*	2035F sensitivity**
Passengers	7.8M	20.6M	20.6M	20.6M
Passengers per ATM	136	155	136	155
ATMs	**57k**	**132k**	**151k**	**132k**
Annual Assumptions	20hrs / day 25 ATMs / Hr	20hrs / day 45 ATMs / Hr	20hrs / day 45 ATMs / Hr	16.5hrs / day 25 ATMs / Hr
Annual Runway Capacity	183k	329k	329k	151k
Runway Utilisation	**31%**	**40%**	**46%**	**88%**

Assumes 45 movements per hour is delivered by 2035
** Sensitivity assumes no growth in passengers per ATM*
*** Sensitivity assumes no growth in passengers per ATM and no growth in annual runway capacity*

However, if BIA is not able to deliver any improvement in operational performance and the average passengers per aircraft is assumed flat whilst operating a day of 16.5 hours , then the measure of year round utilisation would near 90% and these levels would represent a 'full' airport and this is shown in the second sensitivity above.

11.4 Case for a Second Runway

In discussion with several stake holders it was suggested that priority should be given to the construction of a second runway at BIA to enable future growth as the runway limits will start to become a constraint on traffic growth. A site to the south of the current runway has been suggested and land is already partly protected to facilitate this growth. This would result in the current terminal being located between the two runways providing an efficient layout for aircraft to manoeuvre on the airfield.

Assuming BIA cannot deliver any operational improvements whilst operating a restricted day, then the runway will be considered 'full' in the late-2020s[31]. In addition to this there may be other factors that appear to support the addition of a new runway, for example:

- **Large Aircraft**: Today BIA cannot accommodate the largest aircraft, the Airbus A380
- **Operational**: A second runway would present operational benefits to the airlines, for example provide alternatives in the event of a runway closure, or when one runway is due to undergo routine works such as resurfacing
- **Capacity**: Provide additional capacity, especially in the periods of peak demand

[31] In 2029 when BIA reaches 17m passengers and 113k ATMs with an annual capacity for 150k ATMs represents annual utilisation of 88% (as per the second sensitivity discussed above)

11.5 Evaluation

Any decision to build a new runway should consider the relative benefits and costs as well as viable alternatives offered at least in the medium term. For example it is understood that operational measures could be introduced to improve the declared levels of capacity.

Airports adjusting their capacity declaration is common and best practice and often undertaken on an annual basis. For example, Mumbai is currently working to achieve gains from 45 ATM/Hr to 50 in the short term and beyond this in the medium term. These gains are supported by improvements to their operations relating to factors such as ATC measures and better management of aircraft on the apron. Some of the typical measures utilised by airports to increase their declared capacities are presented in the following table:

Table 11.5 Measures to improve runway throughput

Measure	Rationale
Arrival & Departure Mix	Adjusting the declared levels of arrivals to better match demand
Air Space Management	Better management of arrival/departure routings
ATC tools & equipment	Ensuring the latest technology is available and implemented
Rapid Exit taxiways	These provide benefit to runway throughput ensuring the runway is cleared quickly
ATC Training	Provide the latest training from airports that currently operate at higher levels of ATMs
Radar separation	Reducing runway separation can support runway throughput gains
Airfield lighting	Intelligent lighting solutions can provide wayfinding for aircraft & reduce runway times
Robust capacity declaration	Ensuring limits are suitable

Source: ICF

The desire to serve the largest aircraft types should also be considered, for example the Airbus A380 is a niche aircraft and whilst operated by several of the carriers that serve BIA is unlikely to ever account for more than 5% of runway movements. It is also an aircraft suited for high density markets at heavily congested airports (e.g. London, Sydney, Singapore etc.) operated by some of the largest airline brands in the world. Other smaller operators have struggled to operate them successfully and are currently trying to offload these expensive assets (e.g. Thai Airways, Malaysian Airlines).

Investing in infrastructure to support such aircraft is unlikely to generate sufficient returns especially when these carriers also operate other relatively large aircraft that are accommodated at BIA today. Another key factor is that the home based carrier (SriLankan) is unlikely to ever operate this aircraft type which is only suitable for 'mega' carriers such as Emirates. Other measures could also be explored to serve these aircraft such as widening the current runway shoulders.

The benefits of any second runway should also be weighed up in relation to the infrastructure investment required as well as future ongoing opex required with such an asset. Building the new runway would take several years and only result in BIA becoming even more 'underutilised' when compared with other international peers that it seeks to imitate.

Master Plans

As discussed earlier, it is our understanding that BIA has not completed a formal master plan since 1983 and that AASL continues to use this work as a guide for planning objectives. Airport operators typically create new masterplans approximately every 5 years, with regular monitoring and updates to ensure that the latest traffic and planning developments are captured.

The goal of a Master Plan is to provide the framework needed to guide future airport development that will allow the airport to keep pace with aviation growth and demand cost effectively. They also need to consider the potential environmental and socioeconomic

impacts of any future developments. Master plans also offer a range of wider potential benefits in addition to their value in informing the planning process for development:

- They provide an indication of an airport operator's plans for infrastructure
- They inform long-term resource planning for local and regional bodies
- They make a useful tool for communicating to a range of stakeholders, including airlines, funding institutions, local authority and other local interests
- They help airport operators to make clear milestones relating to planning applications, construction and opening dates
- They demonstrate the range of costs and benefits of airport growth; and
- They enable airport operators and others to assess local social and environmental impacts.

If applicable a master plan should be linked to wider Government objectives such as national aviation and transport policies. Master plans are most applicable for airports likely to undergo strong demand growth requiring new or extended terminals or runways and BIA should be considered in this category for prioritisation.

Master plans typically address the following core areas:

- **Forecasts**
  - Passenger and air traffic forecasts typically underpin the master plan with a focus applied in specific years (e.g. every 5 years) or when certain thresholds are met (e.g. current terminal capacity). Busy day scheduling modelling, passenger profiles and potentially simulation modelling may be used as a background for major infrastructure projects
- **Infrastructure proposals**
  - Airports should typically make best use of their existing capacity before new developments are made. It is important to understand where the binding constraints arise as well as suitable sensitivities (e.g. gates, stands, queues etc.) This typically results in an investment plan identifying important milestones and capital expenditure plans over the next 10 years
- **Safeguarding and land/property take**
  - Master plans should seek to address what the long-term land requirements are for future airport development and whether this requires changes to airport boundaries
- **Surface access initiatives**
  - Over the long term surface access can become a significant constraint to airport growth so needs to be carefully planned as part of an integrated approach to the development of the airport
- **Impact on people and the natural environment**
- **Proposals to minimise and mitigate impacts.**

We understand that BIA has plans to produce an updated master plan and this is welcomed. Understanding which binding constraints will be the most important barrier to growth as well as putting in place a well thought out plan for future development will provide BIA with a clear focus and enable them to prioritise accordingly

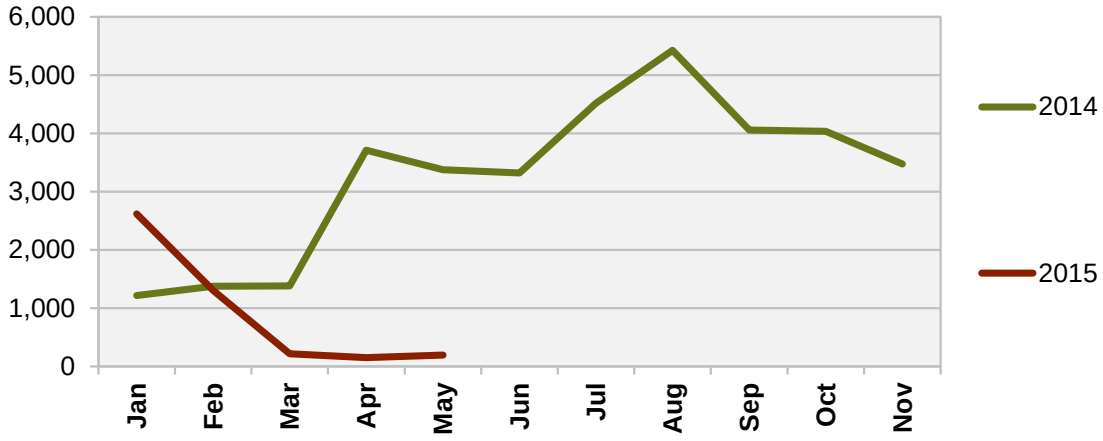
It should be noted that for the analysis relating to AASL's operational performance and development plans, limited data has been made available to the study. Therefore information gathered in stakeholder meetings and publicly available sources has been relied upon to form views around the current performance and plans of AASL.

11.6 Strategy for Mattala International Airport

As noted above, since March 2015 traffic volumes at MIA have fallen to under 200 passengers per month; a significant decline from the peak of over 5,000 passengers in Aug'15. This drop in performance is attributable to SriLankan's withdrawal from the market following the presidential election in January 2015. Less than 6,000 passengers are expected to use the airport in 2015 which is well below the designed capacity of over 1 million passengers.

It is our understanding that the remaining passengers relate to an ongoing service provided by flydubai but these passenger volumes would only represent a small proportion of seats they currently fly.

Figure 11.12 Mattala Passenger Volumes, 2014-2015



Source: AASL

It is considered unlikely that Mattala's performance will improve significantly despite ongoing efforts to market Mattala as an alternative gateway to Sri Lanka. As noted above, a number of plans are currently under consideration to increase demand at MIA, but those introduced so far; namely lower airport charges and an open skies policy outside the current restrictions applied in the Colombo market are understood to have seen little interest from the airline community to date.

The study has considered the most popular plans to increase use of MIA, and these are discussed in more detail below.

11.6.2 Development as a Tourism Gateway

Mattala is located on the South Coast; Sri Lanka's leading tourism region with the highest number of bed nights at present by some margin. It is well located within the region for certain tourist destinations such as Yala national park and some beach areas, but is not the most convenient entry point for many other beach areas due to its location in the east of the region and due to the existence of the Southern Expressway which has significantly reduced surface access times from BIA.

Going forward, discussions with stakeholders including some of the tourist bodies suggest that there may be potential for international charter flights to serve Mattala. These carriers would benefit from operations to the airport due to its better location for some of the markets on the South Coast as well as taking advantage of lower landing charges. It is also understood that plans are in place to develop additional tourism attractions within the close vicinity of MIA, and to improve local transport connectivity and transfer services from the airport. These would both serve to improve the attractiveness of the airport to tourists and airlines and to increase its demand.

11.6.3 Development as a Flight Training hub

Within Asia the airline industry is estimated to support over 70k pilots with a growing need to train thousands more to accommodate the future growth that is forecast. Pilot numbers operating within Asia are estimated to double in the next 10-15 years supported by strong growth from markets such as China and India.

Mattala may have potential to offer flight school operations, but it would need to be able to provide training facilities and standards in line with international expectations. Some flight schools are supported and run by legacy airlines but many do not perform this role

themselves. Airlines will often outsource the flight school training but perform their simulator training at their main bases to reflect the location of their crew and demand.

Mattala would need to be able to offer affordable operations where airspace (e.g. Government controlled) does not become a barrier operationally or financially to these flight schools. For example the US is favoured by many schools due to the cheap costs facilitated by the relatively open environment whereas training in markets such as China can be restricted due to factors such as military involvement with potential no fly zones and the need to file flight plans in advance.

11.6.4 Development as an MRO hub

The global MRO (Maintenance, Repair & Overhaul) market is a multibillion dollar industry providing services to airlines around the world. The global air transport fleet (currently comprising 27,000 active aircraft) will generate an annual MRO spend of approximately $60bn, and with fleet sizes set to grow on average 3% this will translate to future market growth and spend.

MRO operations typically break down into the following categories:

- **Airframe**: This relates to heavy maintenance performed on an aircraft for a 'heavy check' such as a 'D Check'. This operation is highly labour intensive requiring significant manpower and investment in facilities.
- **Engine**: For this category of maintenance, the engines are typically removed from the aircraft and sent to a workshop for further maintenance which is not able to be carried out during regular line checks.
- **Component**: Similar to engine maintenance in that parts are removed from the aircraft. For example pumps, generators are removed from the aircraft and sent to a workshop

Whilst Sri Lanka may be able to offer a competitive proposition in relation to operating costs with relatively cheap labour it should be recognised that MRO facilities need to be situated at, or close to very large centres of aviation demand. Current MRO facilities are typically found in Singapore, Dubai, and Amsterdam where sizeable based carriers can be found.

An airport of Mattala's scale will always be lacking operations of a comparable nature. Whilst airlines could fly their aircraft to Mattala for specific checks, such checks typically take place at the airline's home base or down route at a market they already fly to, thus eliminating the cost of positioning an aircraft and losing further flying time/revenues.

The Engine/Component side of the MRO business does not even need to be carried out at an airport since components are often removed from the aircraft and taken to a nearby warehouse to undergo maintenance thus limiting the attractiveness of a facility such as Mattala.

11.7 Funding Review of AASL

11.7.1 Funding Status

AASL's financial position has changed substantially in the last five years. This was due firstly in 2012 to the amalgamation of AASL's assets with those of BIA previously held by the Government (only part of the assets of the former Airport Authority were transferred to AASL in 1983 at its formation; the remaining assets were previously held within the Voted and Retained Revenue Funds of the GoSL).

Secondly, AASL has taken on significant borrowings to enable the construction of MIA and the expansion of BIA. Outstanding loan amount is Rs 35,919 million as of December 31, 2014.

The gearing ratio, as proportion of total borrowings over total source of funding (equity and borrowings) is a measure of financial leverage of the company. Such ratio has evolved as set out in the table below over the last five years.

Table 11.6 Financial leverage

	2010	2011	2012	2013	2014
Equity	8%	4%	10%	17%	23%
Debt (1)	92%	96%	90%	83%	77%

(1) Longer term interest bearing borrowings

Source: AASL 2014 Annual Report

Debt comprises loans denominated in foreign currencies obtained thorough General Treasury for the development of BIA under sovereign guarantee.

The ratio has constantly decreased over time, thus improving the capital structure of AASL which has been highly geared over the past years.

Looking forward, AASL has secured agreement in principle from JICA for a loan of USD190million for the construction of a second terminal at BIA. This loan will be drawn down in instalments as required, and is a 40 year loan including 10 year interest free grace period. The interest rate on the construction portion (95%) of the loan is just 0.2%, while the rate on spending on consultants is 0.1%.

The financial leverage as of end of December 2014 is still high and the additional borrowing for the second terminal at BIA will constrain the future borrowing capacity of AASL in the future years.

12 Conclusions

12.1 Introduction

In order to guide the GoSL's development of its domestic aviation sector, and in order to determine the potential for involvement by the private sector in the industry, this Study aimed to assess whether a strong rationale for domestic airport developments exists on the basis of a market study which included a forecast for domestic aviation up to 2035.

In the context of a market driven approach for airport developments, the Study reviewed national airports to identify and select some sites where the traffic forecast would justify further investments, taking into account the integrated transport network across the country.

With regards to private sector participation, the Study considered the domestic aviation market, the market need for investments and key factors which impact the investment appetite of the private sector, such as the financial viability issues of domestic airport operations.

The final objective of the Study was the review and appraisal of the operations of AASL in order to determine insights into the body's competitiveness. Options for operational or financial improvement have been identified.

12.2 Key Findings

12.2.1 Market analysis and key forecast outputs

A key output of the market analysis is the 20 year forecast. Figure 12.1 below summarizes the key variables which are forecast in the Study.

Figure 12.1 Summary of forecast

variable	unit	2014	2035
Inbound Tourism	number of tourists	1,5 million	5.4 million
International Air Traffic	arrival & departure	7.8 million	21 million
Tourist Visits across regions	number of visits	4.5 million	16 million
Domestic Air Travel demand	arrival & departure	137,000	337,000

Source:ICF

Tourism development drives international air travels: inbound tourism is forecast to grow and will contribute nearly 50% of total international aviation traffic in coming years.

Sri Lanka aviation sector is also forecast to grow (7% CAGR), however only a portion of inter- regional tourism travel will be served by air services. Domestic traffic will remain relatively low compared to growth of international air travels. There is a strong relationship between surface transportation network and demand for air services. Average sector distance in Sri Lanka is lower than in comparable countries, hence the alternative choice of road transport becomes more impactful on demand for air services than elsewhere.

Domestic aviation connectivity is not a constraint to tourism growth: The low domestic aviation forecast suggests that implementation of tourism development plans does not need expansion of domestic airports and contribution of domestic air travels to tourism is limited.

Overall, the Market Study analysis suggests that the scope of developing domestic airports to support tourism growth is not well supported by market needs. In order to make sound investment decisions, a rationale for development of domestic airports should be developed and tested first, from the perspective of tourism development there is any strong rationale for additional investments in domestic airports.

The Market study provided a forecast demand for domestic air services up to 2035 for each key tourist destination. In the second part of the Study, the Consultants assessed the quality and capacity of existing infrastructure in selected airports (one of each region) in comparison to the estimated traffic forecast for each airport. A key purpose of the analysis was to test whether there is a need for additional investments in existing domestic airports, should demand for air service develop at the estimated growth rate in coming years.

12.2.2 Development of Domestic Airports

The analysis for development of domestic airports was carried out for six domestic airports which were selected through a screening process based on the following criteria: (1) short and long term demand, (2) location within region and (3) importance to tourism market.

For those six airports[32] options for investment were developed taking into account:

The analysis suggested that the five (5) most relevant airports for development are:

Bandaranaike International Airport – in order to facilitate direct transfers for international passengers arriving into Sri Lanka;

Mattala International Airport – in order to make most use of the existing infrastructure assets and to enable continued growth within Sri Lanka's most popular tourism region;

Sigiriya Airport – in order to provide easier access to key tourism destinations within the Ancient Cities region; Hingurakgoda has been identified as alternative airport in the region, should Sigiriya not be a suitable site for environmental issues.

Batticaloa Airport – in order to provide quicker access to Sri Lanka's east coast and upcoming tourism destinations in the region; and

Jaffna Airport – in order to provide quicker access to the north of the country.

The site visits found that a significant amount of investment is not required in order to service the unconstrained demand forecasts.

Given the limited need for infrastructure investments to meet unconstrained traffic demand, the above finding have a significant impact on prospects for domestic airport development, weakening significantly the rationale for additional investments in those selected airports.

12.2.3 Prospect for investments

A private sector investor seeks a target level of return and profitability and the existing level of traffic and the domestic aviation forecast for coming years might not be sufficient to justify viable investments from a private sector perspective.

A key challenge for private sector participation in Sri Lanka's domestic aviation sector, assuming the forecasts demand is realised, is the operation of the regional airports. Small airports face high operating costs per passenger and revenue opportunities are expected to be limited.

[32] Bandaranaike International Airport, Mattala International Airport, Sigiriya Airport, Batticaloa Airport, Palavi Airport Jaffna, and Diguna (Kandy).

In the future, the GOSL may consider transferring the management of domestic airports to AASL or to a private operator, as well as to continue to fund the domestic airports through the role of the SLAF. In order to make informed decisions, the Consultants highly recommend developing an accounting mechanism which allow an estimation of operating costs on a 'stand-alone' basis.

Improved transparency on costs would be beneficial in several ways, including:

- to understand and monitor the actual impact on public resources of funding the domestic airports; and
- to evaluate concrete prospects for private sector involvement, being mindful of expected returns from a private operator.

In addition to financial viability issues, involving the private sector entails other challenges and some steps can be taken by the GOSL to facilitate and promote such participation in domestic aviation. This Study sets out recommended actions to define a clear route to PPP and to strengthen the legal and regulatory framework as well as the institutional arrangements to promote private sector participation in the sector. In particular addressing the market distortion from Helitours activities is recommended if the intention is to prepare the industry for private sector participation in the future.

12.2.4 AASL's Operational and Financial Performance

Analysis of AASL's operations has identified a number of areas for potential improvement going forward, including scope to increase both aero revenues and non- aero revenues. In additions, key important remarks are:

Opportunity for growth. Aeronautical revenue are likely to increase with volumes but they could experience additional growth if charges are restructured. BIA has significant scope to increase non-aero revenue per passenger and in particular with the building of the second terminal.

Scope to expand capacity of existing runway at BIA. It is understood that operational measures could be introduced to improve the declared levels of capacity which is currently lower than level of capacity of peer international airports operating with a single runway. Airports adjusting their capacity declaration is common and best practice and often undertaken on an annual basis. Any decision to build a new runway should consider the relative benefits and costs as well as viable alternatives offered at least in the medium term.

Update the Master Plan. Master plans are most applicable for airports likely to undergo strong demand growth requiring new or extended terminals or runways and BIA should be considered in this category for prioritisation. Understanding which binding constraints will be the most important barrier to growth as well as putting in place a well thought out plan for future development will provide BIA with a clear focus and enable them to prioritise accordingly

Solid financial performance. AASL's financial performance is positive and profitability has grown over the last year, mainly driven by volume growth. Future borrowing capacity will be constraint by the financing of the second terminal at BIA.

12.3 Key Conclusions and Recommendations

In conclusions, the Market Study provides a set of considerations to take into account when exploring options for domestic airport development:

- Tourism shall drive international aviation traffic growth, contributing to nearly 50% of total forecast traffic of 21 million passengers in 2035
- Domestic aviation market is fairly underdeveloped and is expected to grow to 337,472 passengers by 2035
- Low levels of forecast demand for domestic aviation, compared to international air travel, signal a small contribution of domestic air service to tourism development

- There is no strong rationale for additional airports to support tourism development plans.

The Study reviewed and assessed the opportunity/need for further development of selected existing domestic airports and recommendations were developed on prospects for private participation:

- Existing domestic airports do not constrain tourism growth, the forecast demand at each airport can be served by existing facilities and there is no need for immediate infrastructure investments
- There is significant room for improving the utilisation of the existing runaway at BIA International Airport and investing in a second runway is not required to support traffic growth until volumes are much greater
- Financial viability of small airport operations is likely to be an issue. Cost transparency in operations and management of domestic airports managed by the SLAF is highly recommended to allow informed decisions regarding the use of public resources and to evaluate options for private sector participation
- Addressing pricing distortions, preparing the sector for more open competition and taking steps to improve the overall environment for private participation are encouraged measures to facilitate private investments when demand for air services will be sufficient to generate interest from investors.

ANNEXES

Annex Contents:

Annex 1 Mission Meetings - Stakeholder Consultation

A series of meetings were undertaken between 15th and 19th June 2015, as summarised in Programme of Meetings: 15-19 June 2015 as shown in Table A1.1.

Table A1.1 Meetings held during stakeholder consultation period

DATE/TIME	MEETING
Monday, June 15	
9.00 am 9.30 am	World Bank Team/ PPIAF meeting
10.00 to 10.30 am	Ms Shirani Weerakoon Additional Secretary Ministry of Tourism and Sports
11.00 am to 11.30 am	Mr Rohantha Athukorale Chairman Sri Lanka Tourism Promotion Bureau
11.30 am to 12.00	Mr. Paddy Withana Chairman and Officials Sri Lanka Tourism Development Authority
12.00 noon to 12.30 pm	Mr Vipula Wanigasekera General Manager Sri Lanka Tourism Convention Bureau
3.30 pm to 5.00 pm	Mr Malraj Kiriella Director General Sri Lanka Tourism Development Authority
Tuesday, June 16	
10.00 am	Mr. D. Swarnapala, Secretary and Mr. R.M.S.P. Rathnayake, Additional Secretary Ministry of Civil Aviation
10.30 am	Presentation of the Inception Report All stakeholders, hosted by Mr. Rathnayake
3.00 pm	Mr. Upul Jayasuriya Chairman Board of Investment
Wednesday, June 17	
09.45 am to 10.30 am	Group meeting with: Ms. Ruvini Bandaranayaka and three heads of departments Executive Directress Airport and Aviation Services
10.30 am to 11.15 am	Ms. Ruvini Bandaranayaka and Executive Directress Airport and Aviation Services
11.15 am to 12.00 pm	**Mr G. Withanage** **Head of Civil Engineering (P&D)** Airport and Aviation Services
12.00 pm to 12.45 pm	**Mr. H.S. Hettiarachchi** **Head of Airport Management** Airport and Aviation Services
1.15 pm to 2.00 pm	**Mr. L. Dahanayake**

DATE/TIME	MEETING
	Head of Finance Airport and Aviation Services
4.00 pm	Prof. Kithsiri Liyanage Secretary Ministry of Policy Planning, Economic Affairs, Child, Youth & Cultural Affairs
Thursday, June 18	
9.30 am	Tourist Hotels Association of Sri Lanka (Apex body of all approved/ formal sector accommodation) Mr. Hiran Cooray, President Ms Amal Goonetilleke, Vice President
10.45 am	Mr. Prema Cooray Chairman Rainforest Ecolodge former Chairman Aitken Spence former Chairman of the Chamber of Commerce
12 noon	Mr Rohan Pethiyagoda Advisor to Minister of Tourism
1.45 pm to 2.45 pm	Mr. Romesh David Director Cinnamon Air
3.00 pm	Mr Chandra Wickremasinghe Chairman Connaisance de Ceylan
4.30 pm	Air Marshal Gagan Bulathsinhala Commander Sri Lanka Air Force
Friday, June 19	
9.30 am	Mr. Lakshman Jayasekera CEO Hybrid Airports (Pvt) Limited
10.30 am	Mr. D. Swarnapala, Secretary Ministry of Civil Aviation
12.30 pm	Mr. H.M.C. Nimalasiri Director General and Chief Executive Officer Civil Aviation Authority
3.00 pm	Mr. Ajith Dias Chairman Sri Lankan Air Lines and Mihin Airways

Annex 2 Domestic Airport Factsheets

A2.1 Bandaranaike International Airport, Katunayake

Name	**Bandaranaike International Airport (BIA, also known as Katunayake Airport)**
Description	BIA is one of the busiest hub airports in South Asia, and is operated by AASL.
Location	BIA is located in the Western Province on the West Coast in a suburb of Negombo, 35 km north of Colombo.
Current Use	Main international airport serving Sri Lanka with passenger traffic just under 8m in 2014. It is the home hub for SriLankan Airlines, Mihin Lanka, Sri Lankan Cargo, and Cinnamon Air. The airport is used for both civilian and military use; AASL manages all civilian aspects of the airport while SLAF manages military uses.
Connectivity	BIA is currently connected to the Colombo-Katunayake Expressway with indirect access to the Southern Expressway. It will be connected to the proposed Central Expressway to the Northeast. A high-speed rail system has been suggested to connect the airport to the capital Colombo by an electrified high-speed rail link to Colombo Fort where it will link to the proposed Colombo Monorail (39 km from Colombo Fort Station to Negombo), but plans are currently in the early concept stage only.
Future Developments	A second passenger terminal is currently in planning; funding has been secured from JICA, and AASL anticipate that the terminal will be completed in 2019. Future projects may include a second runway, a domestic terminal, a five-story car-park, and a five-star hotel neighboring the airport.
Impact on Tourism Development	BIA is crucial for the continued development of Sri Lanka's tourism market as the entry point to the country for the vast majority of travelers. Domestic connectivity through BIA is widely seen as a high priority to enable to development of the domestic aviation industry in order to reduce passenger transit time from their incoming international flight to an alternative airport which offers domestic onward flights.

A2.2 Mattala International Airport

Name	**Mattala Rajapaksa International Airport (MIA)**
Description	MIA is an international airport serving southeast Sri Lanka. It is the newest greenfield airport in the country.
Location	MIA is located in the Southern Province, 30 km north of Hambantota. It is 290 km from BIA.
Current Use	Constructed in 2013 to serve as Sri Lanka's second international airport, MIA has capacity for 1m passengers per year and its runway is capable of handling Airbus A380 flights. However, demand amongst passengers and airlines to use the airport has been significantly lower than expected. SriLankan Airlines ceased all flights to the airport in January 2015, and at present Flydubai is the only major airline using MIA. MIA was funded and is operated by AASL.
Connectivity	MIA currently has poor local and national surface access. This is expected to change in the future once an extension of the Southern Expressway is completed which, together with the completion of the Outer Circular Highway would connect MIA to BIA. There are also conceptual plans to connect the airport with the East Coast region through the South – East Expressway, although no timing or route details for this are currently available. At present the airport has no direct railway connectivity, but there is a planned railway to Kataragama, which is 36 km from MIA. Currently, travellers can travel approximately 60% of the distance from Colombo Fort Station to MIA by railway (157km – as far as Matara). Plans have been recommended to improve local connectivity of the airport improvements to the local road network and support for the development of bus and taxi networks.
Future Developments	MIA has declined in usage, so AASL and the Ministry of Civil Aviation have identified a number of developments to improve the traffic and profitability of MIA. These include well-developed plans to allow an open skies policy, providing landing and use access to any foreign airline seeking to travel via or to MIA. MIA will also be promoted as an entry/exit point for migrant workers by opening approval counters for foreign employment. Other potential developments include improvements to public transit and taxi networks to and from MIA, building an MRO facility at MIA, and providing a flight training academy at MIA.
Impact on Tourism Development	MIA is located on the South Coast; Sri Lanka's most popular tourist region which provided approximately 4 million bed nights in 2013; 35% of the national total. As such, it is an important asset for the continued development of tourism in the country. However, it should be noted that to date the majority of tourism development in the South Coast has been concentrated in the western areas around Bentota and Galle, and that developments in the immediate vicinity of MIA are more limited. Going forward, SLTDA regards the area around MIA as a priority for tourism development. In addition, AASL has drawn up a schematic called "Destination Resort City", which will be marketed to developers for attractive terms to build a world class destination near MIA. This would include resorts, villas, a golf course, spas, theme parks, nature trails, and a mini nature park connected via monorail. Currently, the main sights in the vicinity of the airport are the city of Hambantota (sea port, cricket stadium, national parks, and tele-cinema village) and Yala National Park.

A2.3 Ratmalana Airport, Colombo

Name	**Ratmalana Airport**
Description	Ratmalana was Sri Lanka's original international airport prior to construction of BIA, and nominally serves both domestic and international traffic.
Location	Ratmalana is located in the Western Province on the West Coast. It is 46 km south from BIA and 20 km south of Colombo.
Current Use	Ratmalana was Sri Lanka's original international airport and is now used as a domestic and regional airport offering facilities for charter flights, aviation training and corporate jet landing, storage and departure services. The airport is operated jointly by AASL and SLAF. Helitours is based out of the airport offering low-cost scheduled and charter domestic flights.
Connectivity	Ratmalana will be fully connected to BIA once the Outer Circular Highway is complete. It is 14 km from Colombo Fort Station to Ratmalana by rail.
Future Developments	A series of upgrades to the airport are currently underway including renovations to the runway, a new terminal, control tower, taxiway, apron, and runway. The current AASL budget includes LKR6m to overlay the east taxiway, LKR50m to construct a new administration building for the Fire Division (which will free up additional hangar space for commercial customers) and LKR30m to renovate the perimeter road. Consultations have also revealed that a Memorandum of Understanding was signed between a private company, Hybrid Airports and the former government to allow Hybrid to perform feasibility studies on Ratmalana, Palaviya, and Koggala, as well as assess the need for a new airport at Nuwara Eliya. Thus far, Hybrid has completed the studies for Ratmalana and Palaviya, and put forth an unsolicited bid to develop, own, and operate Palaviya. It has been noted by the Ministry and has not been pursued to date.
Impact on Tourism Development	RMA is conveniently located for Colombo; which the majority of international visitors to Sri Lanka visit during their stay, as well as the Southern Expressway route to the popular South Coast region. However, as transfer times and distances from BIA are relatively significant it is unlikely that domestic aviation services for tourists would be successful if offered from RMA alone.

A2.4 Palali Airport, Jaffna

Name	**Palali Airport (Jaffna Airport)**
Description	Palali Airport was originally built in World War II by the British Royal Air Force. SLAF acquired the airport following the end of WWII and continues to operate and manage the airfield.
Location	Palali Airport is located in the Northern Province near the coast on a peninsula. It is 371 km from BIA, and 16 km north of Jaffna. The Northern Province has poor access from many other areas of Sri Lanka due to its remote location, and travel times by surface access are currently significant.
Current Use	Palali Airport is currently operated by SLAF, but is used for both military and civilian uses including scheduled flights by Helitours and Cinnamon Air, and charter flights by a number of other providers.
Connectivity	Palali has low connectivity with the rest of SL., and no expressways currently go to Jaffna. The proposed Central Expressway will cover approximately 40% of the journey. It is 392 km from Colombo Fort Station to Jaffna by rail, and the Sri Lankan Government is in favour of promoting a high speed rail system, with initial priority being given to the Colombo to Jaffna line. This upgrade could potentially lead to the travel time from Colombo to Jaffna being reduced from the current 9 hours to 2 hours. However it is noted that these plans are in the very early concept stage of development.
Future Developments	The consultants are not aware of any current plans for the future development of Palali airport.
Impact on Tourism Development	Tourism in the northern regions is currently very low, with minimal tourist infrastructure and very few visitors. Going forward this may change; SLTDA has identified plans to develop a lagoon resort close to Jaffna which would provide 1,000 – 1,500 rooms. The SLTDA also has plans to develop tourism offerings on Mannar Island to the south east of Palali.

A2.5 Ampara Airport

Name	**Ampara Airport**
Description	Ampara Airport was established in 1989 and is operated by the SLAF.
Location	Ampara is located in the Eastern Province near the coast. It is located 296 km from BIA, and is 8 km northwest of Ampara.
Current Use	Ampara is currently used predominantly by SLAF who have one scheduled flight operated by Helitours going there per week.
Connectivity	There are no current expressways that go to Ampara. The proposed South – East Expressway will connect Ampara to the extension of the Southern Expressway all the way to BIA but the timing of this is highly uncertain. The airport and nearby town have no direct railway connectivity but the railway from Colombo Fort Station to Batticaloa covers approximately 80% of the journey.
Future Developments	Consultants are not aware of any current plans for the future development of Ampara airport.
Impact on Tourism Development	Ampara City has selected tourist sites but current visitor numbers are relatively low. The airport is 80km from Arugam Bay, a surfing area that hosts an annual international surfing contest and which has become increasingly popular as a niche tourist destination in recent years.

A2.6 Batticaloa Airport

Name	**Batticaloa Airport**
Description	Batticaloa Airport was established in 1958, and, having been shut down for a number of years was reopened in 1983 as an air force base under the auspices of SLAF. Renovation of the air field as domestic airport commenced in 2012.
Location	Batticaloa Airport is located in the Eastern Province near the coast, 2 km southeast of Batticaloa. It is 287 km from BIA.
Current Use	Batticaloa is a military and public airport. Helitours and Cinnamon Air operate at Batticaloa Airport, however it is currently closed for renovations undertaken by the SLAF. The runway is being resurfaced and extended and it is estimated that the project is 60% complete. Funding for the renovations have been provided to SLAF directly from the Government.
Connectivity	No current expressways go to Batticaloa from BIA. The proposed South – East Expressway will connect Batticaloa along the Southern Border to other expressways but is still in a very early stage of conceptual planning. A new rail line to cover the 350 km from Colombo Fort Station to Batticaloa has been proposed but is also in the conceptual planning stage.
Future Developments	Beyond the current renovation works, the Consultants are not aware of any current plans for the future development of Batticaloa airport.
Impact on Tourism Development	Passikudeh, SLTDA's most developed tourism development is located 35km northwest of Batticaloa and currently has 850-1,000 rooms. As a result of the generally poor surface transport access to the East Coast from Colombo, SLTDA has recommended that Batticaloa Airport should be a high priority for development.

A2.7 Anuradapura Airport

Name	**Anuradhapura Airport**
Description	Anuradhapura is an ancient city with significant history located in the Cultural Triangle. It is one of the oldest continuously inhabited cities in the world.
Location	Anuradhapura Airport is located in the North Central Province. It is 176 km from BIA and is located 8 km southeast of Anuradhapura.
Current Use	Anuradapura is currently used for both military and civilian uses and is operated by the SLAF.
Connectivity	No current expressways go to Anuradhapura from BIA, although connectivity between the two will be significantly improved on completion of the proposed Central Expressway when approximately 70% of the journey will be covered by high speed road. It is 205 km from Colombo Fort Station to Anuradhapura by railway.
Future Developments	The consultants are not aware of any current plans for the future development of Anuradapura airport.
Impact on Tourism Development	Anuradhapura is located within the Cultural Triangle and could therefore be used as an entry point to the Ancient Cities tourism region. Anuradhapura itself has an ancient city with temples, stupas, ruins, and museums.

A2.8 Weerawila Airport

Name	**Weerawila Airport**
Description	Weerawila Airport is an SLAF-operated air field, which was originally identified as a potential location for Sri Lanka's new international airport. However, MIA was eventually selected instead.
Location	Weerawila Airport is located in the Southern Province. It is 282 km from BIA, 13 km northeast of MIA, and 24 km northeast from Hambantota.
Current Use	Weerawila is currently used by SLAF. Helitours operates at Weerawila Airport
Connectivity	Weerawila is expected to be connected to BIA through the extension of Southern Expressway. There are also suggestions for the local connectivity in the vicinity if MIA should be improved, and this would also benefit Weerawila. However there are no confirmed road development plans yet in place. There is also no direct railway connectivity to the airport, although it has been suggested that a railway will be built to Kataragama, 25 km from Weerawila Airport. The current closest railway is Matara.
Future Developments	Beyond the current renovation works, the Consultants are not aware of any current plans for the future development of Weerawila airport.
Impact on Tourism Development	Weerawila is located in the South Coast region; Sri Lanka's most popular tourism area with 4 million bed nights in 2013. As noted above, there are plans to develop tourism attractions and developments within the Hambantota region in order to attract visitors and airlines to use MIA. While this would increase tourism interest in the immediate vicinity of Weerawila, it is not likely to lead to additional demand for services at Weerawila as the majority of new traffic is likely to use MIA.

A2.9 Palaviya Airport, Puttalam

Name	**Puttalam (Palaviya / Palavi) Airport**
Description	Palaviya Airport is located near the town of Puttalam. It has largely gone into disuse due to concrete structures having been built on the runway. However, a feasibility study for development of the airport has recently been completed by Hybrid Airports, a private company, who subsequently have submitted an unsolicited proposal to develop Palaviya Airport. This was rejected by the previous government but is currently being evaluated by the present ministry.
Location	Palaviya Airport is located in the North – Western Province. It is 106 km from BIA. It is 10 km south from Puttalam, and 43 km southeast from Kalpitiya.
Current Use	Palaviya is a military and public airport; however it is currently not suitable for Fixed Wing Aircrafts due to the construction of buildings on the runway. Helicopter operations do use the site but numbers are low; reported to be around two per month.
Connectivity	Palaviya Airport is not connected to BIA via Expressway. The proposed Central Expressway will cover about 40% of the journey, but will go towards the Northeast, rather than taking an A-class road south directly to BIA. It is 130 km from Colombo Fort Station to Palavi by railway, **and** an additional 5 km from Palavi to Puttalam by railway.
Future Developments	A feasibility study has been performed on Palaviya Airport and an unsolicited proposal to develop Palaviya was submitted to the previous Government. This includes consideration of the development of a new runway, terminal building, cargo complex security, safety, and ground support equipment and navigation facilities together with a fuel station, sports complex and a commercial office.
Impact on Tourism Development	Palaviya airport is the closest air field to the Kalpitiya; an area highlighted for its potential development as a tourist destination. Whale and dolphin watching is very popular, and the SLTDA has initiated plans to develop Kalpitiya into a Maldives-resort style area. The development plans include 4,000 rooms over 19 islands and land plots.

A2.10 Koggala Airport

Name	**Koggala Airport**
Description	Koggala Airport is an airport located on the Southern tip of Sri Lanka used extensively as an air force base during World War II.
Location	Koggala Airport is located in the Southern Province. It is 163 km from BIA, and 15 km southeast from Galle.
Current Use	Koggala is currently used for both military and civilian flights. It is operated by SLAF.
Connectivity	Koggala airport is connected to BIA via the Southern Expressway for approximately 85% of the journey. Once Outer Circular Highway is completed the route to Koggala from BIA will be fully covered by expressways. In the long term it is anticipated that Koggala may be connected with the Eastern Border of Sri Lanka via extension of Southern Expressway and South – East Expressway. However, details of the South-East Expressway in particular are at a very early concept stage and thus are not expected to occur for some time. Koggala's good connectivity to BIA via the Southern Expressway has reduced its use as a domestic airport for visitors travelling from Colombo.
Future Developments	Consultants are not aware of any current plans for the future development of Koggala airport.
Impact on Tourism Development	The South Coast is a premier tourist region with nearly 50% of all tourists visiting the South/West Coast beaches. The South Coast also accounts for nearly 4 million bed nights, or 35% of the total nights spent by tourists. The main sites are the city of Galle, specifically Galle fortress, one of the largest remaining forts in Asia built by European occupiers.

A2.11 Katukurunda Airport

Name	**Katukurunda Airport (SLAF Katukurunda)**
Description	Katukurunda Airport is an Air Force base established in 1984. It is mainly suited for smaller aircrafts and is operated by SLAF.
Location	Katukurunda Airport is located near the city of Kalutara in the Western Province. It is 94 km from BIA.
Current Use	It is a military and public airport. Millennium Airlines (Simplifly) operate at Katukurunda Airport. Openskies also offers a flight training program at Katukrunda.
Connectivity	Katukurunda Airport is nearly fully connected to BIA via the Southern Expressway and once the Outer Circular Highway is complete this will ensure a full connection. It is 45 km from Colombo Fort Station to Katukurunda by rail.
Future Developments	The consultants are not aware of any current plans for the future development of Katukurunda airport.
Impact on Tourism Development	The airport is located near the South Coast, a very popular tourist region, but there are no specific tourism developments in the immediate vicinity of Katukurunda. Main site is the city of Kalutara, specifically the nearby beaches and temples. The airstrip is also used as a motor sport venue where people will race motor cycles and cars.

A2.12 Sigiriya Airport

Name	**Sigiriya Airport**
Description	Sigiriya Airport is a centrally located airport in Sri Lanka. Sigiriya is considered a top attraction in Sri Lanka, drawing in the most visitors of all the historic cities in the Cultural Triangle.
Location	Sigiriya Airport is located in the Central Province in the Cultural Triangle. It is 185 km from BIA and is 13 km northeast of Dambulla.
Current Use	Sigiriya is a military and public airport currently operated by SLAF. Millennium Airlines (Simplifly), and Cinnamon Air operate at Sigiriya Airport, although Cinnamon Air cannot land amphibious planes there due to the poor quality of runway.
Connectivity	Sigiriya Airport is currently not connected by any expressways and surface road access from Colombo is therefore currently relatively poor. In the future it will be partly connected to BIA via the proposed Central Expressway. The proposed Central Expressway will cover approximately 90% of the journey. It is 208 km from Colombo Fort Station to Habarana by railway (approximately 90% of the journey from Colombo to Sigiriya).
Future Developments	The consultants are not aware of any current plans for the future development of Sigiriya airport.
Impact on Tourism Development	Sigiriya is a major tourism destination. The main tourist sites in the immediate vicinity include the ancient city of Sigiriya, specifically Lion Rock, and the nearby town of Dambulla. It is also conveniently located within middle of Cultural Triangle/Ancient Cities area which is one of the major tourism areas of the country and is expected to continue to grow in popularity going forward.

A2.13 Trincomalee Airport

Name	**Trincomalee Airport (China Bay)**
Description	China Bay Airport is near Trincomalee. The airport established the SLAF Academy at Trincomalee in 1976. It is the largest air base in the East and has the capacity to handle large scale air operations.
Location	China Bay Airport is located in the Eastern region. It is 267 km from BIA and is 9 km south of Trincomalee.
Current Use	China Bay is a military and public airport operated by SLAF. Millennium Airlines (Simplifly), Helitours, Cinnamon Air, and Lankan Cargo operate here. In addition, the Sri Lankan Air Force Academy is based here.
Connectivity	China Bay Airport is not currently connected to BIA via any expressway. The proposed Central Expressway will connect Trincomalee with BIA for approximately 50% of the journey. It is envisaged that the area will be better connected to the Southern Border through the proposed South – East Expressway in the future, although this connection will not be complete and plans for this expressway are at a very early stage of concept development. It is 290 km from Colombo Fort Station to China Bay by railway, and from China Bay railway station it is an additional 7 km to Trincomalee.
Future Developments	Consultants are not aware of any current plans for the future development of China Bay (Trincomalee) airport.
Impact on Tourism Development	SLTDA are currently developing Kuchchavelli, a beach resort 20 km north of Trincomalee. This will cover 500 acres and is targeting at a high-end market. It is expected to be fully developed in approximately 5 years and will provide 700 – 1,000 hotel rooms. As a result of this development, the SLTDA is interested in promoting Trincomalee as a more developed domestic airport.

A2.14 Hingurakgoda Airport

Name	**Hingurakgoda Airport**
Description	Hingurakgoda is an air field located in the Cultural Triangle and operated by SLAF. It has the fourth largest runway of any air field in Sri Lanka, meaning large aircrafts (up to a Boeing 747 in emergencies) can land.
Location	Hingurakgoda Airport is located in the North Central Province in the Cultural Triangle. It is 207 km from BIA and 5 km northeast of Hingurakgoda.
Current Use	Hingurakgoda is a military and public airport that is currently operated by SLAF. There are no scheduled domestic services currently calling at Hingurakgoda.
Connectivity	Hingurakgoda Airport is currently not connected to Colombo by any expressways but in the future it will be connected to BIA via the proposed Central Expressway which will cover approximately 80% of the journey. It is 244 km from Colombo Fort Station to Hingurakgoda by railway.
Future Developments	The consultants are not aware of any current plans for the future development of Hingurakgoda airport.
Impact on Tourism Development	Hingurakgoda is located in the Cultural Triangle/Ancient Cities region, one of the major tourist attraction regions in Sri Lanka. The SLTDA has recommended the development of at least one of the central domestic airports to serve the Cultural Triangle area but has not expressed a preference for Hingurakgoda to be selected.

A2.15 Vavuniya Airport

Name	**Vavuniya Airport**
Description	Vavuniya airfield is a small airport operated by SLAF and which is equipped to deal with light to medium sized aircrafts.
Location	Vavuniya Airport is located in the Northern Province. It is 223 km from BIA and is 5 km from the town of Vavuniya, 96 km from Trincomalee, 54 km from Anuradhapura, 102 km from Mannar Island, and 143 km from Jaffna.
Current Use	Vavuniya is a military and public airport. However no scheduled flights are currently using Vavuniya.
Connectivity	Vavuniya Airport is currently not connected to Colombo by any expressways. The proposed Central Expressway will connect Vavuniya Airport to BIA for approximately 60% of the journey. It is approximately 252 km from Fort Colombo Station to Vavuniya by railway.
Future Developments	The consultants are not aware of any current plans for the future development of Vavuniya airport.
Impact on Tourism Development	Vavuniya was heavily affected by the civil war. More recently, the government launched an urban development plan to develop agriculture, irrigation, road networks, water supply, electricity, health, education and civil administration for the city and surrounding area. Tourism in the vicinity of Vavuniya is currently limited, but Vavuniya is the closest airport to Mannar Island. This has been suggested as a future tourism development region, although the plans are still in concept stage and the scale of potential developments has not yet been identified.

Annex 3 Review of Guidelines on Private Sector Infrastructure Projects (2006)

The Guidelines on Private Sector Infrastructure Projects (PSIP) was issued by the Ministry of Finance (MoF) in 2006 and as designed to serve as the primary legislation addressing the development of BOO/BOT/BOOT projects. Although it appears that these Guidelines have not been used in recent years, it is useful to conduct an appraisal of the document with regards to its suitability, in order that lessons for future legislation may be learned.

The legislation indicates that the initial step in the PPP process is that the respective Line Ministries should discuss informally the proposed project with the Bureau of Infrastructure Investment (BII). The Consultants note that the BII was disbanded some years ago, and that the Board of Investment (BOI) has nominally taken over all roles from the BII in recent years. As a result, the initial step in the PPP process is that the respective Line Ministries should informally discuss the proposed project with the BOI.

Subsequently, a financial and technical viability report has to be prepared by the proposing agency (possibly the Civil Aviation Authority in the case of the domestic airports) which must then be evaluated by the BOI for clearance by the Ministry of Finance and Planning. This infers that the Line Ministry has to be the driver to 'recommend' PSIP projects and assumes their agency has all the necessary data to provide the financial and technical viability report. This may be difficult in areas where there is not an established track record and the potential project is based on a changed situation, as is being suggested in relation to domestic airports by attracting traffic that currently may not exist in its current form.

Following Cabinet Approval, the Cabinet appoints first a Negotiating Committee to handle all matters pertaining to BOO/BOT projects and following approval, a Project Committee is appointed by the Secretary to the Treasury at the request of the Secretary of the Line Ministry, in liaison with BOI. A representative of BOI acts as the Secretary to the Project Committee which is responsible for development of the project and for guiding the project through its various stages towards implementation. One of the Committee's responsibilities is to determine the criteria of assessment for the technical and financial viability of the project.

The specified procedures for the Request for Proposal (RFP) process appear to be logical and relatively standard in relation to significant private sector involvement in infrastructure developments. The legislation cites the possible use of the World Bank Private Sector Infrastructure Development Company (PSIDC) funding. However the Consultants have been advised that the PSIDC may no longer exist.

The legislation indicates that the relevant Ministry should charge a form fee for the RFP, but does not stipulate the amount or basis for such a fee. It may be that for small developments where the Government is attempting to attract potential private sector interest that such a fee might not be appropriate. The same situation applies in respect of the proposal guarantee.

An evaluation of the proposals is undertaken by the Project Committee which assesses the adequacy of the proposals, its level of responsiveness and provides a bid ranking. In general, the evaluation and screening process appears reasonably standard. The key issue is the integrity of the evaluation process. The evaluation criteria are based on price, duration of the project and the proposed tariff structure. In the case of domestic airports, the tariff structure is fixed by the Civil Aviation Authority, rather than the proposer as suggested in the legislation. The Project Committee will have already prepared their own estimates as a basis for the evaluation. A key issue could be the transparency of these estimates, though it is suggested that World Bank/ADB methodologies would be adopted in their preparation.

The Project Committee prepares a final report on the bidding process for the Cabinet Appointed Negotiating Committee (CANC) and this includes overall ranking of bidders and recommendations. The CANC then makes a final recommendation on the award of the contract and passes this recommendation on to the Cabinet who are the ultimate approving authority for the award of BOO/BOT projects (the situation on BOOT is not included). The CANC negotiates the contract with the preferred/successful bidder with price negotiation and risk-allocation being the crucial factors. It may

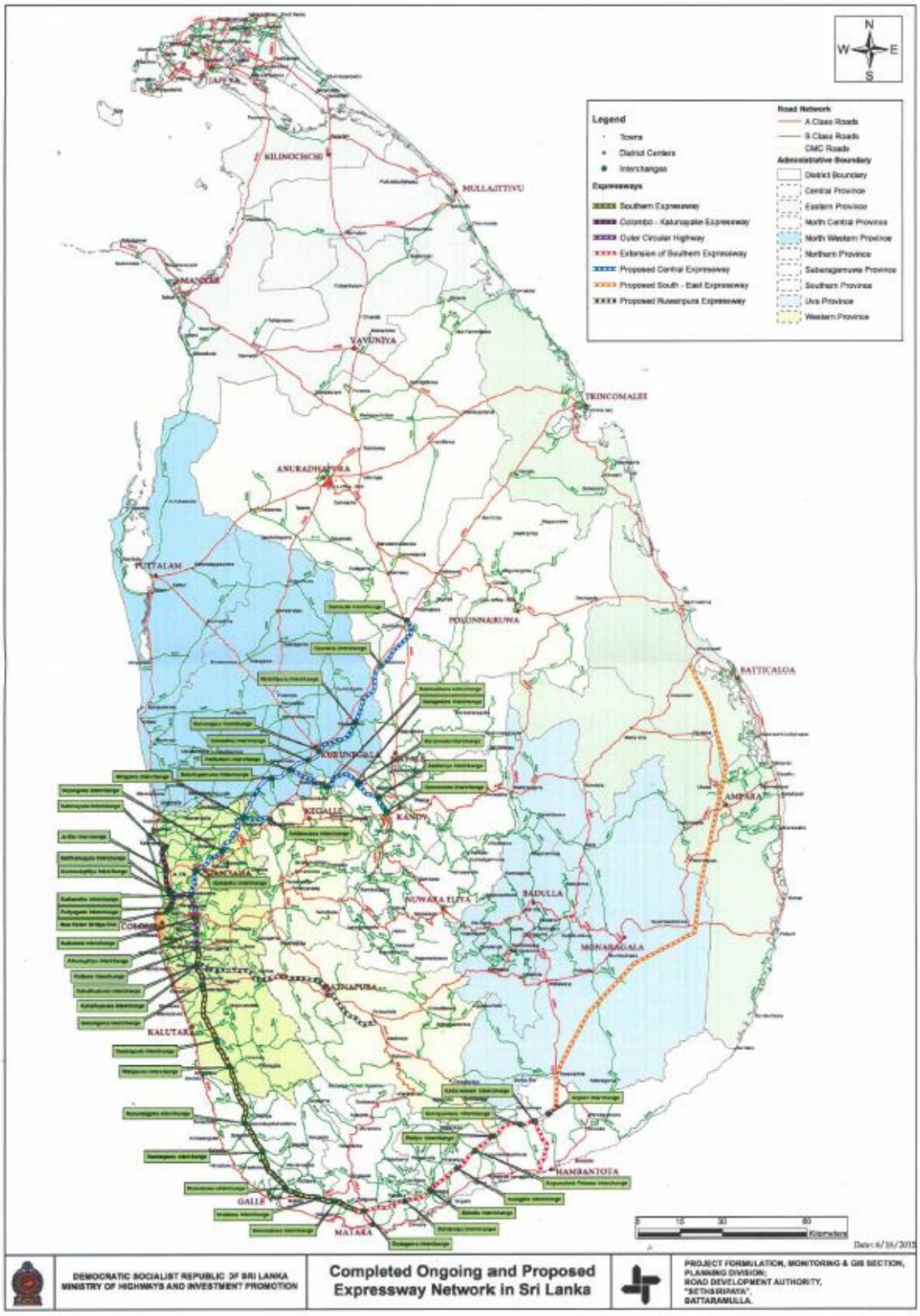
be that in the case of the proposed domestic airport developments that these two aspects might not be the optimum determinants on what is more likely to be more of a service-based arrangement. It is also unlikely that in the case of airport privatisation a performance bond will be a viable condition.

In the finalization stages of the project's closure, the main activities include (i) the establishment of a Project Company; (ii) preparation of an implementation plan and its appraisal by the Project Committee; (iii) finalization of the price negotiations, (iv) application for, and where possible, obtaining of consents and approval by the project sponsor; (v) negotiation and completion of all other agreements and contracts, and (vi) finalization of the financing plan. In the case of airport privatization it may not necessarily be essential to establish a separate company. The legislation proposes a series of agreements. In relation to domestic airports again it may be that many of the agreements would not be required or relevant, but the wording used ('a typical list of agreements is given') suggests there is probably significant flexibility in terms of these requirements.

Before signature of the final Implementation Agreement, the final proposal with the agreed draft agreements should be submitted to the Cabinet for approval. The Line Ministry must submit the Cabinet Memorandum and the CANC recommendations along with a report compiled by the BII, which includes (i) the results of the appraisal of the PC summarized by BII, its consultants and the relevant State Agency involved; (ii) the final price and other major features negotiated; (iii) the major features of the negotiated investment agreement.

Overall, the Guidelines on Private Sector Infrastructure Projects legislation appear acceptable in themselves. It is probable they have already been evaluated several times by various donors, particularly in respect of proposed road development PPP projects, and were developed on the basis of experience in other countries. They may therefore serve as a useful basis for new PPP legislation under the new political structures and policies of the current Government.

Annex 4 Ongoing and Proposed Expressway Development



Source: Road Development Authority

Annex 5 Sri Lanka Tourism Sites

With a popular mix of beaches and religious sites of cultural significance, Sri Lanka is fast becoming a popular tourism destination. The country boasts eight UNESCO-listed world heritage sites, six of them cultural and two natural. These are:

- **The Sacred City of Anuradhapura**

This sacred city was established around a cutting from the 'tree of enlightenment', the Buddha's fig tree, brought there in the 3rd century B.C. by Sanghamitta, the founder of an order of Buddhist nuns. Anuradhapura, a Ceylonese political and religious capital that flourished for 1,300 years, was abandoned after an invasion in 993. Hidden away in dense jungle for many years, the splendid site, with its palaces, monasteries and monuments, is now accessible once again

- **The Ancient city of Sigiriya**

The ruins of the capital built by the parricidal King Kassapa I (477–95) lie on the steep slopes and at the summit of a granite peak standing some 370 m high (the 'Lion's Rock', which dominates the jungle from all sides). A series of galleries and staircases emerging from the mouth of a gigantic lion constructed of bricks and plaster provide access to the site.

- **The Golden Temple of Dambulla**

A sacred pilgrimage site for 22 centuries, this cave monastery, with its five sanctuaries, is the largest, best-preserved cave-temple complex in Sri Lanka. The Buddhist mural paintings (covering an area of 2,100 m2) are of particular importance, as are the 157 statues.

- **The Ancient City of Polonnaruwa**

Polonnaruwa was the second capital of Sri Lanka after the destruction of Anuradhapura in 993. It comprises, besides the Brahmanic monuments built by the Cholas, the monumental ruins of the garden-city created by Parakramabahu I in the 12th century.

- **The Sacred City of Kandy**

This sacred Buddhist site, popularly known as the city of Senkadagalapura, was the last capital of the Sinhala kings whose patronage enabled the Dinahala culture to flourish for more than 2,500 years until the occupation of Sri Lanka by the British in 1815. It is also the site of the Temple of the Tooth Relic (the sacred tooth of the Buddha), which is a famous pilgrimage site.

- **The Old Town of Galle and its Fortifications**

Founded in the 16th century by the Portuguese, Galle reached the height of its development in the 18th century, before the arrival of the British. It is considered the best example of a fortified city built by Europeans in South and South-East Asia, showing the interaction between European architectural styles and South Asian traditions.

- **Central Highlands of Sri Lanka**

Sri Lanka's highlands are situated in the south-central part of the island. The property comprises the Peak Wilderness Protected Area, the Horton Plains National Park and the Knuckles Conservation Forest. These montane forests, where the land rises to 2,500 metres above sea-level, are home to an extraordinary range of flora and fauna, including several endangered species such as the western-purple-faced langur, the Horton Plains slender loris and the Sri Lankan leopard.

- **Sinharaja Forest Reserve**

Located in south-west Sri Lanka, Sinharaja is the country's last viable area of primary tropical rainforest. More than 60% of the trees are endemic and many of them are considered rare. There is much endemic wildlife, especially birds, but the reserve is also home to over 50% of Sri Lanka's endemic species of mammals and butterflies, as well as many kinds of insects, reptiles and rare amphibians.

In addition to these world class sites of cultural and natural importance, Sri Lanka also boasts some excellent national parks and beaches which provides a diverse range of tourism attractions for the inbound market and places Sri Lanka on a competitive footing to grows its significance in global tourism flows.

Annex 6 Key Data Sources

The table below presents the main data sources used by the study.

Table A6.1 Data sources used to prepare the forecasts

Metrics	Period	Source	Notes
Passenger Traffic	1980-2014	ACI, AASL	Regional breakdowns provided by AASL
Air Transport Movements	1980-2014	ACI, AASL	Regional breakdowns provided by AASL
Transfer Statistics	2005-2014	IATA PaxIS	
Short Term Seat Capacity	Jan 2009-Dec 2015	OAG, Airline websites and discussions with Airlines	
Airline Indicators	2010-2014	Airline annual reports	
Economic GDP values Historic & Forecast	1980-2035	IMF, EIU	Future growth projections taken from EIU to 2035
Regional Economy/Population	2014	Sri Lankan Treasury	
Number of Beds by Region	1996-2013	Ministry of Tourism Annual Yearbooks	
Average Occupancy Rates Average Duration of Stay Tourist Arrivals by Nationality	1996-2013	Ministry of Tourism, Monthly Arrivals Updates	
Other Tourism Statistics	2000- 2014	UNWTO and various national Tourism bodies	

The study has assumed that the information, records and materials furnished by the airport, airlines, vendors and others are correct without independent verification. The projections are accurately calculated based upon historical and surveyed information in addition to the information, records and materials furnished to the study, and assuming that the critical key assumptions are realized.

Annex 7 Sri Lankan Domestic Economy and Population

Table A7.1 Sri Lankan GDP & Population, 2013

Region	GDP	Population	GDP %	Pop %
Western	3,643	5,907	42%	29%
Central	960	2,619	11%	13%
Southern	955	2,519	11%	12%
Northern	312	1,082	4%	5%
Eastern	543	1,589	6%	8%
North Western	887	2,414	10%	12%
North Central	439	1,291	5%	6%
Uva	410	1,294	5%	6%
Sabaragamuwa	526	1,960	6%	9%
Total	**8,674**	**20,675**	**100%**	**100%**

Source: Sri Lankan Treasury

Annex 8 Bi-lateral Agreements

The list below details the bi-lateral agreements Sri Lanka has signed as of August 2015. This list was obtained through the Civil Aviation Authority of Sri Lanka.

#	Country	Designation	Regulated Capacity	Designated carriers
1	Australia	Multiple	7	
2	Austria	Multiple	7	
3	Azerbaijan	Multiple	21	
4	Bahrain	Multiple	10	Srilankan
				Gulf Air
5	Bangladesh	Multiple	14 (Chithagon 7, Dhaka 7)	Mihin Lanka
6	Belgium	Multiple	7	
7	Belarus	-		
8	Brunei			
9	Bulgaria	Multiple	Unrestricted 3&4	
10	China	Multiple	21 PAX / 7 Cargo	Srilankan
				China Eastern
11	Cyprus		3	
12	Czech Republic			
13	Denmark	Multiple		
14	Egypt	Multiple		
15	Ethiopia	Multiple	7	
16	Finland	Multiple	Unlimited	
17	France	Multiple	5	Srilankan
18	Germany	Multiple	10	Srilankan
				Condor
19	Greece	Multiple	14	
20	Hong Kong	Multiple	7	Srilankan
				Cathay Pacific
21	Iceland	Multiple	PAX Charter + Freighter no restrictions	
22	India	Multiple	(Ref 2011 MoU)	Srilankan
				Mihin Lanka
				Indian Airlines
				Jet Airways
				Kingfisher
				Air India Express
				Spice Jet
23	Indonesia	Multiple	10	Mihin Lanka

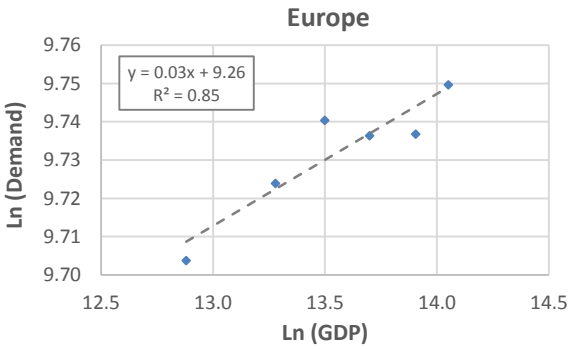
#	Country	Designation	Regulated Capacity	Designated carriers
24	Italy	Multiple	9	Srilankan
				Euro fly
				Edelweiss
25	Iran		2	
26	Israel			
27	Japan	Multiple	OPEN SKIES	Srilankan
28	Jordan	Multiple	7	Royal Jordanian
29	Kazakhstan	Multiple	3	
30	Kenya	Multiple	Unlimited	
31	Kuwait		OPEN SKIES	Kuwait Airways
				Mihin Lanka
				Srilankan
32	Lebanon		OPEN SKIES	
33	Malaysia	Multiple		Srilankan
				Malaysia Airlines
				Air Asia X
34	Madagascar		7	
35	Maldives	Multiple	OPEN SKIES	Srilankan
				Mihin Lanka
36	Mauritius		3	
37	Myanmar			
38	Macao SAR – China	Multiple		
39	Nepal	Multiple	14	
40	Netherlands	Multiple		
41	Norway	Multiple		
42	New Zealand	Multiple	Unlimited	
43	Oman	Multiple	7	Oman Air
				Srilankan
44	Pakistan	Multiple	14	Srilankan
				PIA *
45	Philippines	Multiple	**	
46	Poland			
47	Portugal			
48	Qatar		21	Srilankan
				Qatar Airways
49	Romania			
50	Russia	Multiple	2	Srilankan

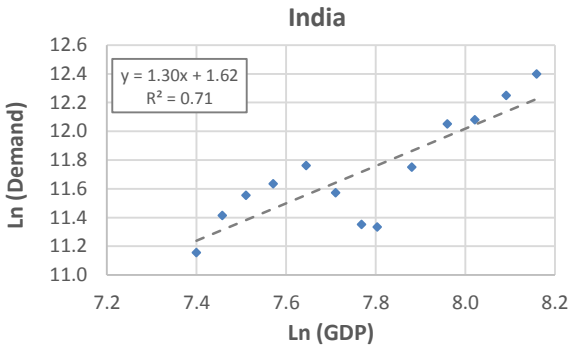
#	Country	Designation	Regulated Capacity	Designated carriers
51	Saudi Arabia		OPEN SKIES	Srilankan
				Saudi Arabian
52	Serbia	Multiple	7	
53	Seychelles	Multiple	7	Mihin Lanka
54	Singapore	Multiple	OS	Srilankan
				Singapore Airlines
55	South Africa	Multiple		
56	South Korea	Multiple	OS	Korean Airlines
57	Spain	Multiple	Unlimited	
58	Sweden	Multiple		
59	Switzerland			
60	Thailand	Multiple	OPEN SKIES	Srilankan
				Thai Airways
61	Turkey	Multiple	14	Turkish Airlines
62	UAE	Multiple	80 (EK28/EY17/G914/FZ14/ G9 from RAK7/RG6)	Srilankan
				Mihin Lanka
				Emirates (28)
				Air Arabia (14)
				Etihad (17)
				Rotana Jets(6)
				Flydubai (14)
63	UK	Multiple	14	Srilankan
				BA
64	Ukraine	Multiple	7	Ukraine Airlines
65	Uzbekistan			
66	USA	Multiple	OPEN SKIES	
67	Vietnam	Multiple	Unlimited	
68	Yemen	Single	2	
69	Yugoslavia			
70	Zambia			

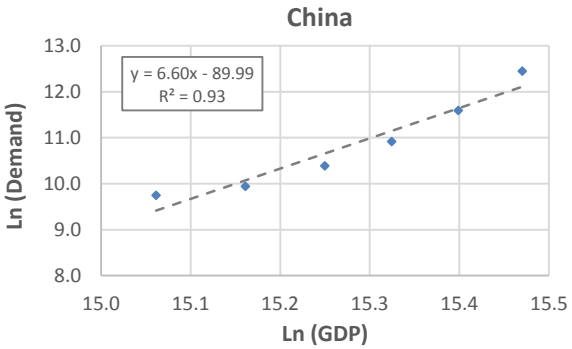
Annex 9 Further Regression Analysis

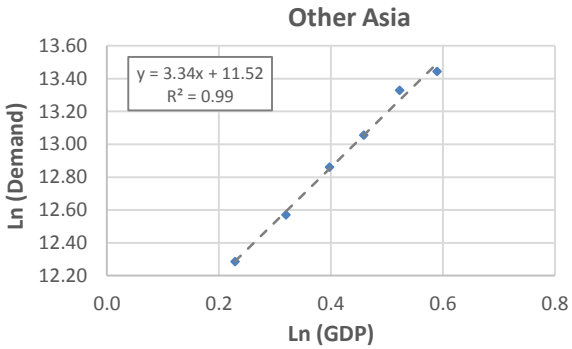
In the following section further short term regression outputs are displayed.

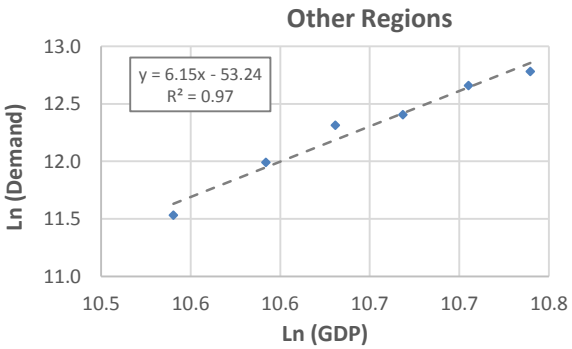
Whilst only available for the relatively short term they have been used to inform current levels of market maturity and links to GDP growth. High levels of correlation have been seen across all regions since 2009 with R^2 values typically over 0.9 imply a high degree of correlation between the explanatory variable (GDP) and traffic growth by market.











Annex 10 Methodology for Surface Access Journey Estimates

A10.1 Introduction

Journey times and costs by surface access routes are key factors determining the proportion of passengers likely to consider domestic aviation as an alternative to surface transport, now and in the future. We have therefore developed estimates of both in order to inform domestic aviation forecasts. The methodology and assumptions by which this was completed are laid out below.

A10.2 Current Journey Times

A10.2.1 Road

- The journey distances by road to each region from BIA were calculated via Google Maps using a proxy destination within each region.
- The study journey time estimates were generated by reviewing travel times estimated using Google Maps, from timing details provided during stakeholder consultations and using assumptions of speeds generated through consideration of regional average speeds as provided by the RDA. These estimated travel times are invariably longer than the estimates generated by Google Maps due to the relatively low average speeds achieved on roads within Sri Lanka.
- A further 45 minutes were added onto each journey time in order to reflect the time to exit the airport and access the ground. Whilst it is understood that not all passengers will be connecting directly to a domestic service due to passengers choosing to stopover in Colombo, or unsuitable connection timings being available, 45 minutes has been considered as appropriate to represent the total end to end journey for the majority of tourists.

Table A10.1 Assumed current journey times by road by region

Region name	Travel time estimate (Google) (hrs)	Assumed travel time (hrs)	Assumed average speed (km/hr)	Assumed Total Travel Time (hrs)
South Coast	4:27	5:00	58.0	5:45
East Coast	5:45	6:00	47.8	6:45
High Country	3:56	5:00	36.4	5:45
Ancient Cities	3:29	4:30	41.1	5:15
Northern Region	6:21	9:00	41.2	9:45

A10.2.2 Rail

- Current journey times by railway were sourced from timetables obtained from www.railway.gov.lk; the official website of Sri Lanka Railways.
- Rail travel is not currently an option from BIA therefore the journey times assumed relate to travel from Colombo. Whilst tourists are less likely to transfer directly from a plane to a train service, the journey times have been considered in relation to those trips that do not involve an international transfer from the airport which would only increase the journey times further.

Region name	Travel time estimate
South Coast	n/a[33]
East Coast	08:45
High Country	05:55
Ancient Cities	05:14
Northern Region	06:15

A10.2.3 Air

- Flight times were obtained from Cinnamon Air, a local airline in Sri Lanka that provides domestic flights around the country.
- Travel time estimates were calculated to account for the additional time it takes for passengers to connect to another a flight, exit an airport, and connect on the ground to their destination.
- It is assumed that exiting BIA will take longer than exiting a regional airport because the regional airports are smaller and there is no need to pass through immigration when travelling domestically. Additional travel time assumptions therefore include:
  - Exiting BIA takes 45 minutes.
  - Exiting a small regional airport takes 30 minutes.
  - The typical connecting time at BIA between flights is 1 hour and 15 minutes.
  - The average ground access time from an airport is 30 minutes.

Table A10.2 Assumed current journey times by air by region:

Region name	Typical Distance (Air)	Flight Time (Air)	Typical Journey Time (Air)
South Coast	170km	0:40	2:55
East Coast	210km	0:50	3:05
High Country	120km	0:30	2:45
Ancient Cities	130km	0:35	2:50
Northern Region	300km	1:05	3:20

A10.3 Future Journey Times

A10.3.1 Road

- A number of road developments and improvements are currently in planning or under consideration within Sri Lanka. These have the potential to significantly reduce surface access journey times around the country. For the purposes of this Study, the following expressway developments have been assumed to occur; these were discussed with the RDA during stakeholder consultations.
  - The Outer Circular Highway will connect the Airport Express to the Southern Expressway, decreasing the time to reach the South Coast from BIA.
  - The Central Expressway will run off from the Outer Circular Highway and significantly improve connectivity to the Cultural Triangle, Vavuniya, and Trincomalee, although it will not serve as a direct route to all these places.

[33] Rail transport not available from Colombo to Mattala (proxy used for the South Coast region journey time estimates)

  - The Extension of the Southern Expressway was proposed after the success of the Southern Expressway in improving surface access to the south of the country. The extension will serve as a means to connect Colombo with areas further along the South Coast as far as Mattala and MIA. This development will significantly improve the connectivity of MIA to tourist destinations within the South Coast area.

- The Origin, destination, distance and assumed completion dates for each of the above developments are summarised in Table A10.3 below.

Table A10.3 Assumed Expressway Developments

Route Name	Origin & Destination	Distance	Assumed Completion
Outer Circular Highway	Kerawalapitiya – Kottawa	29km	End 2017
Central Expressway	Kadawatha - Kurunegala	75km	End 2020
Extension of Southern Expressway	Matara – Mattala	94km	End 2022

- The speed limit on these expressways is anticipated to be 100 km/hr in accordance with the current speed limit on the Southern Expressway. For this Study, average travel speeds of 90 km/hr have been assumed along all expressways.
- Additional assumptions that were made in order to generate forecasts of future travel times include:
  - The new journey time to for BIA to Mattala has been assumed to be 90 km/hr for the entire distance from Colombo, plus an additional 10% to reflect traffic at start and entry points from the expressway.
  - The journey time to Batticaloa has been assumed based on travel speeds of 90 km/hr for the first 75 km where the journey would be along the Outer Circular Highway and Central Expressway, and 60 km/hr for the rest of the distance (220 km). 60 km/hr was estimated as a result of the suggestion from the RDA that the Eastern Provinces have average road speeds of significantly higher than the national average of 30-35km/hr.
  - The new journey time to both the High Country and the Northern Regions assumes a 10% improvement over current average journey speeds. This is because while none of the planned expressways are assumed to go to these destinations, a general improvement in road conditions is expected
  - The journey time to Sigiriya assumes an average speed of 90 km/hr for the first 75 km, which would be along the Central Expressway, and 40 km/hr for the rest of the distance (80 km).
- As with the assumptions for current total road journey times, 45 minutes has been added onto the road journey times to reflect the time to exit the airport and ground access.

Table A10.4 Assumed future journey times by road by region

Region	New road travel time (hrs)	Assumed Speed (km/hr)	Increase in average speed	New journey total time (hrs)
South Coast	3:30	82.9	43%	4:15
East Coast	4:30	63.8	33%	5:15
High Country	4:30	40.4	11%	5:15
Ancient Cities	2:50	65.4	59%	3:35
Northern Region	8:10	45.4	10%	8:55

A10.3.2 Rail

- According to the Ministry of Policy Planning, Sri Lanka has plans to develop a new, high-speed railway system. The Colombo to Jaffna line would be the top priority for this development, and once implemented it is estimated that the trip to Jaffna will be reduced to approximately 2 hours.
- However, the consultants note that implementation of a high speed rail system is both extremely costly and will take significant planning, and that this development is only currently at an early concept stage.
- It has therefore been assumed that the full scale of improvements will not be immediately achieved because of the difficulty, cost and time it would take to implement the high speed rail system.
- It is therefore assumed that the average speed of rail travel on the Colombo to Jaffna line will increase from 48 km/hr to 70 km/hr over the period 2020 to 2030. For the time being, this will reduce the trip to 4 hours and 20 minutes.
- For all other rail lines it is assumed that average travel speeds increase by 10% over the period 2020-2030 to reflect incremental improvements in the rail systems.

Table A10.5 Assumed future journey times by rail by region

Region	New rail travel time (hrs)
South Coast	n/a
East Coast	07:55
High Country	05:20
Ancient Cities	04:45
Northern Region	04:20

A10.3.3 Air

- No changes assumed for the future of air journey times.

A10.4 Summary of Current and Future Journey Time Assumptions

Based on the above assumptions and calculations, the travel times by road and air now and in the future were calculated, as summarised in the table below. We have excluded rail journeys from this consideration as they are not only typically longer than journeys by road, but travelling by rail is also typically selected as an 'experience choice' by travellers who may regard time savings as less important.

Table A10.6 Summary of Current and Future Journey Time Assumptions

Region	Road Today	Road Future	Air Assumed	Saving Today	Saving Future
South Coast	05:45	04:15	02:55	02:50	01:20
East Coast	06:45	05:15	03:05	03:40	02:10
High Country	05:45	05:15	02:45	03:00	02:30
Ancient Cities	05:15	03:35	02:50	02:25	00:45
Northern Region	09:45	08:55	03:20	06:25	05:35

A10.5 Journey Costs

A10.5.1 Road

- A popular way of travelling around Sri Lanka at present by tourists is by hiring a car and driver. Journey costs to travel the routes required were therefore estimated based on costs to hire a car and driver.

- Cost estimates were obtained for semi-luxury cars, with an average of 2 passengers per car. Pricing was found to typically be on the basis of a base price for a set distance and additional charges for extra distance thereafter.
- For this assessment, costs of LKR5900 for the first 100 km, and 59 LKR for every kilometre thereafter were obtained and used.
- As the travel distances are not assumed to change over the forecast period, pricing is assumed to remain the same.

A10.5.2 Rail

- Where services are available, it is assumed that tourists travel within the luxury premium tourist cars. For all other destinations tourists are assumed to travel via first class within regular train cars.
- Ticket prices were therefore obtained from www.railway.gov.lk, the official website of Sri Lanka Railways for regular tickets and www.exporail.lk for premium tourist train tickets. Premium tickets were found to only be available for travel to the High Country.
- Pricing is assumed to remain the same over the forecast period.

A10.5.3 Air

- Today domestic air travel is small and those tourists that do make use of it are considered high end. With the limited service and small aircraft utilised by Cinnamon Air, typical fares are understood to be approximately $200 per person per sector. In contrast, fares charged by Helitours are significantly lower, but are not assumed to represent the market due to their very low levels of market penetration and market subsidies.
- Neither of these fare levels are considered representative of likely fare costs for a more developed, regular air service around the country.
- As a result, the study has estimated illustrative seat costs for a domestic operator in Sri Lanka assuming larger ATR or Bombardier planes with 40-50 seats and taking into account average sector lengths and typical unit costs. It should be noted that depending on the operator, aircraft and airport charging structure any out turned costs could be materially different.
- Pricing is assumed to remain the same over the forecast period.

A10.5.4 Summary of Current and Future Journey Cost Assumptions

- Based on the above assumptions, travel costs by each transport mode were assumed as summarised in the table below. These are assumed to be consistent now and in the future.

Table A10.7 Summary of Journey Cost Assumptions

Region name	Proxy Destination	Estimated Journey Cost (USD)		
		By road	By rail	By air
South Coast	Mattala	$64	n/a	$60
East Coast	Batticaloa	$63	$6	$65
High Country	Nuwara Eliya	$40	$17	$65
Ancient Cities	Sigiriya	$41	$5	$55
Northern Region	Jaffna	$82	$7	$75

Annex 11 Field Visit Report

A11.1 Profile of Selected Domestic Airports

In this section a profile is provided of the eight airports that the Consultant was requested to visit and assess in relation to their ability to handle domestic air services, and as possible future candidates for PPP investment. This profiling includes physical location, facilities, external connectivity, tourist potential and initial conclusions as to their future development potential.

A11.1.1 Koggala

Koggala Airport is located in the south east of the island. It was originally developed in 1942 as an air force base during World War II. It is 163 km from BIA, 130 km from Colombo and 15 km southeast from Galle. It remains a military airfield being operated by the Sri Lanka Air Force (SLAF). The facility is used by the military for helicopters and light aircraft, but flight activity is very limited. Civil aircraft can use the facility and in addition the lagoon at the northern end is used by Cinnamon Air seaplanes operating on a scheduled and charter basis.

The runway, built in 1942, is 1033 x 46 metres with no real runway end safety areas (RESA) due to the close proximity of the railway and road at the southern end and the lagoon at the northern end. The runway is currently in a poor state and is only suitable for light aircraft and helicopters. Major resurfacing would be required to enable the handling of heavier aircraft, but the runway would be too short for an ATR 42 given the obstructions at one end. The apron is currently at the lagoon end where the Cinnamon seaplanes land, but there is no real terminal building, only an open sided structure that offers some protection against sun/rain. The Air Traffic Control appears unusually remote from the runway/apron if civil operations increased significantly.

In some respects the location is good, being close to the primary tourist beach areas in the southeast and near Galle. Further luxury hotels are being built in the immediate vicinity. The Air Force have developed a 9 hole golf course either side of the runway, though it is not clear whether this will be open to the public. This situation at first suggests there may be some appreciable tourist potential linked to these developments.

The key issue regarding Koggala is its connectivity, and particularly its proximity to the Southern Expressway. 85% of the journey from Colombo is via the Southern Expressway and once the Outer Circular Highway is completed the route to Koggala from BIA will be almost fully covered by expressways. In the long term it is anticipated that Koggala may be connected with a link road to the Suthern Expressway extension. Given these connections, the drive from Colombo and BIA is presently only 2-2.5 hours and will reduce further in future. The air distance between Koggala and BIA is only approximately 140 km, or a 40 minute flight and this would suggest the need for high traffic volumes over such a short distance to be potentially viable.

The conclusion is that whilst attractive for serving Galle, the airfield is considered to be too near Colombo to attract the necessary intensive demand required for domestic service viability. It would require substantial investment in a new runway surface and terminal building to be able to handle larger aircraft and would even have been doubtful for an ATR 42. Though fine for Dash 8 100 or 200 and SAAB 340 these aircraft are now out of production. Given the proximately of the luxury hotels it is considered there is an increasing potential for charter flights using light aircraft and seaplanes, in effect an expansion of current operations rather than increased demand for scheduled domestic services.

A11.1.2 Mattala Rajapaksa International Airport (MIA)

MIA is the new international airport managed by AASL. It serves the south coast being located in the Southern Province, 30 km north of Hambantota and 290 km from BIA. It was constructed in 2013 to act as Sri Lanka's second international airport. MIA has a capacity for a minimum of 1 million passengers per year and its runway is capable of handling Airbus A380 flights. However, demand amongst passengers and airlines to use the airport has been significantly lower than expected. SriLankan Airlines was calling on a triangular basis with BIA, but this arrangement has been cancelled in January 2015 due to the negligible demand from MIA and the resulting losses incurred by the

airline. At present, Flydubai is the only major airline using MIA, again on a triangular basis mainly picking up or dropping off migrant workers working in UAE. Another small Middle Eastern carrier has just commenced similar triangular flights, again to handle migrant workers. On average there is only 1 or two flights per day. The primary purpose of the visit was to assess the potential of the airport in terms of its ability to handle domestic services. MIA has been handling domestic traffic travelling between MIA and BIA, but this was predominantly airline and other staff rotating back to Colombo on the SriLanlan triangular flights due to the limited availability of accommodation locally and inability to encourage staff to relocate.

As a new international airport this facility is well equipped both landside and airside. The passenger terminal has a common courtyard and entrance/exit route to the terminal with departures to the left and arrivals on the right. Domestic departures have a separate channel from a dedicated check-in desk and remain on the ground floor and are led through to two gates with direct access to the apron, whilst international passengers are taken up an escalator and handled at the level above. Likewise there is full segregation of arriving domestic passengers, but there has to be document checks to by-pass immigration and to access the domestic reclaim belt. It is considered that there is adequate separation between domestic and international traffic, as well as an established transfer system. The facilities to handle domestic services are all present and thus the airport layout is not a constraint to the establishment of such services.

The key issue, both domestically and internationally, is MIA's connectivity both locally and with the rest of the island. While there is a new dual carriageway linking the airport to the port at Hambantota, where there are office blocks and a convention center, these are currently unoccupied. Surrounding the airport is low level scrub with little sign of habitation and no accommodation of support facilities within the immediate vicinity of the airport. While it is clear the Government has made major investments in infrastructure in this area, it is evident that this has not yet attracted the anticipated demand for commercial activities.

MIA currently has poor local and national surface access beyond the immediate vicinity of the airport, except to Hambantota. The journey time by road from Colombo is approximately 4 hours. The slowest section is beyond the current limit of the Southern Expressway, but this will change once the extension of the Southern Expressway is completed. Together with the completion of the Outer Circular Highway the journey time would be reduced by approximately one hour.

MIA is located on the South Coast; Sri Lanka's most popular tourist region which provided approximately 4 million bed nights in 2013; 35% of the national total. As such, it is an important asset for the continued development of tourism in the country. However, it should be noted that to date the majority of tourism development along the South Coast has been concentrated to the west around Bentota and Galle, and that developments in the immediate vicinity of MIA are much more limited. While there are plans for major tourism developments, such as the 'Destination Resort City' proposed by AASL, rather than the private sector tourist industry, MIA lacks the facilities and tourist attractions in the immediate area. In essence there is a potential mismatch between supply and demand.

The main attraction of Mattala is its proximity to the Yala National Park which is approximately 50km, or one hour's drive away. It could therefore act as a starting point for the tourism circuit of inland Sri Lanka (Yala, hill country, Kandy, cultural triangle) for international travelers, or as the end of a domestic leg from Colombo to speed up the tour, though the attractiveness of the latter will reduce when the next section of the expressway from Matara is opened in approximately two years' time. It is noted that Helitours moved their services from MIA to one of their airfields further east to meet the potential demand for tourism in the Yala National Park.

The overall conclusion is that the facilities for domestic air travel are ready and waiting, but there is little by way of demand due to the lack of tourist development in the region and low population/ economic activity base. The air route from Colombo at 180 km is still relatively short and therefore requires significant demand to ensure viability. Until there is some increase in economic and tourism demand in the area around MIA, it is difficult to envisage domestic airline services being attracted to MIA. This suggests the resolution of the underuse of MIA is likely to relate to development of the international sector, rather than relying on a significant demand for scheduled domestic services.

A11.1.3 Batticaloa Airport

Batticaloa Airport is located in the Eastern Province near the coast, 2 km southeast of Batticaloa. It was established in 1958, and, having been shut down for a number of years was reopened in 1983 as an air force base under the auspices of SLAF. Renovation of the airfield as a domestic airport commenced in 2012. It acts as both a military and public airport. Helitours and Cinnamon Air normally both operate services to Batticaloa Airport, but these are suspended due to renovations being undertaken by the SLAF.

These improvements include a recently constructed terminal building with separate arrivals and departures, which would suffice for any future domestic air travel growth. The cost was indicated as being approximately $80,000, but this was using SLAF labor so potentially around $110,000 would be a more commercial cost. The SLAF is resurfacing the runway (1066 x 46 metres) and apron at a cost of approximately $13 million. The apron backs onto the terminal building. Indications were given that the works were about 50% complete and likely to be finished in 6 months, though there appeared to be only limited construction being undertaken during the visit. Construction started in March 2013 but was suspended in August 2014. Funding for the renovations has been provided to SLAF directly from the Government

Located on the east coast, Batticaloa is 287 km from BIA with no motorway connections. Current driving time by road is approximately 6 hours. The distance by air is approximately 210 km, thus starting to make the air connectivity more attractive, with the presence of two operators. The proposed South–East Expressway will connect Batticaloa along the Southern Border to other expressways, but is still in a very early stage of conceptual planning and will probably make little difference. The more likely route in the future will be via Dambulla using the proposed Central Expressway. This should reduce the time from Colombo to 4 -4.5 hours.

Passikudeh, SLTDA's recent tourism development is located 35km northwest of Batticaloa and currently has 850-1,000 rooms. As a result of the generally poor surface transport access to the East Coast from Colombo, SLTDA has recommended that Batticaloa Airport should be a high priority for development. Despite this individual development, this area appears to have limited tourism, with tourists preferring Trincomalee further north. It is noted Helitours provides services to Trincomalee using their 'China Bay' airport.

The conclusion is that the necessary facilities for domestic aviation should be available once the resurfacing work has been completed, though the potential demand for this route appears uncertain given its low tourism development at this stage and the preference for Trincomalee. As regards domestic demand there appears to be little economic activity in Batticaloa itself which would generate the 'wealth' creation necessary to support significant local traffic.

A11.1.4 Hingurakgoda Airport

Hingurakgoda is an air field located in the 'Cultural Triangle' and operated by SLAF. It has the fourth largest runway of any airfield in Sri Lanka, meaning theoretically large aircraft (up to a Boeing 747 in emergencies) could land. However, this 2300x45 metre runway is in a poor state, as are the taxiways. There is a terminal building which can be accessed from a side road, thus avoiding having to drive driving through the entire base. This access road is in poor condition. It is noted this is a major helicopter training base and therefore is heavily militarized. There are no scheduled domestic services currently using Hingurakgoda.

Hingurakgoda is situated in the Cultural Triangle/Ancient Cities region, one of the major tourist attraction regions in Sri Lanka. The main attraction of the airport is its proximity to the ancient city of Polonnaruwa, about 30 minutes' drive away, though the access road is in a poor state. There are tourist hotels nearby at Polonnaruwa. The airport is 207 km from BIA and 5 km northeast of Hingurakgoda. There is no expressway connection to Colombo and the road journey takes approximately 5.5 hours. In future it will be connected to Colombo and BIA via the proposed Central Expressway, which will cover approximately 80% of the journey. This will reduce journey times by approximately 1 hour. The flight distance to BIA is approximately 150 km.

The conclusion is that while this airport could potentially be developed to handle civilian traffic, the nature of its current operations and overall investment by SLAF makes this facility less attractive than the nearby Sigiriya Airport.

A11.1.5 Sigiriya Airport

Sigiriya Airport is located in the Central Province in the' Cultural Triangle' and Sigiriya is considered one of the top tourist attractions in Sri Lanka, attracting the most visitors of all the historic cities in the 'Cultural Triangle'. Sigiriya Airport is both a military and public airport being currently operated by SLAF. Cinnamon Air operate daily flights at Sigiriya Airport, although they cannot land amphibious planes there due to the poor quality of runway. This was a 1768 metre strip, but the two ends have been abandoned as the SLAF has scaled back its operations, so now there is only a 900 metres of usable runway, with a motocross track using other portions of the airfield and surrounding woods.

The access road is poor and the journey from the perimeter gate to the passenger handling area is quite prolonged. There are however a number of civilian movements, especially by helicopters. There is no terminal building, only a zoned apron opposite the ATC tower where buses take any tourists on and off site. There are charter helicopter flights from Ratmalana costing $1000 for an 8 seater aircraft. Cinnamon Air also provide scheduled and charter flights.

Sigiriya Airport is 185 km from BIA and is 13 km northeast of Dambulla. It is currently not connected by any expressways and surface road access from Colombo is therefore currently relatively poor. Driving time is approximately 5 hours. In the future it will be partly connected to BIA via the proposed Central Expressway. The proposed expressway will cover approximately 90% of the journey and thus reduce journey time by approximately 1 hour. The distance from Colombo by air is only 120 km, thus suggesting viability on this route could be problematic. The Cinnamon air fare at $235 single indicating the high cost on this short distance route.

Sigiriya is a major tourism destination with the main tourist sites in the immediate vicinity include the ancient city of Sigiriya, specifically Lion Rock, and the nearby town of Dambulla. It is also conveniently located within the middle of 'Cultural Triangle'/'Ancient Cities' area and is expected to continue to grow in popularity going forward. There are good tourist hotels in both Sigiriya and Dambula.

The conclusion is that this airport would appear to be one of the domestic airports outside Colombo with most civil aviation activity, due to the attractive location and immediate access to the World Heritage sites, hotels and other places of interest nearby. Clearly, the main potential may lie in the provision of charter flights for the' upper end' of the tourist market. The potential for scheduled domestic flights appears more constrained due to the short distance relative to the potential scale of demand. Development of the Central Expressway will have a negative effect on the viability of such scheduled services.

A11.1.6 Palali Airport (Jaffna Airport)

Palali Airport is located in the Northern Province near the coast on a peninsula approximately 15 km to the northeast of Jaffna. It was originally built in World War II by the British Royal Air Force. SLAF acquired the airport following the end of WWII and continues to operate and manage the airfield, though it lies within a major Security Area controlled by the army. The airport is currently operated by SLAF, and is used for both military and civilian uses, including scheduled flights by Helitours and charter flights by a number of other providers.

The runway is 2305 x 45 metres with a central section of 950 metres having been resurfaced courtesy of an Indian grant. The cost of this was estimated at $8 million, though there were substantial additional costs in additional earthworks to correct a side slope. The apron and remainder of the runway are in a poor condition. The runway is only suitable for a STOL performance turbo prop, such as the MA 60 being used by Helitours and perhaps also an ATR 42 given there is adequate length at either end of the resurfaced section. There was some discussion of resurfacing a 15 metre width area either side of the center-line for the rest of the runway, but the proposed Indian funding has now been diverted to a rail project.

There appeared to be two aprons in use – one at the far end of the runway (in poor condition) for military aircraft and another opposite the terminal building where the aircraft stops on the taxiway and

discharges civilian passengers onto a bus. The bus acts as transport in the security area and the luggage remains on the bus whilst passengers use the terminal building (if at all) then return to the bus to leave the base to a specific point in the town center. Departures works in reverse, with passengers getting off the bus for security clearance and check in. The terminal building appears fit for the purpose. Civil services are dominated by Helitours, which has a three times a week Ratmalana – Trincomalee – Jaffna triangular service on the MA 60 aircraft with a mix of civilian and military passengers.

Palali/Jaffna has relatively poor connectivity with the rest of the country being at the most northern point of the island. It is 371 km from BIA/Colombo. Travel times by road are currently significant, usually taking approximately 7 hours. The proposed Central Expressway will cover approximately 40% of the journey and this will reduce transit times by approximately 1 hour. While there are conceptual plans for a High Speed Rail link that would compete with air, this is only at an early planning stage.

Tourism in the northern region is currently very low, with minimal tourist infrastructure and very few visitors. Going forward this may change; SLTDA has identified plans to develop a lagoon resort close to Jaffna which would provide 1,000–1,500 rooms and to develop tourism offerings on Mannar Island to the southeast of Palali. The flight distance is 275 km which is starting to make air services a more viable opportunity, especially with the slow road route.

The overall conclusion is that the facilities are adequate for the existing operations, but heavier aircraft, or without STOL capability would require additional runway works plus resurfacing of one of the taxiways. This could be achieved for comparatively low cost (say $1.5 million). There would also appear to be some demand for air services to Jaffna, but the issue is around Helitours, the MA 60 and the military nature of the airport. The first two points are illustrated by indications that Helitours for periods were not licensed by the SL CAA, the fact that they are not an approved IATA operator, the lack of any developed world certification for the MA 60 and the difficulties in booking flights via the phone and website. It is unlikely that any developed world-based tour operator would use Helitours, so the tourist use is by independent travelers booking on spec whilst already in the country. In essence a reformed Helitours or a new airline taking over its routes would appear essential to improve the viability of domestic routes to Jaffna, plus much easier access to the airfield for passengers.

The only other route possibility for Jaffna is as a stopover for a Colombo – India route which would appeal to Tamils in the north of the country. While potentially commercially attractive, this would necessitate much larger scale runway and airfield improvements to accommodate international flights. Given the high security nature of the Palali Airport such an international link might prove problematic. The military nature of the airport with joint military controls inevitably constrains its potential development as a civil airport and effectively rules out potential PPP investment.

A11.1.7 Ratmalana Airport (RMA)

Ratmalana was Sri Lanka's original international airport prior to the construction of BIA, and nominally serves both domestic and international traffic. It is located in the Western Province on the West Coast being 46 km south of BIA and only 20 km south of Colombo. It is now used as a domestic and regional airport offering facilities for charter flights, aviation training and corporate jet landing, storage and departure services. The airport is operated jointly by AASL and SLAF. Helitours is based out of the airport offering low-cost scheduled and charter domestic flights.

The airfield facilities are reasonable with a 1773 x 30 metre runway in good condition, category 6 firefighting, some runway lighting and an NDB for navigation, but currently it is not in use. One of the taxiways is obstructed and the other serves the middle of the runway. The terminal building is quite large, but much of this has been taken up by CIP and VIP facilities and the departure lounges for regular passengers appear small. Any expansion would necessitate a more flexible use of terminal space. The airport currently serves as a domestic hub (though not for Cinnamon who are at BIA), training school movements and other ad hoc charter and corporate jets; it also has the ATC area control center. It is noted that Helitours has its own separate small passenger terminal adjacent to the main terminal building.

A series of upgrades to the airport are currently underway including renovations to the runway, taxiways and aprons, as well as the terminal building and control tower. The current AASL budget includes $42,000 to overlay the east taxiway, $360,000 to construct a new administration building for

the Fire Division (which will free up additional hangar space for commercial customers) and $220,000 to renovate the perimeter road. A list of development projects was presented, some of which appear logical such as improved navigation aids, better taxiway usage, dealing with the Parliament prohibited area and addressing the Helitours problem. Others appeared less of a priority, rebuilding the control tower when cameras could be an alternative and the widening of the runway strip. The plan to relocate the SLAF hanger and all facilities to the far side of the runway appears logical as then there would be a clearer demarcation between civil and military usage.

RMA is conveniently located for Colombo; which the majority of international visitors to Sri Lanka visit during their stay, as well as having good access to the Southern Expressway route to the popular South Coast region. Currently the transfer times and distance from BIA are relatively significant and therefore in the short term it is unlikely that direct transfer, domestic aviation services for tourists would be successful if offered from RMA alone. The completion of the Outer Circular Highway would appreciably reduce transit times between the airports. It is clear that Ratmalana has the capacity and capability to act as a domestic airport for Colombo, but this approach limits the potential for direct transfers and duplicates airport resources.

The overall conclusion is that Ratamalana could support the addition of more domestic services with minimal investment. The key issue is whether Colombo should have two airports and what should be their specific roles in relation to domestic aviation. This can only be really addressed by developing a National Civil Aviation Plan.

A11.1.8 Bandaranaike International Airport (BIA)

BIA is located in the Western Province on the West Coast in a suburb of Negombo, 35 km north of Colombo. It is the main international airport serving Sri Lanka with current passenger throughput being approximately 8 million passengers per annum. It is the home hub for SriLankan Airlines, Mihin Lanka, Sri Lankan Cargo, and Cinnamon Air. The airport is used for both civilian and military use; AASL manages all civilian aspects of the airport while SLAF manages military uses.

The focus of the assessment was domestic aviation and the relevant facilities at BIA. Cinnamon Air have their own terminal, separate from the main passenger facilities. They have a dedicated rented area external to the terminal where passengers are processed – they provide their own handling and security and AASL merely have access control. They are charged the standard BIA landing and parking fees, plus a rental.

AASL recognize the need to develop facilities to handle domestic passengers, either in isolation or as part of an internal transfer. Their plans involve developing a separate gate for processing domestic passengers, but that can easily be switched over to international traffic when there is no domestic traffic – i.e. a dual purpose gate. Outbound the domestic passenger would follow the usual route and check-in as per international departures and then pass into the emigration area where a new route would be established turning right instead of left for emigration. This would then lead to a single domestic lounge area and gate on the ground floor. Construction is already underway and should be completed in 3-6 months (from October 2015).

The proposals for domestic arrivals are still to be finalized. Initial ideas are that the domestic passengers would arrive on the ground floor and either a route to a sealed-off reclaim unit would be established with a pathway bypassing customs and immigration, or otherwise a bus would take the passenger to a remote reclaim unit and then into arrivals. Neither of these concepts have been finalized and planning is still on-going.

The conclusion is that in principle an arrivals and departures domestic product can be established at relatively low cost and that there is no reason not to proceed with this in case certain domestic routes can be made to interline with international services. It would also be helpful in any future terminal expansion that sufficient flexibility is built into the plans to allow for domestic traffic.

A11.2 Potential Capital Investment needs at Domestic Airports

In this section, estimates are provided as to the potential capital expenditure required to bring these airports up to a reasonable standard in handling domestic passengers consisting of both tourists and

nationals. These estimates are based on the use of helicopters, seaplanes and light propeller-driven aircraft, similar to those currently in use. The CAPEX are shown in Table 1.1 below

Table A11.1 Potential Capital Costs of Airports to handle more Domestic Services

Airport	Development Cost US$	Nature of Development
Koggala	115,000	PAX Terminal building
MIA		None required
Batticaloa		None required
Hingurakgoda		None proposed
Sigiriya	115,000	PAX Terminal building
Palali/Jaffna	760,000	Additional runway, taxiway and apron resurfacing
Ratmalana	300,000 380,000 3-4,000,000	Taxiway improvements Navaid improvements 500 m runway extension
BIA		No additions to existing program
Total	**4,670,000 – 5,670,000**	

It is important to note that at this stage the condition of and facilities at these airports do not represent a barrier to the undertaking and expansion of domestic air services in Sri Lanka, other than the temporary closure of Batticaloa for repairs. The CAPEX costs indicated merely represent quality improvements and in the case of Ratmalana may not be required until 2018.

If the domestic sector were to be developed on the basis of the introduction of larger aircraft the development costs are likely to be substantial, except at BIA and MIA that are equipped to handle such aircraft. The indicative costs shown for the extension at Ratmalana show that the investments costs at these regional airports could be substantial up to $10 million each, depending on the runway resurfacing and extension costs (assuming land is available for such extensions). In effect the move to ATR 42-sized planes and jet aircraft represents a ‘quantum’ leap in terms of airport development costs. While it is acknowledged that some heavier military aircraft, such as C160, have used a number of runways, this does not necessarily mean they would meet the standards required for handling larger civil aircraft.

This situation tends to suggest that the domestic air sector may well expand on the basis of increased flight frequencies and coverage using the existing types of aircraft, rather than introduce large aircraft, despite their potentially lower unit seat operating costs. In addition airport operators, especially the SLAF, are unlikely to undertake such major airport upgrades without some form of underwriting by the various domestic operators.

A11.3 Financial Situation at Domestic Airports

The management of the airports in Sri Lanka is divided between the Airports Authority of Sri Lanka (AASL) and the Sri Lankan Air Force (SLAF). AASL are responsible for the two international airports, BIA and MIA, but with SLAF having responsibility for any military operations at those locations. In the case of Ratmalana AASL has joint responsibility with SLAF, given the significant military activities concentrated at that airport. The other airports around the country included in the study, and being, considered for possible Public-Private-Partnership arrangements, are all owned and managed by the SLAF.

The SLAF have a standard landing fee of SLRs 282 or approximate $2 per aircraft landing irrespective of size and whether rotor or fixed wing. There are no passenger handling charges. While there are ATC charges these are not payable to the airport operators. The reality is that SLAF are providing a public service at minimal cost, based on the premise they require the airport for military purposes. The domestic airlines self-handle and therefore the airport operator SLAF does not need to provide support

personnel, though at military bases, personnel could be available if required. In effect, this means these regional airports have minimal income given the low numbers of aircraft movements and virtually no costs. This situation makes it particularly difficult to prepare any meaningful P&L accounts and a financial prospectus.

Ratmalana as part of the AASL levies charges for domestic flights. The current tariff indicates landing and parking charges for domestic flights are SLRs 250 per 1000 kg take-off weight (MTOW) with a minimum of SLRs 1000 per landing, equating to approximately $7. In addition, there is a passenger handling charge SLRs 50 (approx. 30 cents). The above charges relate to civil aircraft only and it is not clear whether Helitours aircraft, the main domestic carrier from this airport, is classified as a civil or military users. A key income at Ratmalana is the hire of hangers to operators, but this is not the situation at any of the other domestic airports, as is the case with parking fees. It is clear that Ratmalana is not financially viable solely on its income from domestic airline operations, which probably represent only a small part of its overall revenue.

A11.4 Assessment of Potential for PPP Development

The potential for encouraging private sector development in the domestic airport sector is dependent on a number of key factors;

- The nature and scale of the development of the domestic aviation sector;
- potential financial returns generated from airport concessions;
- other non-fiscal factors;
- the relationship with the existing operator – Sri Lankan Air Force; and
- the ability to segregate civil and military operations and responsibilities;

An assessment is made of each of these factors and how they are expected to impact on the decision-making process in relation to attracting private sector investment into the domestic airport sector.

A11.4.1 Development of the Domestic Aviation Sector

The potential to attract private sector investment is likely to be predominantly driven by the potential revenue streams that could be generated under a concession or similar PPP arrangement. The primary income would be the landing charges and passenger handling fees generated by visiting aircraft engaged in domestic flights, be they scheduled or charter movements. Given the potential volatility of the charter market in terms of consistency of demand, the schedule services would be expected to form the dominant revenue reliability factor in considering PPP investments.

An appraisal of the domestic aviation sector in Sri Lanka is beyond the remit of this study, which is focused on airports and their potential development with private sector investment. Nonetheless, there is an established inter-relationship between services and airports. Airline services provide the ‘demand’ for airports and airports represent the ‘supply’ to meet that demand. Construction of airport ‘supply’ in isolation of identified ‘demand’ is unlikely to be successful as ‘supply’ does not necessarily generate demand, as is amply demonstrated by the situation at MIA. Thus, in assessing the need for airport development, PPP or otherwise, it is necessary to consider the potential ‘supply’ trends, in this case the potential future domestic service demand.

In principle, the demand for domestic air services is mainly dictated by its competitiveness versus alternative modes of transport. In cases where the route crosses mountain ranges or the sea, aviation becomes significantly more attractive, such as in Nepal in the case of mountains and Philippines in the case of inter-island services, because of the cost and time advantages over alternatives. In countries where such extremes do not exist, similar time/cost parameters exist, but the advantages of aviation become appreciably less. In general, longer distances and/or poor road networks make aviation more attractive because of the resultant time advantages offsetting the extra cost of travel.

Sri Lanka is a relatively small island in aviation terms and as a result internal flight distances are relatively small. The longest domestic flight leg is between Colombo and Jaffa/Palali at approximately 275 km, with all other airports being under 200 km. These are considered short journeys in aviation terms. It is interesting to note that Cinnamon Air markets itself as an ‘air taxi operator,’ rather than a

domestic airline. The other key factor is the increasing strength of competition from the road sector, the better the road network the stronger the competition from road transport. Sri Lanka is in the process of upgrading its road network with new expressways and this will appreciably reduce road transit times and costs, and therefore erode the advantages of air travel. In essence, improving the road network tends to mean that distance, and therefore, travel time becomes an increasing important factor, effectively increasing the distance at which aviation becomes attractive.

One approach to providing short distance air travel is the more intensive use of aircraft due to the relatively low fares which can be levied on short distance routes due to the road competition. Rail transport is not considered a competitor to air' unless a high speed network is available. Passengers who use air services rarely ever use rail transport on that same route. The key problem in Sri Lanka is that the potential size of 'demand' does not appear to be sufficient to enable the development of intensive services.

The features discussed above clearly suggest that establishing domestic aviation services in a small country with an improving road network will not be an easy task for commercial operators. The fact that the existing services are so limited tends to reflect this situation, though it is acknowledged there may be other factors such as constrained market access. In the Interim Report the relatively low flight distances and growing intensity of the road competition were both identified as potential market constraints.

The Interim Report provided an assessment as to the potential demand for domestic aviation, principally based on the projected expansion of the tourist market. A key objective of the project specialists visiting the domestic airports in October 2015 was to validate the desk research undertaken in the Interim Report by undertaking on-site assessments across the country. This site assessment suggests the overall demand for scheduled domestic air travel may have been significantly overestimated. The following paragraphs explain the disparity between the desk research and the situation on-the ground.

The Interim Report assumed typical journey times to/from Colombo to resort areas by road or by air. Based on travelling the road network it may be that the original road travel times cited were in some cases longer than actual (based on a hire car with driver basis). The estimated travel time from Colombo to the main domestic airports is shown in Table 1.2 below. These are generally lower than those indicated in the earlier report, even allowing for the time from exiting the aircraft at BIA and driving from the airport. This reduces the potential benefits of the estimated journey time by air, as opposed to by road. In addition, the road travel is direct to the resort, whereas by air the passengers will still incur additional time transferring from the domestic airport to their resort.

Table A11.2 Travel Times from Colombo to Regional Airports

Airport	Current driving Time from Colombo	Future driving time from Colombo
Galle/Koggala	1.75-2 hours	1.75-2 hours
MIA	4 hours	3 hours
Batticaloa	6 hours	5 hours
Sigiriya	5 hours	4 hours
Palali/Jaffna	7 hours	6 hours

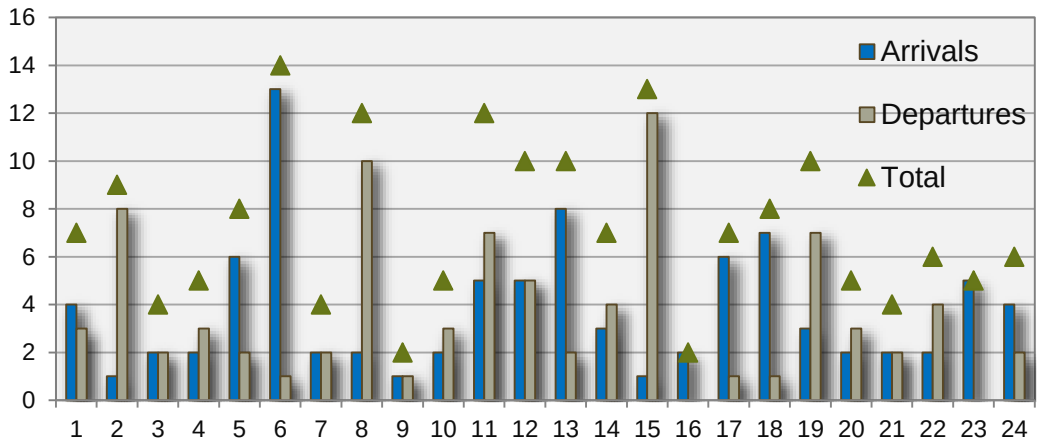
A key assumption in the comparison between road and air times was that 'the minimum connection times (MCT) are set by the airport operator and airlines to determine the minimum allowable time for passengers to transfer between flights. Airports will often permit connections between flights with as little as 45 minutes ground time and SriLankan currently operate with these levels on many of their international flows'. While this assumption is correct, in practice most connecting passengers will experience longer ground times since not all flights will coincide with this minimum.

The first issue is that the 45 minutes is usually only allowed in relation to interline transfers. At this stage SriLankan Airlines is not a domestic carrier and therefore the potential for such an interline transfer is remote. In practice because all the domestic airports potentially served by Colombo currently have no customs and immigration facilities the likelihood is that any arriving international

passenger would have to retrieve their hold baggage then clear customs and immigration at BIA then rescreen their baggage. This would lead to a longer transfer between international and domestic services at an airport such as BIA of 2 hours. This reduces the comparative benefits versus road travel.

The second, and potential key issue is the ability to transfer between international and domestic services, assuming such services were present at BIA. The profile of international arrivals and departures is shown in Figure 1.1. Hourly Profile of Demand at BIA which indicates that arrivals are spread throughout the day with a morning peak around 0600 hours. The departures are similarly spread 0200, 0800 1500 and 1900 hrs. Given this spread and the high percentage of night flights the potential for direct transfers is considered to be limited. It is unlikely that any domestic route would be able to support more than 2 flights per day and therefore in most cases road transport would be faster in almost all cases. A significant number of passengers spend their first, and sometimes last evening in Colombo, due to the preponderance of night flights.

Figure A11.1 Hourly Profile of Demand at BIA



The journey cost comparison was based on the road element being 2 passengers in a private car including the driver. This situation may be relevant with regard to a proportion of the 'upper end' tourists from developed countries who wish to get to their resort quickly, but the growth market has been indicated as being the Asian market, particularly PRC and India. In these markets the group travel concept is much more dominant, usually moving around by coach for the Chinese and small vans for Indian families. Indeed many European tours are also in small vans as well as private cars. This suggests that the road costs, while reasonable in total may not necessary be the norm. It is also evident that tourism is becoming increasingly orientated towards multi-location tours around the island, rather than single beach resort holidays. Coach travel is generally the optimal transport mode for holidays with this type of profile.

The airfares used in the road/air comparisons are based on the seat cost of using an ATR aircraft, but this assumes that the domestic demand is present to support such an aircraft and that the domestic airports were able to handle this aircraft. Site indications suggest that neither the demand nor the facilities can accommodate ATR 42 at this stage. Ironically, the fares used in the comparison are comparable to those currently charged by Helitours, which is considered to be a subsidized rate.

It is clear there is a future for domestic aviation in Sri Lanka. The key issues are the nature and size of the market. While the sector's future should be determined by the development of a National Aviation Strategic Plan, from a potential private sector investor's perspective the following appear at this stage to be the key aspects:

- The size of the domestic aviation sector is likely to be limited because of the size of the country;
- Viability with such short distances suggests that overall growth will be steady rather than spectacular;

- The longer distance routes where the differential between road and air travel are greatest are likely to offer the best opportunities for developing scheduled services such as Colombo-Palali/Jaffna and Colombo/Batticaloa;
- The scale of demand suggests that growth can be satisfied in the short to medium term by increased flight frequencies utilizing the existing types of aircraft; and
- There is likely to be significant potential for short distance charter flights using small fixed wing aircraft, seaplanes and helicopters to cater for the 'upper end' of the tourist market.

A11.4.2 Potential financial returns generated from airport concessions

The current situation with the domestic airfields being predominantly military airfields operated by the Sri Lankan Air Force, means that overall sale of the facility to a private sector investor is probably unrealistic. A more practical approach would be concession arrangements whereby the investor was responsible for the civil aviation activities and the military their own operations. This form of separation between civil and military in principle exists at Ratmalana, though not on a concessional basis. The current legislation appears to allow for such concessions, even though it does not specify the aviation sector.

Such a concession can take many forms, but the most likely would be that the concessionaire would be responsible for marketing, management of the passenger operations and terminal, in cooperation with the SLAF. It is unlikely the concession would include airside infrastructure operations such as runways, aprons, taxiways, lighting and Navaids as these would be considered strategic national resources. It is also unlikely any concessionaire would be interested in being responsible for airside facilities as it would significantly increase potential capital expenditure and overall project risk.

The major constraint is the lack of flights and therefore income. Currently, the charges at these domestic airports are minimal, and even using the national-based charges levied at Ratmalana the income stream is insufficient to support the costs of such a concession. As indicated, the current operators self-handle and thus it would be difficult to force existing operators such as Helitours and Cinnamon Air to pay handling charges and higher landing fees than they pay at Ratmalana. The cost of undertaking such a concession in terms on managing a small civil airport, assuming SLAF was responsible for all technical services and airside infrastructure, would be a minimum of $100,000 per annum. Current and future income levels are not expected to generate sufficient income to be able to cover these costs.

It is not considered there is any realistic potential to undertake PPP operations at the Sri Lankan domestic airports based solely on the ability of the private sector to generate positive financial returns. Even assuming the government underwrites all infrastructure costs. This is because of the likely low level of income generated by the continued use of small aircraft, the limited overall traffic demand and thus flight frequency, and the low charges currently levied for landing fees and passenger handling. The growth in the charter market should generate supporting revenue, but this would still be insufficient to cover likely operational costs. The introduction of commercial rates necessary to significantly expand revenue would merely increase the cost of domestic aviation and constrain potential growth.

A11.4.3 Non-fiscal factors

The above assessment was based solely on the ability of the concessionaire to generate profits from what would be a minimal investment, such as minor terminal improvements. However, it is recognized that interest may also relate to non-fiscal factors, such as the ability to provide integrated services. For example, the Cinnamon Group is principally a premium hotel organization that also, with other partners, has an 'air taxi' service. The ability to offer luxury hotels and connecting air taxi services assists in being able to market a premium integrated product to clients. Given that they self-handle their own aircraft, the additional costs of 'running an airport' in terms of terminal and landside operations would be relatively minimal, as staff could be used for other tasks when no aircraft are scheduled.

The potential downside of such a strategy is that they are already obtaining an almost free service courtesy of the SLAF. It would potentially add costs/risk for limited gain, other than in possibly

attracting premium clients, but even this is questionable as such clients are interested in service, rather than who owns the facility. There is no evidence to suggest existing carriers or hotel groups are currently receiving sub-standard services at domestic airports sufficient to justify 'taking them over'.

Another concern would be if an airline operator or hotel group were to obtain a concession there is a potential risk of creating a monopoly situation at that airport. Whilst this could be addressed in the concession agreement, the operators would likely give priority to its own interests. The above cites Cinnamon because it is currently an operator of hotels and air services, but the same could equally apply to Shangri-La, Marriot, Taj or any of the other major luxury hotel organizations on the island.

The initial conclusion is that while there could be some potential for the private sector to invest in the domestic airport sector based on non-fiscal returns, the benefits appear questionable.

A11.4.4 Relationship between Concessionaire and SLAF

The relationship between the potential private sector concessionaire and the military in the form of the SLAF has been identified as a concern. Essentially, these domestic airports are all military bases, some of which have civilian operations. While there is no evidence of restrictions in principle, it is important to note that at sensitive airports such as Palali, Helitours is the key operator and this is a quasi-military airline. The situation at Ratmalana clearly suggests that military and civil operations can operate in parallel, though it is accepted that the civil operator AASL in this case is a government-owned organization.

The site assessment suggest that civil and military activities could potentially be segregated by means of developing separate public access to the terminal building. This is easier at some locations than at others. Given the distance from Colombo, it is clear that Papali is potentially the most attractive route for development of domestic aviation. However, it is located within a sensitive high security military area and it is unlikely that a concession would be given to the private sector, or that an investor would be interested given the likely operational constraints. A similar situation could exist at Hingurakgoda which is a major training base.

In principle, it is considered that at Batticaloa, Koggala and Sigiriya the civil activities could be segregated and that the military management of the overall airfield should not necessarily be a constraining factor. However, it should be acknowledged that a private sector investor may be 'nervous' about external control over their activities under a concession.

A11.4.5 Overall Conclusions regarding PPP Development of Domestic Airports

The overall conclusions regarding the development of domestic airports is as follows:

- These airports/airfields are military properties, thus wholesale transfer of a facility to a private sector investor is unlikely, unless the military were to decide to close the airfield;
- The domestic aviation sector is small and unlikely in isolation to generate sufficient income to cover the costs of any meaningful operating concession;
- Non-fiscally based interest is possible, but the potential advantages over the current arrangements is not clear. In reality the SLAF is proving a public service to users at minimal cost;
- Some airports are in high security areas and are 'military dominant' to an extent were PPP investment would either be refused or would compromise the interest of a potential investor; and

There is no clear reason why a PPP investment is required or that a private sector investor could be attracted to the sector at this stage. In the longer term as the domestic aviation sector gradually expands with more scheduled domestic services, 'taxi' and charter flights, it may be that some airports could eventually reach a stage whereby they would become commercially attractive.