





LOMBOK

BASELINE DEMAND & SUPPLY, MARKET DEMAND FORECASTS, AND INVESTMENT NEEDS

MARKET ANALYSIS AND DEMAND ASSESSMENTS TO SUPPORT THE DEVELOPMENT OF INTEGRATED TOURISM DESTINATIONS ACROSS INDONESIA

WORLD BANK SELECTION # 1223583

ACKNOWLEDGMENTS

PREPARED BY:

Horwath HTL
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TABLE OF CONTENTS

TABLE OF FIGURES

INTRODUCTION

The Government of Indonesia in the National Medium-Term Development Plan (*Rencana Pembangunan Jangka Menengah Nasional*, RPJMN) 2015 to 2019, has set a number of objectives to increase the role of tourism in the Indonesian economy. Between 2015 and 2019, its goals together with the Ministry of Tourism's goals are to increase:

- international visitors from 9 million to 20 million;
- domestic visits from 250 million to 275 million;
- the tourism contribution to GDP from 4 percent to 8 percent;
- tourism foreign exchange revenues from IDR120 trillion to IDR240 trillion;
- Indonesia's Travel and Tourism Competitiveness Index ranking from 70th to 30th place; and
- tourism sector employment from 11 million to 13 million workers.

To achieve these goals President Joko Widodo urged his cabinet to accelerate the development of 10 priority tourism destinations (Figure 1):

- **Borobudur (Jogjakarta, Solo, Semarang: Central Java)**
- **Lake Toba (North Sumatra)**
- **Mandalika (Lombok)**
- Bromo, Tengger, Semeru (East Java)
- Labuan Bajo (Flores)
- Wakatobi (South East Sulawesi)
- Pulau Seribu / Kota Tua (DKI Jakarta)
- Morotai (North Maluku)
- Tanjung Lesung (Banten)
- Tanjung Kelayang (Bangka Belitung)

The 3 destinations in bold are considered high priority destinations with additional effort being expended to encourage and develop tourism.

The World Bank has been requested by the Government of Indonesia to support, through financing, advisory support, and analytics, the Government's efforts to accelerate tourism development in the 10 priority destinations. As part of this support, in August 2016, the World Bank engaged Horwath HTL (HHTL) and Surbana Jurong to conduct a market analysis and demand assessment for the 10 priority destinations, with a focus on Lombok, Borobudur and Lake Toba.

FIGURE 1 – LOCATION OF 10 PRIORITY TOURISM DESTINATIONS IN INDONESIA

Source: Google Maps, Surbana Jurong

The key objective of the Assessment is to assist the Government of Indonesia in identifying and prioritising infrastructure, skill and SME development, planning and other tourism-related expenditures to accelerate the development of the 10 priority tourism destinations. The scope comprises of (1) market demand and supply analysis, plus investment analysis and (2) demand assessment (projections) and investment needs (including infrastructure). The findings are expected to inform the government's integrated tourism master plans for these destinations.

To this end, the following key tasks were undertaken:

Task 1:	Understanding governmental decentralization & its effect on decision making plus preliminary information gathering.
Task 2:	Collection and analysis of the government's statistical data.
Task 3:	Survey of international and domestic tourism stakeholders for collection of public and private sector information.
Task 4:	Survey of tour-operators in selected key markets.
Task 5:	Secondary research on tourism supply and demand.
Task 6:	Analysis of the image of Indonesia and the 10 priority destinations.
Task 7:	Future market demand analysis.
Task 8:	Investment and infrastructure needs assessment.
Task 9:	SMEs and skills assessment and needs.

Appendix IV contains a list of interviews undertaken with both the public and private sectors to gather primary research that was used to supplement secondary research. The list includes the number of interviews, the organisation (where appropriate) and the location.

This Report is part of a series of reports:

- report for Indonesia, country level;
- reports for the 3 high priority destinations (Lombok, Borobudur, and Lake Toba); and,
- reports for the 7 other priority destinations (Bromo/Tengger/Semeru, Labuan Bajo, Wakatobi, Pulau Seribu/Kota Tua, Morotai, Tanjung Lesung and Tanjung Kelayang).

Assessment of the Destination and Key Tourism Areas

The 3As terminology (Attraction, Amenities and Accessibility) can help explain how the supply and demand analysis and needs assessment was carried out for the destination with respect to the destination boundary and the key tourism areas.

- **Attractions**: attractions specifically focussed on engaging and drawing visitors to the destination. The destination is defined by its attractions and their ability to draw visitors. Within the destination boundary, (existing and future) clusters of attractions with potential for tourism development and propensity to generate overnight stays and revenue and/or (existing and future) key tourism areas are identified and henceforth called "key tourism areas".
- **Accessibility**: methods of reaching the destination via the main gateways (external accessibility) plus transport links between gateways, attractions and key tourism areas all of which support the destination (internal accessibility). For external accessibility, the focus is on the gateway hubs (such as airports and ports). For internal accessibility, the Report assesses the transport infrastructure; the existing, the gaps and the required transportation network that facilitates accessibility within the destination.
- **Amenities**: support the destination and the attractions such as hotels, restaurants and entertainment facilities together with basic capacity infrastructure. Within the destination boundary, and generally within the key tourism areas, the Report assesses:
  - the existing basic infrastructure capacity (water supply, power supply, telecommunication, waste water and waste management, etc.);
  - identifies any basic infrastructure capacity gaps;
  - analyses demand and supply of existing attractions and amenities;
  - provides projections for future attractions and amenities; and
  - provides an assessment of infrastructure needs of the destination to ensure success of the attraction and amenities. In some cases, when amenities within the destination boundary have a direct effect on the attractiveness of the key tourism areas, the scope of the baseline and investment needs of basic capacity infrastructure is conducted beyond the key tourism areas.

BASELINE DEMAND & SUPPLY

1. DESTINATION CHARACTERISTICS

1.1 GEOGRAPHY

Lombok is an island in West Nusa Tenggara province of Indonesia (Figure 2). The island is part of the Lessur Sunda Islands chain, with the Lombok Strait separating Bali to the west and Sumbawa to the east. It has a total area of 4,725 square kilometres and is roughly circular in shape. The island is divided into four kabupaten:[1] Lombok Barat (West Lombok), Lombok Utara (Lombok Utara), Lombok Tengah (Central Lombok) and Lombok Timur (East Lombok) and one township: Kota Mataram (Mataram City).

FIGURE 2 – LOMBOK MAP

Source: Google Map.

Lombok Barat serves as the administrative centre of the island. It includes the majority of Lombok's developed tourism infrastructure and is the gateway to the Gili islands. Lombok Tengah and Lombok Timur are a mix of rural villages and beaches, while the southern coast of Lombok is well known for its remote beaches and surfing sites.

1 In Indonesia, subnational governance includes four levels: (1) province/Provinci, (2) city/Kota and regency/Kabupaten, (3) sub-district/Kecamatan or district/Distrik, and (4) urban community/Kelurahan or village/Desa.

1.2 CLIMATE

Situated just south of the Equator, Lombok enjoys consistent hours of sunlight and warm temperatures throughout the year, ranging from a low of 24 °C to a high of 34 °C during the hot months and 20 °C to 31°C during cooler months. There are two seasons: the dry season, from April to September, and the rainy season from October to March. The climate in Lombok is generally dryer than neighbouring Bali, which makes it a particularly attractive option during the rainy season. May through June is considered the most pleasant time to visit the island.

1.3 RESIDENT POPULATION

According to the 2014 census, the population of Lombok Island was 3.3 million. It grew at CAGR of 1.1% from 2010 to 2014. This is lower than the national population growth rate of 1.38% per annum from 2010 – 2015[2]. According to the United Nations Population Fund (UNFPA), the national growth rate is forecast to slow to 0.62% by 2035[3]. This indicates that Lombok's population growth rate is likely to remain low in the next 25 years (Figure 3).

FIGURE 3 – POPULATION TRENDS, PULAU LOMBOK

Resident Population	2010	2014
Kab. Lombok Utara	199,904	209,060
Kab. Lombok Barat	599,609	626,941
Kab. Lombok Tengah	859,309	898,855
Kab. Lombok Timur	1,105,671	1,155,247
Kota Mataram	402,296	420,941
Total Pulau Lombok	**3,166,789**	**3,311,044**

Source: Census

1.4 CULTURE

Lombok is culturally diverse with a variety of religions and ethnicities. The island's indigenous Sasak people are predominately Muslim; however, before the arrival of Islam, Lombok had a long period of Hindu and Buddhist influence from Java. Today, the island's population is 85% Sasak, 10-15% Balinese, and a very small remainder is Javanese, Arab Indonesians, Sumbawanese and Chinese-Peranakan.

The Sasak culture has withstood the pressures of modernity remarkably well. The strong culture and history of the Sasak people is unique to Lombok. As a result of the deep Islamic background, most of the local villages in Lombok have mosques and minarets.

2 This is not the same time frame, but used for comparison purposes only.

3 Source: UNFPA The 2010-2031 Indonesian Population Projection

2. DESTINATION DEFINITION

2.1 KEY ATTRACTIONS & TOURISM AREAS IN LOMBOK

Tourism development in Lombok started in the mid-1980s, when Lombok attracted attention as an "unspoiled" alternative to Bali. Since then, low-budget bungalows, owned and operated by local business entrepreneurs, started to proliferate at places like the Gili islands and Kuta. In the 1990s, the national government began to take an active role in planning and promoting Lombok's tourism. The Lombok Tourism Development Corporation (LTDC) was formed and prepared detailed land-use plans with maps and areas zoned for tourism facilities.

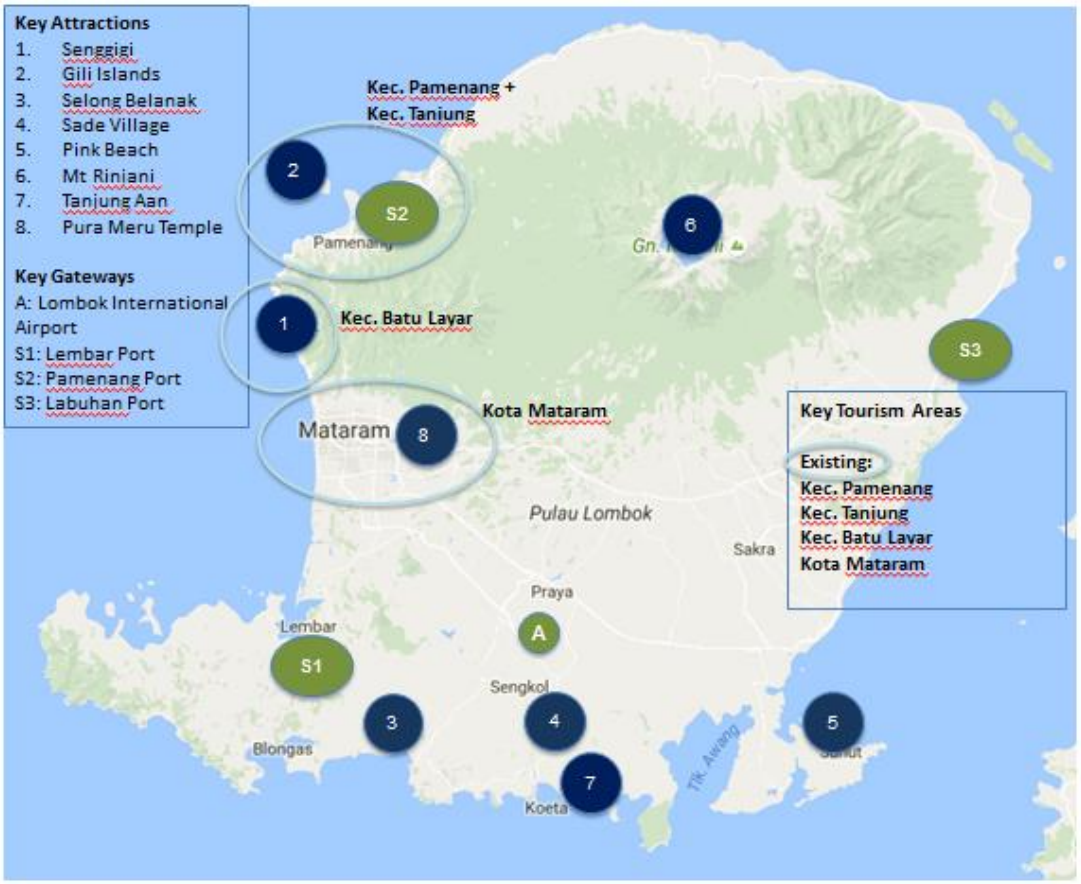
In the late 1990s and early 2000s, tourism in Lombok (and Indonesia) underwent a series of discouragements including the 1997 Asian Financial Crisis, a series of terrorist attacks, and SARS outbreak. In 2008, the Global Financial Crisis affected the foreign investors in the project, ending the prospect of LTDC going forward with the development. As a result, the government assumed land ownership from LTDC, and then appointed Bali Tourism Development Corporation (BTDC) now renamed Indonesia Tourism Development Corporation (ITDC) to develop the area within Kab. Lombok Tengah.

The following analysis identifies the key tourism areas by looking at:

- key attractions; and
- key tourism areas, which will be discussed in more detail in the Amenities: Hotel & Lodging Options section.

The islands' key tourism areas are driven by current services/products and current demand. Not all of Lombok's key attractions are close to the existing key tourism areas as highlighted in Figure 4. New tourism areas are likely to develop around these key attractions in the future.

FIGURE 4 – CURRENT KEY TOURISM AREAS & ATTRACTIONS IN LOMBOK



Source: Google Map, Horwath HTL

2.1.1 SENGGIGI (KAB. LOMBOK BARAT, KEC. BATU LAYAR)

Senggigi is the key attraction as well as a key tourism area. The area is comprised of three main beaches, namely Batu Bolong to the south, Senggigi in the centre and Mangsit beach to the north. Central Senggigi is currently the most developed area that has the highest concentration of large-scale four and five-star hotels such as Santosa Villas & Resort and Sheraton Senggigi. Mangsit beach and Batu Bolong are relatively less developed, mainly dominated by strong independent boutique accommodation and beautiful natural surroundings. Main activities in and around Senggigi are the beaches, snorkelling and diving (Figure 5). The tourism development in Batu Bolong and Mangsit continue to focus on beachfront hotels, while the central Senggigi area has an additional element of vibrancy and street feel. Despite the rapid growth of other attractions in Lombok, the area continues to maintain its popular status, especially amongst international visitors.

FIGURE 5 – THINGS TO DO: DIVE SITES IN SENGGIGI

Source: Dive Zone Lombok

2.1.2 GILI ISLANDS & TANJUNG (KAB. LOMBOK UTARA, KEC. PAMENANG & KEC. TANJUNG)

Similar to Senggigi, the Gili Islands are also a key attraction and a key tourism area. The three famous northern Gili Islands, Gili Trewangan, Gili Air and Gili Meno, have gained in popularity thanks to their beauty and their easy access from Bali, their quietness (no cars or motorbikes) and the efforts made to preserve the natural resources. They are enjoyed mostly by divers, backpackers and honeymooners.

Gili Trawangan is the largest and the most visited island, where most of the accommodation and restaurants are located, including upscale hotels such as Villa Ombak and Queen Villa. Gili Air and Gili Meno are much quieter with high-end resorts.

FIGURE 6 – THINGS TO DO: DIVE SITES AROUND GILI ISLANDS

Source: Blue Marine Dive.

Tanjung is a potential key tourism area in Lombok, and is the administrative capital of Kab. Lombok Utara. Similar to Senggigi, Tanjung is also well known for its luxurious hotels, villas, and resorts.

2.1.3 KOTA MATARAM

Kota Mataram is the capital, the largest city and commercial hub (government, education, commerce, industry and services) of the province of Nusa Tenggara Barat. As will be discussed in more detail in the Hotel & Lodging Options (Amenities) the majority of room night demand is generated by the corporate and government segments. It will not be assessed for infrastructure given the predominantly commercial, non-tourism nature of the area.

2.1.4 SELONG BELANAK (KAB. LOMBOK TENGAH, KEC. SEKOTONG)

Selong Belanak is currently one of Lombok's favourite beaches with its long curved bay, beautiful white sand and blue water, an ideal location for beginner surfers. There is one notable small 6-villa resort called Sempiak Villas on Selong Belanak with a contemporary beach club called Laut Biru Bar & Restaurant. The beach also has several local shops (warung) where villagers serve Indonesian food and drinks to the beach-seeking visitors.

2.1.5 SADE VILLAGE (KAB. LOMBOK TENGAH, KEC. PUJUT)

Sasak Sade Village is one of the living museums of Lombok's indigenous art, culture, and traditions. Sade Village is located in south Lombok Tengah and houses Sasak farmers' families still living in traditional houses. The floors in the houses are made of a mixture of clay, droppings and straw, polished into a shining floor. The Sasaknese rice sheds are built on stilts (lumbung) and their famous shape has become a symbol of Lombok. Its people still live their ways of life in the customs that they have grown up with. Tours of the village are provided by the Sasak villagers, where visitors are welcomed with folk dances, ethnic martial arts. One of the ancient traditions of the Sade Sasak is called "Kawin Culik" (bride kidnapping) where the groom kidnaps the woman he wants to marry and hides her in one of his relatives' houses. The following day, they return to the bride's house to receive her parents' blessing.

2.1.6 TANJUNG RINGGIT / PINK BEACH (KAB. LOMBOK TIMUR, KEC. JEROWARU)

Ekas Peninsula (where Pink Beach is located) is close to Tanjung Ringgit (in the Southeast) and a key attraction in Lombok due to the pink colour of the beach. The access roads to Pink Beach and Tanjung Ringgit are arduous.

2.1.7 MOUNT RINJANI (KAB. LOMBOK UTARA, KEC. SEMBALUN)

Lombok's topography is dominated by Mount Rinjani. This attraction, with a 3,726-metre elevation is the second highest volcano and third highest peak in Indonesia. It is one of the most popular trekking destinations in Southeast Asia. Other than its height, Rinjani has become popular among the adventurous travellers thanks to its waterfalls as well as its breath-taking mountain top scenery. The trek to the summit normally takes between 2 and 3 days to complete.

Within the Mt Rinjani National Park are 2 popular waterfalls, Tiu Kelep and Manku Sakti.

2.1.8 TANJUNG AAN (KAB. LOMBOK TENGAH, KEC. PUJUT)

Tanjung Aan is one of the most beautiful beaches within the boundaries of Mandalika and is currently very popular for beach goers. Together with its natural qualities, the development of infrastructure makes the area appealing for potential tourism development that is expected to take place in the next few years.

2.1.9 PURA MERU TEMPLE (KOTA MATARAM)

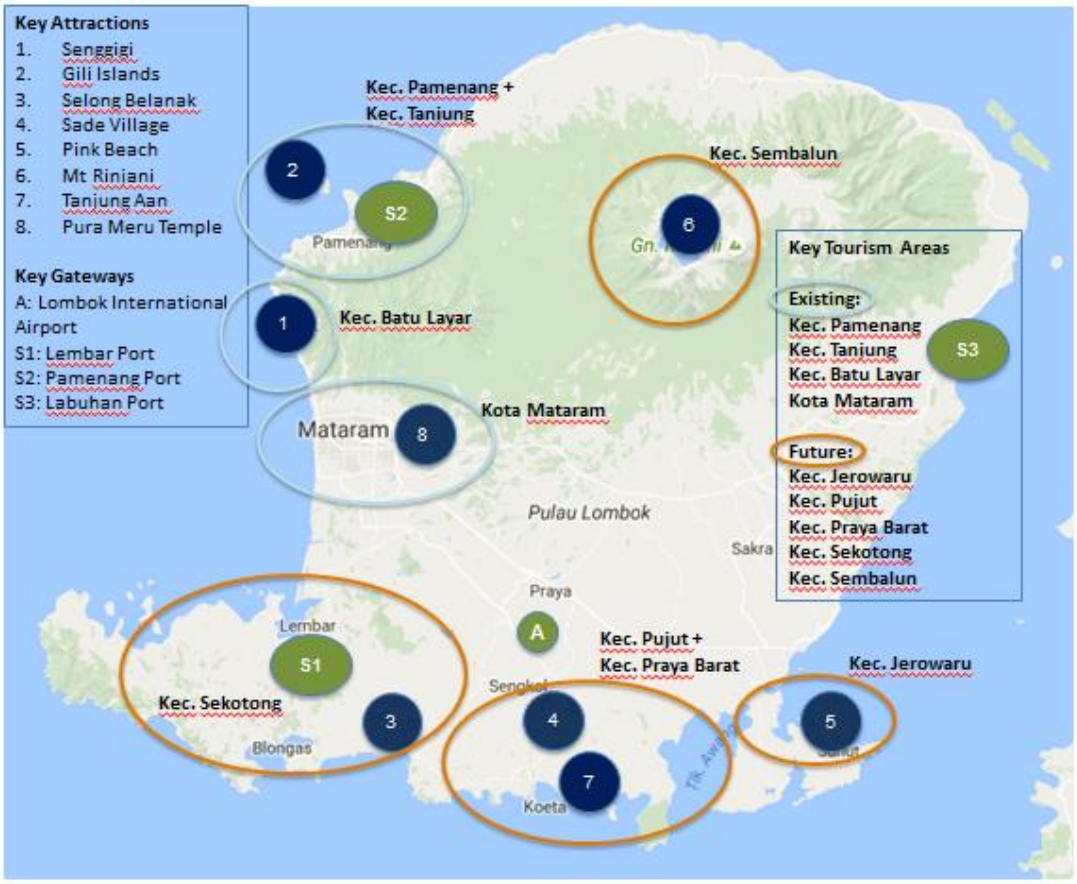
A key attraction in Mataram is the Pura Meru Temple, the largest and second most important Hindu temple on Lombok. It was built in 1720, when Lombok was still part of the Karang Asem Kingdom, and is dedicated to the Hindu trinity of Brahma, Vishnu and Shiva.

2.2 CONCLUSIONS ON ATTRACTIONS

New infrastructure developments, government promotion of local tourism together with the Mandalika development are expected to develop Lombok into a top tourism destination in the medium-term and long-term.

The existing and well-established key attractions / key tourism areas of Senggigi, Gili Islands, and to a certain extent Mataram provide the foundation for Lombok's tourist industry. However, the future also lies in the less explored areas around the remaining key attractions, particularly along Lombok's south coast. Figure 7 presents Lombok's current and projected future key tourism areas.

FIGURE 7 – KEY ATTRACTIONS & KEY TOURISM AREAS, CURRENT & FUTURE, LOMBOK



Current Tourism Areas	Future Key Tourism Areas
• Senggigi (Kab. Lombok Barat, Kec. Batu Layar) • Gili Islands (Kab. Lombok Utara, Kec Pamenang & Kec. Tanjung) • Kota Mataram	• South West (Kab. Lombok Tengah, Kec Sekotong) • Central South, which includes Mandalika (Kab. Lombok Tengah, Kec. Pujut & Kec. Praya Barat) • South East (Kab. Lombok Timur, Kec. Jerowaru) • Mount Rinjani & Surrounds (Kab. Lombok Timur, Kec. Sembalun)

Source: Google Map, Horwath HTL.

3. VISITOR ARRIVALS & DEMOGRAPHICS

The total number of visitors to Lombok Island reached 1,982,427 in 2015[4]:

- 952,600 are domestic visitors (excluding the trips of residents of the island and in the Island)
- 1,029,800 are foreign visitors

3.1 FOREIGN VISITORS

The West Nusa Tenggara Province hosted 1.061 million international visitors in 2015[5], and Lombok Island captured 96.7% of these arrivals, i.e. 1.030 million. Lombok has become a popular destination for international visitors, which have increased roughly four-fold since 2010. The CAGR of international visitors from 2010 to 2015 was 33%.

3.1.1 ORIGIN OF VISITORS

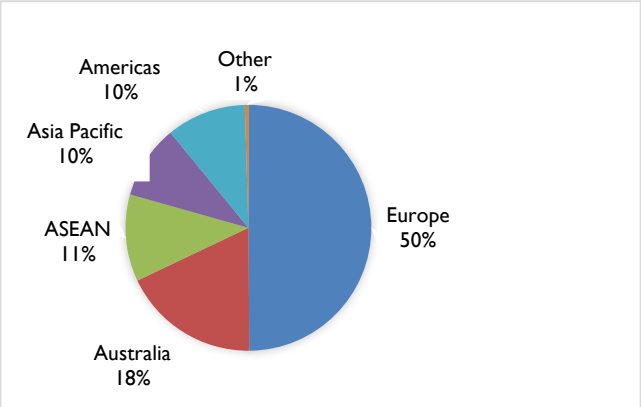
European visitors represent half of all foreign arrivals in Lombok: the main source markets are the Netherlands, Germany, the UK, France and Italy. Though it is not a standalone destination, Lombok has become a favourite place of European visitors in Indonesia, visited by 24% of all European visitors to Indonesia.

The European visitors tend to stay considerably longer than the foreign visitor average of 2.3 nights—around 4 to 7 nights. As most of them arrive by boat via Bali, Lombok is generally an extension of their trip to Bali.

Consistently being the main source of visitors for the past several years, Australia accounted for nearly 18% of international visitor arrivals to Lombok in 2015. The market has grown significantly over the years partly driven by the strengthening of the Australian dollar, the Jetstar direct flight from Perth (discontinued in October 2014) and spill-over from Bali, although the latter still hosts 12 times more Australian visitors than Lombok. Australian visitors are concentrated in Senggigi, the Gili Islands and Southern Lombok for the surf.

4 These numbers are estimates derived from the BPS West Nusa Tenggara Tourism survey at province level.
5 Source: BPS West Nusa Tenggara Tourism Survey

FIGURE 8 – BREAKDOWN OF FOREIGN VISITOR ARRIVALS IN LOMBOK, 2015



Source: Statistics NTB province culture and tourism in 2015

Asian visitors are almost absent from Lombok, except for Malaysians (due to the direct connection with Kuala Lumpur) and South Koreans, whereas Bali is already very popular in China, Japan, Taiwan and India. The reasons are the lack of awareness of the destination and the weak air connectivity with the hubs of Jakarta and Bali.

Similarly, visitors from the Middle East (Saudi Arabia, Egypt, Iran, and UAE) represent a small share of demand for the destination, though it is promoted as a religious destination for Muslims.

Lombok is usually offered in packages as an alternative to Bali for seaside stays at the end of circuits, or for stays fully dedicated to seaside enjoyment.

FIGURE 9 – PLACES ASSOCIATED WITH LOMBOK IN A SELECTION OF PACKAGES OF TOUR OPERATORS

Country	Examples of packages including Lombok Island as a destination
Australia	**Example 1**: **Bali / Lombok** Senur, Tetebatu, Senaru, Gili Islands, Senggigi – **Intrepid (8 days)** **Example 2**: **Bali / Lombok** /Seminyak, Gili Trawangan, Senggigi, Seminyak, Ubud – **Contiki (8 days)**
France	**Example 1: Bali/ Lombok / Java /** Denpasar, Penebel, Munduk, Banyuwangi, Ijen Lovina, Kintamani, Sidemen, Amed, Padangbai, Lombok (ferry cross, Night at Senggigi), Sempage, Api Trek, Sembalun, Ajang, Gili, Ubud (hiking) – **Balaguère (20 days)** **Example 2: Java / Bali / Lombok /** Jogjakarta, Prambanan, Borobudur, Bromo, Ijen, Pemeturan, Lovina, Ubud, Blayu, Serangan, Teluk Kode, Senggigi – **Mandalika (16 days)**

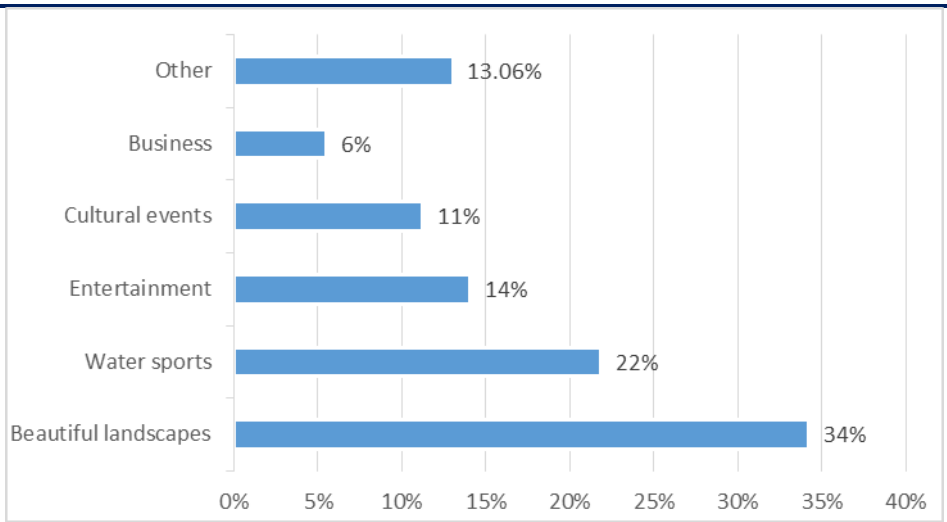
Country	Examples of packages including Lombok Island as a destination
Malaysia	**Example 1: Only Lombok /** Banyumalek (Pottery Village), Sukerara Traditional Weaving Village, Sade or Rambitan, Kuta & Tanjung Aan Beach, Gili Trawangan, Bukit Malimbu – **Mayflower (3 days)**
Singapore	**Example 1: Only Lombok /** Senggigi or Mataram Area – **Lokopodo (Day tour)**
UK	**Example 1: Bali / Lombok** / Denpasar, Seminyak, Uluwatu, Ubud, Lombok (Rinjani, Sasak) – **Abercrombie & Kent (14 days)**

Source: Horwath HTL

3.1.2 MOTIVATIONS AND ACTIVITIES

Leisure demand is the largest motivation of international visitors (81%). Business accounts for only 6% of arrivals.

FIGURE 10 – BREAKDOWN OF FOREIGN VISITOR ARRIVALS IN LOMBOK BY MOTIVATION, 2015



Source: Statistics NTB province culture and tourism in 2015

Admiring the beauty of the landscapes is the major purpose of visit to Lombok. Water sport activities (especially diving) and cultural activities are also considered a strong motivation for foreign visitors.

3.1.3 LOCATION OF ACCOMMODATION

Based on the arrivals in commercial accommodation, their favourite place to stay in Lombok is Kab. Lombok Utara (70%, Gili Islands), followed by Kab. Lombok Barat (Senggigi).

The number of foreign guests to the Gili Islands has more than doubled since 2010, and 84% of the additional foreign visitors to Lombok have been captured by the Gili Islands.

3.1.4 AWARENESS AND IMAGE OF LOMBOK AMONGST INTERNATIONAL MARKETS

Lombok has significant popularity among international travelers and travel trade professionals. It has retained its allure as an "unspoiled paradise", a "Bali as it once was", since it has many characteristics that Bali possessed in the past.

FIGURE 11 – REASONS FOR SATISFACTION REGARDING LOMBOK

Key market	Reasons for satisfaction	Reasons for dissatisfaction
Australia	Beaches	NA
China	Beaches	Quality of accommodations
	Ecological environment	Lack of infrastructure
France	Private villas	Service less efficient than in Bali
	Surfing place	Religious conservatism
Germany	(Lombok tours not sold)	(Lombok tours not sold)
Japan	(Lombok tours not sold)	(Lombok tours not sold)
Malaysia	Natural beauty	Expensive compared with Bali
	Good alternative to Bali	Lack of infrastructure
	Beaches	Poor accessibility
	Surfing	Lack of service, entertainment and information about the destination
Singapore	Exotic destination	Limited number of flights and higher price than Bali
	Clear water	Lack of infrastructure
	Excellent dive spots	Not enough information given about Halal tourism
	Halal tourism	Poor quality water sports
	Surfing and cycling	

Source: Analysis of tour operators interviewed (41).

3.1.5 FOCUS ON SOUTH LOMBOK (KAB. LOMBOK TENGAH)

South Lombok also benefits from solid recognition among tourism professionals and the travel trade. Out of 41 interviewed tour operators and travel agents, 28 have heard about the area of "Mandalika" and all of them are familiar with elements of the Southern part of Lombok. Less than half of them offer packages including stays in the South Lombok area: 1/6 in China, 1/3 in France, 4/4 in Malaysia, 1/5 in UK, 7/7 in Singapore, 0/4 in Germany, 0/5 in Japan, 5/7 in Australia.

The Southern part of Lombok Island is marketed either as a standalone destination, primarily for short stays by the beach, or as a day excursion from Senggigi.

FIGURE 12 – PLACES ASSOCIATED WITH SOUTHERN LOMBOK IN PACKAGES OF TOUR OPERATORS

COUNTRY	DESTINATION ASSOCIATED WITH SOUTHERN LOMBOK IN CIRCUITS
China	Example 1: Bali, Nusa Lembongan, Treasure Island, Mandalika – Tong Chen Travel (5 to 8 days)
France	Example 1: Stay at Novotel Lombok – Asia (10 days)
Malaysia	Example 1: 2 day stay in Mandalika
UK	Example 1: Stay at a hotel – Ethos Travel (one week)

Source: Analysis of packages offered by tour operators interviewed by Horwath HTL

According to interviewed tour operators, the commercialization of the Southern coast of Lombok is increasing, and might benefit from the Mandalika resort development project, especially if the scale of the development allows for the hosting of large groups. Mandalika should also benefit from the development of Bali: as it is getting more crowded and expensive, operators have declared that they would consider Lombok as a possible alternative offer.

Tour-operators and travel agents associate Mandalika or the South of Lombok with "Kuta" or "Kuta Bay", with beaches and with the Novotel Lombok Resort and Villas.

South Lombok as seen by Travellers

Travellers are generally less aware of Southern Lombok than of other places in Lombok, such as the Gili Islands and Senggigi, as illustrated by the number of reviews on the TripAdvisor website (Figure 13).

It is associated by reviewers essentially with beaches and traditional villages. "Tanjung Aan Beach" and "Selong Belanak Beach" enjoy extremely positive reviews from users.

FIGURE 13 – NUMBER OF REVIEWS TRIPADVISOR WEBSITE

Name of the destination	Number of reviews	Type of activity according TripAdvisor
Kuta Lombok	11,675	8 hotels 83 other accommodation 24 activities (mainly diving and surfing)
Tanjung, Lombok	1,580	1 hotel 21 Locations
"Gili Islands"	82,441	61 hotels 143 lodging 118 activities (diving mainly)
Senggigi	28,170	27 hotels 78 lodging 64 activities (cultural visits, diving, cruises)

Source: Analysis of TripAdvisor Website by Horwath HTL in all available languages, 31/10/2016.

The topics of dissatisfaction and concerns expressed by TripAdvisor users, as shown on Figure 14, relate mainly to the poor state of local sanitation and the noticeable environmental pollution.

FIGURE 14 – REASONS FOR SATISFACTION FOR ATTRACTIONS ASSOCIATED WITH SOUTH LOMBOK ON TRIPADVISOR WEBSITE

Attraction Name	Satisfaction	Dissatisfaction
"Selong Belanak Beach"	Beaches (color of water, sand, waves) Surfing Relaxation place (quiet) Clean	"Raw Sewage in Ocean" Expensive
"Tanjung Aan Beach"	Beaches (blue water, sunset): natural paradise Relaxation Light sand and volcanic rocks Cosy place	Cleanliness Crowd Sellers
"Pink Beach"	Beach Quiet Isolated Virgin beach	Cleanliness Lack of restaurants

Source: Analysis of TripAdvisor Website by Horwath HTL in all available languages, 31/10/2016.

3.2 DOMESTIC VISITORS

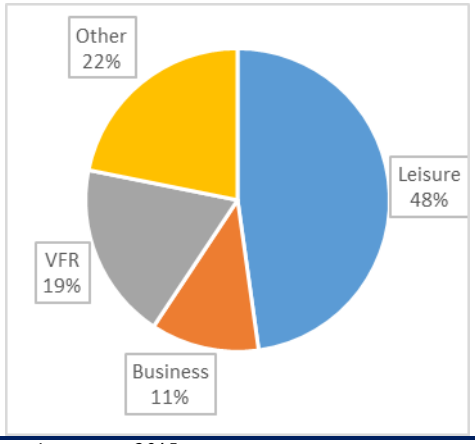
Domestic visitor numbers reached 952,600 in 2015, representing almost half of Lombok's total visitors. The historical growth trend in total domestic visitor arrivals to Lombok is uncertain, however, the CAGR of domestic visitors in commercial accommodation between 2010 and 2015 was 13%, representing an estimated 74% of total in 2015.

Lombok benefits from domestic flight connections, which make it accessible for weekend getaways. The growth of the domestic market has been sustained in the past ten years on the back of the increased number of flight connections, and is expected to continue in the future.

3.2.1 PROFILE, MOTIVATIONS AND ACTIVITIES

Domestic visitors' main purpose of visit is leisure (48%), with business accounting for only 11% of domestic arrivals. Other key features of their profile are highlighted in Figure 15.

FIGURE 15 – BREAKDOWN OF DOMESTIC VISITOR ARRIVALS IN LOMBOK BY PURPOSE OF VISIT, 2015



Source: Statistics NTB province culture and tourism in 2015

- They come mostly from Java (Jakarta 26%, East Java 20%, Central Java 18% & West Java 13%).
- 74% stay in commercial accommodation (hotels and villas).
- Their average length of stay in Lombok is 2.7 days (1.8 days for those who stay at commercial accommodation, 5.3 days for those who stay at friends and relatives).
- Their average expenditure per day is USD 24.40 (USD 39.1 for those who stay at commercial accommodation, USD 15.80 for those who stay at friends and relatives).

3.2.2 FOCUS ON BUSINESS DEMAND IN LOMBOK

The business segment (11% of domestic visitors) refers to contracted corporate accounts and other business travellers. Usually such demand is typically found in Kota Mataram hotels rather than beach locations. That said, some internationally-branded hotels do have contracted corporate accounts. The majority of the demand in this segment consists of domestic corporate and MICE groups.

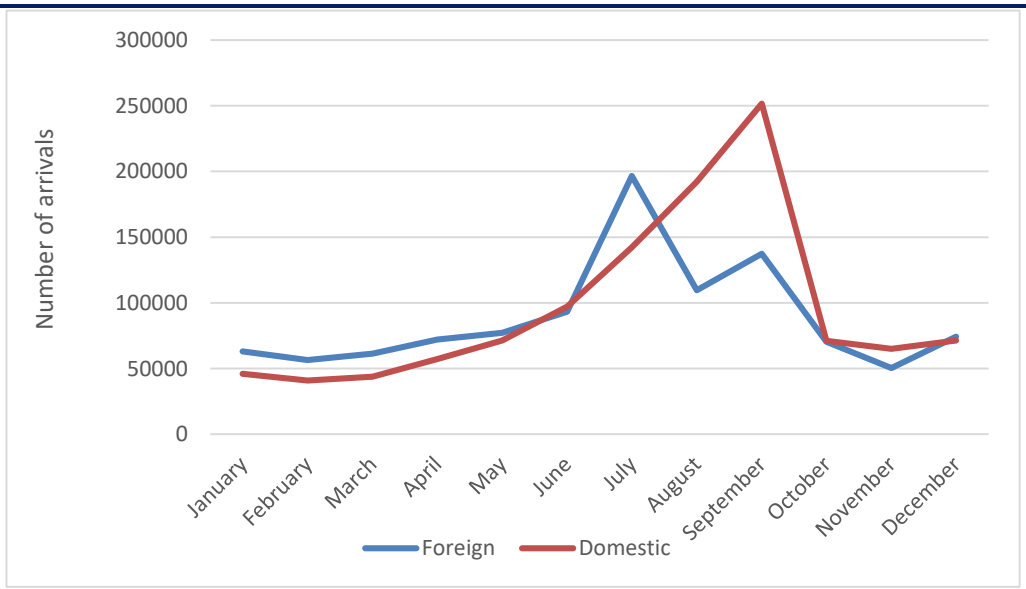
The typical pattern of business visitors is heavy on weekdays, from Mondays to Thursdays, and weak on weekends and public holidays. The monthly seasonality is relatively flat throughout the year. Only minor dips are observed at different times of the year as business slows down during religious holidays. The distinct low season for business demand is during the fasting month of Ramadan.

Like many destinations in Indonesia, Lombok, particularly Mataram, was badly affected by the imposition of the regulations restricting government meetings at the end of 2014. Though these restrictions on government meetings in hotels have since been moderated, the industry remains under pressure. The impact of the regulation is expected to continue to negatively affect hotels, especially those with large meeting facilities in the short term. However, with the planned improvements of the air connectivity and the potential opening of MICE venues in Mandalika, the majority of interviewees expect this segment to grow in the future.

3.3 SEASONALITY

The seasonality of tourism in Lombok is influenced by climate and origin country summer holiday periods. The peak season in Lombok stretches from July to September, which coincides with the summer holidays for Europeans (with a peak in July) and Indonesians (with a peak of September), as well as the dry season in Indonesia. During these months, the region has the most pleasant weather for travelling.

FIGURE 16 – BREAKDOWN OF VISITORS ARRIVALS TO LOMBOK BY MONTH, 2015



Source: Statistics NTB province culture and tourism in 2015

The shoulder period stretches from April to June and October to mid-December. April to June is typically popular with honeymooners, particularly from Korea.

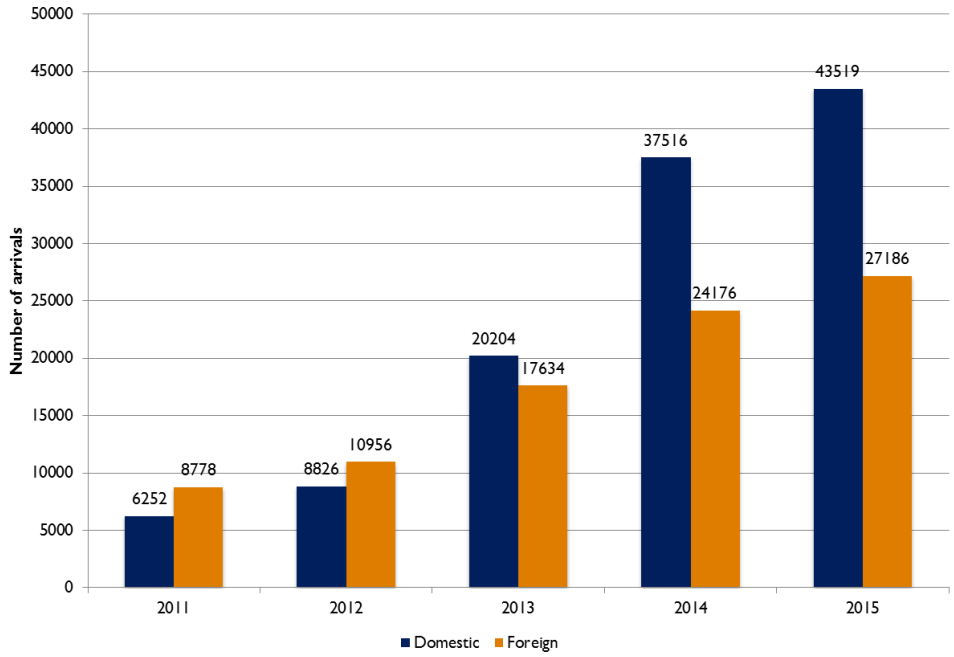
The low season is from January to early March, a period with heavy rain, monsoons and in some places high winds. As Lombok is relatively undeveloped in terms of shopping, entertainment and other recreational facilities, there are few visitors visiting at these times.

As Mataram is primarily a government and commercial destination, the area experiences little fluctuation in seasonality throughout the year.

3.4 SNAPSHOT OF VISITORS TO MT RINJANI

Figures for domestic and foreign visitor arrivals to Mt Rinjani National Park are available from the Balai Taman Nasional Gunung Rinjani. Visitation of Mt Rinjani National Park is illustrated in Figure 17.

FIGURE 17 – RINJANI NATIONAL PARK DOMESTIC & INTERNATIONAL VISITORS



Source: Balai Taman Nasional Gunung Rinjani

The number of domestic visitors has grown exponentially since 2011. The large jump in domestic visitors in 2013 and 2014 is attributed to the following:

- Improved recording of visitor numbers;
- Much stricter hiking regulations for domestic visitors encouraging more hikers; and
- Increasing number of nature lovers among young generation Indonesians due to the influence of social media (Instagram, Facebook and Path) and local TV programmes (such as, My Trip, My Adventure and Jejak Petualang).

Foreign visitor arrivals have also increased particularly amongst those travellers looking for something different, other than the beach or marine based activities.

What is interesting to note is that visitation to Mt Rinjani is only a small percentage of the total visitor arrivals to Lombok: under 5% and 3% of domestic and foreign visitor arrivals in 2015.

3.5 TOURISM PROMOTION / DESTINATION MARKETING

The following initiatives have been undertaken by the local tourism office to promote tourism in Lombok.

- The regional government has been actively promoting the region as a Halal tourism destination by: (1) hosting several national events in Lombok about Halal tourism; (2) introducing guidelines, best practices for tourism-related business that are 'Muslim-friendly'; and (3) joining various trade shows abroad, particularly in Malaysia and the Middle East.
- The government also introduced event calendars with several cultural activities being held in Lombok throughout the year including: Bau Nyale Festival, Ogoh Ogoh Parade, Gendang Beleq Festival, Senggigi Festival, Stick Fighting Festival, etc.
- Familiarization trips and trade fair participation (ITB Asia, ITB Berlin).

However, Lombok still lacks a clear or strong image and continues to be promoted as a Bali side-trip or add-on. The marketing of the destination remains inefficient due to:

- The NTB BPPD program is ill-prepared and replicated year-on-year, while at the local kabupaten level tourism marketing is still conducted in a fragmented and inconsistent manner.
- There is a lack of a coherent marketing and promotional strategy by the NTB marketing department (BPPD):
  - No clear strategy based on a full and deep understanding of market characteristics and visitor trends to Lombok which would allow the NTB BPPD to better position and segment the target markets; and
  - The mix of current marketing and promotional activities (i.e. tourism fair participation, website, collateral materials, advertising) is not coordinated or designed to fulfil any specific strategic objectives.
- There is a lack of support by local stakeholders and communities, as they do not have a shared understanding and vision of tourism.

3.6 CONCLUSIONS ON VISITOR ARRIVALS & DEMOGRAPHICS

The total number of visitors to Lombok Island reached almost 2 million in 2015 having grown with a CAGR of around 22%[6] between 2010 and 2015, roughly half international and half domestic. The international guests are predominantly Australian and European and the Gili Islands and Sengiggi are their preferred tourism areas. The global awareness of Lombok is strong, with the destination seen as an 'unspoiled paradise', and accordingly most international visitors come to Lombok for the beautiful landscapes and the beaches. A cause for concern is the deterioration of the natural environment.

[6] Domestic visitor arrivals in commercial accommodation + total foreign visitors, 2010 to 2015

Domestic visitors are typically coming to Lombok for leisure purposes and primarily from Java. Some visit for business purposes and will typically stay in Mataram.

The government has undertaken some marketing and promotions activities in Lombok, but there is a need to take a more macro view of the destination to develop a brand strategy for the continued development of the destination.

4. ACCESSIBILITY HIGHLIGHTS

The transport system in Lombok Island consists of road, air, and water transport facilities. The Island is accessed directly through Lombok International Airport.

The key ports in Lombok Island are Lembar, Labuhan Lombok and Pamenang (Figure 18). Transport infrastructure is assessed for Lombok island looking at connectivity from the airport and primary ports to tourist attraction areas and places of accommodation.

4.1 EXISTING MODE OF TRAVEL AND VISITOR'S MOVEMENT

4.1.1 ORIGIN OF VISITORS

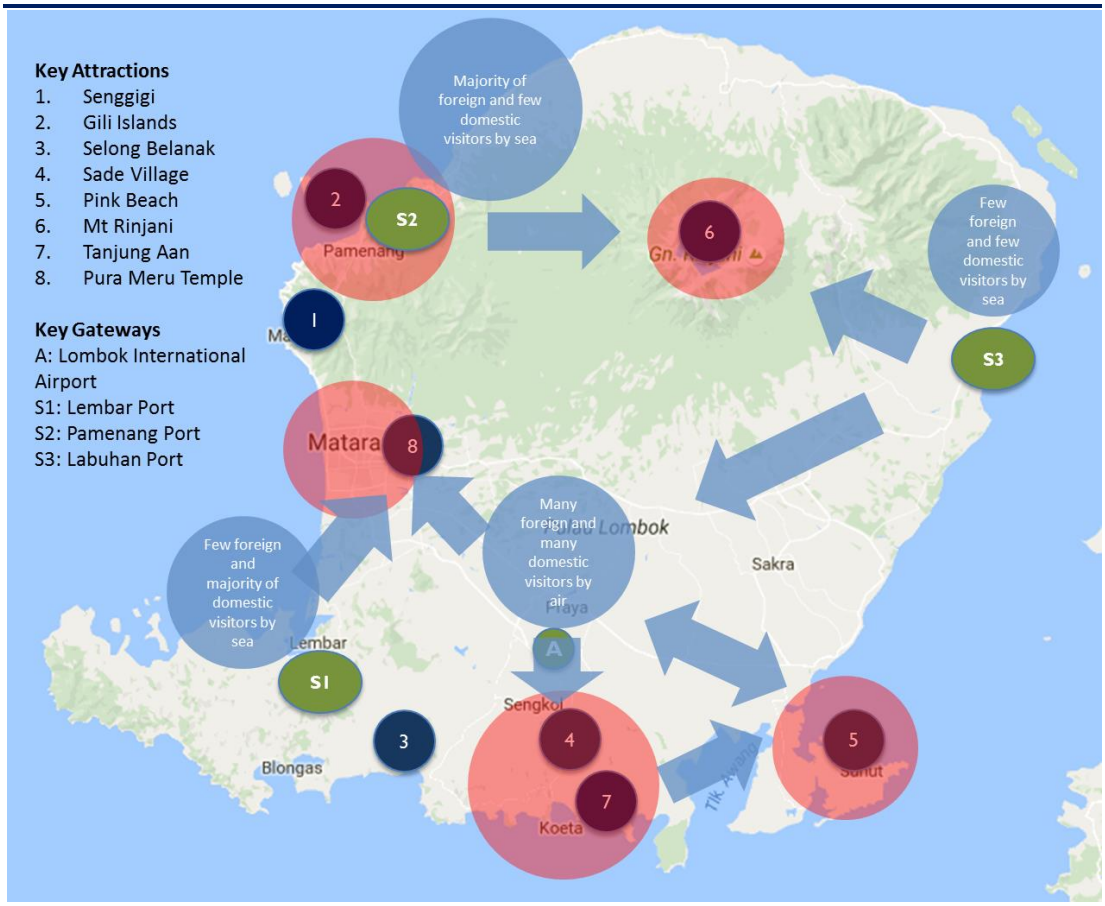
The origin of visitors is important for the accessibility assessment as it is an indicator of the mode of arrival of visitors and illustrates their distribution pattern within the tourism destination. In 2015, out of 1.9 million visitors, around 52% of them were foreign visitors.

4.1.2 EXISTING MODE OF ARRIVAL AND VISITOR'S MOVEMENT

- In 2015, 68% of foreign and 70% of domestic visitors arrived by sea. Hence, sea transport is an important mode of arrival for all visitors to Lombok today. The remaining share of visitors arrived by air.
- 63% of foreign visitors arriving by sea arrive by fast boat to the Gili Islands from Bali and the remaining 37% arrive to Lembar Port by ferry (32%) and cruise ship (5%).
- 82% of domestic visitors arriving by sea arrive by ferry to Lembar Port from Bali and 18% arrive by fast boat to the Gili Islands.
- Foreign visitors typically take the frequent and direct speedboats from Bali to the Gili Islands.
- Lembar Port plays an important role as a prominent sea gateway to Lombok for domestic visitors. Lembar Port is the most important harbour and connects to Bali. Hence, it is important to ensure good connectivity between Lembar Port, key attractions and key tourism areas.
- 31% of total visitors today arrive by air. Travelling by air has been more convenient than sea for a long time. The proportions of air arrivals in comoarison to sea are likely to increase in future. Thus, the role of Lombok International Airport as an important Gateway cannot be neglected.

Based on the tourist arrival modes, the tourist distribution illustrated in Figure 18 as follows.

FIGURE 18 – LOMBOK ISLAND TOURISM DESTINATION & VISITOR'S MOVEMENT



Source: HHTL

4.1.3 EXISTING MODES OF TRANSPORT WITHIN LOMBOK

Figure 19 presents a summary of travel times and conditions for different modes of transport used by visitors to travel around Lombok.

FIGURE 19 – TRAVEL TIME AND CONDITIONS

	Public Transport	Taxi / Rental Car/Mini vans/Tour Buses
Travel Time	From Lombok International Airport: • Public bus to Senggigi, 2 hr travel time (50 km) • Public bus to Mandalika Bus Terminal at Mataram, 1 hr travel time (30 km)	From Lombok International Airport: • 1 hr 15 min to Senggigi (50 km) • 2 hr to Tanjung (70 km) • 25 min to Mandalika SEZ (16 km)

	Public Transport	Taxi / Rental Car/Mini vans/Tour Buses
Service Conditions	From Lombok International Airport: • Public bus to Senggigi, Frequency 2 buses/3 hour, unreliable bus serviceShuttle bus to Senggigi, Frequency 1 bus / half an hour (good service at RP 25,000) • Shuttle bus to Mataram, Frequency 1 bus / hour (good service at RP 20,000) From Mandalika Bus Terminal at Mataram: • Public bus service available to Praya, Mount Rinjani, Pink Beach • Public transport will be improved in Mataram and Senggigi with new Bus Rapid Transit (BRT) operation, operational as of 2016.	• Taxi (metered) and illegal taxi. Taxi services are generally adequate; however, need to be organized and regulated. • Car rentals are available in Senggigi and Mataram • Motorbike rentals and motorbike taxis are also available • • In Gili Islands, cars are prohibited, only horse and carts or bicycles are available.

Source: Ground field study

- 70% of domestic visitors are estimated to use their private cars or car rentals to visit Lombok, 20% use tour buses/vans, and 10% use public buses.
- 40% of the foreign visitors to Lombok are estimated to be the travellers on tours, and are thus more likely to be travelling by buses/vans; 50% are estimated to use public bus and the remaining are estimated to use rental cars or taxis.
- Visitors staying at the Gili Islands get around by foot and hire bicycles as most places are within walking/biking distance.

5. HOTEL & LODGING OPTIONS (AMENITIES)

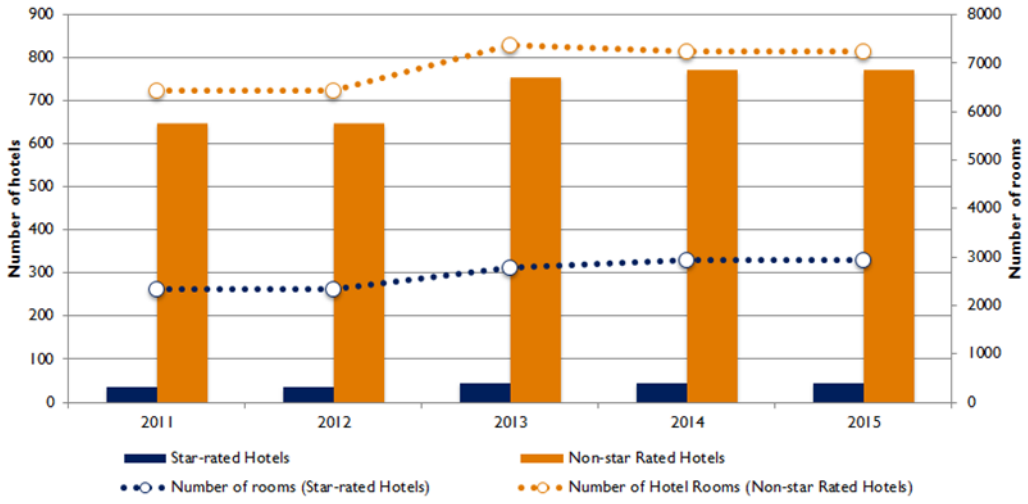
The following section will look systematically through the different levels of accommodation within Lombok. We will look at total room count (1) in Lombok (2) star vs. non-star rated and finally (3) by Kabupaten within Lombok.

The existing performance of the hotels will be assessed by (1) star-rating with information from the NTB cultural and tourism agency and (2) by key tourism area (as defined in Chapter 2), through our market research.

5.1 VOLUME OF ROOMS

As of 2015, Lombok had 816 registered accommodation establishments with a total of 10,185 hotel rooms. Between 2011 and 2015, the total number of hotels and hotel rooms in the market increased at a CAGR rate of 4.5% and 3.8% respectively (Figure 20).

FIGURE 20 – LOMBOK HOTELS AND ROOM CAPACITY, 2011 - 2015



Source: NTB cultural and tourism agency. Note: The numbers were extracted from total hotel and room count for West Nusa Tenggara Province. The numbers are the combined hotels and rooms for the 4 Kabupaten and 1 Kota that make up Lombok

5.1.1 NUMBER OF STAR AND NON STAR-RATED HOTELS

Currently, accommodations in Lombok range from guesthouses to luxury resorts and attract different market segments in accordance with their quality level, rate structure and market positioning.

Star-Rated Hotels

The Senggigi Beach Hotel was the first internationally marketed hotel to open that has three-star quality or above. This led the way for the opening of additional three- and four-star hotels such as the Holiday Inn (now Holiday Resort Lombok) and Sheraton Senggigi Beach. Latest data shows there are 46 star-rated lodging establishments in the Lombok market. A majority of them are beach resorts located in popular tourist destinations (Senggigi, Gili Islands, and Tanjung) in Kab. Lombok Barat.

Kab. Lombok Barat accounts for 57% of total star-rated hotels in Lombok, followed by Kota Mataram and Kab. Lombok Utara. International brands are limited but growing, with many brands in discussions with developers to open hotels and resorts in the next few years. Kab. Lombok Timur is the least developed area with no star-rated hotels.

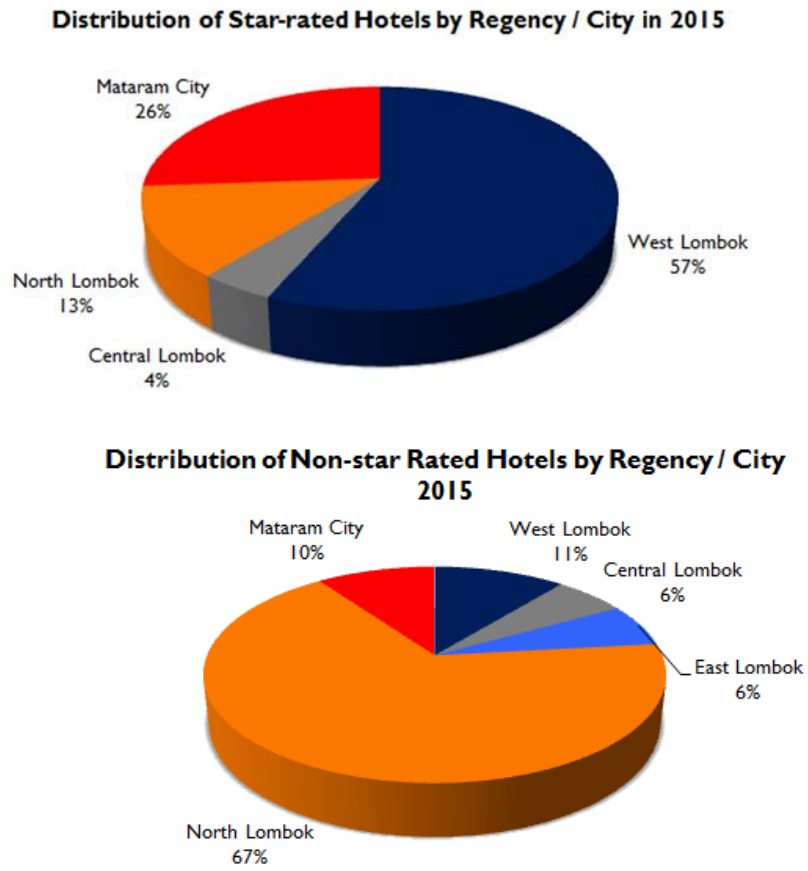
The only star rated hotels in Kab. Lombok Tengah are the Novotel and Tastura Beach Resort (former Aerowisata, hotel division of Garuda).

Non-Star-Rated Hotels

The market is dominated by small properties, which represent over 94% of the total room inventory. The number of non-star-rated hotels experienced a faster growth rate between 2011 and 2015 (CAGR rate of 11.5%) compared to star-rated hotels (CAGR rate of 5.0%).

67% of the non star-rated hotels are concentrated in Kab. Lombok Utara. The remainder of the non-star-rated hotels are quite evenly spread across Kota Mataram, Kab. Lombok Barat, Kab. Lombok Tengah and Kab. Lombok Timur (Figure 21).

FIGURE 21 – GEOGRAPHIC DISTRIBUTION OF HOTELS BY REGENCY/CITY, 2015



Source: NTB cultural and tourism agency.

5.1.2 ACCOMMODATION CAPACITY BY KABUPATEN/CITY

The majority of hotels are located in and around the more established tourist attractions: Kab. Lombok Barat (Senggigi), Kab. Lombok Utara (Gili Islands) and Kota Mataram (Figure 22).

FIGURE 22 – LOMBOK HOTELS & ROOM CAPACITY BY REGION, 2011 – 2015

Overall Market	2011	2012	2013	2014	2015	CAGR (2011 – 2015)
Number of Hotels by Kabupaten/City						
Lombok Barat	86	86	93	110	110	6%
Lombok Tengah	46	46	45	48	48	1%
Lombok Timur	36	36	49	49	49	8%
Lombok Utara	431	431	521*	521	521	5%
Kota Mataram	84	84	92	89	89	1%
Subtotal	**683**	**683**	**800**	**817**	**817**	**5%**

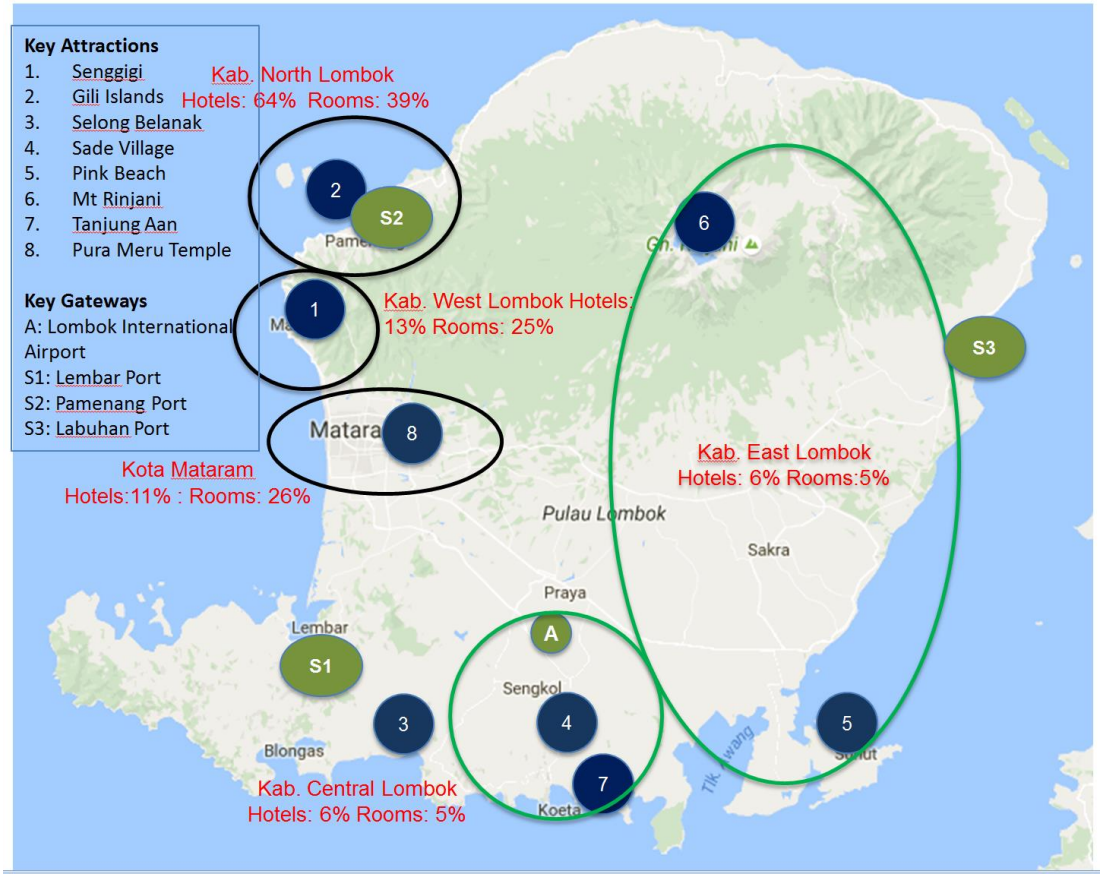
Overall Market	2011	2012	2013	2014	2015	CAGR (2011 –
Number of Rooms by Kabupaten/City						
Lombok Barat	2,052	2,052	2,572	2,589	2,589	6%
Lombok Tengah	491	491	503	513	513	1%
Lombok Timur	384	384	548	553	553	10%
Lombok Utara	3,389	3,389	3,918	3,926	3,926	4%
Kota Mataram	2,467	2,467	2,619	2,604	2,604	1%
Subtotal	**8,783**	**8,783**	**10,160**	**10,185**	**10,185**	**4%**

*Source: NTB cultural and tourism agency * the large jump in 2013 is attributed partly to new builds and partly to new licenses/registration of older properties*

Between 2011 and 2015:

- **Kab. Lombok Timur** experienced the strongest growth in rooms, with a CAGR of 10%. This is off a very low base of just 36 hotels (384 rooms) increasing to 49 hotels (553 rooms). The majority, as noted, are small, independent non-star-rated properties scattered from Sembalun to Pink Beach. The key attractions in Kab. Lombok Timur are Pink Beach and Mt Rinjani with limited accommodation options to date;
- **Kab. Lombok Barat** registered a growth in rooms of 6%, increasing to 110 properties (2,589 rooms), with the majority of hotels clustered in and around Senggigi (key attraction and accommodation area);
- **Kab. Lombok Utara** growth in rooms of 4% to a total of 521 hotels (3,926 rooms) clustered on the Gilis (key attraction and accommodation area) and to a lesser extent Tanjung. Although far from the new airport, Tanjung area is currently home to some small luxury hotel products targeting high-end travellers looking for quiet and isolated beaches. These include the Oberoi, Tugu Lombok Hotel and Lombok Lodge. Guests typically arrive through the airport rather than by boat from Bali. These luxury resorts range from 9 to 50 rooms. The Tanjung hotel market is growing with several new luxury and exclusive accommodation products under development or in the pipeline. The proximity to the Gili Islands, the beach quality, sunset views and a developed luxury niche reputation are helping drive development;
- Growth in **Kab. Lombok Tengah** has been slow only 1% in rooms in the 4 years from 2011 to 2015, with significant amounts of land banking and very little hotel development. Currently Novotel Lombok is the only international branded resort in Lombok Tengah. Otherwise, there are several guesthouses and backpacker lodges in Kuta with 5 to 10 rooms and limited supporting facilities; and
- Similarly, growth in Kota Mataram (key tourism area) has also been relatively stagnant over the past 5 years, only 1% CAGR in rooms from 2011 to 2015. The factors affecting growth in Kota Mataram are largely related to economic growth, as this is a business hub. Interestingly however 2 new branded hotels were opened in 2016, Aston Inn and Golden Tulip with a total of 294 rooms.

FIGURE 23 – LOMBOK HOTEL SUPPLY DISTRIBUTION BY KABUPATEN, 2015



Source: Google Map, Horwath HTL

5.2 PERFORMANCE ESTIMATES

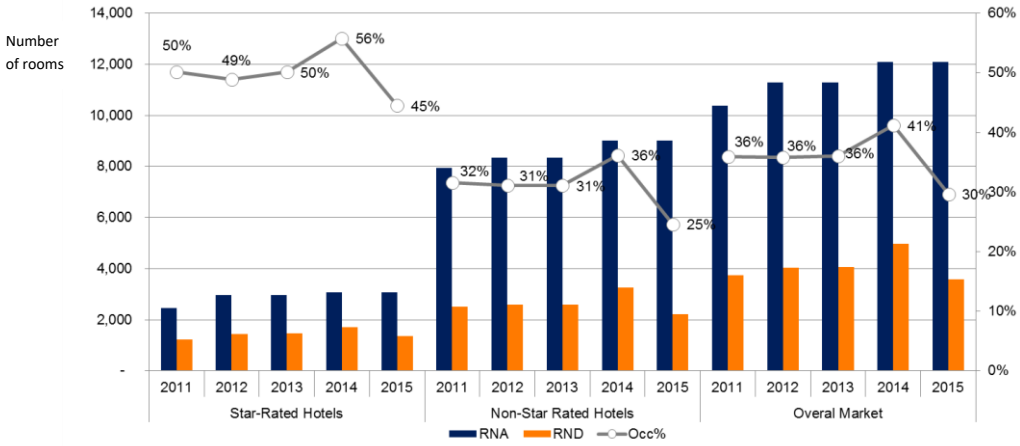
Performance is examined on 2 levels:

- for star vs. non star-rated hotels, with information gathered from the NTB Culture and Tourism office; and
- for key tourism areas through fieldwork undertaken by Horwath HTL. These are predominantly star-rated hotels.

5.2.1 PERFORMANCE ESTIMATES BY STAR AND NON STAR-RATED HOTELS

There is no published information on hotel occupancy performance in Lombok or by Kabupaten within Lombok. Figure 24 below relates to West Nusa Tenggara Province and is expected to be a reasonable guide as only 13% of hotels (125 hotels from a total of 941 and only 16% of rooms) in West Nusa Tenggara Province are located outside Lombok Island.

FIGURE 24 – WEST NUSA TENGGARA, HOTEL SUPPLY & DEMAND, 2011 – 2015



Source: Statistics NTB province culture and tourism in 2015, RND = room night demand, RNA = room nights available

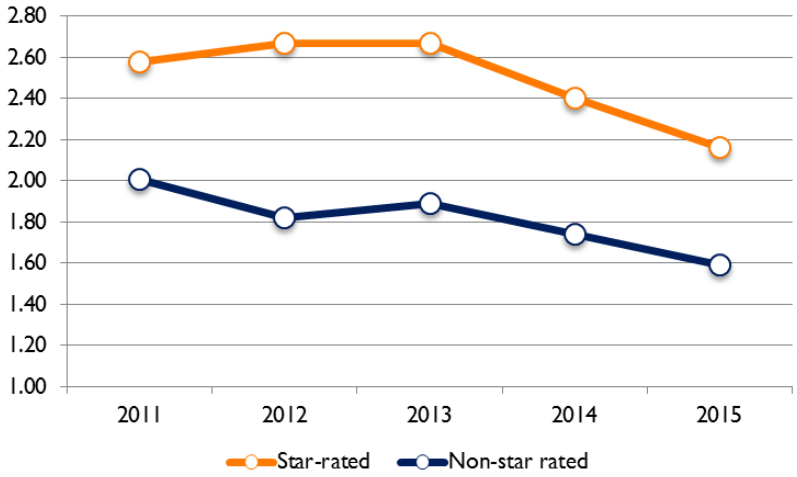
- Both star-rated hotels and non-star rated hotels in West Nusa Tenggara experienced similar trends over the past 5 years. Little movement from 2011 to 2013, with a peak in 2014 (driven by additional flights/ seat capacity) before dropping in 2015 with the cessation of flights from Perth in October 2014 and declines in corporate and government business. Despite the reported increase in number of visitors (around 33% in 2015[7]), RND decreased in 2015 which either (1) throws doubt on the reported visitor numbers, (2) means visitors stayed in alternative non-registered accommodation, such as homestays, (3) there was a reduction in the average length of stay (see Figure 25 below), or (4) more visitors shared rooms. It is unclear as to which of these occurred but it is likely to be a combination.

[7] Domestic visitors in commercial accommodation + total foreign visitors, 2014 to 2015

- Star-rated hotels consistently outperform non-star rated hotels, leading by around 20 percentage points over the past five years. Occupancy of non-star rated hotels ranged from 25 – 36% since 2011 and star rated hotels from 45 – 56%. This is largely attributed to management for reasons such as marketing, reservations reach and facilities.

Over the last 2 years the ALOS recorded at properties has shortened: for the star-rated hotels, from 2.4 days to 2.16 days, meanwhile non-star rated hotels' ALOS decreased from 1.74 days to 1.59 days. As the key attractions increase in popularity and as they are spread across the island, it is believed that the recorded ALOS is reducing as visitors spend fewer nights in each disparate location e.g.: 3 nights in Lombok, but split between 2 nights in the Gilis and 1 night in Kuta.

FIGURE 25 – AVERAGE LENGTH OF STAY IN ACCOMMODATION, 2011 – 2015



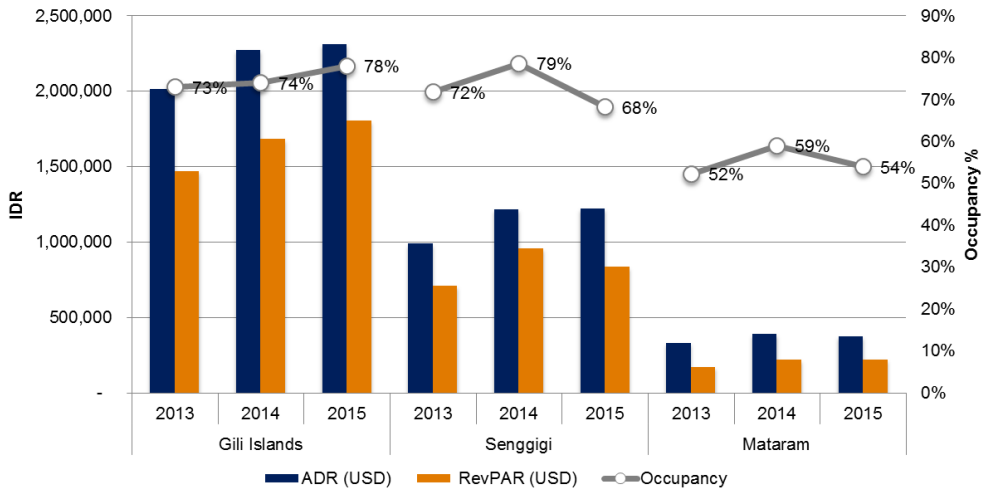
Source: Hotel Statistics NTB 2014 and Statistics NTB province culture and tourism in 2015

5.2.2 ESTIMATED PERFORMANCE BY KEY TOURISM AREA

As occupancy and average rate are not available by kabupaten, market research was undertaken to gauge performance levels for a sample of hotels in the current key tourism areas: Gili Islands (Kab. Lombok Utara), Kota Mataram and Senggigi (Kab. Lombok Barat). This was to gauge differences in performance between the existing key tourism areas.

Figure 26 shows estimated occupancy, average daily rate (ADR) and revenue per available room (RevPAR) for the 3 major hotel markets between 2013 and 2015:

FIGURE 26 – SELECT PROPERTIES: ESTIMATED OCCUPANCY, ADR & REVPAR PERFORMANCE BY KEY ACCOMODATION AREA, 2013 – 2015



Source: Horwath HTL, C9hotelworks.

KOTA MATARAM

At year end 2015 the Golden Tulip Mataram-Lombok was the only internationally branded hotel in Kota Mataram. In the 4 years to 2015, the number of star-rated hotels registered a CAGR rate of 7.5% with the opening of big local brands including: Aston Inn, Santika and Favehotel. Meanwhile non-star rated hotels remained stagnant with CAGR rate of 0.3% for the same period.

Lodging properties in Mataram vary in size and positioning, ranging from guesthouses and small boutique properties with less than 10 rooms to star-rated hotel with over 200 rooms. Besides the guest houses which offer limited facilities, most hotels have an all-day dining outlet, outdoor swimming pools, business centre and meeting facilities. There are many hotels catering to business travellers located in the business district of Kota Mataram.

Both midscale and budget hotels achieved average to good occupancy levels driven by low yielding government and corporate demand. These segments provide hotels with a relatively good occupancy base as well as additional non-room revenue including meeting room rentals and other ancillary revenues. Due to its heavy reliance on corporate and government segment, the hotel market's performance is weaker on weekends, than weekdays.

Estimated Performance

Year to date August 2016, midscale hotels in Kota Mataram achieved between 50% and 75% occupancy with estimated ADR ranging from IDR 330 to IDR 500,000. Meanwhile, budget hotels' estimated occupancy levels are between 50% and 70% with ADR at IDR 290 to IDR 350,000.

The sample includes 9 hotels with a total of 1,300 rooms (50% of total Kota Mataram), all of which are star-rated and believed to be representative of the better quality accommodation supply in Kota Mataram. The occupancy numbers are around 5% higher than those reported by NTB Culture and Tourism Office for province wide star-rated hotels as illustrated above.

Market Leader

- **Santika Lombok:** Opened in 2013, Santika Lombok is currently the market leader within Mataram hotel market. Leveraging on its strategic location close to most of the government offices and good brand presence in Indonesia, the hotel has achieved relatively good occupancy and ADR in comparison to other hotels within this market.

SENGGIGI (KAB. LOMBOK BARAT)

As Lombok's most well-known resort destination, Senggigi has the most hotels and resorts ranging from 3 to 5-stars (midscale to upper upscale based on rate performance). These properties generally provide access to private beaches, spa facilities and recreational facilities such as outdoor pools and tennis courts. In addition, most resorts have multiple food and beverage outlets, including all-day-dining, bar, and a specialty restaurant. Room inventory varies significantly across different resorts, ranging from a few rooms to 150 rooms. There is limited seasonality in Senggigi.

This region has seen a growing supply of midscale, budget and non-star rated properties in recent years driven by (1) Senggigi comparably better tourism readiness (more options for food & beverage, retail and accommodation options), (2) greater inflows of domestic and Malaysian visitors driving supply growth and (3) Senggigi is a gateway to the Gili Islands. Between 2011 and 2015, the number of star-rated hotels and non star-rated hotels have grown at CAGR rate of 4.3% and 7.0% respectively.

Estimated Performance

Year to date June 2016, the estimated average daily rate of our sample of Senggigi resorts ranged from IDR 900 to IDR 1,400,000. The overall occupancy levels are estimated at approximately 68 to 79%.

The sample includes the top 10 performing hotels by rate, with a total of 550 rooms (25% of total Lombok Barat). Occupancy is significantly higher than the rates presented by the NTB Culture and Tourism Office for star-rated hotels and illustrates the potential for hotels to operate above market average.

Market Leaders

- **Sheraton Senggigi**: the 154-room property is one of the first international standard resorts in Lombok. Traditional in style, the Sheraton's inventory is predominately rooms based offering only 2 villas. Equipped with good meeting and banqueting facilities and with its strategic location, the property has good capture of MICE demand.

- **Qunci Villas:** Opened in 2003 with an original key count of 20, this property has since expanded to 78 keys. All rooms have traditional thatched alang-alang grass roofs and private terraces or balcony. The interior design is modern and contemporary and the average room size is 55 square meters. The Pool villas are more luxurious in design and are generously sized with a 30-metre pool, which run parallel to the beach.

GILI ISLANDS AND TANJUNG (KAB. LOMBOK UTARA)

A broad range of lodging products are offered on the Gili islands, from boutique villa and basic guesthouses to high-end beach resorts. Among the three islands, Gili Trawangan has the majority of the accommodations and restaurants. Meanwhile, Tanjung is home to Lombok's most prestigious resorts such as Oberoi and Tugu Lombok Hotel.

Estimated Performance

As a relatively established destination, hotels on the Gili Islands' hotel market achieved the strongest average daily rates in Lombok peaking at around IDR 2 - 2.4 million in 2015 and year to date September 2016 respectively. The occupancy levels in this area are estimated at approximately 70 to 78% full year 2015.

The sample covers 12 top end professionally managed hotels only, excluding guesthouses and represents only a small fraction of total rooms in Lombok Utara. Again, the occupancy is far higher than that reported by the NTB culture and tourism office.

Market Leader

- **Oberoi Lombok:** Opened in 1997, Oberoi was one of the first luxury resorts to open and continue to be one of the top performing properties in Lombok. Designed by Peter Muller, the Australian architect who invented the concept of luxury private villa resort in Bali in the early 1970s, the resort features 50 rooms including 20 villas, some with private pools and ocean views.

5.3 HOTEL FACILITIES IN KEY TOURISM AREAS

5.3.1 FOOD & BEVERAGE

- Most star-rated hotels and resorts in Senggigi and Gili Islands feature at least a restaurant, mainly an all-day dining restaurant offering multi-cuisine options. In general, Mataram hotels have more restaurant outlets to complement their MICE related guests.
- High-end resorts also offer at least an additional specialty restaurant that provides an alternative dining option for their guests. Resorts with beach access also offer BBQ facilities.
- In terms of bars, most of the resorts in the coastal area of Senggigi and Gili Islands offer either a separated bar or bar-cum-restaurant. In Mataram, they prefer a lobby lounge or coffee shop.
- Most budget hotels in Lombok feature an all-day dining restaurant. Some only provide breakfast, while the other meals of the day are offered on request.

5.3.2 MEETING SPACE

- It is common for leisure-oriented resorts to offer limited or no meeting space given the small scale of the resorts, as there is limited demand for conference space for resort.
- Majority of hotels in Kota Mataram offer meeting rooms as the hotels' main demand is from the corporate and government sectors. The hotels feature ballrooms and a range of small to medium sized meeting rooms that accommodate between 50 and 200 people.

5.3.3 OTHER FACILITIES

- There is a full range of leisure facilities offered in resorts, water sports (diving, snorkelling, fishing, canoeing, banana boats, jet ski, etc.), sports (ball games like tennis, basketball, volleyball, jogging, yoga, etc.), children playgrounds, convenience or souvenir store, and spa.
- Meanwhile, city hotels do not offer water sports facilities. They mainly offer small-scale gym and a swimming pool.
- Given the large focus on couples, not many of the resorts/hotels offer kids' club facilities. In the absence of purpose built facilities for children, there are typically baby-sitting services and organised activities for children such as arts and crafts, or outdoor activities.

5.4 CONCLUSIONS ON EXISTING HOTEL SUPPLY

Due to the diversity of the destination, the size and quality of hotel supply in Lombok varies depends on the location. Senggigi and Gili Islands have high concentration of mid to top-tier international and independent resorts with established supporting facilities, while Mataram's supply is mainly regional business hotels.

Hotel supply in other parts of the island is mostly smaller in scale, with fewer supporting facilities and less professionally managed, reducing their ability to reach certain demand sources.

6. SMES: SUPPORTING TOURISM INFRASTRUCTURE (AMENITIES)

The following discussion concerns existing small and medium sized enterprise tourism activities in Lombok.

6.1 INDEPENDENT FOOD & BEVERAGE

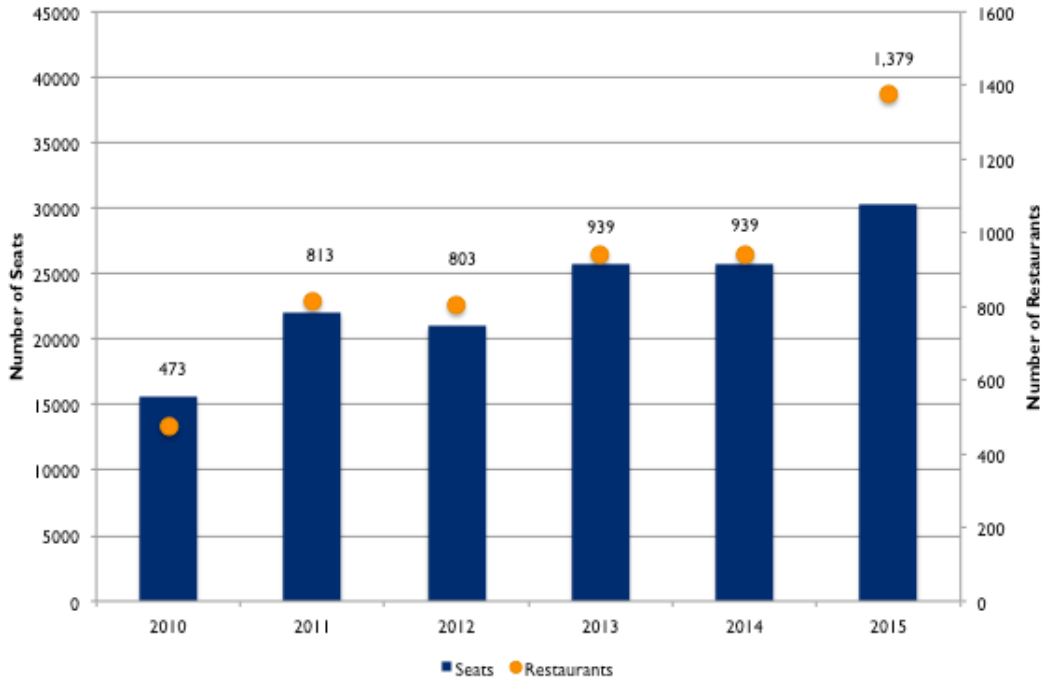
There are a variety of different cuisines, ranging from local Indonesian delicacies to western cuisines. As a whole, Lombok offers a wide variety of restaurants ranging from 'budget' to 'upscale'. As the dominant religion is Islam, the cuisine is different to neighbouring Bali and it is estimated that around 90% of cuisine is Halal. Labelling is provided on all non-halal food.

There is a concentration of mid- to upscale restaurants, bars and other nightlife entertainment at the well-established tourist areas (e.g.: Senggigi and Gili Islands). These F&B establishments are generally well managed and offer good quality food to attract both local patrons and international visitors. The restaurants in these areas have capacities ranging from 30 to 200 seats with average checks estimated around IDR 60 to IDR 200,000.

Meanwhile, there are limited restaurants, but more small local food stalls and cafes around developing and unexplored sites around the islands. Most of these establishments provide mainly local cuisine with minimal services level. The food is affordable with average checks of around IDR 30 to IDR 50,000.

According to the latest statistics from the regional tourism offices, there are currently a total of 1,379 restaurants in Lombok (Figure 27), having registered a CAGR growth rate of 24% from 2010 to 2015. On average, these restaurants feature between 20 and 30 seats (in 2015 the average number of seats was 22 per restaurant).

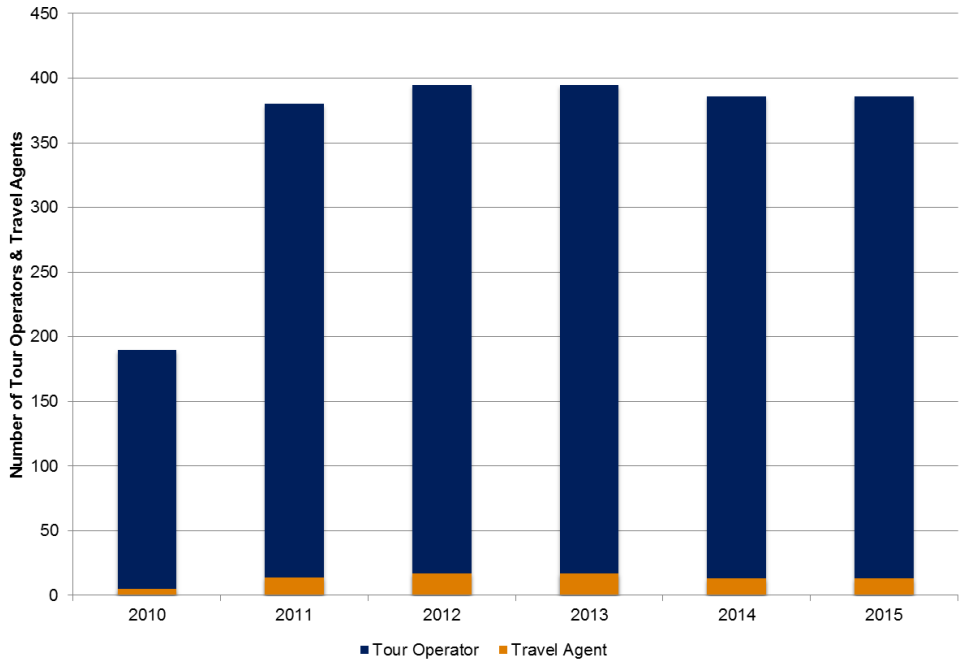
FIGURE 27 – NUMBER OF RESTAURANTS & SEAT CAPACITY IN LOMBOK, 2010 – 2015



Source: NTB cultural and tourism agency.

6.2 TRAVEL AGENCIES

FIGURE 28 – NUMBER OF TRAVEL AGENTS & TOUR OPERATORS IN LOMBOK



Source: NTB cultural and tourism agency.

Currently, there are a total 386 travel agents and tour operators in Lombok. It is estimated that tour operators represent more than 95% of the overall tour and travel business in West Nusa Tenggara, with an estimated 90% or more of them based on Lombok Island. The difference between tour operator and travel agent is their permit based on their scope of services. Tour operators or BPW (Biro Perjalanan Wisata) offer a broader range of services than travel agents or APW (Agen Perjalanan Wisata) given that a travel agent is basically an intermediary between consumer and supplier, they do not offer original products. Most of the BPW use Mataram as their central office to control operations in Lombok.

Bidy Tour and Travel plus A&T Holidays are 2 of the main local tour operators working alongside a national level tour operator like Panorama. Both Bidy and A&T are strong with European and North American inbound markets.

It is understood that the number of registered tour & travel businesses increased significantly in 2011 over 2010 due to increased registration of businesses rather than the creation of new businesses. The government encouraged registration to improve and create a uniformity of service quality standards in line with the tourism master plan development for 2010 to 2025.

There are also many international destination management companies (DMCs) working with local travel agents to provide tour packages to Lombok including DMC Mataram, Kelana, Lotus Asia Tours, Destination Asia, etc. Targeted markets include:

- International (Malaysian, Middle Eastern as well as European, Australian and American markets).
- Domestic market (mainly from Java).
- Honeymooners/ couples.
- Adventurers, surfers and divers.
- Corporate's incentive groups.
- Religious travellers.

Products Offered

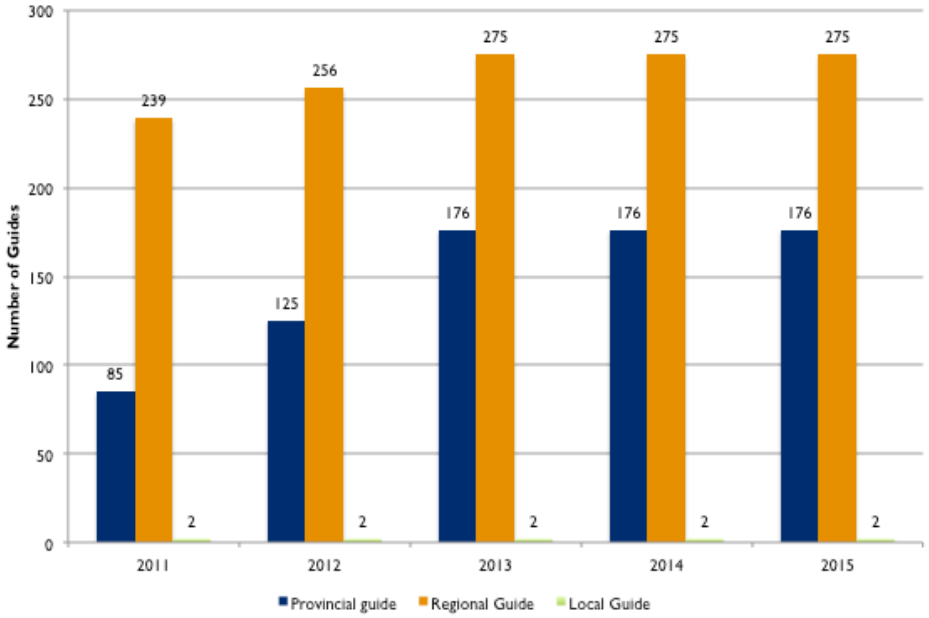
- Accommodation, transportation and diving excursions in one package are the most common products being offered.
- Getaway trips for couples/honeymooners at high-end resorts with pristine white sand and clear water beaches.
- Offer adventurous trekking/cycling/camping tours to inland mountains, waterfalls, and forests.
- Diving / snorkelling trips to several beautiful dive spots around the island.
- Island hopping.
- Land cruises to visit daily life and culture of the local Sasak culture.

- Other cultural attractions include: Hindu temples (Pura Lingsar, Pura Narmada, Pura Saranadi), Islamic Centre, etc.
- South coast tour – Kuta beach, Tanjung Ann, Mawun beach, Selong Belanak.
- Beach and surfing packages.
- Incentive travel packages for corporates.

6.3 TOURISM SERVICE PROVIDERS

6.3.1 LOCAL GUIDES

FIGURE 29 – NUMBER OF GUIDES IN LOMBOK



Source: NTB cultural and tourism agency.

In NTB, there are 3 categories of tour guide, based on their service coverage and their range of skills, knowledge and experience:

- Provincial guides are allowed to serve any destination within the Province of NTB;
- regional guides' service area is limited to the specific city or kabupaten; and
- local guides are confined to a certain tourist object or attraction.

The travel agencies have an estimated 8 to 10 guides each, mostly Bahasa-Indonesia speakers only. However, as there is an increasing number of international visitor arrivals, English proficiency is improving. A small number can also communicate in other languages including Chinese, Arabic and other European languages.

There is a tourist information centre run by the government at the airport, however it is not very effective as most visitors simply take brochures. Alternatively, visitors ask local private tourist information centres (travel agents) who can arrange tour packages, transportation and even accommodation. The majority of tourist information centres are in Senggigi.

There was a lack of change in the number of guides between 2013 and 2015, which is difficult to believe as tourism numbers continued to increase. This maybe an issue of data collection, however concrete explanation is unattainable.

6.3.2 OTHER SME TOURISM SERVICE PROVIDERS

- Providers of transportation: cars, bike, and boat rentals.
- Diving courses and water sports operators.
- Camping and porter services.
- Laundry services.
- Cooking classes are offered in the key tourism areas, mostly on the Gilis and include Gili Cooking School on Gili Trawangan and Anggrek Putih Cooking School in Senggigi.

6.4 CONCLUSIONS ON SMES SUPPORTING TOURISM ACTIVITIES

There are currently a reasonable variety of SMEs supporting tourism activities in Lombok. These are more prevalent in the key tourism areas of the Gili Islands, Senggigi and Mataram. That said, the destination lack depths in small business and if Lombok is to develop in the future the number and variety of SMEs must be developed further to meet increasing tourism needs.

7. INVESTMENT ANALYSIS

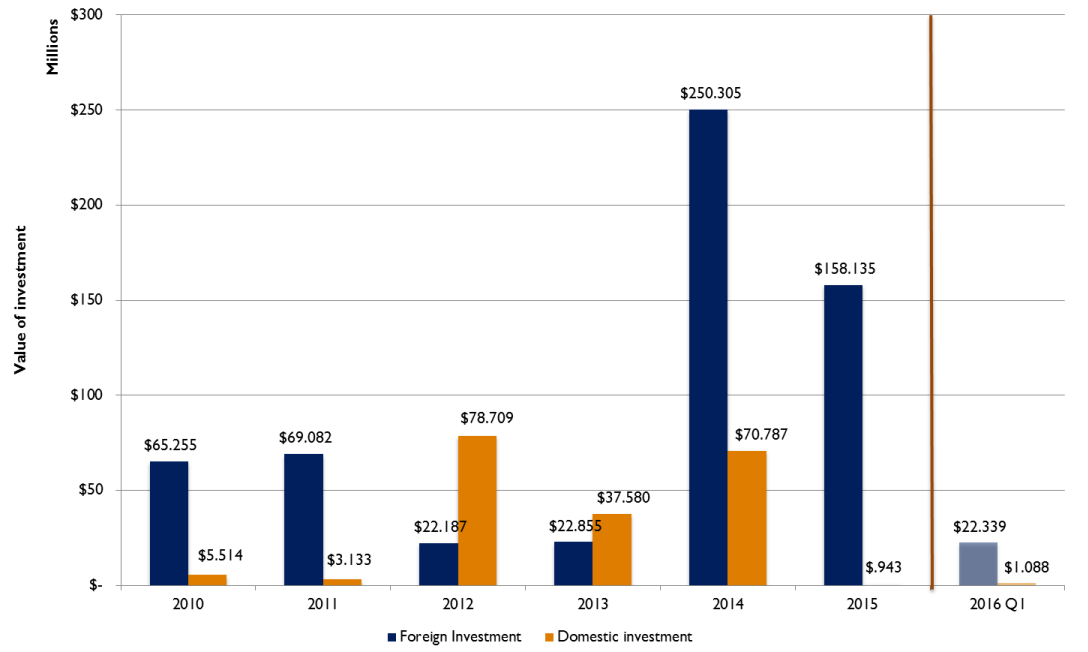
7.1 DIRECT INVESTMENT

Figure 30 illustrates the direct investment for all industries (both domestic and foreign investors) in Lombok between 2010 and 2015, as well as YTD March 2016.

Investment in Lombok fluctuated since 2010, with a peak in 2014, which was an encouraging year for investments as:

- hotel performances in Lombok were very strong due to increased air-lift, foreign arrivals and good market optimism; and
- in late 2013 following re-election, the very popular incumbent governor initiated self-sufficiency agriculture programs that stimulated investment.

FIGURE 30 – DIRECT INVESTMENT IN LOMBOK, 2010 – YTD 2016 (MILLION USD)



Source: BKPM-PT NTB.

Figure 31 covers realised FDI on hotels and restaurants only in Lombok between 2010 and Q1 2016.

FIGURE 31 – REALISED FDI & DDI ON HOTEL & RESTAURANTS, LOMBOK 2010 – YTD 2016 (USD)

Year	Number of projects	Hotel & Restaurant Investment	FDI in Hotel & Restaurant % Total
2010	32	6,050,000	8%
2011	31	8,520,000	12%
2012	57	11,790,00	50%
2013	115	10,730,000	30%
2014	73	14,130,000	5%
2015	218	17,190,000	11%
YTD 2016	143	15,670,000	
Year	**Number of projects**	**Hotel & Restaurant Investment**	**DDI in Hotel & Restaurant % Total**
2010	8	260,000	5%
2011	5	960,000	31%
2012	5	2,180,000	3%
2013	13	1,250,000	3%
2014	3	-	-
2015	5	-	-
YTD 2016	-	-	

Source: BKPM

The annual amount of FDI in Lombok is quite small and indicates that only small-scale investments have been made in the last few years. For example, a 250 key upscale resort, with an average investment of around USD 100 – 120,000 per key would require an investment of USD 25 – 30 million.

Whilst for DDI in Lombok, the largest investments were made in 2012 (just over USD 2 million) whilst in 2013 the greatest number of projects were realised (13).

Other interesting points to note:

- FDI in hotel & restaurants as a percentage of total FDI in Lombok has fluctuated from a low of only 5% in 2014 to a high of 50% in 2012; and
- By looking at the investment value of DDI in hotels and restaurants in Lombok, we can see that typically domestic investors prefer to develop something smaller and most probably targeted at domestic demand (small per project investment values).

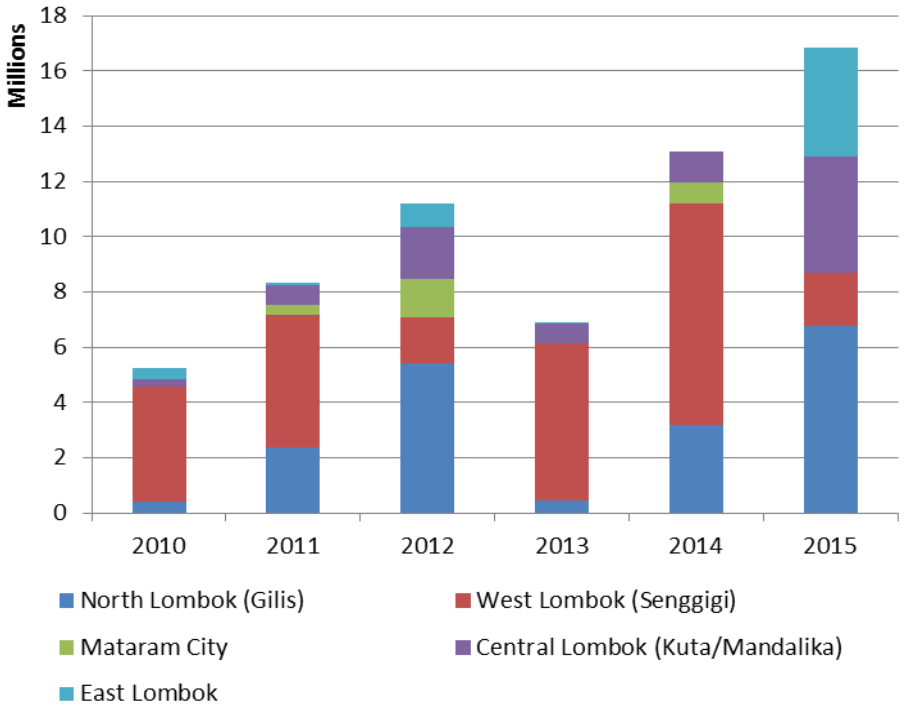
7.1.1 FDI BY KABUPATEN

Figure 32 highlights the key areas for FDI in hotels & restaurants across Lombok in the 5 years from 2010 to 2015:

- Kab. Lombok Barat (which includes the key tourism area of Senggigi) enjoyed strong years of investment in 2010, 2011, 2013 and 2014;

- Kab. Lombok Utara (which includes the key tourism area of Gili Islands) recorded strong investment activities in 2012 and 2015; and
- In 2015, higher number of FDI has been spent in Kab. Lombok Timur and Kab. Lombok Tengah.

FIGURE 32 – REALISATION OF FDI IN HOTELS & RESTAURANTS BY KABUPATEN, LOMBOK 2010 – 2015 (USD)



Source: BKPM-PT NTB.

7.2 ASSET CLASSES & SCALE

As seen above, West Lombok is the only region that has enjoyed FDI constantly since 2010 and here the classes of asset investment are mainly small scale hotels, guesthouses and restaurants.

Going forward, future hotel developments are estimated to have a wide range of investment values associated with them. Estimates for investments are as follows:

- Development cost of a midscale hotel properties in Kota Mataram with an average daily rate of around IDR 450,000 is estimated to be around IDR 0.75 billion per key;
- Development cost of upscale hotel properties in Senggigi with an average daily rate of around IDR 1.5 million is estimated to be around IDR 1.3 billion per key; and
- Development cost of an upper upscale hotel along the south coast with an average daily rate of around IDR 2 – 2.5 million is estimated to be around IDR 2.2 billion per key.

As will be presented in Chapter 12, Lombok has a large wave of tourism-related developments in the pipeline, including several projects in Mandalika.

7.3 KEY PLAYERS / INVESTORS

7.3.1 ITDC AND MANDALIKA

Indonesia Tourism Development Corporations (ITDC), a state owned company, has pioneered a large-scale tourism project called Mandalika Resort Lombok, in collaboration with the Indonesia central government. The development is expected to boost the island's tourism through:

- addition of high-end resorts;
- opening of a convention centre;
- attractions; and
- improvement of overall infrastructure of the area (water supply, power plant, solar panels).

Mandalika hotel pipeline projects will be discussed in more detail, which investments and by whom in Chapter 12. The latest non-hotel investment information that we have received indicates the following pipeline **investments under contract** include:

- 2 seawater reverse osmosis (SWRO) desalination plants; and
- Office building with 4 floors sitting on 4 hectares of land.

To date pipeline **investments in negotiation** include:

- 1 Solar Cell Farm (developed on 14 hectares and producing 5 Mw);
- Sharia-compliant products to include approximately:
  - 20 hectares of commercial development; and
  - 10-15 hectares of residential development;

Other pipeline **investments under consideration** include:

- "Eagle Hills" between 80 and 100 hectares for multi-lot mixed-use development projects including residential, hotel and commercial;
- Electric Capsule Rail Transportation spanning over 8 kilometres by public private partnership;
- *Street Race Circuit* 5.5 to 6.0 kilometres which will include commercial and technical investments, and a hotel with Pit Dock facilities;
- Additional lots under expression of interest include mid-rise, low-density residential developments on 2 to 3 hectares.

Regional government investment is expected for supporting facilities including infrastructure (Sulin bridge improvement, expansion of road maintenance), transportation (improvement of public transports network), shopping mall and restaurants.

7.3.2 OTHER INVESTORS

- Domestic-led developers investing in hotels include the following:
  - Aston Inn is owned by Pt. Brillian Multi Usaha;
  - Novotel is owned by the Rajawali Group;
  - Jeeva Resorts which operated Klui, Beloam Beach Camp, and Santai resorts on Lombok and Saba Estate in Bali;
  - Epicentrum shopping mall owned by Pt. Sriwijaya Propindo Utama;
  - Puri Mas (single property owner); and
  - Hotel Tugu Lombok (family owned with 4 hotels and several restaurants).
- Foreign independent investors and investment funds investing in hotels/resort, restaurants, and tour operators include the following:
  - Sundancer Resort is being developed by PT. Wisata Bahagia Indonesia – a privately owned company and part of the Singapore based HMI Group. The Sundancer Resort, located in Sekotong is currently stalled;
  - Qunci Lombok has an American owner;
  - Suarga Resort in Senggigi which is understood to have German owners; and
  - Lombok Lodge by a Belgian, Ben Olaerts.
- Local communities who turn their houses into non-star rated hotels, homestays or develop other supporting facilities such as restaurants, convenience stores, bike rental, water sports, etc. They both invest and operate these facilities.

7.4 INVESTMENT SENTIMENT: DOMESTIC & FOREIGN INVESTORS

7.4.1 FOREIGN INVESTORS INTERVIEWED[8]

Our interviews with foreign investors showed a proclivity for investment in locations, which are popular for their country's citizens. As seen in the baseline demand analysis, other than Australia (18% of arrivals in 2015) there are very few arrivals from any of the key source markets from which we sought investment information such as China, Japan, Malaysia and Singapore.

Not surprisingly therefore, foreign investors canvassed on Lombok were largely disinterested in the destination. Comments worth considering from foreign investors on Lombok included the following:

8 Investment sentiment gleaned from interviews with 25 potential and existing foreign investors from Australia, China, Japan, Malaysia, and Singapore. The questions were aimed at better understanding their thoughts on pros and cons of SEZs, the tourism investment climate in Indonesia, the future of tourism investment and possible investment opportunities in Lombok.

- One Australian investor group is looking to invest in hotels in Lombok in the range of USD 10 – 15 million. The group is an aggressive investor seeking beach destinations to increase his regional network. Noting the importance of Bali for the Australian market, they foresee overflow demand to Lombok as potential source market for rooms.
- One opinion, which seems quite relevant, comes from a Chinese investor who indicates that if his company wanted to invest in the area, it would be in Bali. Lombok is too close to Bali and Bali has more to offer visitors.
- The quality transportation links are seen by one Chinese investor as a positive point for Lombok, which is placed alongside Borobudur as a potential destination for investment in the future.
- One Malaysian investor had spent time researching Lombok and intends to invest at some point in the future. Infrastructure is better than in other locations and the beach demographic suits their target market. He would be interested in a midscale hotel with up to 200 keys but will wait to see how the destination develops further before making the investment.

None of the Japanese or Singaporean investors canvassed had any interest investing in Lombok. Comments received included 'hype & no substance' which indicates they think that Lombok lacks depth as a destination (recommendations on diversity of positioning and product in a later chapter will help change this perception). Lombok, as stated above, has been discussed and debated since the 1990s with very little investment or development. It is no wonder, therefore, that potential investors are concerned about the destination having no substance as it has been given the spotlight but has not yet shined.

7.4.2 DOMESTIC INVESTORS INTERVIEWED[9]

Domestic investors interviewed have divergent positions on their investment interest in Lombok:

- Two already have hotels in Lombok and are keen to invest further;
- One is keen to invest but in the medium term, not now;
- Two are not interested at all in investing in Lombok; and
- Two have investigated Lombok in the past but have not pursued the investment due to issues of culture ('it is tough to do business in Lombok, we are not sure it's worth the pain") and the slowness in general development of Lombok.

Other interesting comments, which echo concerns for Lombok as a destination, include the following:

- We will wait and see, perhaps in the 5 years from 2020 to 2025 when Lombok has had more time to grow;

9 Investment sentiment gleaned from interviews with 9 existing Indonesian tourism investors. The investors chosen had interests in various tourism assets including hotels, restaurants, ground transportation and travel agencies. The questions were aimed at gathering their thoughts on the pros and cons of SEZs, the tourism investment climate in Indonesia, the future of tourism investment and possible investment in Lombok.

- Development in Lombok has stalled. It needs a kick-start, which can only be initiated by the government;
- The reputation for thievery and violence of the local communities along the south coast is a concern;
- There is no government support for tourism investment in Lombok;
- Lombok's potential lies in its proximity to Bali and its beaches; and
- Skilled labour is difficult to find but fortunately, Bali is close.

7.4.3 SENTIMENT RELATED TO SPECIAL ECONOMIC ZONE (SEZ) INVESTMENTS

It is noted that the comments on SEZ investments were not made in relation to Mandalika specifically but to the 4 tourism SEZs across Indonesia.

In general, it is felt that SEZs are beneficial for encouraging investment, however, further clarity on benefits are required. In addition, the fundamentals of investment in the destination are more important – is there sufficient infrastructure and is there sufficient demand?

Comments on Fiscal Benefits Regime

- All things equal, fiscal benefits do encourage investment.
- Few people are likely to invest IDR 1 trillion (USD 75 million) in tourism in any of these destinations.
- Tax incentives / allowances (both Income tax allowance and value-added tax) for investment in the SEZs must remain higher than in non-SEZ areas to remain relevant.
- Hotels do not make money for many years, so short-term tax holidays are of little value.
- The tax deductions and period for tax deductions must be negotiated with the government. The benefits are too unclear to make a call, transparency is very important.
- The majority of construction materials (someone suggested 80%) are Indonesian so import duty reductions on construction materials are immaterial.

Comments on Non-Fiscal Benefits Regime

- The non-fiscal employment visa benefits are immaterial. The majority of staff is local.
- The visa on arrival programme is beneficial and should help to encourage increased foreign visitor arrivals.

7.4.4 WHERE IS THE DESTINATION ON THE INVESTMENT CYCLE?

Due to the diversity of the destination, different parts of Lombok are at different stages of the investment cycle:

- Mature stage: West and Northwest areas such as Senggigi, Gili islands are well-known destinations internationally and regionally. These areas are currently enjoying relatively good levels of investment with new hotels opening (Katamaran, former Windy Beach that was demolished and rebuilt), properties under renovation (Alang Alang and Anema) and chain owners accumulating additional properties (Jeeva and Sudamala). Performance is relatively strong for well-managed properties in both the Gilis and Senggigi and risk is lower than in the undeveloped areas of Lombok. Investments in Senggigi and the Gilis are across the board for tourism services and assets including hotels, restaurants and travel agencies/tour operators. Mataram is also relatively mature with a good number of branded hotels and more in the pipeline. It is not as mature as Senggigi and Gilis in terms of transactions, where several properties are on the market. These are mostly long-held assets and owners now wish to divest after years of operations to exit Lombok whilst prices are higher than when purchased/developed. That said, often they are overpriced and have been on the market for some time.

- Developing Stage: Areas such as Mandalika, Tanjung, Rinjani, and Sekotong are developing destinations with lower levels of investment but growing interest in tourism-related developments. The new hotels pipeline is long in Mandalika and along the south coast (as will be discussed in more detail below) with the potential for large-scale hotels, restaurants and supporting tourism service infrastructure. In Tanjung, the investment is more high-end / niche with larger amounts being spent per room but the total investment potential is smaller. In Sekotong, restaurants, homestays and smaller non-star hotels have begun to open with small investment levels. In Rinjani the investment is also very small scale and aimed at the niche adventure / climbing visitors. The supporting infrastructure is therefore minimal with 1 night length of stay.

- Infancy Stage: the more inaccessible areas in the southeast such as Pink Beach and Gili Petelu are still in a very early stage of development. Although, infrastructure has improved significantly in recent years, limited hotel developments and the pursuant supporting tourism infrastructure such as restaurants and retail are expected in the near future.

7.4.5 CONCLUSIONS ON INVESTMENT

To summarise the investment sentiment and the impact of the sentiment on the supply and demand for hotels and tourism infrastructure in Lombok:

- Investment is occurring in Lombok but predominantly in the more established / key tourism areas of Senggigi, Gilis, and Kota Mataram;

- Investments are relatively small scale with no investors willing to invest large sums in significant developments that could help push Lombok into a new phase of investment/ development;

- Small scale investment and small-scale developments do not help increase air lift, which is very limited internationally and a limiting factor for the further development of Lombok;

- Existing investors in Lombok are keen to invest further and some are renovating or adding inventory to their properties in the key tourism areas;

- Investors are however wary to invest in the less developed areas of Lombok, mainly the oft-discussed south coast, due to its history of inactivity leading to a 'wait and see' mentality;
- Land prices have increased due to land banking and this makes resort investment riskier;
- Cultural differences between the south and the north of Lombok has also fostered increased development in the north;
- There is foreign visitor growth in Lombok but it is not a stand-alone destination, more a side trip from Bali. This impacts the length of stay, the performance of the hotels and the investment potential of the destination;
- Occupancy figures reported by the government are very low and fluctuating which does not inspire investment in hotels;
- Average daily rates are generally lower than Bali for comparable product; and
- Development costs are generally higher than Bali for comparable products.

Overall, Lombok has the ingredients to become a world-renowned tourism destination like Bali and investment has slowly picked up pace over the past few years. However, several factors mentioned previously include the long history of inactivity in the tourism industry, lack of skilled labour, etc. continue to hinder investment prospects and temper investors' enthusiasm.

The key for development in Lombok is governmental intervention in Mandalika, public investment in tourism assets, providing a kick-start to the industry, fostering demand growth, and ultimately inspiring confidence in investors. However, the stagnation in development of the project makes foreign investors cautious and reluctant to invest extensively in tourism-related business in the area. In conclusion, both domestic and foreign investors are cautiously optimistic, excited yet sceptical about the investment prospect of Lombok. As a result, the growth of FDIs and DDIs is expected to be moderate in the short and medium-term.

8. SKILLS ASSESSMENT

8.1 WHAT SKILLS EXIST?

- Most training for hotel staff is done on-the job.
- SMK training is insufficient and out-dated for current market demands.
- Inadequate training for more senior positions.
- Difficult to recruit staff for entry, supervisory or managerial positions.
- Bali is used as a source of management staff.
- Rank & file and supervisors tend to be local.
- Different hotel associations propose to provide lectures and assist in training the students to improve the overall quality of human resources in Lombok.

8.2 SKILLS GAPS[10]

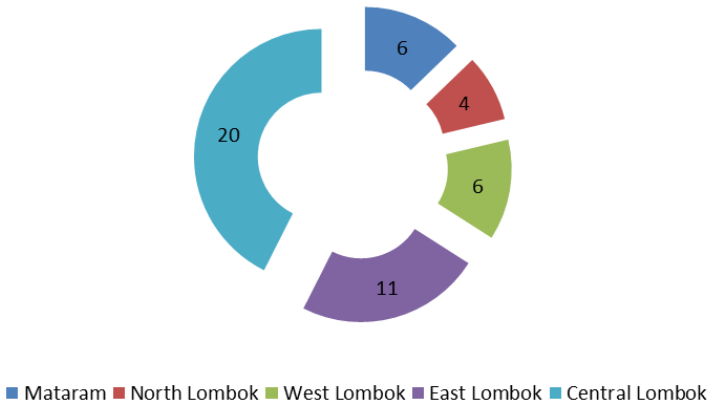
- Service, systems (reservations, cashier, etc.), culinary and language skills.
- Basic service excellence training (beneficiaries to include non-star hotel owners, taxi drivers, boat captains, etc.).
- Environmental understanding and conservation skills.
- Access to market training, particularly for homestay providers.

8.3 TRAINING SCHOOLS

Sekolah Menengah Kejuruan (SMK) or vocational schools in Lombok are located mostly in Mataram the commercial heart & capital of Lombok. It is understood that there are 47 SMK across Lombok, 29 private and 18 public schools (more affordable with government support). Figure 33 illustrates how the SMK are split across the 5 regencies of Lombok and Figure 34 splits the total number of tourism related courses into availability within regencies.

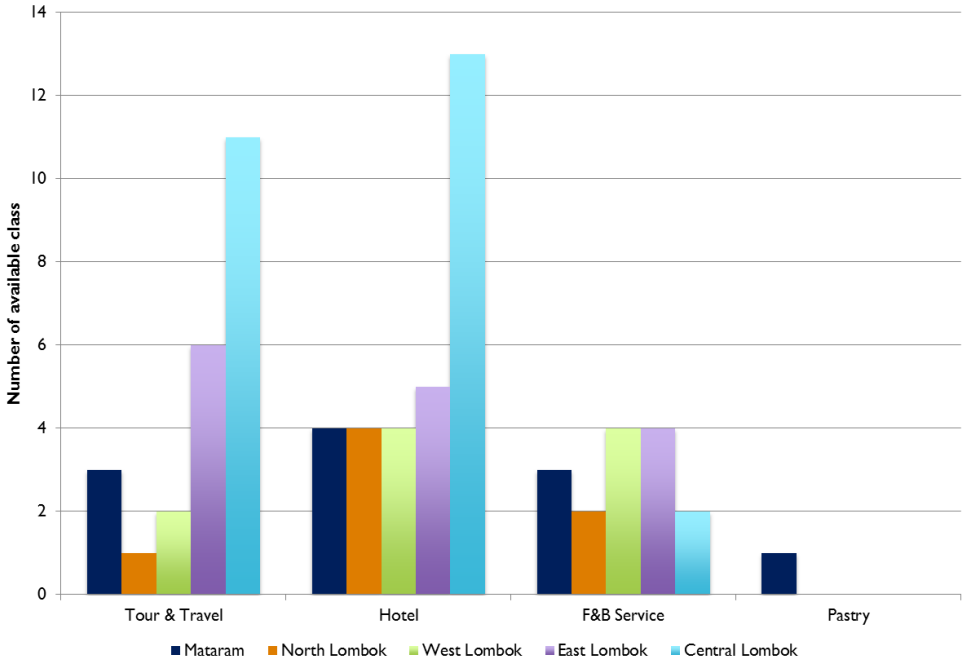
10 Gleaned from interviews with existing local investors in various assets including hotels, restaurants, travel agencies, and interviews with local hoteliers, restaurant managers.

FIGURE 33 – SMK IN LOMBOK BY REGENCY, 2015



Source: Direktorat Pembinaan Sekolah Menengah Kejuruan

FIGURE 34 – VOLUME OF SMK HOSPITALIY TRAINING COURSES IN LOMBOK BY REGENCY, 2015



Source: Direktorat Pembinaan Sekolah Menengah Kejuruan

- There are vocational schools present on the island that provide the main workforce for the industry. However, most relevant training is done on-the job.
  - SMK4 Mataram: courses for hotel accommodation, food services, and business travel.
  - SMK Hasanuddin Mataram: business travel and office administration courses.
  - SMK Saraswati Mataram: hotel accommodation courses.
  - SMK Tourism Mataram: hotel accommodation, hospitality courses.

- All SMK provide language training and those mentioned above offer practical operational courses in addition to classroom theory. Some hotels in Mataram and Senggigi like Santika and the Kila Senggigi are supporting these schools by opening their hotels to training students. These vocational schools are an important talent source for entry-level staff in hotels and tourism services in Lombok.
- Lombok Cooking School – SAPI Culinary: provides 1-year program with 6 months' internship. Courses include culinary skills, services, English, food safety & hygiene, accounting basis, and F&B management
- Hotel Association: Different hotel associations propose to provide lectures and assist in training the students to improve the overall quality of human resources in Lombok. Their members also send their employees to Bali to get certified professionally by the certification body. In 2014 / 2015, this programme was supported by the government, free of charge to the hotel and employees, however, in 2016, the government cut their budget, and this program is no longer funded.
- LMP3 RINTAM – hotel and tourism training centre offers 1- year hotel and tourism courses that are based on Indonesian National Standard Competency, with lecturers coming from star-rated hotels
- Politeknik Pariswisata Lombok: in mid-2016 the tourism ministry officially opened the Lombok PoltekPar to nurture the future human resources needed to meet the development forecasts of a major tourism destination. During their first year, the school will have 120 students. Currently they are using the Diklat Building of NTB civil servant administration office (BKD) however in the future the PoltekPar building will be located in Puyung, Lombok Tengah. Currently the school has 4 major studies, tour & travel, room division, culinary and F&B services.
- Most of the training schools are concentrated in Lombok Tengah and Lombok Timur. Trainings on service, culinary, other operational skills, and language trainings are also provided at established hotels as well. Furthermore, many hotel groups that have a presence outside of Lombok (Bali, Jakarta, etc.) also provide training courses at their sister properties where the hotel market is more established.

DESTINATION SWOT & VISION

9. DESTINATION SWOT

This chapter takes the form of a SWOT analysis to summarize the main findings on tourism supply and demand in Lombok.

9.1 STRENGTHS

- Lombok possesses attractive cultural and natural resources that are favourable for tourism development.
- International airport, fast boat and ferry services from Bali. Road networks and conditions are good in Lombok, many roads were upgraded in recent years, making travelling between different areas of the island easy.
- The island has retained its allure as an "unspoiled paradise", in contrast with neighbouring Bali, which creates a strong unique selling point.
- Good supporting tourism-related facilities: F&B (restaurants, bars, local food market, etc.), travel agents, and adventure activity operators.

9.2 WEAKNESSES

- There is poor marketing support to promote and differentiate Lombok from Bali. Lombok has been overshadowed by its closest neighbor, Bali and still needs to develop its own identity.
- The level of skills is still low, due to a lack of qualified schools/institutions with the capacity to provide comprehensive and relevant training.
- Lombok still lacks high quality and internationally branded resort supply to attract Asian and Middle Eastern visitors.
- The supporting basic capacity infrastructure in some areas is still inefficient, for example the eelectricity supply across Lombok is unstable, requiring hotels to rely on costly generators and water supply in the south of Lombok is limited.

9.3 OPPORTUNITIES

- Over-crowding and over-commercialization of Bali should lead to demand for new and 'unspoiled' destinations.
- Marine tourism is becoming increasingly popular in the Indonesian archipelago, particularly among the islands surrounding Lombok. Over time, this should generate new potential demand for resorts located near ports.
- The significantly level of government support for the development of a major destination resort project at Mandalika is expected to boost Lombok tourism.

- The international airport has good capacity to accommodate both international and domestic flights reducing the reliance on Bali's Denpasar Airport for international visitors. Many airlines are planning new international routes to Lombok (i.e.: Emirates is planning direct flight from Dubai, which can potentially drive more demand from the Middle East and Europe).
- Two new larger 'fast boats' with capacities of 180 and 120 passengers are currently being built, which will significantly increase transportation capacity between Lombok and Bali once completed.
- The opening of the Ministry of Tourism's Hotel School (Poltekpar) in Mataram will provide comprehensive education/training and improve the overall labour pool responding to increased demand on the island.
- MICE opportunities (capture from Bali) that arise from improved domestic and international air connectivity.
- The government has been actively promoting Halal tourism in Lombok, which provides an opportunity to capture Muslim travelers. The completion of Masjid Islamic Centre is expected to attract significant attention and build international awareness of Lombok as a religious tourism destination.

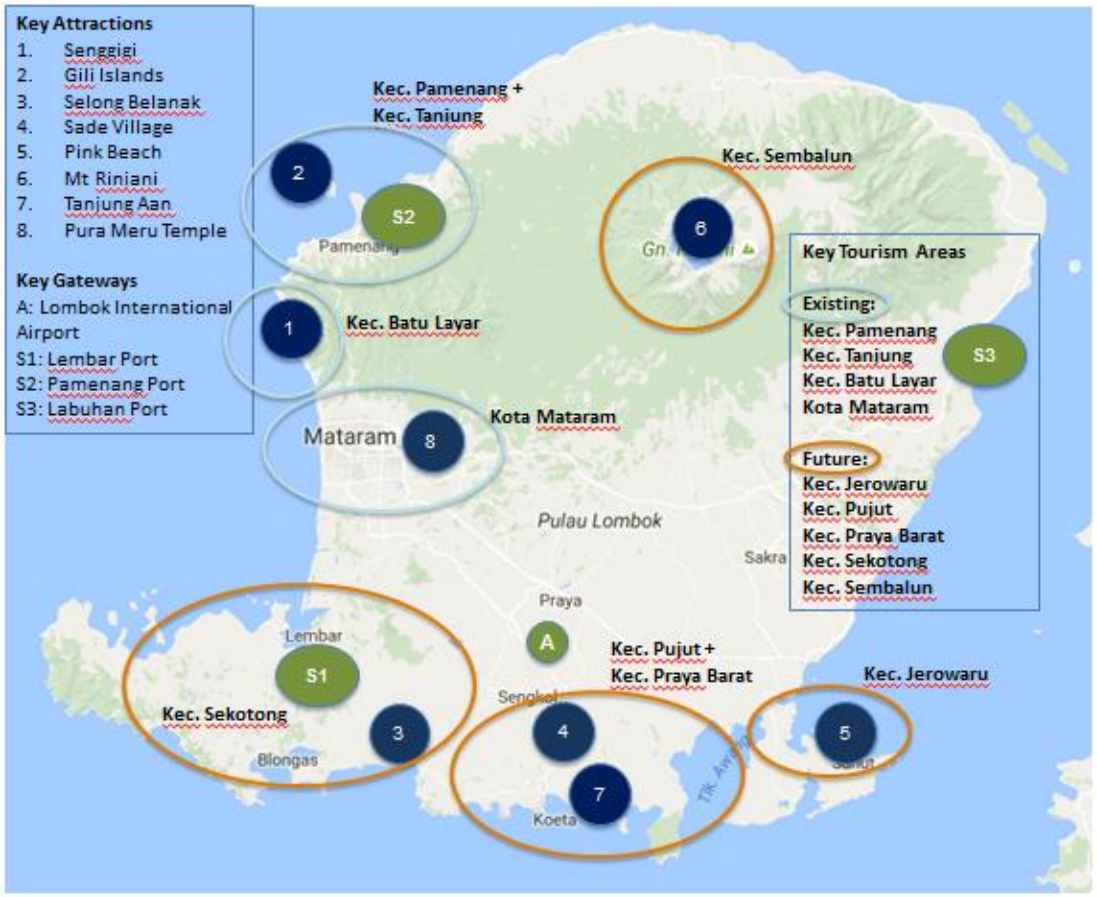
9.4 THREATS

- Business demand from the government sector is volatile, as budgets can be cut or regulations can be changed overnight.
- Security and safety issues in some areas continue to negatively affect the island's attractiveness to visitors.
- Volcanic eruptions are expected to continue disrupting visitor arrivals to the area, as Mount Rinjani is an active volcano.
- Competition should further intensify from established resort destinations like Phuket and Bali, as well as up and coming regional destinations such as Sri Lanka, Hainan, the Philippines, and Vietnam.

10. DESTINATION VISION STATEMENT

Figure 36 highlights the key attractions that help define the tourism potential and the different potential tourism districts or key tourism areas within Lombok now and in the future. As has been discussed, there are currently 3 key tourism areas – Senggigi, Gili Islands and Mataram – but going forward with the further development of the key attractions to drive increased overnight demand, new key tourism areas are expected to grow.

FIGURE 35 – KEY ATTRACTIONS, EXISTING & FUTURE KEY TOURISM AREAS, LOMBOK



Source: Google maps, Horwath HTL

10.1 RECOMMENDED DESTINATION VISION

Lombok is the unspoiled paradise; it fosters the development of sustainable and different key tourism areas offering various options to appeal to broader sources of tourism demand. It should not develop a single identity, e.g. Halal or eco-tourism (although they can be components).

- Senggigi and Gili Islands: largely luxury or high-end beach destinations that are expected to develop further organically. Target markets: Australia, Europe.
- Kota Mataram: business driven, mid-tier. Target markets: Indonesia, Malaysia.
- Mount Rinjani and surroundings for nature based, niche tourism. Small / low impact. Not a principal focus, but identified as a secondary alternative. Target markets: Europe, China (niche).
- Southern Coast:
  - **South west**, including Selong Balanak, low-density beach destination to cater for high yielding visitors, surfers, divers, particularly along coast line. Facilities should match this demand. Target markets: US, Europe (France), Australia, Japan, Germany, Singapore.
  - **Central south,** including Mandalika, developed as a high-density mass market tourism area. Close to airport. Multiple hotels, all price points, greater variety of facilities. Target markets: China, Malaysia, Singapore, Australia, Middle East, MICE.
  - **South east**, including Pink Beach, developed as a high-end, low-density accommodation area with supporting facilities (similar to south west). Target markets: US, Europe (France, Germany), Australia, Japan.

MARKET DEMAND FORECASTS

11. FUTURE MARKET DEMAND ANALYSIS

11.1 INTRODUCTION: METHODOLOGY

The purpose of this section is to develop detailed projections for the scale, origin and characteristics of future visitor demand for Lombok. The steps are:

- Assess and analyse potential market demand for Lombok to define target market segments (based on the segment's ability to generate value for the destination in a sustainable manner), building on the baseline supply and demand analysis;
- Define two demand scenarios based on the conditions required for the development of the destination: a "best-case" scenario where these conditions are met and a "business as usual" scenario where they are not; and
- Provide quantitative forecasts of future demand from source markets depending on the scenarios.

The next sections of the Report use this assessment of future demand to identify opportunities for the development of Lombok (accommodation, transportation, leisure activities, etc.) in terms of scale, location, and timing, and to assess public investment needs (transport and basic services and infrastructure).

11.2 PRIORITY MARKETS FOR THE DESTINATION

11.2.1 DOMESTIC VISITORS

Domestic visitors to Lombok reached 952,648 in 2015, representing 48% of total visitors. Growth of the domestic market has been supported in the past ten years by the development of sea and air connections, and is expected to grow in the future. Domestic visitors are mostly concentrated in Kota Mataram (both a business and leisure destination) and Kab. Lombok Barat (mostly a leisure destination).

It is assumed that, in the future, middle to upper middle-class residents of the major cities connected by air to Lombok (such as Jakarta, Denpasar, and Surabaya) will have a higher propensity to visit for a week or a weekend getaway, for holiday purposes, if interesting packages including flight and accommodation are developed.

Mataram is already established as a domestic business and MICE destination. More MICE activities could be developed in Lombok during the weekdays, especially as part of the development of the southern coast of the island, targeting Java-based companies as priority markets.

11.2.2 FOREIGN VISITORS

The number of foreign visitors reached 1,029,779 (including cruise visitors) in 2015. The destination has become increasingly popular among international visitors: the number who stay in commercial accommodation has increased fourfold since 2009 (Source: BPS West Nusa Tenggara).[11]

In 2015, the top 5 sources of international visitors to Lombok were Australia (18% of international visitors), France, the UK, Germany and the US. Asian visitors are almost absent from Lombok, except for Malaysians and South Koreans, compared to Bali, which is very popular amongst visitors from China, Japan, Taiwan and India.

The most popular destinations in Lombok among international visitors are the Gili Islands, followed by Senggigi. South Lombok is mostly a popular surfing destination among Australian visitors.

For most visitors, Lombok is a part of a longer trip including other destinations in Indonesia, especially Bali. Lombok can also be included in packages as an alternative to Bali for seaside stays at the end of circuits or for shorter stays fully dedicated to seaside enjoyment.

Due to its wide variety of attractions, Lombok is capable of drawing **visitors from almost all source markets**, attracting mass tourism (especially to large scale beach resorts) as well as niche markets (e.g. hiking, diving and surfing).

11.2.3 NEIGHBOURING COUNTRIES WILL BECOME IMPORTANT MARKETS FOR LOMBOK

Australia accounted for 18% of international overnight visitors to the destination in 2015. However, according to the passenger exit survey, only 9% of Australia visitors to Indonesia visit Nusa Tenggara Barat Province (which includes Lombok), compared to 89% visiting Bali. The relative share of the two islands is expected to become more balanced in the future, provided Australians and New Zealanders are offered the same conditions of access and accommodation in Lombok as in Bali.

Malaysia and **Singapore** together in 2015 represented 10.3% of international visitors to Lombok. However, less than 3% of Malaysian and Singaporean visitors to Indonesia currently visit Nusa Tenggara Barat Province (which includes Lombok). Due to geographic, cultural and religious (for Malaysians) proximity, this segment is expected to become more important, provided that the tourism offer in Lombok develops with high-density beach resorts.

Conditions required for the attraction of neighbouring markets thus include:

- Development of high-density mass tourism beach resorts; and
- For the Australian market: direct air connections with major cities in Australia (e.g. Sydney, Melbourne and Perth).

11 Buku Analisa Pasar Kunjungan Wisatawan, Dinas Kaebudayaan Dan Pariwisata Provinsi Nusa Tenggara Barat Tahun 2015

11.2.4 EUROPEAN COUNTRIES WILL REMAIN MAJOR SOURCE MARKETS FOR LOMBOK

In 2015, European countries[12] accounted for 50% of overnight foreign visitors to Lombok (around 496,000 visitors). This market is expected to remain important, especially in Lombok, but is unlikely to grow at the same pace as the other source markets, for the following reasons:

- Due to demographic patterns, the European market is less dynamic, compared to emerging Asian outbound markets. Therefore, its growth will moderate over time, especially after 2026; and
- Indonesia will remain a "once in a lifetime" destination for most of European visitors. As a result, Lombok will not become a standalone destination for Europeans, but rather an additional option as part of a multi-destination trip.

11.2.5 ASIAN COUNTRIES, ESPECIALLY CHINA, ARE THE MARKETS WITH GREATEST POTENTIAL FOR GROWTH

Asian visitors, with the exception of Malaysians and Singaporeans, are currently almost absent from Lombok, accounting for less than 8% of total foreign visitors.[13] This situation should change in the future, provided public investment is undertaken to develop the southern coast of Lombok as a mass tourism beach destination, with considerable margin for growth, for several reasons:

- Increasing demographic weight, growing propensity to travel and relative geographical proximity of Asian markets;
- Increasing appetite of these markets for established beach resort destinations like Phuket and Bali, as well as up-and-coming regional destinations such as Sri Lanka, Hainan, the Philippines and Vietnam; however, these destinations will also represent intense competitors for Lombok; and
- The neighbouring destination Bali is already very popular among visitors from China, Japan, Taiwan and India, both as a cultural and beach destination.

11.2.6 MIDDLE-EASTERN COUNTRIES HAVE GROWTH POTENTIAL IN TERMS OF GUEST NIGHTS AND DAILY EXPENDITURE

The popularity of Indonesia among residents of the Middle East traveling for leisure purposes is currently generally limited to Bali, and does not include Lombok. However, this source market should be targeted, for the following reasons:

- The government has been actively promoting Lombok as a Muslim-friendly destination. The completion of the Masjid Islamic Centre in Mataram is expected to attract significant attention and boost international awareness of Lombok as a religious tourism destination;
- Emirates and other Gulf airlines are planning to open direct flights to Lombok in the next five years, which can potentially drive more demand from the Middle East;

12 All countries in Europe, including Russia

13 Buku Analisa Pasar Kunjungan Wisatawan, Dinas Kaebudayaan Dan Pariwisata Provinsi Nusa Tenggara Barat Tahun 2015

- Middle Eastern visitors are attracted both by beach destinations and cultural tourism, which are two major components of Lombok's offer. Furthermore, they favour family-oriented destinations, which corresponds to the image and offer of Lombok; and
- Visitors from the Middle East have the highest average daily expenditure among all segments of international visitors to Indonesia (193 USD per day for leisure travellers in 2015).

11.3 SCENARIOS

Two scenarios are presented:

- Business as usual scenario:
  - "organic" development of the destination driven by the forces of the market;
  - no significant level of government support for the development of a major destination resort project at Mandalika; and
  - no integrated development vision and planning.
- Best case scenario:
  - significant government support for the development of the southern coast of Lombok into several different tourism zones. This includes the mass market anchor of Mandalika & key high-end low-density zones in the south west and south east;
  - Gili Islands maintain their attractiveness through implementation of environmental sustainability best practices, addressing key basic services deficiencies;
  - for Senggigi's development (and northward to Tanjung), planning controls are put in place and well-enforced to maintain the 'boutique' character, which was successfully created through 20 years of small-scale hotel development; and
  - direct connectivity between Lombok and selected targeted markets develops as the result of the creation of a new, attractive offer in the southern coast, further driving demand growth.

11.4 BUSINESS AS USUAL SCENARIO

11.4.1 SCENARIO SUMMARY DESCRIPTION

This scenario considers an increasing attractiveness of Lombok for domestic and especially foreign visitors, building on current and past trends. However, this increasing appetite for the destination will soon be facing a supply shortage, at least until 2026, for the following reasons:

- Taking into account past trends, the organic growth of the current key tourism areas of the Gili Islands and Senggigi (mainly driven by small scale local investment) will be unable to absorb all potential future demand, which is expected to increase at a quicker pace. This situation is already reflected in high and rising occupancy rates at star rated hotels in these areas;

- Interviews with investors indicate that, without any significant public initiative for triggering the development of a mass tourism destination in southern Lombok (i.e. Mandalika), private projects in the pipeline will remain on hold over the next ten years, as no private player is willing to take the first mover risk of investing; and
- No integrated development vision and planning.

As a result of this supply constraint, the growth potential of the destination will not be completely harnessed, leading to sub-optimal growth in visitors and tourism expenditure.

In the 2016-2021 period, and to a lesser extent in the 2022-2026 period, demand growth will be constrained by the pace at which new accommodations are built (corresponding to a pipeline of identified projects amounting to 3,120 additional rooms). This constraint will apply both to domestic and foreign visitors; however, part of the additional domestic demand may be absorbed by home stays and non-star rated hotels (which are more flexible, and quicker to be developed).

The supply constraint will affect foreign visitors in different ways, in accordance with the sensitivity and behaviours of each market. For instance, while European demand may be more flexible regarding room categories, Middle-Eastern visitors will prefer to avoid the destination altogether if the supply of star-rated-hotels is saturated.

For the emerging Asian source markets (including Malaysia and Singapore), the absence of integrated and large-scale beach resorts will affect the attractiveness of the destination, and lead to weaker-than-expected growth rates.

As the destination's offer does not structurally change, the average length of stay and expenditure for each segment will remain the same as in 2015.

In the 2027-2041 period, the supply constraint will no longer apply, but demand growth will gradually slow in line with the demographic characteristics of the different market segments.

11.4.2 QUANTITATIVE FORECASTS OF VISITORS

Figure 36 presents the quantitative forecasts for domestic and foreign visitors in the business as usual scenario.

FIGURE 36 – FORECAST OF DOMESTIC AND FOREIGN VISITORS TO LOMBOK, 2016-2041 (BUSINESS AS USUAL SCENARIO)

		Projections			CAGR (%)		
	2015	2021	2026	2041	2016-2021	2022-2026	2027-2041
Total domestic visitors	**952,648**	**1,092,800**	**1,202,300**	**1,477,800**	**2.3%**	**1.9%**	**1.4%**
In commercial accommodation	701,513	823,500	919,900	1,165,000	2.7%	2.2%	1.6%
Leisure	455,270	545,300	612,100	786,600	3.1%	2.3%	1.7%
Business	109,840	124,100	137,300	168,800	2.1%	2.0%	1.4%
Other	136,402	154,100	170,500	209,600	2.1%	2.0%	1.4%
In non-commercial accommodation	251,135	269,300	282,400	312,800	1.2%	1.0%	0.7%
Total foreign visitors	**1,029,779**	**1,414,800**	**1,609,400**	**2,283,500**	**5.4%**	**2.6%**	**2.4%**
Overnight visitors	993,581	1,374,800	1,561,400	2,211,500	5.6%	2.6%	2.3%
Europe	495,591	709,500	805,800	952,400	6.2%	2.6%	1.1%
Australia	179,384	264,100	314,900	563,700	6.7%	3.6%	4.0%
Malaysia	70,485	92,600	105,200	204,400	4.7%	2.6%	4.5%
Singapore	31,559	41,500	47,100	75,000	4.7%	2.6%	3.1%
China	13,132	16,300	17,600	39,200	3.7%	1.6%	5.5%
USA	41,740	51,800	56,000	82,500	3.7%	1.6%	2.6%
Middle East	2,059	2,600	2,800	4,800	3.7%	1.6%	3.7%
Other	159,631	196,400	212,000	289,500	3.5%	1.5%	2.1%
Cruise ship visitors	36,198	40,000	48,000	72,000	1.7%	3.7%	2.7%
TOTAL VISITORS	**1,982,427**	**2,507,600**	**2,811,700**	**3,761,300**	**4.0%**	**2.3%**	**2.0%**

Source: Horwath HTL: The forecast periods are: 2016-2021 (6 years), 2022-2026 (5 years), (15 years).

The quantitative forecasts are based on the following detailed assumptions.

11.4.2.1 VISITORS STAYING IN COMMERCIAL ACCOMMODATION

The expected accommodation supply constraints over the 2016-2026 imply the following visitor absorption capacity for this market segment.

2016-2021

- In 2021, the total number of available rooms is expected to reach 13,522 (the current number of rooms is 10,380 and an additional 3,142 rooms are in the investment pipeline), i.e. 4,935,530 available room nights.
- With a room occupancy rate of 50% (same as in 2015[14]), the number of room nights sold is estimated to be 2,467,800.
- Assuming the same average length of stay of 1.9 nights as in 2015 (1.8 nights for domestic visitors and 2.4 nights for foreign visitors) and an average of 1.9 guests per room (1.7 for domestic visitors and 2.0 for foreign visitors), the total number of potential visitors in commercial accommodation is estimated at 2,198,300, which represents a CAGR of 4.4% between 2016 and 2021 (domestic visitors in commercial accommodation + foreign overnight visitors).

14 Average occupancy rate is not likely to grow more, as most hotels predominantly have a leisure clientele, which implies that occupancy rates are higher during the weekends.

2022-2026

- The same reasoning is applied for the 2022-2026 period, when nearly 4,900 additional rooms are expected to be built, enabling 2,786,000 total potential room nights. Under the same ALOS and guests per room assumptions as for the 2016-2021 period, the total number of overnight visitors that can be accommodated is 2,481,300, i.e. a CAGR of 2.5% between 2022 and 2026.

Relative to the overall growth potential for visitors in commercial accommodation implied by these calculations, **the growth trends for individual market segments are expected to differ as follows:**

Domestic segments

- The domestic leisure segment (455,270 visitors in 2015) is projected to grow at a CAGR of 3.1% in 2016-2021, higher than the projected trend at the Indonesia level (2.0%), as home stays and non-star rated hotels can absorb a part of the potential demand. This above-average growth is expected to persist in the 2022-2026 period (CAGR of 2.3% compared to the national trend of 1.9%) and over the long-term in 2027-2041 (CAGR of 1.7% compared to national trend of 1.3%).
- The growth of the domestic business market (109,840 visitors in 2015, mostly in Mataram) is also expected to exceed national trends in all periods of the forecast horizon (CAGR of 2.1% in 2016-2021, 2.0% in 2022-26, and 1.4% in 2027-2041), albeit by a smaller increment than for the domestic leisure segment (identified investment projects are not targeted at this segment).

Foreign segments

For foreign visitors in commercial accommodation, the overall growth implied by the supply constraints is CAGR of 5.6% in 2016-2021, and 2.6% in 2022-2026. Relative to these overall trends:

- Demand is expected to grow faster for the mature markets such as Europe[15], with CAGR of 6% between 2016 and 2021, due to a lower sensitivity of this market to the accommodation supply. This assumption is also consistent with the expected growth trend of European visitors to Bali, since these same visitors will increasingly also visit Lombok as an extension. Between 2022 and 2026, this above-average growth increment is expected to dwindle (CAGR of 2.6%), as the market matures further. After the supply constraint dissipates in the long run, growth in the 2027-2041 period is expected to follow the national-level trend for European visitors (CAGR of 1.1%)

15 Lombok has become an increasingly popular destination among Europeans, reflected not only in the growing number of visitors, but also in its inclusion in packages and guides' recommendations as one of the "must see" destinations in Indonesia, strongly paired with Bali, during a "once in a life time" trip to the country. In a market saturation situation, European visitors will therefore tend to be more flexible in terms of dates (as they have longer stays in Indonesia) and accommodation quality standards (they may choose home-stays and non-star rated hotels if other types of accommodation are not available).

- The growth rate for the Australia market is also expected to be above-average in 2016-2021, considering the lower sensitivity of this visitor segment to the accommodation supply constraint. Lombok has become an increasingly popular destination among Australian visitors, but Indonesia is still considered a proximate vacation destination for Australians. In a market saturation situation, Australian visitors may choose not to go to Lombok at all, rather than to be flexible in terms of accommodation quality and dates of stay. This assumption is consistent with the expected trend of Australian visitors to Bali, considering steady air connectivity.[16] This above-average visitor growth is expected to persist during the 2022-2026 period (CAGR of 3.6%), before growth reverts to the Indonesia average for Australian visitors in 2027-2041 (CAGR of 4.0%).
- For Malaysia[17] and Singapore,[18] visitor growth is expected to be below-average for the 2016-2021 period (CAGR 4.7%), in light of the significant sensitivity of these visitors to the supply constraint. For 2022-2026, it is expected to converge to the overall average with the completion of new accommodation and facilities, and then follow the national-level trend for Malaysian and Singaporean visitors in 2027-2041.
- For the emerging markets like China, or the Middle East, visitor growth is expected to be below-average during both the 2016-2021 and 2022-2026 periods due to the poor suitability of Lombok's offer to this market (mainly small scale, non-branded hotels) and the sensitivity of this market to the supply constraint.[19] Thereafter, visitor growth for these markets in 2027-2041 is expected to follow their Indonesia-level trends.

11.4.2.2 DOMESTIC VISITORS IN NON-COMMERCIAL ACCOMMODATION

The estimates for the 3 periods are based on the latest Census forecasts of population growth for West Nusa Tenggara (1.2% between 2016 and 2021, 1.0% between 2022 and 2026, 0.7% between 2027 and 2041).

11.4.2.3 CRUISE SHIP VISITORS

The estimate is based on the number of port calls already scheduled for 2017 and 2018 and the global trends for the Asia market. It is consistent with the evolution of ports of calls in Bali[20].

16 Lombok will not be considered as a standalone destination, but rather an extension on a trip to Bali.

17 The same phenomenon occurs for Malaysians as for Singaporeans. In a supply saturation situation, Malaysians visitors will rather choose not to go to Lombok than to be flexible in terms of accommodation quality and dates of stay.

18 Lombok is regarded by Singaporeans as a weekend getaway destination, among many other competing destinations in Indonesia and in the region. Singaporean will generally visit Lombok over the weekend, when the supply constraint will be particularly strong. In a supply saturation situation, Singaporean visitors will rather choose to not go to Lombok than to be flexible in terms of accommodation quality and dates of stay.

19 Lombok is not established as a must see destination for Chinese visitors, while the segment is rather sensitive to accommodation quality standards and has few vacation days. In a supply saturation situation, Chinese visitors will rather choose to not go to Lombok than to be flexible in terms of accommodation quality and dates of stay.

20 The growth prospects of cruise ships depend on the overall trend in demand for cruising in Asia, which is very positive, given the dynamism of the Chinese market and the sharing of this market between the ports of Indonesia, and in particular between Bali (Benoa) and Lombok (Lembar). So far, almost all cruise ships having a call in Lombok also have a call in Bali, the day before or the day after, while Bali receives approximately 3 times more calls than Lombok, and is also used as a departure or end port. We have assumed that this situation will persist, and that the evolution of port of calls in Lombok is linked with Bali's situation.

11.5 BEST CASE SCENARIO

11.5.1 SCENARIO SUMMARY DESCRIPTION

This scenario is based on the assumption that an integrated tourism Masterplan is prepared and implemented for Lombok[21], involving:

- In South Lombok: strong SOE performance in the Mandalika resort development project (with direct investment in leisure and business facilities, as well as supporting infrastructure). This involvement is likely to generate improved private investment dynamics and development of integrated and large-scale tourism;
- In Lombok Utara and Lombok Barat: continued organic growth of current key tourism areas (Gilis, Senggigi). For the Gili Islands to maintain their attractiveness in the future, environmental sustainability needs to be improved by addressing key basic services deficiencies (such as water, sanitation and solid waste management).
- For Senggigi development, and its northward development to Tanjung, it will be particularly important to establish and enforce planning controls to maintain its 'boutique' character, which was created through 20 years of small-scale hotel development.
- Direct connectivity between Lombok and selected targeted markets (Australia, China, and Middle-East) will develop as the result of the creation of a new, attractive offer in the southern coast, which helps to improve Lombok's potential as stand-alone destination.

11.5.2 MARKET RESPONSE

In the 2016 – 2021 period, demand growth will be slightly constrained by the pace at which new accommodation is built (mainly corresponding to the pipeline of identified projects).

In the 2022 – 2041 period, Lombok's attractiveness is expected to improve across all market segments, driven by the development of new types of leisure and business offerings along the southern coast, combined with a greater variety of hotels offered.

Average length of stay and expenditure are expected to increase for certain segments (Australian, Chinese), corresponding to the new products offered in the southern coast, and the increased perception of Lombok as a standalone beach destination.

11.5.3 GENERAL REMARKS ON THE BEST-CASE SCENARIO FORECAST

The market share of each segment will evolve according to the sensitivity and appetite of each segment for the proposed new offer in southern Lombok.

21 A detailed scenario description with recommendations on the marketing positioning and investment is undertaken in Section 12.

Due to the relative similarity and geographic proximity with Bali, future demand trends for Lombok have been estimated using a comparative approach with Bali's development, adjusted to take into account the change in market context (evolution in demographics, purchasing power, and the fact that competition between destinations is more intense now than over the last twenty years).

11.5.4 QUANTITATIVE FORECASTS FOR DOMESTIC VISITORS

Figure 37 presents the quantitative forecasts of domestic visitors in the Best-Case scenario.

FIGURE 37 – FORECAST OF DOMESTIC VISITORS TO LOMBOK, 2015-2041 (BEST CASE SCENARIO)

		Projections			CAGR (%)		
	2015	2021	2026	2041	2016-2021	2022-2026	2027-2041
Total domestic visitors	**952,648**	**1,092,800**	**1,226,000**	**1,601,100**	**2.3%**	**2.3%**	**1.8%**
In commercial accommodation	701,513	823,500	943,600	1,288,300	2.7%	2.8%	2.1%
Leisure	455,270	545,300	627,200	867,600	3.1%	2.8%	2.2%
Business	109,840	124,100	143,400	198,400	2.1%	2.9%	2.2%
Other purposes	136,402	154,100	173,000	222,300	2.1%	2.3%	1.7%
In non-commercial accommodatio	251,135	269,300	282,400	312,800	1.2%	1.0%	0.7%

Other purposes include Education, Health, Religion and Sport
Source: Horwath HTL

11.5.4.1 LEISURE

2016 – 2021	Same reasoning as in the business as usual scenario: while potential demand is dynamic, actual demand growth is hindered by the accommodation supply constraint. Estimated growth (CAGR 3.1%) is based on the maximum room capacity considering organic supply growth and the share of the leisure segment in 2015.
2022 – 2026	Demand growth is no longer hindered by the supply constraint. Estimates are based on expected domestic visitor growth at national level, adjusted upwards (from CAGR 1.9% to 2.8%) to take into account the increased attractiveness of Lombok compared with other domestic tourism destinations.
2027 – 2041	Estimates are based on expected domestic visitor growth at national level, adjusted upwards (from CAGR 1.3% to 2.2%) in order to take into account the increased attractiveness of Lombok compared with other domestic tourism destinations.

11.5.4.2 BUSINESS

2016 – 2021	Same reasoning as in the business as usual scenario (CAGR of 2.1%).
2022 – 2026	Estimates are based on expected domestic visitor growth at national level, adjusted upwards (from CAGR 1.9% to 2.9%) to take into account the increased attractiveness of Lombok due to the development of new MICE facilities in southern Lombok.
2027 – 2041	Estimates are based on expected domestic visitor growth at national level, adjusted upwards (from CAGR 1.3% to 2.2%) due to a better competitive positioning of Lombok compared with other domestic tourism destinations (improved connectivity and new facilities adapted to demand).

11.5.4.3 DOMESTIC VISITORS IN NON-COMMERCIAL ACCOMMODATION

As in the business as usual scenario, the estimates for the 3 periods are based on the forecasts of evolution of the population of West Nusa Tenggara (1.2% between 2016 and 2021, 1.0% between 2022 and 2026, 0.7% between 2027 and 2041).

11.5.5 QUANTITATIVE FORECASTS FOR FOREIGN VISITORS

Figure 38 presents the quantitative forecast of foreign visitors in the Best-Case scenario.

FIGURE 38 – FORECAST OF FOREIGN VISITORS TO LOMBOK, 2015-2041 (BEST CASE SCENARIO)

		Projections			CAGR (%)		
	2015	2021	2026	2041	2016-2021	2022-2026	2027-2041
Total foreign visitors	**1,029,779**	**1,429,800**	**1,799,000**	**3,549,100**	**5.6%**	**4.7%**	**4.6%**
Overnight visitors	993,581	1,389,800	1,751,000	3,477,100	5.8%	4.7%	4.7%
Europe	495,591	709,500	833,900	1,354,100	6.2%	3.3%	3.3%
Australia	179,384	279,100	375,600	755,200	7.6%	6.1%	4.8%
Malaysia	70,485	92,600	120,800	268,300	4.7%	5.5%	5.5%
Singapore	31,559	41,500	50,400	90,400	4.7%	4.0%	4.0%
China	13,132	16,300	22,300	57,500	3.7%	6.5%	6.5%
USA	41,740	51,800	61,700	104,400	3.7%	3.6%	3.6%
Middle East	2,059	2,600	10,800	87,100	3.7%	33.0%	14.9%
Other	159,631	196,400	275,500	760,100	3.5%	7.0%	7.0%
Cruise ship visitors	36,198	40,000	48,000	72,000	1.7%	3.7%	2.7%

Source: Horwath HTL

11.5.5.1 EUROPE

2016 – 2021	Same growth as in the business as usual scenario due to the near-term accommodation supply constraints.
2022 – 2026	Estimate based on the expected growth of European demand at national level, adjusted upwards (to GAGR 3.3%) to reflect that Lombok will be capturing part of Bali's market share (as Bali becomes congested) after the south coast is developed. Average length of stay remains unchanged from 2015 (2.5 days).
2027 – 2041	Same growth as for 2022-2026.

11.5.5.2 AUSTRALIA

2016 – 2021	The development of Mandalika and the southern coast (helping to establish Lombok as a standalone beach resort destination) is expected to induce Australian air carriers to re-introduce direct air connections to Lombok in a gradual and phased manner, starting with approximately 2 flights per week. These new direct flights are estimated to generate an additional 15,000 Australian visitors per year over this period.[22]
2022 – 2026	Estimate based on: The expected growth of Australian visitors at the national level, adjusted upwards (to CAGR 6.1%) taking into account that: • The new offer targets Australian visitors; • Lombok will capture an increasing share of Bali's market; • Direct air connectivity will be further improved: (5 flights per week by 2026); and • Average length of stay increases (+2 days) as Lombok establishes itself as a standalone beach resort destination (rather than a side trip from Bali).
2027 – 2041	Visitor growth (CAGR of 4.8%) continues to exceed the projected national average growth for Australian visitors (4.0%), as direct air connectivity continues to improve in line with demand (to an estimated 20 flights per week).

11.5.5.3 SINGAPORE

2016 – 2021	Same growth as in the business as usual scenario due to the near-term accommodation supply constraints.
2022 – 2026	The expected growth of Singaporean demand at national level, adjusted upwards (to CAGR 4.0%) to reflect: • That Lombok will be capturing part of Bali's market share as Bali becomes congested; • The increased variety of product on the southern coast, adapted to Singaporean traveller preferences; • Direct flight connections; and • Average length of stay increases (+1 day) as Lombok increasingly establishes itself as a standalone beach resort destination.
2027 – 2041	Same growth as for 2022-2026

22 Between October 2013 and October 2014, Jetstar ran 4 weekly flights from Perth to Lombok for the first 5 months, and 3 weekly flights for the remaining 7 months. Each flight had a seat capacity of 180, and during this period, Australian visitors to Lombok grew by around 17,000, implying a flight occupancy rate of around 50%. Using this historical per flight visitor "elasticity" as a reference point and assuming the flight occupancy rate would be higher in the future (around 80%) once Lombok is better developed and marketed as a destination results in an estimated 7,500 additional visitors per year for each new direct flight offered.

11.5.5.4 MALAYSIA

2016 – 2021	Same growth as in the business as usual scenario due to the near-term accommodation supply constraints.
2022 – 2026	The expected growth of Malaysian demand at national level, adjusted upwards (to CAGR 5.5%) to reflect: • That Lombok will be capturing part of Bali's market share as Bali becomes congested; • The increased variety of product on the South Coast, adapted to Malaysian traveller preferences; • The appeal of Lombok's Halal tourism to this market segment; and • Average length of stay increases (+1 day) as Lombok increasingly establishes itself as a standalone beach resort destination.
2027 – 2041	Same growth as for 2022 – 2026

11.5.5.5 CHINA

2016 – 2021	Same growth as in the business as usual scenario due to the near-term accommodation supply constraints.
2022 – 2026	Estimate based on the expected growth of Chinese demand at the national level, adjusted upwards (to 6.5%) to take into account: • Lombok offers an alternative to Bali, which is increasingly commercialized by Chinese tour operators; and • Average length of stay increases (+1 day) as Lombok increasingly establishes itself as a standalone beach resort destination.
2027 – 2041	Same growth as during the 2022 – 2026 period.

11.5.5.6 USA

2016 – 2021	Same growth as in the business as usual scenario due to the near-term accommodation supply constraints.
2022 – 2026	Estimate based on the expected growth of US visitor demand at the national level (CAGR +3.6%). Average length of stay remains the same.
2027 – 2041	Same growth as for 2022 – 2026.

11.5.5.7 MIDDLE EAST

2016 – 2021	Same growth as in the business as usual scenario due to the near-term accommodation supply constraints.
2022 – 2026 and 2027 – 2041	On top of the visitor growth assumed in the business as usual scenario, Lombok is also estimated to capture a portion (0.5% in 2026, and 3% in 2041) of Middle East visitors to Thailand (which are projected to reach 1.59 million visitors in 2026 and 2.74 million in 2041). These additional visitors captured explain the significant boost to the CAGR of Middle East visitors to Lombok over these forecast periods (to 33% in 2022-2026 and 15% in 2027-2041). Average length of stay increases (from 3.5 to 5.5 nights) as Lombok establishes itself as a standalone beach resort destination.

11.5.5.8 CRUISE PASSENGERS

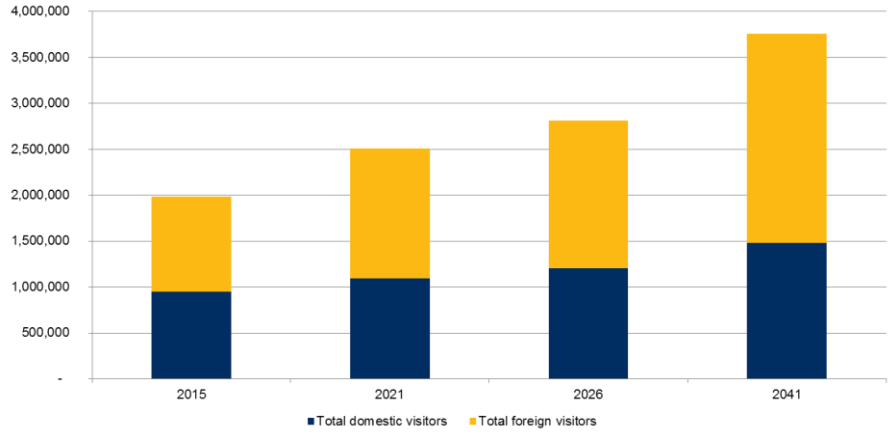
2016 – 2041	The estimate is based on the number of port calls already scheduled for 2017 and 2018 and the global trends for the Asian market. It is consistent with the evolution of ports calls in Bali.[23] The number of cruise passengers is expected to increase at the same pace as in the business as usual scenario because: • Lombok is already a scheduled port call along the coast of Indonesia; and • The planned tourist developments are mainly in the south of the island, relatively distant from the port of Lembar.

11.5.6 COMBINATION OF BOTH DOMESTIC AND FOREIGN VISITORS

Figure 39 presents the quantitative forecast of both foreign and domestic visitors in the Best-Case scenario. The projected number of total visitors is forecast to almost double from 2.0 m in 2015 to 3.8m in 2041.

23 The growth prospects of cruise ships depend on the overall trend in demand for cruising in Asia, which is very positive, given the dynamism of the Chinese market and of the sharing of this market between the ports of Indonesia, and in particular between Bali (Benoa) and Lombok (Lembar). So far, almost all cruise ships having a call in Lombok also have a call in Bali, the day before or the day after, while Bali receives approximately 3 times more calls than Lombok, and is also used as departure or end port. We have assumed that this situation will persist, and that the evolution of port of calls in Lombok is linked with Bali's situation.

FIGURE 39 – FORECAST OF DOMESTIC & FOREIGN VISITORS TO LOMBOK, 2015-2041 (BEST CASE SCENARIO)



Source: Horwath HTL

11.6 ECONOMIC IMPACT (BUSINESS AS USUAL VS. BEST CASE)

Figure 40 presents the projected number of guest nights in accommodations, in Lombok in the Best-Case scenario, which would reach 6.2 million guest nights in 2021, 8.6 million in 2026 and 15.1 million in 2041.

FIGURE 40 – FORECAST OF GUEST NIGHTS IN COMMERCIAL ACCOMMODATION IN LOMBOK, 2015-2041 (BEST CASE SCENARIO)

		Projections		
	2015	**2021**	**2026**	**2041**
Total domestic visitors	**2,576,000**	**2,887,000**	**3,169,000**	**3,937,000**
In commercial acccommodation	1,234,000	1,448,000	1,660,000	2,266,000
In non-commercial accommodation	1,342,000	1,439,000	1,509,000	1,671,000
Overnight foreign visitors	2,362,000	3,302,000	5,401,000	11,145,000
China	27,000	34,000	69,000	177,000
Malaysia	134,000	177,000	351,000	780,000
Singapore	65,000	85,000	154,000	276,000
Australia	391,000	608,000	1,570,000	3,156,000
Europe	1,249,000	1,788,000	2,101,000	3,412,000
USA	102,000	127,000	151,000	256,000
Middle East	7,000	9,000	60,000	481,000
Other	387,000	474,000	945,000	2,607,000
Total visitors	**4,938,000**	**6,189,000**	**8,570,000**	**15,082,000**

Source: Horwath HTL

Comparatively, in the business as usual scenario, the projected number of guest nights in accommodations, in Lombok, would reach only 6.2 million guest nights in 2021, 6.8 million in 2026 and 8.9 million in 2041.

The best-case scenario unlocks the potential for demand and allows Lombok to generate roughly 6 million more guest nights in 2041 than it would without the proposed public interventions and investment.

As presented in Figure 41 in the best-case scenario, total visitors should generate estimated total revenue of USD 1.7 billion in 2041 (USD 505 million in 2021 and USD 821 million in 2026), which is 4.5 times the current expenditure of domestic and foreign visitors in 2015.

FIGURE 41 – FORECAST OF ANNUAL EXPENDITURE FROM VISITORS TO LOMBOK, 2015-2041, IN CONSTANT USD THOUSANDS, BASE 2015) (BEST CASE SCENARIO)

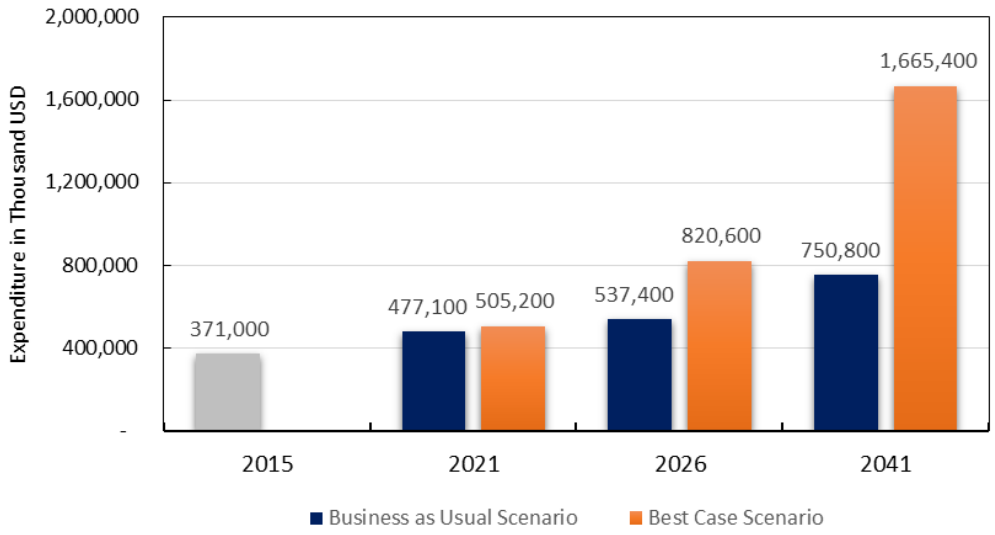
		Projections			CAGR (%)		
	2015	2021	2026	2041	2016-2021	2022-2026	2027-2041
Total domestic visitors	**69,400**	**84,700**	**95,100**	**124,100**	**3.4%**	**2.3%**	**1.8%**
In commercial accommodation	48,200	62,000	71,200	97,700	4.3%	2.8%	2.1%
In non-commercial accommodation	21,200	22,700	23,900	26,400	1.1%	1.0%	0.7%
Total foreign visitors	**301,600**	**420,500**	**725,500**	**1,541,300**	**5.7%**	**11.5%**	**5.2%**
Overnight visitors	298,900	417,500	721,900	1,535,900	5.7%	11.6%	5.2%
China	4,400	5,500	11,100	28,500	3.8%	15.1%	6.5%
Malaysia	19,100	25,300	50,200	111,500	4.8%	14.7%	5.5%
Singapore	10,000	13,100	23,700	42,600	4.6%	12.6%	4.0%
Australia	61,300	95,300	246,200	494,900	7.6%	20.9%	4.8%
Europe	135,200	193,500	227,400	369,300	6.2%	3.3%	3.3%
USA	13,900	17,300	20,600	34,900	3.7%	3.6%	3.6%
Middle East	1,300	1,700	11,600	92,600	4.6%	46.8%	14.9%
Other	53,700	65,800	131,100	361,600	3.4%	14.8%	7.0%
Cruise ship visitors	2,700	3,000	3,600	5,400	1.8%	3.7%	2.7%
Total visitors	**371,000**	**505,200**	**820,600**	**1,665,400**	**5.3%**	**10.2%**	**4.8%**

Source: Horwath HTL

The calculations are based on projected daily expenditure in constant US dollars, which grows to an average of USD 31.50 for domestic visitors by 2041 and USD 137.40 for foreign visitors.

Comparatively, in the business as usual scenario, the total visitor expenditure is only USD 751 million in 2041 (USD 477 million in 2021 and USD537 million in 2026). The Best-Case scenario allows Lombok to generate USD 915 million more in visitor expenditure in 2041 than it would without the proposed public interventions and investment (Figure 42).

FIGURE 42 – COMPARISON OF ECONOMIC IMPACT IN BOTH SCENARIOS 2015-2041



Source: Horwath HTL

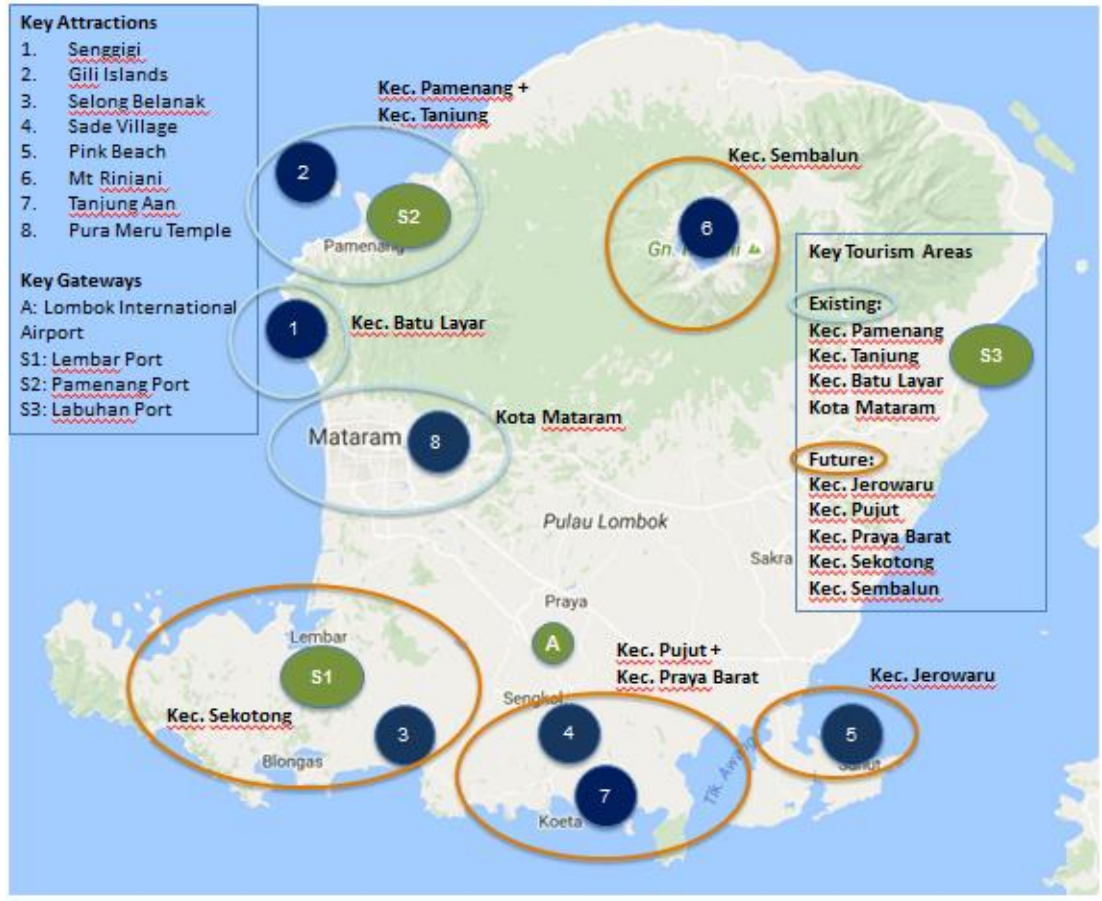
INVESTMENT NEEDS

12. AMENITIES: KEY RECOMMENDATIONS

12.1 FUTURE KEY TOURISM AREAS: KNOWN PIPELINE DEVELOPMENT

The following sections detail our understanding of future hotel developments in areas identified as future key tourism areas. Figure 43 illustrates the location of the existing and future key tourism areas.

FIGURE 43 – KEY TOURISM AREAS, EXISTING & FUTURE, LOMBOK



Source: Google maps, Horwath HTL

12.1.1 MANDALIKA (KAB. LOMBOK TENGAH, KEC. PUJUK)

Currently there is only one international branded resort in Mandalika, the Novotel Lombok, built in the 1990s with 102 rooms including 25 villas.

To date Mandalika has failed to eventuate for a number of reasons including:

- Lack of financial commitment by the developers;
- Land title issues which remain a blight on the development;
- Lack of engagement and lack of interest of local communities;

- Lack of master plan focus, grand plans, too little commitment from ITDC to complete the fundamentals;
- Social issues and the reputation of south Lombok as a dangerous area;
- Land banking across the remainder of south Lombok has funnelled investment out of the area and into swathes of land that remain 'banked' and not developed;
- Multiple changes of management within the ITDC structure; and
- The lack of water is a huge problem although 20 years later reverse osmosis is becoming more and more cost effective.

It is understood that there is renewed vigour within ITDC and with the assistance of the Central Government and the push associated with the 10 Destinasi Prioritas, a new wave of development began with the ground breaking of the Pullman in Q3 2016. Figure 44 details the tourism development plan of in Mandalika.

FIGURE 44 – TOURISM DEVELOPMENT PROJECTED IN MANDALIKA, 2016 – 2021

Property	Room Count	Est. Opening	Development Stage
Origin Lombok	33	Opened Mid 2016	Just outside north of Mandalika
Serenting Bay			
Royal Tulip	~ 300	2020	Planning
Pullman*	251	2019	Planning
2 x additional plots	~ 504		
Tanjung Aan			
Club Med**	~ 350	2019	Planning
Kuta			
Upper Midscale Kuta Beach	~ 250	2019	Planning
Others			
Misc. projects in Mandalika	3,750		
Total	**5,438**		

Source: Horwath HTL

TANJUNG (KAB. LOMBOK UTARA, KEC. TANJUNG)

Although far from the airport, the Tanjung hotel market is growing with several new luxury and exclusive accommodation products under development or in the pipeline. The proximity to the Gili Islands and Senggigi, the beach quality, sunset views and a developed luxury niche reputation are helping drive development.

SEKOTONG (KAB. LOMBOK TENGAH, KEC. SEKOTONG)

The area has become more accessible in recent years with the construction of road infrastructure. The area has several unique selling features such as the famous Desert Point surf site and the three nearby islands, the southern Gilis: Gili Nanggu, Gili Tangkong, and Gili Sudak, which feature pristine beaches. Known developments include:

- **Sundancer:** The Sundancer development site totals 49 hectares. The overall development will be built in 6 stages, starting with a five-star resort. Further stages will include residential developments, and potentially additional resorts.
- There are plans for a resort on 7 hectares west of Sundancer, we have assumed 200 rooms given the site size. Still in planning.

ARE GULING BAY (KAB. LOMBOK TENGAH, KEC. PUJUT)

The bay has been master planned to include around 4 or 5 hotels and we have assumed around 900 rooms:

- Royal Tulip Resort & Spa Lombok (2.3 hectares): there is one site under development planned to have 61 villas;
- The other 4 hotels have been assumed to have an average of around 210 rooms each.

MEKAKI BAY (KAB. LOMBOK TENGAH, KEC. SEKOTONG)

Mekaki Bay is a very large resort development in southwest Lombok being developed by Twenty One Development from Jakarta.

- Land size is 512.7 hectares and split as follows: 158.7 hectares Hak Guna Bangunan (HGB) + 201 hectares National Park (TWA) + 153 hectares of limited production forest;
- It will be divided into plots and currently they have 6 internationally branded upper upscale and luxury resorts planned with a total of 1,032 rooms (182 + 180 + 250 + 200 + 220).
- Negotiations continue to (1) finalise hotel management agreements and (2) with co-investors to finance different components of the development.

JOGO HILLS (KAB. LOMBOK TENGAH, KEC. PRAYA BARAT)

Jogo Hills is a 50-hectare plot that has been master planned to include 2 resorts, a beach club and residential for sale. We have assumed the number of resort keys to be around 500.

SELONG BELANAK (KAB. LOMBOK TENGAH, KEC. PRAYA BARAT)

Sempiak Villas with its 6 villas stands alone on the very beautiful Selong Belanak beach. The remainder of the bay has been largely sold to private investors for development. The only project that we are aware and has started taking shape is Selong Selo.

- **Selong Selo** is a master planned development which will contain 2 hotels: 1 luxury retreat style on the hill with less than 100 rooms and the second, beachfront with an estimated 250 rooms. We have assumed a total rooms count of 350 rooms. There are also residences for sale, Selong Selo Residences and Serangan Indah.

BAMBANG BAY (KAB. LOMBOK TENGAH, KEC. PUJUT)

There are 2 developments of note in Bambang Bay area which could add an additional 842 rooms to Lombok's pipeline:

- Lobster Bay Villas & Residences (8.5 hectares): it is primarily residential for sale; however, the villas are on leaseback as hotel villas. There are 92 villas.
- A 120-hectare master planned development in Bambangku which is still in the planning stage, however, it is likely to have at least 4 or 5 resorts, with an estimated 150 rooms per resort for a total estimate of around 750 rooms.

12.1.2 MT RINJANI (KAB. LOMBOK TENGAH, KEC. SEMBALUN)

We are not aware of any new developments planned surrounding Mt Rinjani.

12.1.3 CONCLUSIONS ON PIPELINE ROOM COUNT

Figure 45 illustrates the estimated volume of rooms in the identified pipeline.

FIGURE 45 – IDENTIFIED EXISTING & PIPELINE ACCOMMODATION IN LOMBOK

Area	Project	Est. Rooms	2016 - 2021	2022 - 2026	2027 - 2041
Mandalika South Coast		5,438	1,586	1,694	2,158
	Sekotong	350	150	200	0
	Are Guling	900	0	450	450
	Mekaki Bay	1032	150	441	441
	Jogo Hills	500	0	500	0
	Tanjung Ringgit	500	0	500	0
	Selong Belanak	350	150	200	0
	Bambangku	842	150	692	0
Lombok Barat		678	678	-	-
Gili Lombok Utara		278	278	-	-
Mataram		250	-	250	-
Total		**11,118**	**3,142**	**4,927**	**3,049**
Business as usual scenario		**4,886**	**3,142**	**1,744**	**-**
Best case scenario		**11,118**	**3,142**	**4,927**	**3,049**

Source: Horwath HTL

12.2 FORECASTING FUTURE SUPPLY NEEDS

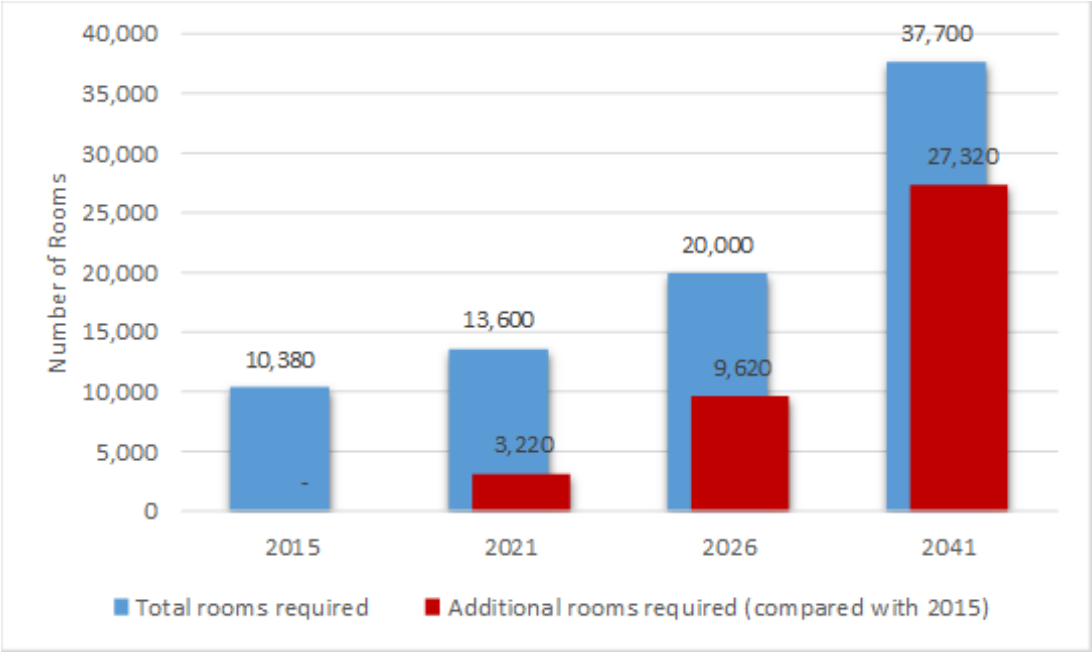
Based on the forecast visitor arrivals and room night demand, the volume of new rooms can be estimated. In 2021, the volume of arrivals has been calculated based on the accommodation supply existing in 2016 and planned for an opening before 2021 (respectively 10,470 and 3,142 rooms), with an occupancy rate of 55%.

The number of required rooms has been calculated for the Best-Case scenario:

- By 2026, 20,000 rooms will be required to satisfy the demand, i.e. 9,620 additional rooms (compared with 2015). This matches approximately with the pipeline (3,142 + 4,927 = 8,069 rooms identified)
- By 2041, 37,700 rooms will be necessary to accommodate the additional room night demand, which means a total of 27,320 additional rooms will need to be built over existing 2015 volume. This goes well beyond the projects identified in the pipeline (11,118), but new projects are likely to appear with the rise of South Lombok.

Figure 46 highlights the volume of rooms required to house the forecast visitor arrivals from 2015 to 2041.

FIGURE 46 – BEST CASE SCENARIO, NUMBER OF ROOMS REQUIRED



Source: Horwath HTL

13. STAFF REQUIRED & SKILLS NEEDED

13.1 ACCOMMODATION STAFF REQUIRED

The above demand and supply forecasts will have a net positive effect on employment in Lombok. Additional services and potential employment growth will occur in all tourism sectors across Lombok.

The following summarises the skills gaps identified following discussions with Lombok hotel managers[24]:

- Service, systems (reservations, cashier, etc.), culinary and language skills;
- Basic service excellence; and
- Environmental conservation knowledge to preserve the island's nature beauty.

13.2 ADDITIONAL STAFF REQUIRED

Figure 47 highlights the number of arrivals forecast plus additional rooms required in Lombok to meet the needs of the tourism forecasts (as outlined above):

FIGURE 47 – ADDITIONAL ARRIVALS & HOTEL ROOMS REQUIRED, 2015 – 2041

	2015 (baseline)	2021	2026	2041
Arrivals*	1,695,094	2,215,376	2,663,040	4,585,560
Total Rooms Req.	10,380	13,600	20,000	37,700
New Rooms Req.		3,220	6,400	17,700

Source: Horwath HTL total domestic & foreign arrivals in commercial accommodation*

Based on these additional rooms, Figure 48 provides an estimate of the number of staff required at entry level, supervisor and management levels by assumed hotel positioning. The hotel positioning is split into 5 categories based on actual achieved daily rates in 2015 across the country, not specific to Lombok where insufficient information is available from which to draw staffing ratio conclusions.

Additional assumptions:

- % Total Rooms: the percentage of total rooms per rate category. For example, if the figure is 0.42 this means that 42% of total rooms are within this rate category. The estimates are based on the data collected in the Horwath HTL Indonesia Hotel Industry Survey of Operations 2016;
- Staff / Room Ratio: staffing levels or full-time equivalents (FTE) per room. For example, if the figure is 0.53 this means, that 0.53 FTE are required per room. The estimates are based on the data collected in the Horwath HTL Indonesia Hotel Industry Survey of Operations 2016; and

24 Gleaned from interviews with existing local investors in various assets including hotels, restaurants, travel agencies, and interviews with local hoteliers, restaurant managers.

- The staffing level split or proportion of total staff within each of entry level, supervisor and management level are based on estimates from market research:
  - Under USD 40 (achieved average daily rate, 2015) is 10% management and 90% entry level. It is assumed that this category includes homestays, smaller properties, family owned and less professionally managed properties. These are assumed to have a slightly different staff split between management (who are often owner relatives) and entry level, no supervisor level; and
  - Over USD 40 (achieved average daily rate, 2015) is 5% management, 10% supervisor and 85% entry level. These categories are assumed to typically include a higher proportion of star-rated hotels, greater professionalization, larger properties and are assumed to include 3 levels of staffing, entry level, supervisor and management levels.

FIGURE 48 – ESTIMATED NUMBER OF STAFF BY HOTEL CATEGORY

	< USD 40	USD 40 - 80	USD 80 - 120	USD 120 - 240	> USD 240	Total
Staff / Room Ratio	0.53	0.83	1.15	1.56	2.70	
% Total Rooms	0.42	0.31	0.11	0.13	0.03	
Additional Rooms:						
Existing						10,380
2021	1,361	1,001	358	410	90	3,220
2026	2,705	1,990	711	814	179	6,400
2041	7,482	5,505	1,967	2,252	494	17,700
Total						37,700
Additional Staff:						
2021	**723**	**832**	**412**	**640**	**243**	**2,850**
Entry Level	651	707	350	544	207	2,459
Supervisor	-	83	41	64	24	213
Management	72	42	21	32	12	179
2026	**1,437**	**1,654**	**819**	**1,271**	**482**	**5,663**
Entry Level	1,293	1,406	696	1,080	410	4,885
Supervisor	-	165	82	127	48	422
Management	144	83	41	64	24	356
2041	**3,973**	**4,574**	**2,264**	**3,516**	**1,333**	**15,660**
Entry Level	3,576	3,888	1,924	2,989	1,133	13,510
Supervisor	-	457	226	352	133	1,168
Management	397	229	113	176	67	982

Source: Horwath HTL

In other words, to 2021 it is forecast that an additional 2,850 staff will be required to meet the needs of the additional rooms projected. Between 2021 and 2026 a further 5,663 staff will be required and between 2026 and 2041 a further 15,660 will be required.

13.3 ADDITIONAL LOMBOK DESTINATION STAFF REQUIRED

The increase in arrivals forecast for Lombok is expected to have a positive net effect on employment.

Between 2015 and 2041 the estimated number of arrivals in commercial accommodation is expected to increase to just under 4.8 million, up over 3 million from the current 1.7 million.

13.3.1 FOOD & BEVERAGE STAFF REQUIRED

- In 2015 there were 1,379 registered restaurants with an average of 22 seats per restaurant.
- The latest data available on the number of restaurant workers in Lombok is 2013. The NTB Tourism & Culture Office reported 4,247 staff working in restaurants and 25,817 seats (939 outlets). In other words, an average of 4.5 staff per outlet or 1 staff for every 6 chairs across Lombok.

FIGURE 49 – ADDITIONAL ARRIVALS & ESTIMATED RESTAURANTS & STAFF REQUIRED, 2015 – 2041

	2015 (baseline)	2021	2026	2041
Arrivals*	1,695,094	2,215,376	2,663,040	4,585,560
Factor Increase		1.31	1.20	1.72
Total Restaurants	**1,379**	**1,802**	**2,166**	**3,730**
Restaurant Inc.		423	364	1,564
Est. Additional Staffing (factor 4.5)		**1,905**	**1,639**	**7,038**

*Source: Horwath HTL * total domestic & foreign arrivals in commercial accommodation*

- Should the number of restaurants increase at a similar pace to visitor arrivals between 2015 and 2041 this will involve an increase of around 2,351 restaurants and an estimated additional 10,582 staff between 2015 and 2041.

13.3.2 TOUR GUIDE STAFF REQUIRED

- From 2013 to 2015, there were an estimated 453 registered guides in Lombok. This increased from an estimated 383 in 2012.
- The number of visitors in commercial accommodation was 1,100,467 in 2012, increasing to 1,358,511 in 2013.
- This equates a total of 1 guide per 2,873 arrivals and 2,999 arrivals in 2012 and 2013 respectively.

FIGURE 50 – ADDITIONAL ARRIVALS & ESTIMATED TOUR GUIDES REQUIRED, 2013 – 2041

	2013 (baseline)	2021	2026	2041
Arrivals*	1,358,511	2,215,376	2,663,040	4,585,560
Factor Increase		1.63	1.20	1.72
Total Guides	**453**	**739**	**888**	**1529**
Est. Additional Guides		286	149	641

*Source: Horwath HTL * total domestic & foreign arrivals in commercial accommodation*

- Should the number of tour guides increase at a similar pace to visitor arrivals between 2013 and 2041 this will involve an increase in around 1,076 guides.
- This will include the following types of guides:
  - Regular tour guides;
  - Dive guides / masters: with the recommended push to make certified and accompanied safety dive compulsory, more available and professional for the general public, this number will increase significantly from current levels; and
  - Authorized hiking guides and rangers: with the recommended push to make certified and accompanied safety hiking compulsory, more available and professional for the general public this number will increase significantly from current levels.

13.3.3 ADDITIONAL EMPLOYMENT OPPORTUNITIES

There are also other supporting sectors that will benefit directly, should visitor arrivals projections and tourism developments continue to grow and meet expectations.

Sectors that will benefit include:

- Retail: as an extension to tourism, souvenirs if produced and marketed correctly could also employ a large number of local people. The existing oleh oleh is basic, to say the least, much of which is imported.
- Events production and participation: the production of daily cultural shows or workshops, whether they be evening performances or daily batik workshops, will require additional staff. In addition, possible monthly adventure events or workshops, whether they be national or regional level of competition or daily diving and trekking workshops, will require additional staff.
- Transport service staff will be required, taxis, buses and minivans etc.

The volume of current staff in such positions is unknown, so we cannot gauge the potential for increase, however it is reasonable to expect staff increases to be in the range of 3 times the current levels.

13.4 CONCLUSIONS ON STAFF VOLUME

In the Best-Case scenario as described, the forecast volume of additional staff is around 24,000 hotel staff, 10,500 food & beverage staff, 1,000 tour guides and around 3 times the volume of current staff providing other tourism services.

14. TRANSPORT INFRASTRUCTURE BASELINE & NEEDS

BASELINE

14.1 AIR TRANSPORT

14.1.1 EXISTING CONDITION

The new Lombok International Airport is the primary gateway for visitors arriving directly by air. The airport is located in Tanaq Awu Village, Kec. Pujut, 40 km from Kota Mataram. It started operations in October 2011, replacing the former Selaparang Airport situated in Ampenan, Kota Mataram.

As per the market study, the following are the key findings regarding the Lombok Airport and its connectivity.

- The construction of a new airport was a necessity as the capacity of the former airport was reached. The new airport is located in the south part of Lombok to support the tourism based SEZ development in Mandalika, which has not yet developed.
- The air passenger volume has increased, however, the connectivity to other international airports by domestic or international airlines needs to be improved.
- International airlines are not interested in Lombok Airport for two main reasons:

  - They are already serving Bali Airport, which is now an international hub, and Lombok is too close to Bali to justify additional flights.

  - The tourist demand (including business travel and MICE) in Lombok is still too limited despite solid growth; and the key tourism areas are presently located in the north of the island (the Gillis and Senggigi) rather than in the South, and therefore well served by boat from Bali.

- In the short term, the focus is not so much to attract airlines as air traffic is a substitute for maritime traffic; but rather to create accommodation capacity in the south to generate the interest of airlines.

From an infrastructure point of view, Lombok Airport is an important gateway for Lombok Island, and its prominence will increase further in the future with the execution of Mandalika SEZ project. The summary of activities in Lombok International airport is presented below.

As shown in Figure 51 the number of aircraft movements at Lombok airport reached 27,759 in 2015 (92% domestic flights) representing 2.5 million passengers (90% on domestic flights). The number of domestic passengers arriving and departing is increasing year by year. The CAGR of passenger volume for this airport was 11% from 2011 to 2015. CAGR for all airports in Indonesia is 7% over the same time frame.

Compared to the growth of Lombok International Airport, Ngurah Rai International Airport in Bali experienced a similar CAGR of around 10.9% between 2011 and 2014[25]. As per Angkasa Pura 1, there has been negative growth in air passengers handled at Ngurah Rai International Airport between 2014 and 2015, while the Lombok International Airport continued to grow at 6% in the same period.

FIGURE 51 – PASSENGER AND AIRCRAFT MOVEMENTS, LOMBOK INTERNATIONAL AIRPORT

Passenger	2011	2012	2013	2014	2015
International	44,692	54,138	152,941	238,768	248,102
Domestic	1,632,229	1,781,913	2,014,678	2,179,107	2,304,297
Total	1,676,921	1,836,051	2,167,619	2,417,875	2,552,399
Aircraft	**2011**	**2012**	**2013**	**2014**	**2015**
International	520	552	1,290	2,034	2,167
Domestic	23,571	27,151	30,142	28,621	25,592
Total	24,091	27,703	31,432	30,655	27,759

Source: PT Angkasa Pura 1

In 2015, there was no significant increase in the number of aircraft movements due to the cessation of the connection between Perth and Lombok. However, the number of international arrivals has increased significantly due to a better occupancy of the flights from Singapore and Kuala Lumpur.

Currently, there are limited international flights scheduled at Lombok International Airport:

- Air Asia operates twice daily from Kuala Lumpur to Lombok, and
- Silk Air operates twice weekly from Singapore.

There are six airlines (Garuda Indonesia, Batik Air, Citilink, Lion Air, Wings Air, Air Asia), which operate scheduled flight services domestically; and link the major cities in West Nusa Tenggara and other cities in Indonesia.

Lombok International Airport can be reached via Jakarta and Bali with a 2-hours flight and a 35-minute flight respectively.

The total number of flights operated per day at Lombok International Airport as of October 2016 was 44 flights (42 domestic flights and 2 international flights, with additional 2 flights from Singapore per week). Figure 52 shows the details on the connectivity of Lombok Airport.

FIGURE 52 – NUMBER OF FLIGHTS TO LOMBOK INTERNATIONAL AIRPORT (DAILY)

Scheduled	Destination	Number of flights	Scheduled	Destination	Number of flights
[illegible]	Bima (BMU)	4	[illegible]	Kuala Lumpur (KUL)	2

25 Source: 2011-2014 data is sourced from DGCA, however, data for 2015 is not available. Hence, 2014-2015 data is used from Angkasapura Annual Report.

Scheduled	Destination	Number of flights	Scheduled	Destination	Number of flights
	Denpasar (DPS)	9		Singapore (SGP)	2 per week
	Jakarta (CGK)	11			
	Jakarta (HLP)	3			
	Makassar (UPG)	1			
	Sumbawa (SWQ)	3			
	Surabaya (SUB)	10			
	Yogyakarta (JOG)	1			
	Subtotal	**42**			

Source: Flightradar24.com

Airport Infrastructure

The runway of the Lombok Airport is 2,750 m long suitable for narrow body (Code D) aircraft. The airport is equipped with an instrument landing system. Figure 53 below shows the existing Lombok airport facilities. The largest aircraft currently in service is A-330 series. The runway length of 2,750 m (wet condition) is adequate for take-off operations with full passenger and cargo payloads.

FIGURE 53 – LOMBOK AIRPORT FACILITIES

Facilities	Lombok Airport
Runway (Lm X Wm)	2750 m x 45 m
Taxiway	(A) 356.4 m x 23 m No Parallel Taxiway
	(B) 371.1 m x 23 m
Loading Apron Requirements	Narrow body: 10
	Wide body: 2 under construction
Terminal Building Capacity	3 Million Passengers

14.1.2 ASSESSMENT OF EXISTING AIRPORT INFRASTRUCTURE

Passengers Handling Capacity

As per the existing airport annual capacity, Lombok International airport can handle 3 million passengers. The existing passenger demand of 2.5 million in 2015 indicates that the airport currently has adequate capacity.

Runway Capacity

Based on the existing runway infrastructure assessment, the runway capacity caters for approximately 16 movements in peak hour. The existing peak-hour aircraft movements at Lombok airport are approximately 9 movements. This indicates that the existing runway capacity is adequate and able to cater to the current demand for aircraft movement without the parallel taxiway configuration.

The annual capacity of aircraft movement based on the current operation is estimated to be 58,400 aircraft. (Technical Details on Runway Capacity Analysis is presented in Appendix I)

Summary

Considering existing air passenger demand of 2.5 million and aircraft movements of 27,759 aircrafts per year, the existing airport infrastructure capacity is adequate to meet the current demand as summarised in Figure 54.

FIGURE 54 – EXISTING GAPS IN AIRPORT FACILITIES, LOMBOK INTERNATIONAL AIRPORT

Facilities	Lombok Airport	Assessment
Runway (Lm X Wm)	2750 m x 45 m Estimated Capacity: 16 Movements per hour 58,400 aircraft movements per year	Adequate to meet existing aircraft movement
Parallel Taxiway	None	Adequate to meet existing aircraft movement
Loading Apron Requirements	9 aircrafts in peak hour Capacity: 10 aircrafts + 2 under construction Active apron: 9 stands	Adequate existing capacity
Terminal Building Capacity	3 Million	Adequate existing capacity

14.1.3 AIRPORT DEVELOPMENT PLAN

According to Angkasa Pura I, the development plan for Lombok International Airport is described in Figure 55.

FIGURE 55 – LOMBOK INTERNATIONAL AIRPORT DEVELOPMENT PLAN

Facilities	Phase I	Phase 2	Phase 3
Runway	45 m x 2500 m	45m x 2750 m	45 m x 4,000 m
Apron	52,074 m²	63,294 m²	74,514 m²
Taxiway	Two exit taxiways	Two exit taxiways	12 exit taxiways, two rapid exit taxiways, one parallel taxiway
Terminal	12,000 m² (passenger, VIP, cargo)	16,500 m² (2.4M passengers per year)	28,750 m² (3.25M passengers per year)
Carpark	17,500 m²	29,100 m²	29,100 m²

Source: Angkasa Pura I

While Phases I and II of the Airport Plan are already implemented, following are the key expansions as per the initial plan for Phase III (2028):

- Construction of terminal building with a passenger handling capacity of 3.25 Million per year;
- Phase III (2028): Runway extension to 4000m x 45m;
- Construction of additional two apron stands for wide body aircraft (under construction); and
- Parallel Taxiway.

In October 2016, it was announced that AP I allocated USD 5.9m for upgrades to the terminal, which would start by year-end 2016 and are expected to be completed by mid-2017. The project includes runway extension, and adding two new aircraft parking spaces (Code E, wide body aircraft) to the current ten stands.

The Airport Improvement Plan is important for Lombok as the existing passenger terminal capacity is operating at 83% of its total passenger handling capacity. JICA is studying the Improvement Plan of Lombok International Airport, and the proposed capacity is subject to change based on the study. The need for improvements to airport capacity in terms of air or landside infrastructure will be subject to future demand needs.

14.2 SEA TRANSPORT

14.2.1 EXISTING CONDITIONS

The sea transport options for Lombok are fast boat services, RORO[26] ferries and cruises. Foreign visitors typically take the frequent and direct speedboats from Bali to the Gili Islands, a trip of about two hours across the Bali Sea. The Gili Islands have jetties for the handling of small boats. Two major ferry terminals give access to Lombok. Lembar Port in the West is the most important harbour and connects to Bali. Labuhan Lombok in the East connects to Sumbawa. Most domestic visitors arrive in Lembar Port from Padangbai in Bali and further afield from Java. There are a few cruise arrivals to Lembar harbour.

Fast Boat Services

The most popular sea transport used by visitors for a day visit is the fast boat services between Bali (Benoa, Sanur and Padang Bai) and Lombok (Figure 56), majority connecting to Gili Islands. The majority of fast boat services are operated by private companies. The boats can dock directly in the main Senggigi tourist area (Bangsal port). The relatively short journey time of around two hours make these transport services a popular and cheaper alternative to flying.

FIGURE 56 – BALI TO LOMBOK SEA TRANSPORT

Source: Online Photo, Horwath HTL

Ferry Transport

RORO ferries are also available from Bali to Lombok. These ferries operate daily from Padang Bai in Bali to Lembar Port, located on the south-west coast of Lombok. The distance is about 38 miles and the journey takes around 4 hours. Lembar Port is more popular among the local people for inter-island transport than visitors. Like Lembar Port, the Kayangan Port (Labuan Lombok) on the east coast of Lombok serving the route to Sumbawa, also primarily serves the local population.

26 Roll-on/roll-off vessels designed to carry wheeled cargo

To conclude, Tanjung Lembar is Lombok's main port. It handles small freighters, fishing boats, and a combination of vehicle and passenger ferries crossing the Lombok Strait to Padangbai in Bali on a regular basis. The ferry dock at Lembar Port is a prominent access point for inter-island transport to the Lombok Island, with RORO ferries crossings twice every hour from Lembar to Padang Bai. The estimated seating capacity of ferry services is about 5.6 million passengers per year. However, the average age of the fleet in operation is 31 years. Hence, there is a need to renew ageing assets to modern standards (see Appendix III).

In 2014, there were 1.7 million ferry passenger movements at Lembar Port as shown in the Figure 57. The number is increasing year by year with the CAGR 5.2% over four years. On average, the frequency of crossings in each direction is about 48 trips per day. However, there are few foreign visitors arriving at Lembar Port, as the majority of them arrive directly at Gili Islands. In context, 82% of domestic visitors and 37% of foreign visitors are estimated to arrive at Lembar Port.

FIGURE 57 – RORO SERVICES AT LEMBAR FERRY PORT

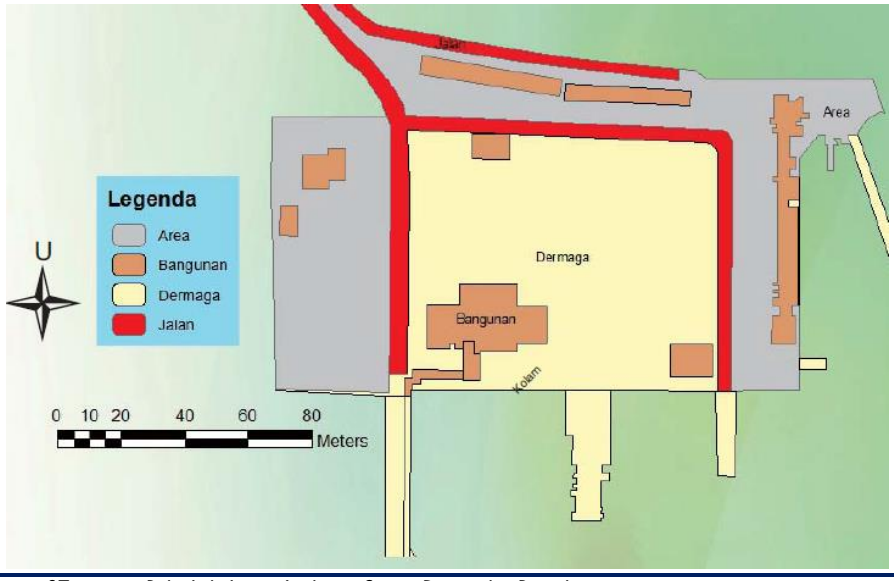
Transport Type	2010	2011	2012	2013	2014*
Passenger	1,450,997	1,484,104	1,752,100	2,065,308	1,776,775
4 wheels vehicles	225,466	241,896	280,990	306,646	93,977
2 wheels vehicles	211,611	220,608	278,682	260,707	132,688

** Preliminary figure until June 2014*
Source: Ministry of Transport, Profil dan Kinerja Perhubungan Darat 2014

Existing Ferry Port Infrastructure Capacity

Lembar ferry port operates two movable bridges with a capacity of 1,000 GT connecting means for vehicles from the port to the ship. Figure 58 shows the layout plan of the ferry port.

FIGURE 58 – LEMBAR FERRY PORT LAYOUT



Source: Ministry of Transport, Balai Lalu Lintas Angkutan Sungai Danau dan Penyeberangan

Based on the operational services of ferry transport, the ferry port can handle 48 trips. The calculation of existing capacity is shown in Figure 59.

FIGURE 59 – CAPACITY CALCULATION OF FERRY PORT

No	Description	Unit	Facility
1	Number of piers	unit	2
2	Route	route	1
3	Number of days in operation	day/year	365
4	Number of hours in operation	hour/day	24
5	Loading time	minute/call	25
6	Unloading time	minute/call	15
7	Navigation time	minute/call	20
8	Service time	minute/call	60
9	Service capacity	call/service time	2
10	Service capacity per day	call/day	48
11	Service capacity per year	call/year	17,520

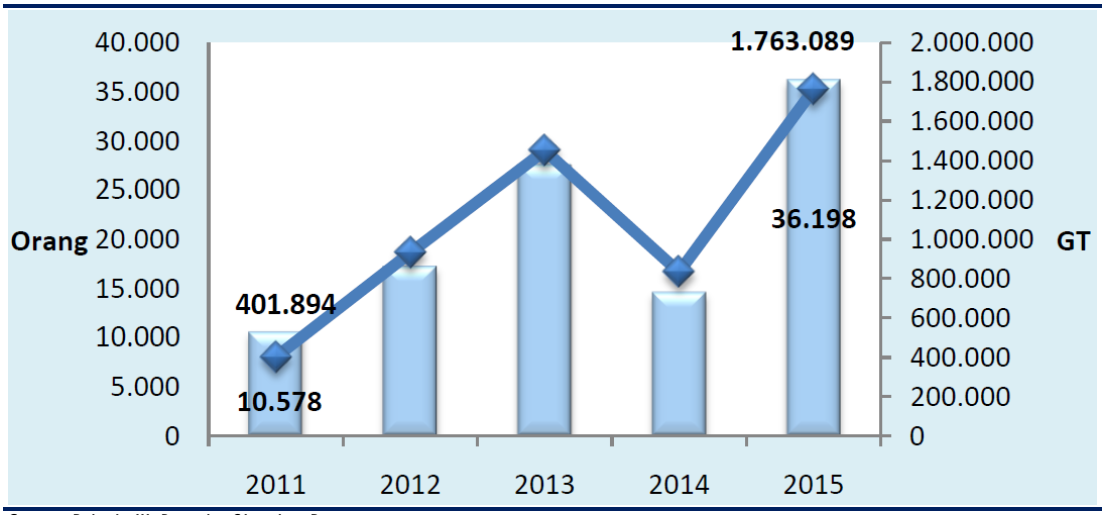
The existing ferry port services about 48 trips per day with two piers, indicating the pier infrastructure has reached its capacity. However, considering the estimated seating capacity of ferry services is about 5.6 million passengers per year; which is thrice the demand, the pier infrastructure is adequate.

Cruise

Many cruise ships from Australia, Singapore, and the USA arrive at Lembar Port. The main user group includes Australian tour groups on short excursions to various tourist destinations on Lombok Island.

In 2015, 26 cruise ships were operated at the Lembar Port and 14 in 2016. Some of these cruise ships are Princess Cruises, Silversea Cruises, Azamara Club Cruises, Holland America, Seabourn, Royal Caribbean, etc. Cruise passenger arrivals are recorded at 36,198 for 2015 with total 1.7 million gross tonnages (GT) as shown in Figure 60.

FIGURE 60 – PASSENGER AND GT OF CRUISE SHIPS AT LEMBAR PORT 2011 – 2015



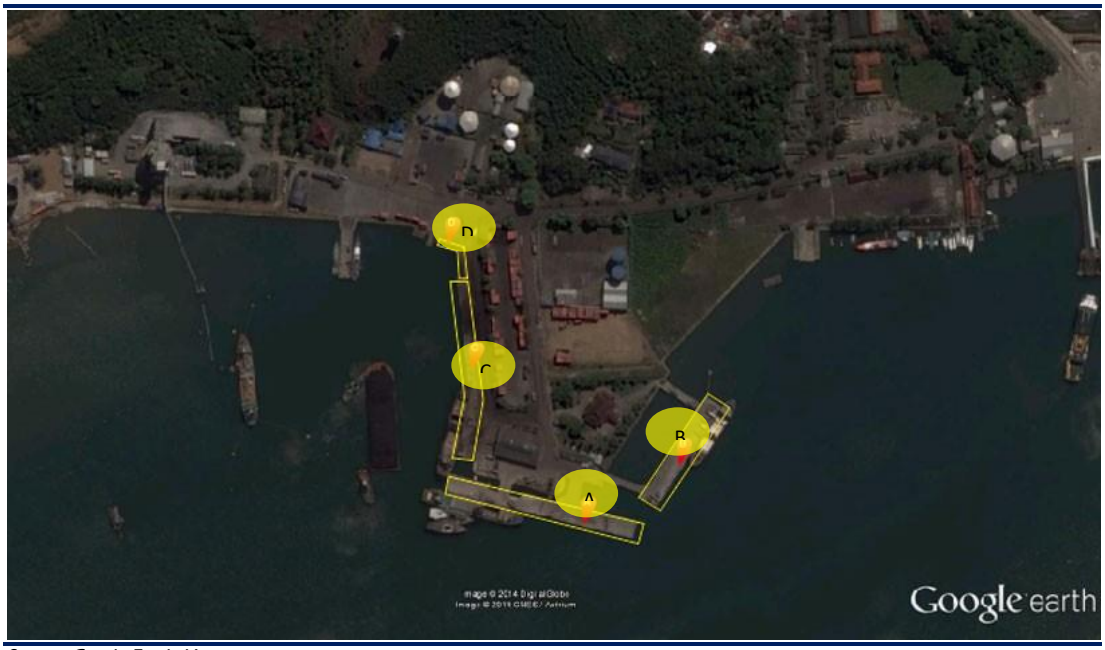
Source: Pelindo III, Branch of Lembar Port

One-day excursions are proposed to passengers who get off the boat to various tourist destinations on Lombok Island such as Gili Islands and Senggigi Beach. No data is available on the visitors who buy these excursions.

Lembar Port Capacity to attend Cruise Calls

Existing port facilities are shown in Figure 61 below. The 3-mile-long access channel between the offshore anchorage and the port basin is maintained to a depth of -7 MLWs.

FIGURE 61 – LEMBAR PORT LAYOUT



Source: Google Earth Map

FIGURE 62 – LEMBAR PORT FACILITIES

No	Quay	Length (m)	Width (m)	Basin (M LWS)
A	Dermaga Nusantara I	162.5	15	-7
B	Dermaga Nusantara II	100	15	-6
C	Dermaga Lokal	150	10	-4
D	Dermaga Pelra	40	10	-4

Source: Pelindo III

The length of the quay of Lembar is 162.5 m x 15 m long suitable for a small class cruise ship. MS Carnival Spirit is by far the biggest cruise ship calling at Lembar Port Lombok, with 88,500 Gross Tonnage[27] (GT) and carrying roughly 2,100 passengers.

27 Gross Tonnage is a nonlinear measure of a ship's overall internal volume

However, the cruise ship is anchored about 0.5 nautical miles from shore in 16 to 18 metres depth. The landing facility is made of a floating pontoon which can accommodate two large tenders simultaneously (one on each side). After that, the guests are taken ashore via ship's tenders.

14.2.2 ASSESSMENT OF EXISTING SEA TRANSPORT INFRASTRUCTURE

Lembar Port is the main port in Lombok, largely used for inter-island transport and by domestic visitors. Capacity of ferry port pier infrastructure is adequate for current demand. In such case, focusing on improvements to increase ferry seat occupancy (estimated seat capacity 5.6 million) is more appropriate, which might delay the need for immediate infrastructure investments.

The majority of foreign visitors arrive directly to the Gili Islands from Bali. Improved cruise infrastructure will facilitate foreign visitors arriving by cruises. Considering that the attractions in Lombok are spread across the Island, it is important to establish the sea connectivity from Lembar to Gili islands and other destinations.

14.2.3 PLANS FOR CRUISE INFRASTRUCTURE

The Government of Indonesia (Pelindo III) has started the construction of the new Gili Mas Port across Lembar Bay opposite to the existing port on a plot of 17 hectares. This new Port will handle container traffic and can accommodate Voyager-class cruise ships of up to 3,100 passengers. Gili Mas Port will be equipped with a 400m long wharf and a 3,360m^2 passenger terminals building capable of accommodating 2500 people, a hotel and shopping arcades.

14.3 ROAD TRANSPORT

14.3.1 EXISTING CONDITION

Road Network

As seen in Figure 63, Lombok Island is served by national, provincial and kabupaten roads. The total road length in Pulau Lombok is 3,664.3 km. National roads are in excellent condition; however, 8.8% of the provincial roads are in unstable condition. Most of the roads are paved, with 100% of the national roads and 93% of the provincial roads.

FIGURE 63 - ROAD CLASS & CONDITION IN 5 REGENCIES

	National		Provincial		Kabupaten/Kota	
Road Condition (km)	**Length**	**%**	**Length**	**%**	**Length**	**%**
Good (IRI* <= 4)	220.81	100%	491.9	85%	1555.05	54%
Fair (4<IRI <8)	0		36.3	6%	197.64	7%
Bad (8<IRI<=12)	0		32.02	6%	475.83	17%
Very Bad (IRI >12)	0		19.41	3%	625.47	22%
Total	**220.81**		**579.63**		**2853.99**	

	National		Provincial		Kabupaten/Kota	
Road Surface (km)	**Length**	**%**	**Length**	**%**	**Length**	**%**
Pavement	220.81	100%	544.47	92%	2106.07	74%
Non Pavement	0		45.16	8%	747.92	26%
Total	**220.81**		**589.63**		**2853.99**	

**International Roughness Index (IRI) is scale for inclusion in the Road Pavement Management System. It is used worldwide as the index for comparing pavement smoothness*

Source: Central Statistics Agencies for 5 Regencies/City, 2016

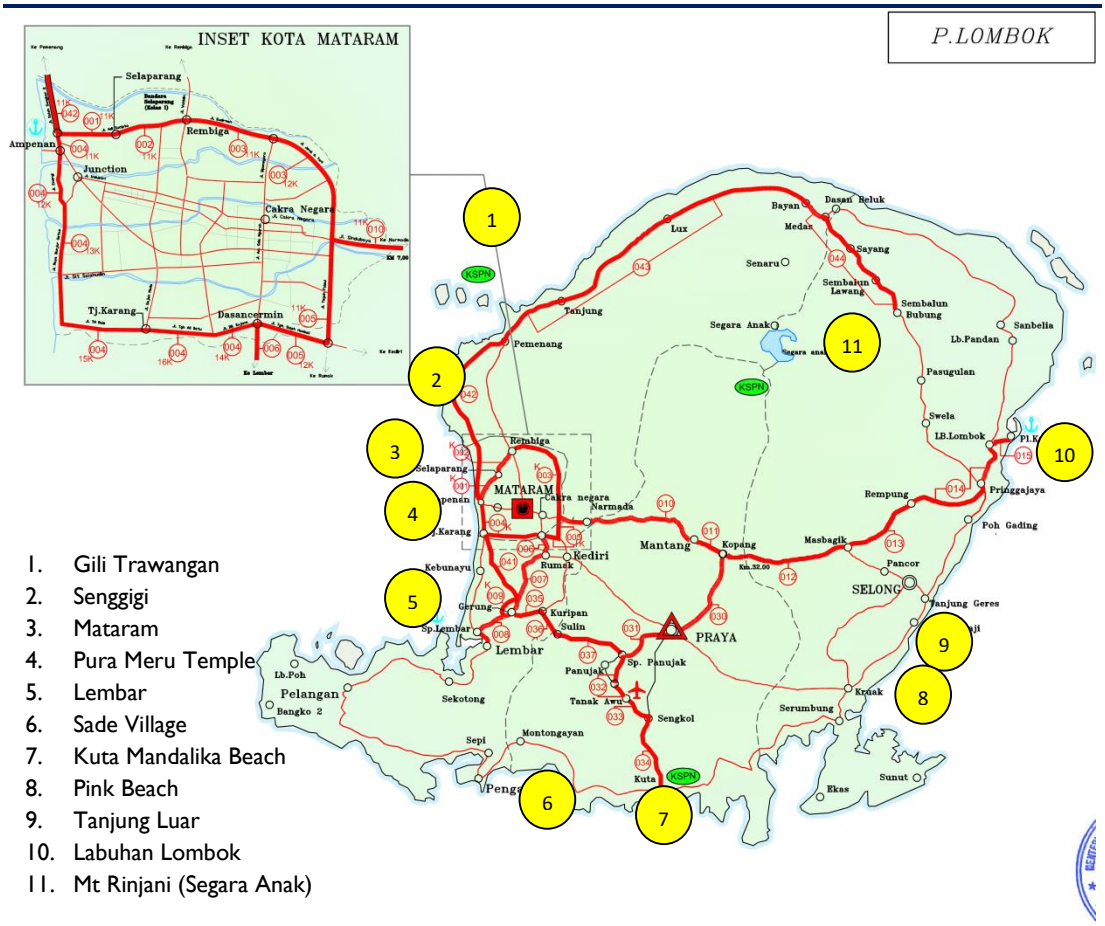
Access to **Gili Islands and Rinjani Mountain** is by circular coastal national and provincial roads. The road runs from Senggigi along Pemenang to Sembalun Lawang, which is the most preferred route for visitors to reach Mount Rinjani. This 120-km road is well paved; however, the road width is slightly narrow (6 m). For those arriving by ferry from Sumbawa at Kayangan Port, Mt Rinjani can be reached via Pringgajaya and Sembalun Lawang.

The road connecting **Mataram and Senggigi** runs between Panujak, Ampenan, and Pemenang further north towards Lombok Utara. This road plays an important role as the inter-regional connection as well as circular tourist road. The road is well-paved and relatively wide (20 metres) with proper median and dual carriageways.

Regarding the road condition **around the tourism assets at Senggigi**, the access road has been constructed under the supervision of the Ministry of Public Works. The road is 10 metres wide, mostly paved and adequate to accommodate the large buses passing through the commercial shopping area. However, some parts of these roads experience traffic jams due to lack of a service lane to serve local shops along the road. There is a need to develop a proper road network plan, with clearer hierarchy and function of roads.

The road connecting **tourism resources at Mandalika** runs between Praya and Kuta. While the 16 kilometres road is well paved, the section between Sengkol and Kuta runs through hilly and steep sloping areas and the road width is 7 metres. However, the secondary roads connecting the national roads and tourism areas are mostly narrow (6.5 metres). Jalan Pariwisata Kuta plays an important role as the coastal road connecting various tourism assets within Mandalika. The road is paved with good alignment; however, there is a lack of pedestrian facilities.

FIGURE 64 – NATIONAL ROAD & TOURIST ATTRACTIONS



1. Gili Trawangan
2. Senggigi
3. Mataram
4. Pura Meru Temple
5. Lembar
6. Sade Village
7. Kuta Mandalika Beach
8. Pink Beach
9. Tanjung Luar
10. Labuhan Lombok
11. Mt Rinjani (Segara Anak)

Source: Ministry of Public Works, SK NO. 290 TAHUN 2015

Registered Vehicles

The number of vehicles registered on Lombok Island was 601,000 vehicles in 2015 (Figure 65). As per the vehicle classification, about 90% of the total number of vehicles on the island are motorcycles.

FIGURE 65 – NUMBER OF REGISTERED VEHICLES, LOMBOK ISLAND, 2015

	Car	Truck	Bus	Motorcycle	(Total)
Total	36,599	19,901	1,907	543,564	601,971

Source: Central Statistic Agencies NTB Province, 2016

Vehicle Ownership

As shown in Figure 66, the number of cars on Lombok is still relatively low at 11.6 vehicles per 1,000 persons, while motorcycles are at a considerably higher 171.5 vehicles per 1,000 persons.

FIGURE 66 – RATE OF MOTORIZATION IN LOMBOK

Year	Car	Bus	Truck	Motorcycle
2015	11.6	6.3	0.6	171.5

Source: Central Statistic Agencies NTB Province 2016 (rate of motorization was calculated based on number of registered vehicles and population)

The rate of motorization will increase along with overall socio-economic growth, which will have an added impact on the potential need for increased road capacity.

Traffic Volume

The current traffic volume in Lombok is quite low with respect to the ratio of traffic volume over road capacity (VCR), indicating the adequacy of the existing road infrastructure on the Island (Figure 67). The assessment of VCR analysis is presented in the section below.

FIGURE 67 – NATIONAL ROADS & TOURIST ATTRACTIONS

No	Road Section	National Road	Length (km)	AADT	Tourism Attractions
1	032	SP. PENUNJAK - TANAH AWU (BANDARA INTERNASIONAL LOMBOK)	4.87	8,232	7) Mandalika (Kuta Beach and Sade Village)
2	033	TANAH AWU - SENGKOL	8.97	4,156	
3	034	SENGKOL - KUTA	11.5	1,079	
4	042	AMPENAN - PAMENANG	31.9	1,423	2. Senggigi
5	042	JLN. SALEH SUNGKAR 2 (MATARAM)	1.4	9,317	
6	043	PEMENANG - BAYAN	58.62	1,556	1. Gili Trawangan
7	044	BAYAN - SEMBALUN BUBUNG	28.6	548	11. Mt Rinjani
8	008.11	JLN. A. YANI 1 (GERUNG)	0,92	6,336	5. Lembar
9	008.12	JLN. A. YANI 2 (GERUNG)	0,70	6,444	
10	001	JLN. ADI SUCIPTO / AMPENAN - SELAPARANG	3.06	3,693	3. Mataram 4. Pura Meru Temple
11	002.11	JLN. ADI SUCIPTO / SELAPARANG - REMBIGA (JLN.SUDIRMAN)	0.74	6,505	
12	003.11	JLN. SUDIRMAN (MATARAM)	2.52	7,584	
13	003.12	JLN. JEND. A. YANI (MATARAM)	3.74	5,346	
14	004.11	JLN. SALEH SUNGKAR 1 (MATARAM)	0.51	11,666	
15	004.12	JLN. ENERGI (MATARAM)	1.37	3,036	
16	004.13	JLN. RAYA BANJAR GETAS (MATARAM)	2.02	5,267	
17	004.14	JLN. DR. SUJONO (MATARAM)	4.26	5,381	
18	004.15	JLN. TM RAIS (MATARAM)	2.11	8,499	
19	004.16	JLN. T. ALI BATU (MATARAM)	1.3	5,712	
20	14	REMPUNG - LABUHAN LOMBOK	27.64	5,932	10. Labuhan Lombok
21	15	LABUHAN LOMBOK - LABUHAN KAYANGAN	3.5	601	

**Annual Average Daily Traffic (AADT)*
Source: IRMS Database, Ministry of Public Works

14.3.2 ASSESSMENT OF EXISTING ROAD INFRASTRUCTURE

The road between Praya (Airport) and Mandalika, and the roads along Senggigi and in the Gili Islands are the major roads providing access to Lombok's key attractions. The traffic volumes on the key roads, existing road conditions and the adequacy of existing road infrastructure are summarised in Figure 68.

FIGURE 68 – ASSESSMENT OF EXISTING KEY ROADS

Section	AADT*	VCR 2015	Existing Assessment
Praya-Mandalika-Kuta: 16km Travel Time: 25 minutes	4,489	0.13	Well paved, the section between Sengkol and Kuta road width 7m, adequate current capacity. The road connecting further to the tourism assets are mostly narrow (6.5 m). Jalan Pariwisata Kuta is an important coastal road connecting various tourism assets within Mandalika. The road is paved with good alignment; however, lacks pedestrian facilities. Despite low VCR and well-paved road, the average speed is low due to the hilly terrain and some narrow segments.
Praya- Ampenan-Senggigi-Pamenang (For Gili Trawangan): 55 km road Travel Time: 1 Hour 40 Min	6,324	0.23	Well paved, relatively wide (20m) dual two carriageways from Praya to Mataram, around Senggigi is 10 m wide mostly paved, and other segments are narrow (6m). Adequate current capacity.
Pamenang –Tanjung - Sembalun Lawang (Rinjani): 97 km Travel Time: 2 Hours 40 Min	1,052	0.08	Well paved, slightly narrow (5.5 m), adequate current capacity.
Lembar Port - Ampenan:34km Travel Time: 45 Min	5,491	0.32	Well paved, narrow (6m), adequate current capacity.
Mataram - Ampenan: 1.4 km Travel Time: 5 min	9,317	0.45	Well paved, road width 8m, adequate current capacity.
Praya – Labuan Lombok: 67 km Travel Time: 2 Hours	6,194	0.17	Well paved, narrow (6.5m), adequate current capacity.
Labuan Lombok – Rinjani : Travel Time: 2 Hours	3,267	0.18	Sufficiently paved, narrow (5.5m), adequate current capacity.

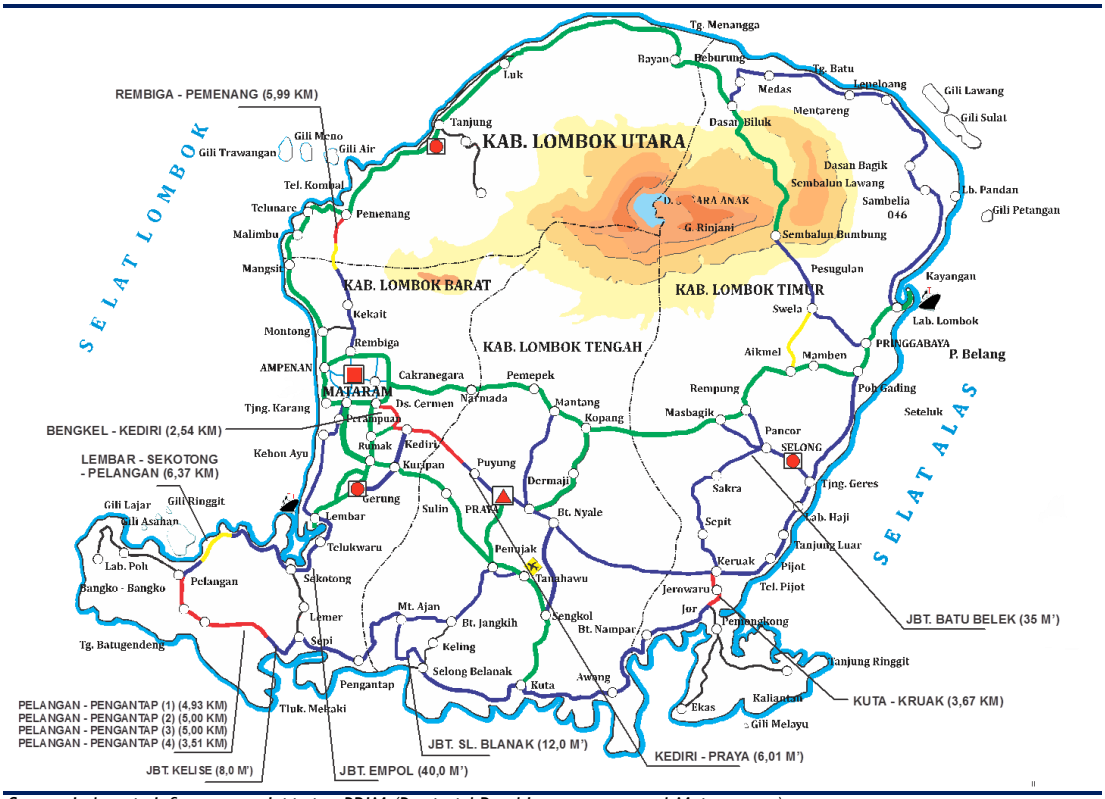
**Annual Average Daily Traffic (AADT)*
Note: The AADT in figure 29 is average summary of road corridor.

Since the current traffic volume is quite low, the existing road infrastructure is adequate and of good quality.

14.3.3 ON-GOING ROAD INFRASTRUCTURE PROJECTS

National roads and provincial roads in Lombok Island have generally been well maintained. However, some problems remain in forming a favourable network. PRIM[28] project, which was initiated by IndII (Indonesia Infrastructure Initiative) since 2013, has committed to solve some of these problems as shown in Figure 69.

FIGURE 69 – ROAD IMPROVEMENT PROPOSAL IN 2017



Source: Indonesia Infrastructure Initiative, PRIM (Provincial Road Improvement and Maintenance)

Amongst the above on-going road maintenance projects, the following roads support the tourism movement in Lombok.

- Improvement of Provincial Roads Sp Pengatap – Mt. Ajan (102.15 km)

This will improve the accessibility in Lombok Tengah connecting **Kuta beach** to a new economic growth area on the West Coast. This road is to be improved to meet Bina Marga standards and financed by an Australian Government soft loan. This road will function as an East-West link connecting **Lombok Barat and Lombok Timur**.

- Improvement of Provincial Roads Pringgabaya – Sembalun – Lb Lombok (81.49 kilometres)

28 PRIM is an Australian Government program to support provincial road maintenance based on performance

To support the linkage of tourism attractions in Lombok Utara and Labuhan Lombok, road improvements are being carried out. This project will improve connectivity to areas around **Mt Rinjani** and change the image of Kayangan Gateway. The current improvement program for provincial roads for this section covers Mt Rinjani and Labuhan Lombok.

Other key road and bridge proposals connecting Lembar to Mandalika and Pink Beach are:

- Kuta – Kruak road improvement (3.67 kilometres);
- Bridge improvement at Sl Blanak (12 metres);
- Bridge improvement at Kelise (8 metres); and
- Pelangan – Pengantap road improvement (18.44 kilometres).

14.4 PUBLIC TRANSPORT, PARA TRANSIT, AND TAXI

14.4.1 EXISTING CONDITION

There are very few transport options for visitors to travel around Lombok Island. The public buses serve the main routes and the most popular destinations. These services are mostly used by residents, some domestic visitors and a few backpacker foreign visitors.

Public Transport

There is a public bus service operated by DAMRI[29]. The bus services connect Lombok International Airport to Mataram (bus terminal named Mandalika, located a few miles east of Mataram) and Senggigi.

There is no service from the airport to Lombok Utara (Tanjung, Kode port to the Gilis) nor the South (Kuta beach).

FIGURE 70 – BUS OPERATION IN LOMBOK BY DAMRI

Origin	Destination	Travel Time	Fares
Lombok Airport	Senggigi Beach	1.5 hours	IDR 25,000
Lombok Airport	Mandalika Bus Terminal	1 hour	IDR 20,000

Source: Bus Bandara DAMRI Schedule

From Mandalika bus terminal at Mataram, there are several inter-city services provided by the provincial transport services (AKDP) to various cities close to tourism attractions.

FIGURE 71 – BUS OPERATION IN LOMBOK BY AKDP[10]

Origin	Destination	Distance	Tourism Attractions
Mandalika Main Bus Terminal (Mataram)	Praya	27 km	Kuta beach

29 DAMRI stands for Djawatan Angkoetan Motor Repoeblik Indonesia and refers to an Indonesian state owned public transit bus company

Mandalika Main Bus Terminal (Mataram)	Tanjung – Bayan – Sembalun	131 km	Senggigi beach, Gili Trawangan, Segara Anak
Mandalika Main Bus Terminal (Mataram)	Masbagek – Labuhan – Sembalun	137 km	Mount Rinjani, Segara Anak
Mandalika Main Bus Terminal (Mataram)	Pancor	53 km	Pink Beach

Source: Dinas Perhubungan Kota Mataram 2016

Para-transit

- Ojek[30] is the most popular transport option, mostly for the local population and backpacker solo visitors. Ojek is popular due to its affordability and availability / convenience.
- Cidomo (horse and cart) is the earlier mode of public transport in Lombok and is still being used today. In Gili Islands, cidomo is the only form of transport other than non-motorised transports, keeping the Islands completely car and motorbike-free.

Taxis and Rental Cars

Taxis operator such as Blue Bird and Express are readily available in Lombok. However, these taxis operate mainly in the urban Mataram area and Senggigi. Most visitors use a taxi to visit destinations in Lombok, including Kuta in South Lombok, Bangsal (for the Gili Islands) and Lembar Harbour. However, a significant number of taxi services are unregulated, causing inconvenience for visitors.

Car rental is the most convenient option for longer distances or a full day island sightseeing tour. There are car rental companies at the Airport arrival areas. The price varies from around IDR 350,000 to IDR 700,000 for a day depending on the distance and the number of hours hired.

14.4.2 ASSESSMENT OF EXISTING PUBLIC TRANSPORT

The public transport facilities are generally adequate in Lombok, however, needs to be well maintained and improved to serve the visitors. There are no bus services from the airport to South Lombok at present. It will be needed once the SEZ is developed.

Taxis and car rentals are the most convenient modes of transport to travel around the Island. However, the majority of taxi services are unregulated and concentrated in Mataram. To better serve and facilitate tourism, taxi services need to be more organised and regulated.

30 Ojek is the Motorcycle Taxi popular amongst the local residents and some domestic tourist

14.4.3 PLANS FOR PUBLIC TRANSPORT

Ministry of Transportation (MoTr) has planned to operate a Bus Rapid Transit in the city of Mataram by December 2016 and is deploying a large fleet of buses (20 buses with capacity of about 40 seats) to be operated in the early stages. There are still challenges in the implementation due to the absence of dedicated lanes and the lack of institutions that will manage the operation of this system. The details of proposed BRT route expected to be operational in December 2016 are in Figure 72.

FIGURE 72 – PROPOSED BUS RAPID TRANSIT IN MATARAM

Corridor	Route	Km
I. (Senggigi – Narmada)	Senggigi – Jln Raya Senggigi – Jln Saleh Sungkar – Jln Yos Sudarso – Jln Langko – Jln Pejanggik- Jln Selaparang – Jln Sandubaya – Narmada	25
II. (Terminal Mandalika Looping)	Mandalika – Jln Sandubaya – Jln Faisal p Jln Saleh Hambali – Jln Ali Batu – Jln M Rais – Jln Dr Sujono – Jln Arya Banjar – Jln Energi – Kebon Roek – Jln Adi Sucipto – Lingkar Utara – Sweta – Terminal Mandalika	30
III. (Gunung Sari – Parempuan)	Gunung Sari – Rembiga – Jln Udayana – Jln Airlangga – Jln Gajah Mada – Bundaran Lingkar Selatan - Parempuan	9.5
IV. (Sayang sayang – Rumak)	Sayang sayang – Jln Jend Sudirman (Rembiga) – Monjok – Jln Bung Hatta – Jln Bung Karno (Karang Jangkong) – Jln Bung Karno (Pagutan) – Karang Genteng – Dasan Cermen – Labuapi - Rumak	14

Source: West Nusa Tenggara Governor Regulation, 1 June 2016

The proposed BRT system in Mataram will further enhance the accessibility for domestic and foreign visitors to tourism resources at Senggigi beach. The fixed route bus services play a significant role in the overall transport system.

14.5 CONCLUSIONS ON BASELINE: ADEQUATE FOR CURRENT TOURIST DEMAND

- Limited direct connectivity with international source markets.
- Good accessibility from Bali, by air and by speed boats and ferry.
- On the island, adequate road network connecting the attractions with the key tourism areas. Travel times are long and therefore, people tend to stay in the north without exploring the attractions along the south coast. This limits the length of stay.
- Existing public transport is sufficient, however in terms of quality it is not designed to serve visitors. Visitors moving around the island need to take a taxi or rent a car. Taxi service is currently concentrated in Mataram.

TRANSPORT INFRASTRUCTURE INVESTMENT NEEDS

14.6 FUTURE MODE OF TRAVEL

14.6.1 MARKET SHARE OF VISITORS

According to the market study, the share of foreign visitors will further increase in the future. From the projected 2.5 million visitor arrivals in 2021, around 57% are estimated to be foreign visitors; and out of 5.1 million visitor arrivals in 2041, around 69% are estimated to be foreign visitors.

14.6.2 MODE OF ARRIVAL

The mode of arrival is expected to shift compared to the current context.

- Total visitors arriving by air is estimated to increase from current 31% to 43% in 2021 and 66% in 2041.
- In 2021, 48% of foreign visitors are estimated to arrive by air and remaining by sea. This share of arrival by air will increase to 73% by 2041.
- Similarly, 37% and 50% of domestic visitors are estimated to arrive by air in 2021 and 2041 respectively, with remaining arrivals by sea.
- Thus, Lombok International Airport is forecast to be the predominant gateway to Lombok Island in the future and consequently the connectivity between the Lombok airport and the key attractions and key tourism areas will be increasingly important.
- For the visitors arriving by sea: 92% of the domestic visitors arrive at Lembar and the remainder to the Gili Islands; and for foreign visitors 63% arrive to the Gili Islands and the remainder at Lembar.

14.6.3 TRANSPORT MODAL SPLIT

Based on the market study, private transport will remain the preferred mode of transport for domestic visitors with a slight decrease in share. In the case of foreign visitors, the majority are anticipated to take tour packages, and use tour buses and vans.

FIGURE 73 – FUTURE SCENARIO OF TRANSPORT MODAL SPLIT FOR DOMESTIC & FOREIGN TOURISTS

Tourist Share (%)	Modal Split Domestic Tourist			Modal Split Foreign Tourist		
Mode of Transport	2015	2021	2041	2015	2021	2041
Tour Bus	5%	5%	5%	20%	20%	30%
Tour Van	15%	15%	20%	20%	20%	30%
Public bus	10%	10%	15%	50%	50%	30%
Private car/Car rental/Taxi	70%	70%	60%	10%	10%	10%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Source: HHTL

Based on the above modal split, Figure 74 and Figure 75 present the distribution of peak visitors taking different modes of transport for 2021 and 2041. The number of peak visitors per day includes people that arrive by direct speedboat from Bali to the Gili Islands. These visitors are excluded from the further modal split analysis because they travel onwards on foot. Hence, arrivals by sea transport in figure 75 and 76 only concerns arrivals at Lembar Port.

FIGURE 74 – ESTIMATE OF VISITORS BY TRANSPORT MODES IN 2021

Domestic Tourist Share (%)				Foreign Tourist Share (%)			
Peak visitor per day		16,907		Peak visitor per day		22,120	
Mode of Transport Arrival				Mode of Transport Arrival			
	Air	**Sea**	**Land**		**Air**	**Sea**	**Land**
No of Visitor	6,204	8,727	0	No of Visitor	10,644	4,228	0
Mode of Transport to reach tourism attractions							
Tour Bus	310	436		Tour Bus	2129	1,208	
Tour Van	931	1,309		Tour Van	2129		
Public Bus	620	873		Public Bus	5322	3,020	
Private car/Car rental/Taxi	4,343	6,109		Private car/Car rental/Taxi	1064		
Total	**6,204**	**8,727**			**10,644**	**4,228**	

**Peak visitor per day as projected based on market study.*

FIGURE 75 – ESTIMATE OF VISITORS BY TRANSPORT MODES IN 2041

Domestic Tourist Share (%)				Foreign Tourist Share (%)			
Peak visitor per day		27,711		Peak visitor per day		61,426	
Mode of Transport Arrival				Mode of Transport Arrival			
	Air	**Sea**	**Land**		**Air**	**Sea**	**Land**
No of Visitor	13,984	11,193	0	No of Visitor	44,913	6,084	0
Mode of Transport to reach tourism attractions							
Tour Bus	699	560		Tour Bus	13474	3,042	
Tour Van	2,797	2,239		Tour Van	13474		
Public bus	2,098	1,679		Public bus	13474	3,042	
Private car/Car rental/Taxi	8,391	6,716		Private car/Car rental/Taxi	4491		
Total	13,984	11,193			44,913	6,084	

**Peak visitor per day as projected based on market study.*

The assessment of the impact of tourism on road infrastructure capacity for Lombok will be conducted based on above estimate of visitor-generated traffic volume.

14.7 ROAD TRANSPORT NEEDS

14.7.1 FUTURE TRAFFIC VOLUME AND ROAD CAPACITY

Traffic analysis consists of general traffic generated by everyday commuters and traffic generated by visitors.

General Traffic Volume

The traffic volume to and from the key attractions and key tourism areas in the future will also be affected by the traffic increases as a result of other economic activities in Lombok. For the purpose of this study, the future traffic volume has been estimated based on forecast demographics and visitor arrivals.

The estimated number of vehicles in 2021 and 2041 in Lombok Island is shown in Figure 76.

FIGURE 76 – ESTIMATED NUMBER OF VEHICLES, LOMBOK, 2021 & 2041

Year	No of Vehicles	Growth
2021	850,022	5.92%
2041	1,637,688	3.33%

Source: Surbana Jurong

The results of general traffic volume projections per road segment are shown in Figure 77.

FIGURE 77 – ESTIMATED GENERAL TRAFFIC VOLUME, LOMBOK, 2021 & 2041

Section No	National Road	Length of Road (Km)	AADT 2015	PCU 2015	AADT 2021	PCU 2021	AADT 2041	PCU 2041
32	SP. PENUNJAK - TANAH AWU (BANDARA INTERNASIONAL LOMBOK)	4.54	8,232	11,354	11,624	16,032	22,395	30,888
33	TANAH AWU - SENGKOL	9.66	4,156	5,364	5,869	7,575	11,306	14,594
34	SENGKOL - KUTA	17.07	1,079	1,474	1,524	2,082	2,935	4,011
42	AMPENAN - PAMENANG	11.15	1,423	2,141	2,009	3,023	3,871	5,824
42	JLN. SALEH SUNGKAR 2 (MATARAM)	1.43	9,317	14,199	13,156	20,050	25,347	38,629
43	PEMENANG - BAYAN	0.4	1,556	2,593	2,197	3,661	4,233	7,053
44	BAYAN - SEMBALUN BUBUNG	2.81	548	792	774	1,119	1,491	2,155
8.11	JLN. A. YANI 1 (GERUNG)	0.7	6,336	11,868	8,947	16,758	17,237	32,287
8.12	JLN. A. YANI 2 (GERUNG)	0.88	6,444	11,976	9,099	16,911	17,531	32,581
1	JLN. ADI SUCIPTO / AMPENAN - SELAPARANG	2.34	3,693	6,832	5,215	9,647	10,047	18,587
2.11	JLN. ADI SUCIPTO / SELAPARANG - REMBIGA (JLN.SUDIRMAN)	0.89	6,505	11,898	9,185	16,800	17,697	32,368
3.11	JLN. SUDIRMAN (MATARAM)	3.74	7,584	13,473	10,709	19,025	20,632	36,655
3.12	JLN. JEND. A. YANI (MATARAM)	6.83	5,346	9,785	7,549	13,817	14,544	26,620
4.11	JLN. SALEH SUNGKAR 1 (MATARAM)	2.88	11,666	17,367	16,473	24,523	31,737	47,247
4.12	JLN. ENERGI (MATARAM)	2.82	3,036	7,120	4,287	10,054	8,259	19,371

4.13	JLN. RAYA BANJAR GETAS (MATARAM)	5	5,267	12,484	7,437	17,628	14,329	33,963
4.14	JLN. DR. SUJONO (MATARAM)	5	5,381	8,690	7,598	12,270	14,639	23,640
4.15	JLN. TM RAIS (MATARAM)	2.58	8,499	16,104	12,001	22,740	23,122	43,812
4.16	JLN. T. ALI BATU (MATARAM)	2.55	5,712	9,005	8,066	12,716	15,540	24,498
14	REMPUNG - LABUHAN LOMBOK	8.35	5,932	9,742	8,376	13,756	16,138	26,502
15	LABUHAN LOMBOK - LABUHAN KAYANGAN	9.89	601	968	849	1,367	1,635	2,633

PCE : Passenger Car Equivalent was adopted from Djohar (1984) Passenger Car Unit value and Saturation Flow for Junctions in Bandung

Visitors (Tourist and VFR) Traffic Volume

The additional visitors' traffic volume generated is an important component distributed across the road network. The visitors' traffic volume takes into account those arriving by sea via Lembar port, and other ports, except Gili; including those arriving by air via Lombok International Airport. Based on the provisional modal split for domestic and foreign visitors, the apportionment rate of each traffic facility and number of visitors per vehicle are shown in Figure 78 and Figure 79

FIGURE 78 – DOMESTIC AND FOREIGN TRAFFIC VOLUME ESTIMATION, 2021

Domestic	Praya	Lembar	Pax / vehicle
Tour Bus	21	12	35
Tour Van	160	94	14
Public bus	43	25	35
Private car/Car rental/Taxi	2,613	1,527	4
Total	**2,837**	**1,658**	
Foreign	**Praya**	**Lembar**	**Pax / vehicle**
Tour Bus	95	35	35
Tour Van	152		14
Public bus	238	86	35
Private car/Car rental/Taxi	266		4
Total	**752**	**121**	

Source: HHTL & Surbana Jurong

FIGURE 79 – DOMESTIC AND FOREIGN TRAFFIC VOLUME ESTIMATION, 2041

Domestic	Praya	Lembar	Pax / vehicle
Tour Bus	36	16	35
Tour Van	360	160	14
Public bus	108	48	35
Private car/Car rental/Taxi	3,777	1,679	4
Total	**4,280**	**1,903**	
Foreign	**Praya**	**Lembar**	**Pax / vehicle**
Tour Bus	472	87	35
Tour Van	962		14

Public bus	472	87	35
Private car/Car rental/Taxi	1,123		4
Total	**3,029**	**174**	

Source: HHTL & Surbana Jurong

For selected tourism corridors, the traffic volume generated by visitors is considerably high in comparison to general traffic. For example, about 86% of traffic is generated by visitors on the Mandalika corridor (road from Airport to Kuta) and 33% on the Senggigi corridor (road from Mataram to Ampenan to Senggigi). Figure 80 shows the proportion of visitors traffic volume share for 2021 and 2041.

FIGURE 80 – TOTAL GENERATED VEHICLE TRAFFIC VOLUME BY VISITORS, 2021 & 2041

Vehicle Traffic	2021			2041		
Port of Entry	ADT	PCU	Peak	ADT	PCU	Peak
Praya	3'589	4'311	431	7'309	9'402	940
Lembar	1'779	2'059	206	2'077	2'502	250

PCE : Passenger Car Equivalent was adopted from Djohar (1984) Passenger Car Unit value and Saturation Flow for Junctions in Bandung

FIGURE 81 – TOTAL GENERATED VEHICLE TRAFFIC VOLUME BY VISITORS, 2021 & 2041*

Vehicle Traffic	2021			2041		
Corridor	Mataram	Senggigi	Mandalika	Mataram	Senggigi	Mandalika
Praya	27%	25%	89%	28%	28%	92%
Lembar	12%	12%	43%	16%	7%	24%

**Comparison in peak traffic (10% of AADT), AADT of road corridor is considered as average AADT of road sections*

Based on the above findings, there is significant visitors traffic in comparison to general traffic volume, especially the road corridors to Mandalika and Senggigi. It is important to ensure the adequacy of this road infrastructure.

Road performance

Road performance supporting the tourism destinations is assessed by Level of Service (LOS), as a measure to indicate the effectiveness of the proposed road infrastructure. LOS is categorised into six different classes, ranging from A to F, where A is the best. The IHCM 1997 has recommended that the LOS not be allowed to reduce to lower than "C" which is the accepted international standard. Figure 82 presents LOS in relation to congestion as a V/C ratio (volume over capacity) for a given traffic density.

FIGURE 82 – LEVEL OF SERVICE ROAD CAPACITY

LOS	V/C ratio
A	0.26
B	0.42
C	0.63

D	0.84
E	1.00
F	≥ 1.00

Source: IHCM

The results of the future traffic volume analysis at the road segment supporting the Lombok access is presented in Figure 83. (For details on calculations, refer to Appendix II).

FIGURE 83 – RESULTS OF FUTURE TRAFFIC VOLUME ANALYSIS

Section	VCR 2021	VCR 2041	Infrastructure Needs
Praya – Mandalika - Kuta	0.19	0.39	Adequate capacity
Praya- Ampenan - Senggigi -Pamenang (For Gili Trawangan)	0.32	0.68	Adequate capacity.
Pamenang -Tanjung - Sembalun Lawang (Rinjani)	0.11	0.45	Adequate capacity.
Lembar Port - Ampenan	0.46	0.97	Section from Lembar Port to Gerung needs to be widened to dual 2 in 2041.
Mataram - Ampenan	0.63	1.34	Need to widen to dual 2 in long term.
Praya - Labuan Lombok	0.24	0.5	Adequate capacity.
Labuan Lombok - Rinjani	0.25	0.53	Adequate capacity.

Source: Surbana Jurong

Based on the above calculation, the road Mataram- Ampenan will reach its capacity in the long term.

14.7.2 ROAD INFRASTRUCTURE NEEDS

Based on the above estimates, the existing road capacity is adequate to meet the estimated traffic volume within the desired Level of Service. The table below presents the summary of tourism infrastructure needs for the key roads in Lombok.

- The capacity of the existing road infrastructure is adequate. In the long term, only a short segment of the Lembar Port-Ampenan-Mataram road needs to be widened. However, this road is largely used by local residents (share of visitors traffic less than 30%).
- All roads connecting the airport, Lembar Port and key tourism areas must be well maintained.
- Additionally, key tourism areas such as Senggigi need to have dedicated roadside footpaths for pedestrians.

14.8 AIR TRANSPORT

14.8.1 FUTURE AIR PASSENGER DEMAND AND AIRCRAFT MOVEMENTS[31]

- The air passenger movement at Lombok airport is estimated to reach 3.1 million passengers in 2021 and about 5.3 million passengers in 2041.
- The yearly aircraft movements are estimated to be about 34,017 Aircrafts/ year in 2021 and 57,279 Aircraft/ years in 2041[32].

14.8.2 AIRPORT INFRASTRUCTURE NEEDS

In 2021 and 2041, the passenger demand is estimated to exceed the number of passengers that could be accommodated as per the current airport infrastructure. The main airport facilities that will need to be improved according to the estimated passenger and aircraft demand in 2021 and 2041 are shown below.

31 The Future Air Passenger Demand and Aircraft Movement are estimated at a broad basis to assess the airport infrastructure needs for tourism development. A separate detailed specific Airport Study needs to be conducted to look into the specific air passenger and aircraft demand for individual airports.

32 The historical trend of annual aircraft and passenger movements were available for five years. A regression equation was fitted to these data to allow estimation of future annual aircraft movement at Lombok (see Appendix I). However, the statistical result is not sound enough to justify the future projection of the aircraft based on the passenger movement. Therefore, the aircraft load factor approach is used by determining the average seat capacity of the aircraft for future demand as: 1) The majority of aircraft used by the airlines operate their fleet to Lombok route will be the Code D (narrow body aircraft) with capacity of 140 seats; 2) The average load factor remain constant as per existing which is 65.67%

FIGURE 84 – LOMBOK INTERNATIONAL AIRPORT – INFRASTRUCTURE NEEDS

	Existing (2015)	Airport Improvement Plan	Short Term (2021)	Long Term (2041)
Air Passenger Demand	2.5 Million	NA	3.1 million	5.3 million
Aircraft landing and Take Off Demand	27,759 Aircrafts/ year	NA	34,017 Aircrafts/ year 12 aircrafts in peak hour	57,279 Aircrafts/ year 19 aircraft in peak hour
Runway (Lm X Wm)	2750 m x 45 m Estimated Capacity: 16 Movements per hour 58,400 aircraft movements per year	Phase 3 (2028): 45 m x 4,000 m Estimated Capacity: 29 movements per hour 105,850 aircraft movements per year	Runway capacity adequate	Runway Capacity Adequate
Parallel Taxiway	None	Phase 3: Yes	Not needed	None but parallel taxiway would be needed by 2030
Loading Apron Requirements	Nine aircraft in peak hour Capacity: 10 aircraft + 2 aircraft Active apron: 9 stands	Phase 3:74,514 m² Capacity: 2 stands for wide-body aircraft under construction	Capacity Adequate, ten aircraft stands required	Apron expansion should be started in 2030 15 aircraft stands required in 2041
	Existing (2015)	**Airport Improvement Plan**	**Short Term (2021)**	**Long Term (2041)**
Terminal Building	3 Million Reaching capacity shortly	3.25 Million The capacity is subject to review. Airport Improvement Plan of Lombok International Airport is being studied by JICA in 2016	Adequate in the short term with small capacity gap. Need to expand terminal building to accommodate 4 million passengers by 2030	Need to expand terminal building to accommodate 6 million passengers in 2041

The current airside infrastructure can manage the existing air traffic and current slots of aircraft take-off and landing. Therefore, the new runway infrastructure can be delayed until 2030 as the capacity without rapid exit and parallel taxiways will be able to handle the projected demand.

- Both runway capacity and the terminal capacity is adequate for the short term. However, terminal capacity will need to be improved to accommodate additional 4 million passengers by 2030.
- Taking into account the ultimate plan by 2028, runway capacity is estimated to be still adequate until 2041. There will be a need to expand the existing passenger terminal to accommodate 6 million passengers.

14.9 SEA TRANSPORT

14.9.1 FUTURE SCENARIO

Based on the market demand assessment, the estimated cruise and ferry passenger arrivals in Lombok are shown in Figure 85 and Figure 86.

FIGURE 85 – LOMBOK CRUISE PASSENGER DEMAND

	2015	2021	2026	2041
Number of calls	22	25	30	45
Number of passengers	37,182	40,000	48,000	72,000

Source: Howarth HTL

FIGURE 86 – FERRY PASSENGER DEMAND

	2015	2021	2041
Tourist via Lembar Ferry	725,150	765,000	1,193,000
General Passenger Lembar Ferry	1,709,356	2,104,701	2,189,693
Total	**2,434,506**	**2,869,701**	**3,382,693**

Source: Howarth HTL

14.9.2 SEA PORT INFRASTRUCTURE NEEDS

Cruise Port

The Gilimas Port is under construction with a 3,360 sqm passenger terminal building able to accommodate 2,500 passengers per arrival. With new facilities, the port can facilitate Voyager-class cruise ships, large ships with around 138,000 gross tonnages (GT) that can carry more than 3,000 passengers. Gilimas Port will be adequate to meet the estimated long-term cruise demand for Lombok.

Ferry Port

It is assumed that 50% out of the total visitor arrivals by sea transport is coming from Padang Bai to Lembar.

As per the existing daily capacity, the ferry port can handle a maximum of 48 ferry trips, indicating the ferry port infrastructure has reached its capacity, however, ships' occupancy is considerably low. If ships' occupancy is optimized this will delay the need for immediate new pier infrastructure investments.

Further to this, the connection from Lembar to Gili islands and other destinations needs to be improved.

FIGURE 87 – ESTIMATED CAPACITY OF FERRY PORT

No	Description	Unit	2015	2021	2041
1	Service capacity per day	call/day	48	48	48
2	Service capacity per year	call/year	17,520	17,520	17,520
3	Average passenger capacity	seats	320	320	320

4	Ship seat capacity	5,606,400	5,606,400	5,606,400
5	Passenger demand	2,434,506	2,869,701	3,382,693

Source: Pelindo III

- While the sea transport infrastructure is adequate in Lembar Port for Cruises and Ferry, it is necessary to improve the connection from Lembar to Gili islands and other destinations.
- In the existing tourism areas of Senggigi and Gili Islands water transport infrastructure facilities such as jetties, anchoring sites and buoys need upgrading. All improvements along the coast must be done subject to detailed environmental studies.

14.10 PUBLIC TRANSPORT

The proposed BRT system in Mataram (Trans Mataram Metro) will further enhance the accessibility for domestic and foreign tourist to tourism resources at Senggigi beach.

Maintenance of public transport facilities such as bus terminal facilities will be an important component that needs to be addressed to sustain these transport facilities and infrastructure for the long run.

In addition, considering the future KEK in Mandalika, the transport operation from the airport terminal needs to be expanded to serve this tourism zone, especially considering significant growth in accommodation in South Lombok.

15. BASIC CAPACITY INFRASTRUCTURE (AMENITIES)

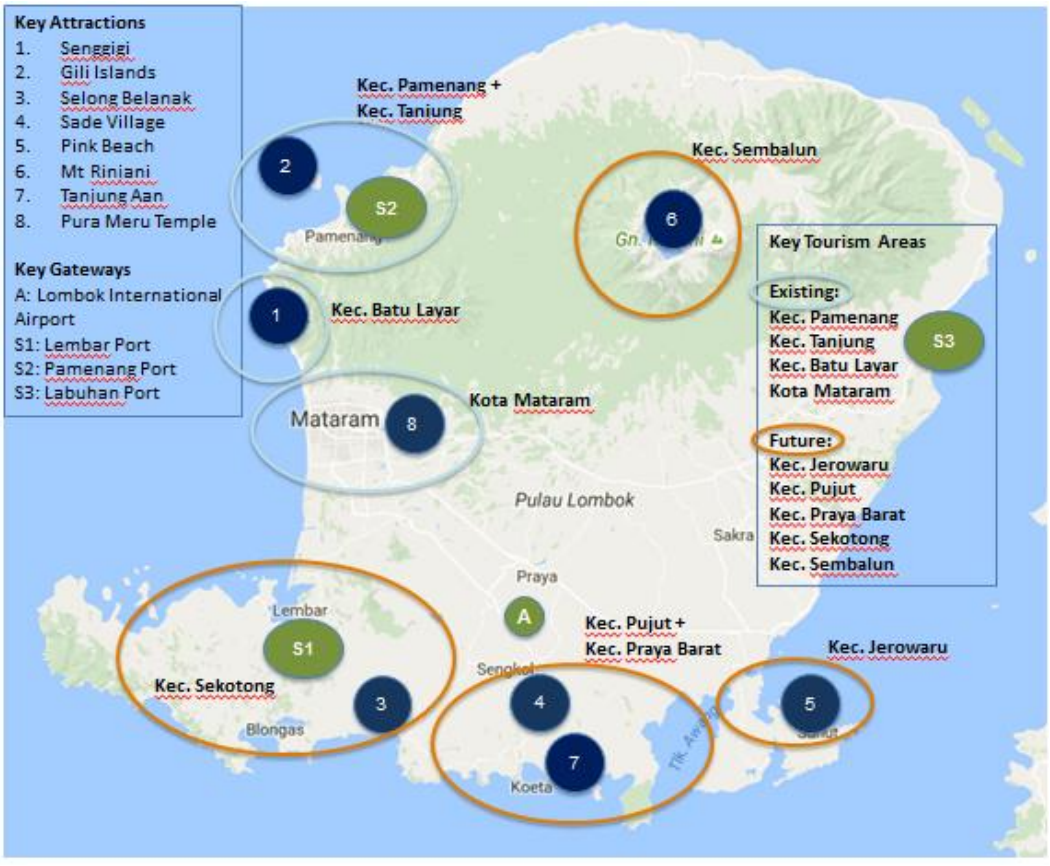
BASELINE

15.1 KEY TOURISM AREAS

Assessment of the existing condition of basic infrastructure is conducted for existing and future key tourism areas. Four key areas have been identified for tourism development covering 8 kecamatan:

1. Gili Islands (Kec. Pemenang);
2. Senggigi area (Kec. Batu Layar and Tanjung);
3. Southern coast (Kec. Pujut, Praya Barat, Sekotong and Kec. Sekaroh/ Jerowaru); and
4. Mt Rinjani (Kec. Sembalun).

FIGURE 88 – KEY ATTRACTIONS & TOURISM AREAS, LOMBOK



Source: Google maps, Horwath HTL

15.2 WATER SUPPLY

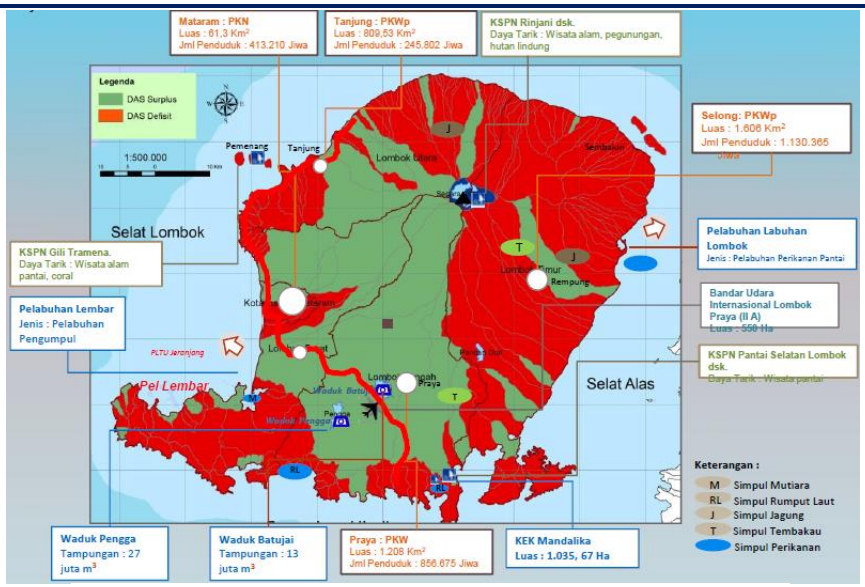
15.2.1 EXISTING WATER SUPPLY CONDITIONS

Surface Water

Surface water is the main raw water source in Lombok. There are 197 sub water catchments in Lombok, scattered across the island. Out of the 197 sub catchments, only 42 has surplus water capacity, concentrated in the central and western parts of the island. The remaining 155 show a deficit in capacity.

These sub catchments have a total potential water capacity of 90,180 L/s. However, the existing facilities can only manage to extract and produce up to 60,883 L/s of water, with 29,297 L/s of surplus[33]. Currently, only 15.51% of the total raw water sources are utilised for domestic usage. Distribution of water usage may change according to the changes in demand of different industries. Allocation of water for domestic purposes is conservatively taken as 15% in the subsequent analysis.

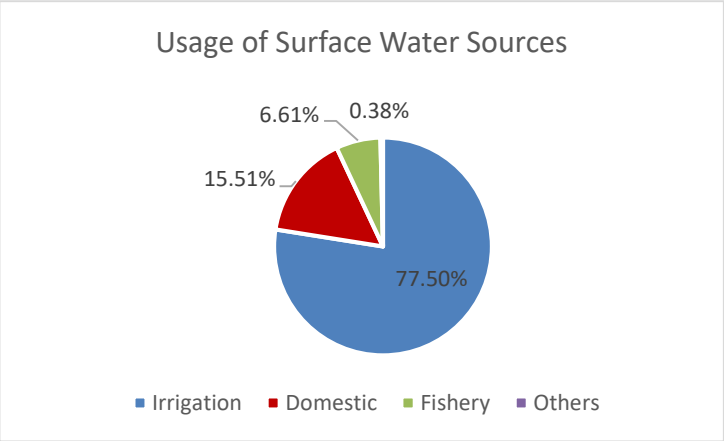
FIGURE 89 – WATER CATCHMENT IN LOMBOK ISLAND



Source: Department of Public Works, 2016

33 *Source: Department of Public Works*

FIGURE 90 – DISTRIBUTION OF SURFACE WATER SOURCES

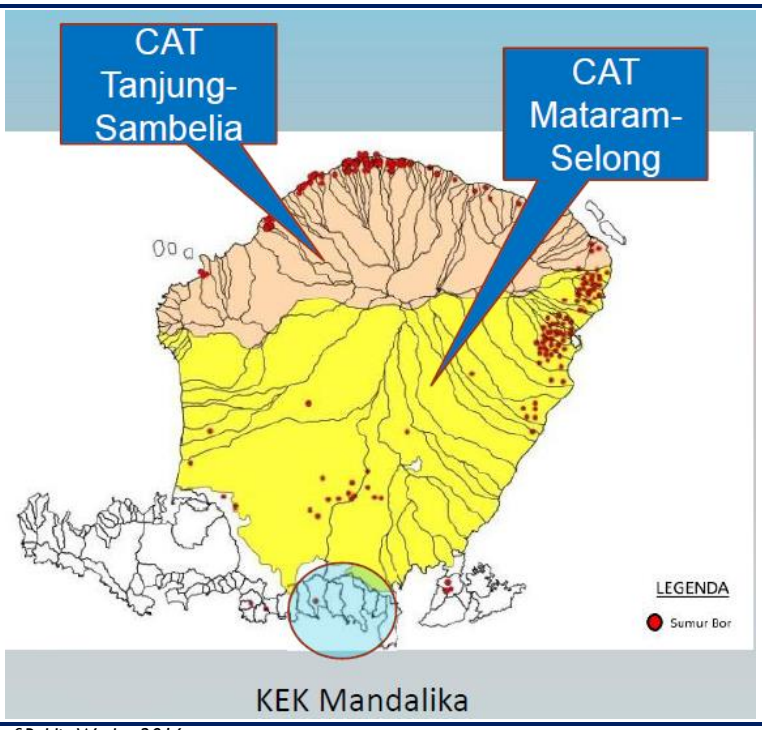


Source: Department of Public Works, 2011

Groundwater

Groundwater is not the main raw water source in Lombok, and has only been utilized by the residents in the rural areas through artesian wells. Lombok is located within the groundwater basin (CAT) of Tanjung - Sambelia and Mataram - Selong, as shown in Figure 91. The southern part of the island is a dry zone where availability of both surface water and groundwater is very limited.

FIGURE 91 – GROUNDWATER BASIN IN LOMBOK ISLAND



Source: Department of Public Works, 2016

Water Supply in the Gili Islands

The Gili Islands (Gili Trawangan, Gili Meno and Gili Air) are a key tourism attraction in Lombok. Located apart from the main island, water sources to serve the demand of the three (3) islands are not self-sustained. There are very limited surface water and groundwater sources in the Gili islands. Currently, a small-scale desalination plant (owned by PT. Berkat Air Laut) with production capacity of 10 L/s is in operation. It is estimated that water produced from this desalination plant only meets 15% of the total water demand. Water is imported from the main island using small boats to fulfil the demand.

15.2.2 ASSESSMENT OF EXISTING WATER SUPPLY INFRASTRUCTURE

According to the national service standards for public works and spatial planning (SPM Permen PU 01/PRT/M/2014) sustainable water supply is defined as having access to a safe and reliable water source that can supply at least 60l/cap/day. For the key tourism areas, the higher quality SNI 3-7065-2005 standard is assumed, meaning that the population and visitors in key tourism areas should have access to sustainable piped water supply which is defined as having a house connection and 24 hours water supply at 120l/cap/day for domestic users and 250l/cap/day for visitors staying overnight.

The national statistical office (BPS) has baseline information on service provision. BPS collects this information by sample surveys and aggregate data are available at the Provincial level and sometimes at the Kabupaten/Kota level. In practice, it was not possible to arrive at a reliable baseline for water supply service provision in the key tourism areas because data were either not available or were only available at the Provincial level which is not sufficiently detailed to serve as a baseline for the key tourism areas.

As a proxy, data have been collected on population connected to piped networks of water supply companies (PDAM), because these data are widely available by PDAM at Kabupaten and Kecamatan level. It should be noted however that these data should be regarded as minimum number of people served by piped water supply, because apart from PDAM many local networks exist, often community operated, that deliver sustainable water supply.

In the context of this study PDAM data as presented here should therefore not be taken as absolute figures for current water supply service levels but should be considered as an indication of variation in service levels between the several key tourism areas. More detailed study at Kecamatan level is needed to arrive at a thorough baseline for each of the key tourism areas.

Coverage of PDAM piped water service in each of the kabupaten and the key tourism kecamatan are tabulated in Figure 92:

FIGURE 92 – COVERAGE OF PDAM WATER SUPPLY

Kota / Kabupaten	PDAM Coverage (% of households served)
Kota Mataram	62.00
Kab. Lombok Utara	16.37
Kab. Lombok Barat	21.27
Kab. Lombok Tengah	15.58
Kab. Lombok Timur	32.96
Key Tourism Kecamatan	
Kec. Pemenang	21.27
Kec. Tanjung	10.00
Kec. Batu Layar	69.00
Kec. Pujut	9.87
Kec. Praya Barat	17.00
Kec. Sekotong	10.20
Kec. Jerowaru	8.81
Kec. Sembalun	80.35

Source: BPS Kota Mataram, Lombok Utara, Lombok Barat, Lombok Tengah, Lombok Timur

Generally, capacity of the existing raw water sources is sufficient to serve the domestic and tourist usage in Lombok, except at the Gili islands and south Lombok where availability of water sources is insufficient. The deficiencies in water supply could potentially limit the development and growth of tourism activities in the Gili islands and south Lombok.

15.2.3 FUTURE PLANS FOR WATER SUPPLY

To serve the Gili islands, the authorities have identified a potential raw water source at Kecamatan Gangga. Capacity of this water source which is located on the mainland is about 150 L/s. An underwater piping system is proposed to deliver water from the identified water source to the Gili islands.

To overcome the shortage of water in the south, the authorities have introduced several proposals:

1. Construction and implementation of six (6) water reservoirs which are currently under planning; these water reservoirs will have a total capacity of about 600,000 m^3 and they are located at Desa Mertak, Desa Sekotong Barat, Desa Pene, and Desa Pemonkong.
2. Construction of Mujur Dam to provide water for irrigation and domestic usage. The proposed Mujur Dam will have the capacity of 183 L/s to serve Kecamatan Praya Timur.

In Mandalika SEZ, development of water supply is planned in three (3) stages[34]:

a) Stage 1 (Year 2015 – 2020), to construct and implement:

- Reverse Osmosis (RO) water treatment plant with capacity of 60 L/s (completed in 2016)

34 *Source: Mandalika Special Economic Zone*

- Reservoir for distribution of treated RO water with capacity of 5,000 m^3, and pumping station with capacity of 100 L/s
- Transmission and distribution system, with 80 – 400 mm diameter pipes

b) Stage 2 (Year 2020 – 2025), to construct and implement:
- Increased capacity of RO water treatment plant, with another 60 L/s
- Increased capacity of reservoir (5,000 m^3), and pumping station (100 L/s)
- Expansion of water supply network (80 – 300 mm)
- PDAM water treatment plant, with capacity of 50 L/s
- Reservoir, with capacity of 1,000 m^3, and pumping station with capacity of 50 L/s for above mentioned treatment plant
- Transmission and distribution system, with 80 – 150 mm diameter pipes for above mentioned treatment plant

c) Stage 3 (Year 2025 – 2030), to construct and implement:
- RO Intake Jetty, with capacity of 20,000 m^3
- Increased capacity of pumping station (100 L/s)

Mandalika SEZ also proposed the expansion of water supply network from Kab. Lombok Tengah to supply potable water to hotels and resorts located within its vicinity. Plans and proposals are in place to improve the availability of water and conditions of water supply.

The proposed new water source at Kecamatan Gangga to serve the Gili islands is required to mitigate the shortage of water.

A series of projects are planned to fulfil the water demand at Mandalika SEZ. The desalination plant in Mandalika SEZ already produces 60 L/s of potable water and after 2020 production capacity will double to 120 L/s. The desalination plant will help to ease the problem of water shortage in south Lombok. However, the produced potable water is limited to usage within the SEZ Mandalika. Cooperation between SEZ and the local PDAM is needed on production and distribution of potable water not only to serve the SEZ, but also the surrounding kecamatan.

15.3 WASTEWATER AND SANITATION

15.3.1 EXISTING WASTEWATER AND SANITATION CONDITIONS

According to the national service standards for public works and spatial planning (SPM Permen PU 01/PRT/M/2014) sustainable sanitation is defined as having access to a private or a communal (MCK) toilet connected to a septic tank or to a piped sewer system with downstream treatment facilities. If population density is higher than 300 inhabitants/ha an off-site sewer system is required

with centralized wastewater treatment plant. Waste water treatment facilities must meet specified technical and effluent quality standards.

The national statistical office (BPS) has baseline information on service provision. BPS collects this information by sample surveys and aggregate data are available at the Provincial level and sometimes at the Kabupaten/Kota level. In practice, it was not possible to arrive at a reliable baseline for sanitation service provision in the key tourism areas because data were either not available or were only available at the Provincial level which is not sufficiently detailed to serve as a baseline for the key tourism areas.

As a proxy STBM (Sanitasi Total Berbasis Masyarakat) data have been collected, because these data are widely available up to Kecamatan level. It should be noted however that STBM data in general give a much too positive picture of current service levels because the STBM service level represents a much lesser quality than the level required in SPM Permen PU 01/PRT/M/2014. STBM's definition of adequate sanitation includes sanitation facilities which:

1. Avoid water contamination;
2. Avoid contact between human and faeces;
3. Avoid contact between insects/ animals and faeces;
4. Are not smelling unpleasant; and
5. Are easy to clean.

The STBM definition actually means that all sanitation facilities are included, even pit latrines and temporary structures, and only open defecation practise is excluded. Percentage of population served as indicated by STBM data is therefore much higher than population served in accordance with SPM Permen PU 01/PRT/M/2014 service level quality. In the context of this study STBM data as presented here should therefore not be taken as absolute figures for current sanitation service levels but should be considered as an indication of variation in service levels between the several key tourism areas. More detailed study at Kecamatan level is needed to arrive at a reliable baseline for each of the key tourism areas.

- According to STBM data 98.8% of households in Kota Mataram is equipped/ have access to adequate sanitation. The coverage is very low in the other four kabupaten, with an average of only 55.3%.

There are no off-site or integrated wastewater treatment facilities in Lombok, except for main facilities such as hospitals, hotels and airports. The most common wastewater treatment facilities used are septic tanks.

15.3.2 ASSESSMENT OF EXISTING WASTEWATER AND SANITATION

Coverage of adequate sanitation as defined by STBM standards is tabulated in Figure 93:

FIGURE 93 – COVERAGE OF ADEQUATE SANITATION

Kota / Kabupaten	Adequate Sanitation (% of households equipped with/ has access to adequate sanitation)
Kota Mataram	98.84
Kab. Lombok Utara	58.49
Kab. Lombok Barat	52.51
Kab. Lombok Tengah	54.76
Kab. Lombok Timur	55.46
Key Tourism Kecamatan	
Kec. Pemenang	67.76
Kec. Tanjung	64.83
Kec. Batu Layar	73.53
Kec. Pujut	44.95
Kec. Praya Barat	44.29
Kec. Sekotong	38.73
Kec. Jerowaru	21.21
Kec. Sembalun	45.26

Source: Sanitasi Total Berbasis Masyarakat

According to STBM standards wastewater and sanitation facilities are satisfactory only in Kota Mataram. The remaining four (4) kabupaten (Lombok Utara, Lombok Barat, Lombok Tengah and Lombok Timur) have very poor coverage of adequate sanitation. In the 8 key tourism kecamatans the average coverage is between 21 and 73% of the population. The actual current sanitation coverage is even lower because STBM standards are inferior to national standard SPM Permen PU 01/PRT/M/2014.

15.3.3 FUTURE PLANS FOR WASTEWATER AND SANITATION

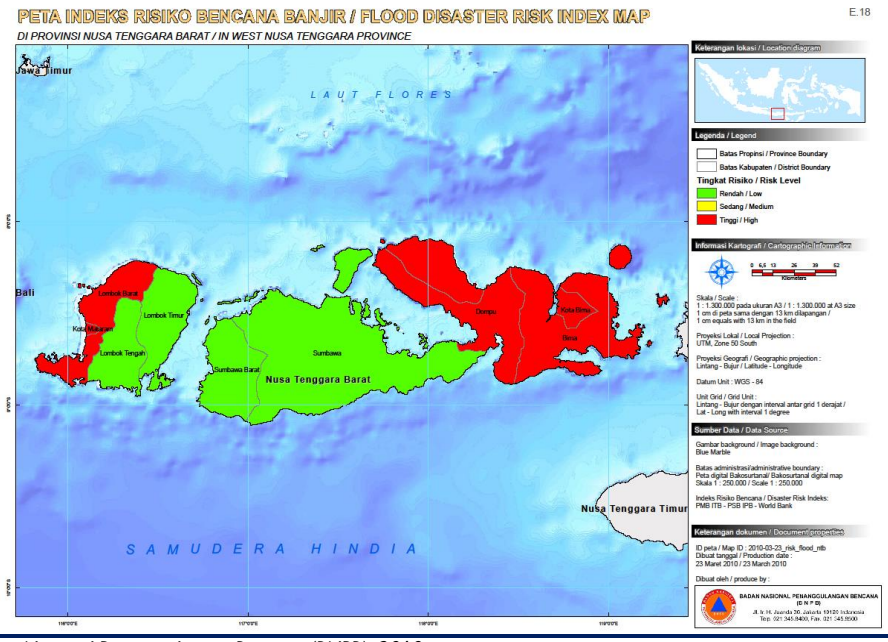
There are proposals by the Public Works Department as well as the Mandalika SEZ to develop centralized wastewater treatment facilities in Kota Mataram and the Mandalika SEZ. Integrated wastewater treatment facility is the ultimate approach in managing wastewater in a sustainable way. However, development of such facilities takes time. The immediate attention shall be given to close the existing gaps of adequate sanitation, particularly in the key tourism kecamatans.

15.4 DRAINAGE

15.4.1 ASSESSMENT OF EXISTING DRAINAGE AND FLOODING ISSUE

The west coast of Lombok (Kab. Lombok Utara, Kab. Lombok Tengah and Kota Mataram) is categorized as a high-risk flood zone. Flash floods occur during heavy downpours and the rainy season, especially between September and November. Low-lying areas and urban areas, which are highly built up, are flood prone.

FIGURE 94 – FLOOD DISASTER RISK INDEX MAP



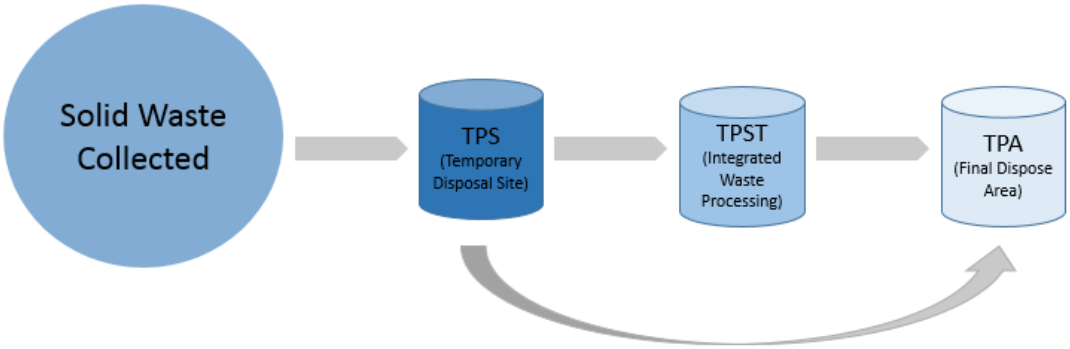
Source: Badan Nasional Penanggulangan Bencana (BNPB), 2010

15.5 SOLID WASTE INFRASTRUCTURE

15.5.1 EXISTING SOLID WASTE COLLECTION AND DISPOSAL CONDITIONS

Generally, solid waste is collected manually and transported to TPS (Tempat Pembuangan Sementara, or Temporary Disposal Sites) and located in residential and community centres. From TPS, waste is transported to TPST (Tempat Pengolahan Sampah Terpadu, or Integrated Waste Processing). Most of the TPSTs are located near to the market and managed by kecamatan/ district agencies. Segregation of waste takes place in TPST. The remaining waste is then transported to TPA (Tempat Pembuangan Akhir, or Final Disposal Area). The procedure of solid waste collection and disposal is shown in Figure 95.

FIGURE 95 – PROCEDURE OF SOLID WASTER COLLECTION & DISPOSAL



Source: RTRW, Rencana Tata Ruang Wilayah

15.5.2 ASSESSMENT OF EXISTING SOLID WASTE MANAGEMENT

According to the national service standards for public works and spatial planning (SPM Permen PU 01/PRT/M/2014) sustainable solid waste management is defined as having access to a solid waste collection services of at least twice a week and transport of waste collected to a transfer station or a processing unit. Solid waste management operations must be in accordance with national technical standards for management of solid waste facilities (Permen PU 03-2013) and for urban waste management techniques (SNI 19-2454-2002).

Existing service level data were collected for each of the key tourism areas at the Kabupaten/Kota level. More detailed and disaggregated data were not encountered. Note that in many Kabupaten the solid waste collection services are limited to the most densely populated and urbanized kecamatans whereas rural areas are often not yet served. More detailed study is needed at Kecamatan level to arrive at a thorough baseline for the key tourism areas. Coverage of sustainable solid waste management is tabulated in Figure 96:

FIGURE 96 – COVERAGE OF SUSTAINABLE SOLID WASTE MANAGEMENT

	Sustainable Solid Waste Management (% of households served)
Kota Mataram	95
Kab. Lombok Utara	0
Kab. Lombok Barat	70
Kab. Lombok Tengah	20
Kab. Lombok Timur	0

Source: Local authorities, Dinas Kebersihan of each Kabupaten, interviews, 2016

Solid waste management services vary widely among local governments but are in general sub-standard:

- Only Kota Mataram is well served and has achieved 95% coverage;
- Coverage in Kabupaten Lombok Barat & Lombok Tengah is 70% and 20%, respectively;
- In Kab. Lombok Utara and Lombok Timur, existing services are negligible[35]

In areas where solid waste collection services are lacking residents dispose of their waste by indiscriminate dumping or by open burning. As a result, beaches and seas are polluted by debris and garbage. Rinjani Mountain has been polluted by litter as there are insufficient solid waste disposal facilities provided along the hiking trail and camp sites. Hence, it is critical that existing gaps are closed at the soonest by providing sustainable solid waste management services, i.e. in the key tourism kacamatans. Special attention is required for Kabupaten Lombok Utara, Lombok Tengah and Lombok Timur, as solid waste management services in these Kabupaten are almost non-existent.

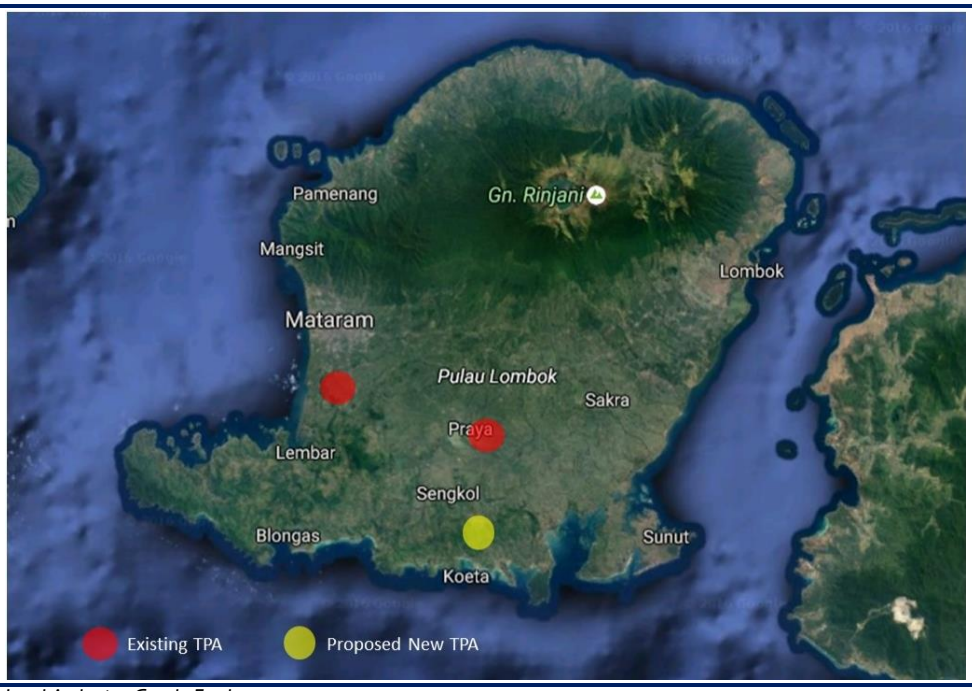
35 *Source: Local authorities, Dinas Kebersihan of each Kabupaten, interviews*

15.5.3 FUTURE PLANS FOR SOLID WASTE INFRASTRUCTURE

The local government has proposed a new TPA (sanitary landfill site) to be located at Desa Pengengat, Kecamatan Pujut. Land area of this proposed sanitary landfill is 10 ha, with another 10-ha reserved for future expansion.

Other than that, the local government also planned to develop TPA Kebon Kongok to become a sanitary landfill site.

FIGURE 97 – LOCATION OF EXISTING AND PROPOSED TPA IN LOMBOK



Source: Local Authority, Google Earth

Focus of existing and proposed solid waste facilities is on the central and southern part of Lombok. Similar attention is urgently needed for the northern part of Lombok, particularly to serve the Gili islands, Senggigi, and Mount Rinjani where the impact of poor waste management on the tourism experience is high and where the environment is very vulnerable for pollution.

The proposed TPA is necessary as part of the upgrading and improvement plans of the overall solid waste management system. Nevertheless, the immediate attention shall be given to improve the solid waste collection system and its coverage. This is important to promote a healthier living environment for the local residents and visitors, and also a healthier marine environment to preserve the natural beauty of Lombok.

15.6 POWER SUPPLY

15.6.1 EXISTING POWER SUPPLY CONDITIONS

Power supply network in west Nusa Tenggara consists of:

- Lombok System – 150 kV system serving Kota Mataram, Kab. Lombok Timur, Kab. Lombok Barat, Kab. Lombok Tengah, and Kab. Lombok Utara. Power supply system in the islands of Gili Trawangan, Gili Meno, and Gili Air are connected via undersea cables to the main Lombok system.
- Sumbawa System – 20 kV system serving Kota Sumbawa Besar and Kab. West Sumbawa.
- Bima System – 20 kV system serving Bima city, Kab. Bima, and Kab. Dompu.
- Several isolated systems on islands scattered all across the province.

FIGURE 98 – POWER SUPPLY SYSTEM IN WEST NUSA TENGGARA

Source: The Ministry of Energy and Mineral Resources of the Republic of Indonesia, 2016

Power in Lombok is generated from several power plants (diesel, steam, mini-hydro) located across the island. Total installed capacity from these power plants is 255.15 MW.

Coverage of PLN (National Power Company) power supply varies among the five (5) kabupaten:

- As the capital, coverage of PLN power supply is satisfactory, and has reached 100% in Kota Mataram;
- Average coverage in Kab. Lombok Utara, Lombok Barat and Lombok Tengah is 64.62%; and
- Power supply is inadequate and insufficient in Kab. Lombok Timur, with only 33.14% of the households served.

15.6.2 ASSESSMENT OF EXISTING POWER SUPPLY INFRASTRUCTURE

Existing coverage of power supply network is tabulated in Figure 99:

FIGURE 99 – COVERAGE OF POWER SUPPLY NETWORK

Kota / Kabupaten	PLN Coverage (% of households served)
Kota Mataram	100
Kab. Lombok Utara	68.16
Kab. Lombok Barat	65.61
Kab. Lombok Tengah	60.1
Kab. Lombok Timur	33.14
Key Tourism Kecamatan	
Kec. Pemenang	89.42
Kec. Tanjung	67.27
Kec. Batu Layar	100
Kec. Pujut	95.81
Kec. Praya Barat	63.72
Kec. Sekotong	27.86
Kec. Jerowaru	91.44
Kec. Sembalun	Estimated to be 33.14

Source: BPS Kota Mataram, Lombok Utara, Lombok Barat, Lombok Tengah, and Lombok Timur, 2015

Performance of the power supply is only satisfactory in Kota Mataram, Kec. Batu Layar, Kec. Pujut and Kec. Jerowaru. Upgrading and improvement works are required at the soonest to close the gaps, particularly at existing key tourism areas – Kec. Pemenang and Kec. Tanjung. As for the key tourism areas, planning is necessary so that sufficient power supply is available to serve the future tourism development.

15.6.3 FUTURE PLANS FOR POWER SUPPLY

Several potential sources of power generation in Lombok have been identified, as listed in Figure 100. Most of these proposed sources are owned by the private power producers.

FIGURE 100 – POTENTIAL NEW SOURCE OF POWER IN LOMBOK

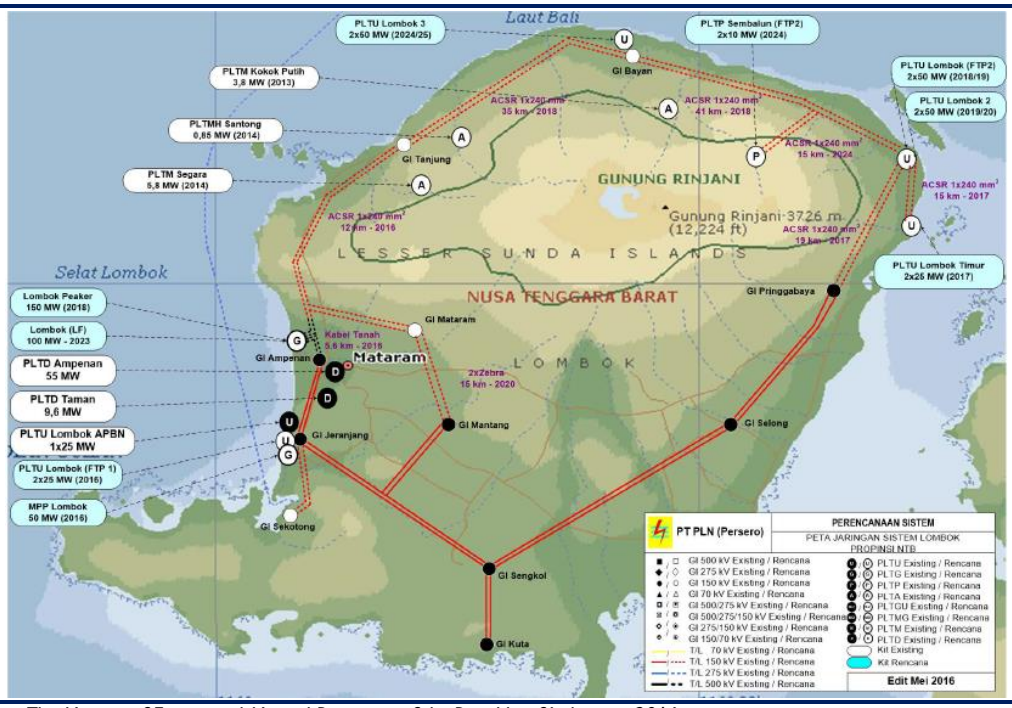
No.	Source	Potential Capacity (MW)
Hydro		
1	Kokok Babak	2.30
2	Sedau Kumbi	1.30
3	Lingsar	3.20
4	Pringgarata	0.29
5	Batu Bedil	0.55
6	Karang Bayan	1.30
7	Nirbaya	0.63
Geothermal		
1	Sembalun	100.00
Total		**109.57**

Source: The Ministry of Energy and Mineral Resources of the Republic of Indonesia, 2016

To mitigate the shortage of power supply in Lombok, the authority is installing a mobile power plant (MPP) with capacity of 50 MW. Other than the MPP, the authority has also planned for medium and long-term development of new power plants, which in total could generate as much as 720 MW of power. As planned, 500 MW of power will be available by 2021, and remaining 220 MW will be available by 2025.

In order to efficiently transmit and distribute the generated power, the authority also has proposals for upgrading and expansion of existing power transmission and distribution systems.

FIGURE 101 – DEVELOPMENT OF POWER SUPPLY SYSTEM IN LOMBOK



Source: The Ministry of Energy and Mineral Resources of the Republic of Indonesia, 2016

Research shall be continued to study the feasibility of power generation from the identified potential sources. The mobile power plant is just a temporary solution and new power plants are necessary to improve the existing power supply conditions and to support the potential growth of power demand in the future. The upgrading and expansion of the power transmission and distribution systems are required to expand PLN's coverage, particularly to the rural areas and key tourism kecamatan.

15.7 TELECOMMUNICATION INFRASTRUCTURE

15.7.1 ASSESSMENT OF EXISTING TELECOMMUNICATIONS INFRASTRUCTURE

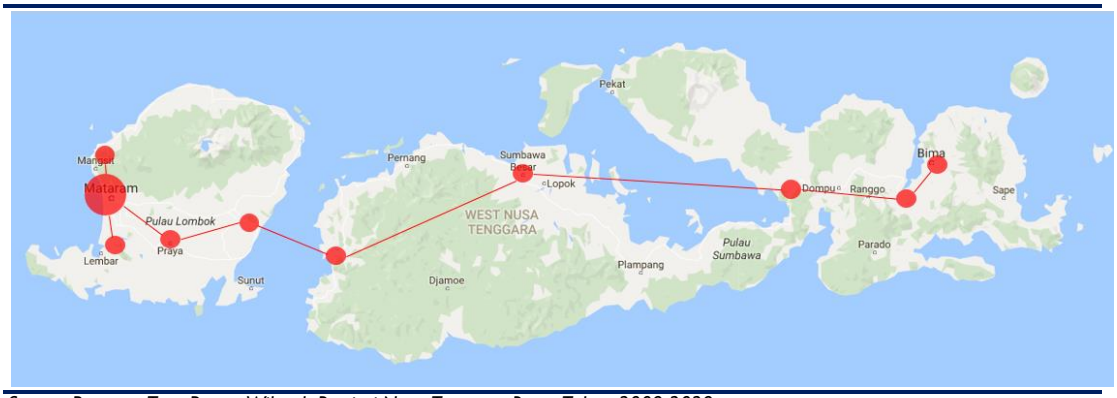
As much as 72% of households in Kota Mataram, and more than 90% of households in the remainder of Lombok (93% in Kab. Lombok Barat, 96% in Kab. Lombok Tengah, 95% in Kab. Lombok Timur and 94% in Kab. Lombok Utara)[36] have no access to internet service. Although coverage of households with Internet access is low, there is no major issue with regards to the telecommunication

36 *Source: Population Census 2010, World Bank*

infrastructure in Lombok to serve tourism activities. The key tourism areas such as Senggigi and Gili islands are well covered by the telecommunication network.

As described in Rencana Tata Ruang Wilayah Provinsi Nusa Tenggara Barat Tahun 2009 – 2029, the authority is planning to develop a telecommunications network based in Kota Mataram. This special multimedia network will further expand to Tanjung, Gerung, Praya, Selong, Taliwang, Sumbawa Besar, Dompu, Woha, and Kota Bima[37].

FIGURE 102 – PROPOSED TELECOMMUNICATION NETWORK IN WEST NUSA TENGGARA PROVINCE



Source: Rencana Tata Ruang Wilayah Provinsi Nusa Tenggara Barat Tahun 2009-2029

There are no major issues with regards to telecommunication facilities in major cities/ towns and at tourist attractions in Lombok. However, the situation might not be the same in rural areas. The proposed improvements should focus along the corridor where major cities and towns are located. As tourist attractions and key tourism areas are spread over the island, it is important to expand the coverage to different corners of the island, particularly in the northeast (Kec. Sembalun) and the south (Kec. Sekotong, Pujut, Praya Barat and Jerowaru).

15.8 SUMMARY OF EXISTING BASIC INFRASTRUCTURE

Summary of existing coverage and gaps of basic infrastructure and services in Lombok are tabulated in Figure 103.

FIGURE 103 – SUMMARY OF EXISTING BASIC INFRASTRUCTURE ASSESSMENT

Infrastructure		Existing Coverage (%)	Existing Gap (%)	Remarks
Water Supply (households served by PDAM)	Kota Mataram	62.00	38.00	Generally low coverage at all Kabupaten and key tourism Kecamatan. Raw water availability especially in Lombok south and at the Gili Islands is a
	Kab. Lombok Utara	16.37	83.63	
	Kab. Lombok Barat	21.27	78.73	
	Kab. Lombok Tengah	15.58	84.42	
	Kab. Lombok Timur	32.96	67.04	

37 *Source: Rencana Tata Ruang Wilayah Provinsi Nusa Tenggara Barat Tahun 2009-2029*

Infrastructure		Existing Coverage (%)	Existing Gap (%)	Remarks
	Key Tourism Kecamatan			major concern for tourism development.
	Kec. Pemenang	21.27	78.73	
	Kec. Tanjung	10.00	90.00	
	Kec. Batu Layar	69.00	31.00	
	Kec. Pujut	9.87	90.13	
	Kec. Praya Barat	17.00	83.00	
	Kec. Sekotong	10.20	89.80	
	Kec. Jerowaru	8.81	91.19	
	Kec Sembalun	80.35	19.65	
Wastewater and Sanitation (households equipped/ has access to adequate sanitation)	Kota Mataram	98.84	1.16	Generally low coverage at all kabupaten, except Kota Mataram Relatively higher coverage at existing key tourism areas, but still insufficient Existing gap has to be closed at the soonest, with focus on key tourism areas especially Gili Islands and Senggigi.
	Kab. Lombok Utara	58.49	41.51	
	Kab. Lombok Barat	52.51	47.49	
	Kab. Lombok Tengah	54.76	45.24	
	Kab. Lombok Timur	55.46	44.54	
	Key Tourism Kecamatan			
	Kec. Pemenang	67.76	32.24	
	Kec. Tanjung	64.83	35.17	
	Kec. Batu Layar	73.53	26.47	
	Kec. Pujut	44.95	55.05	
	Kec. Praya Barat	44.29	55.71	
	Kec. Sekotong	38.73	61.27	
	Kec. Jerowaru	21.21	78.79	
	Kec. Sembalun	45.26	54.74	
Drainage	Kota Mataram, Kab. Lombok Utara, and Kab. Lombok Barat are categorized a high-risk flood zone			Upgrading of stormwater drainage facilities are required
Solid Waste (solid waste generated collected and disposed at designated TPA)	Kota Mataram	95	5	Very low coverage, except Kota Mataram. Existing gaps have to be closed at the soonest, particularly in key tourism kecamatans with special focus on Gili Islands, Senggigi, and Mount Rinjani.
	Kab. Lombok Utara	0	100	
	Kab. Lombok Barat	70	30	
	Kab. Lombok Tengah	20	80	
	Kab. Lombok Timur	0	100	
Power Supply (households served by PLN)	Kota Mataram	100	0	Satisfactory coverage only at Kota Mataram
	Kab. Lombok Utara	68.16	31.84	
	Kab. Lombok Barat	65.61	34.39	
	Kab. Lombok Tengah	60.10	39.90	
	Kab. Lombok Timur	33.14	66.86	

Infrastructure		Existing Coverage (%)	Existing Gap (%)	Remarks
	Key Tourism Kecamatan			Relatively higher coverage at key tourism kecamatan, shall aim for 100% coverage
	Kec. Pemenang	89.42	10.58	
	Kec. Tanjung	67.27	32.73	
	Kec. Batu Layar	100	0	
	Kec. Pujut	95.81	4.19	
	Kec. Praya Barat	63.72	36.28	
	Kec. Sekotong	27.86	72.14	
	Kec. Jerowaru	91.44	8.56	
	Kec. Sembalun	Est. 33.14	66.86	
Telecommunication	No major problem with the existing coverage of telecommunication facilities in key tourism areas			

Located just next to Bali, Lombok has to learn from Bali's development history. The tourism industry in Bali has grown steadily over the past few decades, however, inadequate and insufficient design of the infrastructure facilities has caused problems such as overcrowding and pollution. Planning and development of infrastructure facilities should be carefully handled, and systematically planned in phases, in accordance with the projected growth of population and visitor arrivals.

Existing coverage of piped water supply is not satisfactory, although overall capacity of raw water sources is sufficient. Water supply is not self-sustained in the Gili islands and south Lombok. However, several proposals have been announced by the authorities (Public Works Department and Mandalika SEZ) to ease the problem of water shortage and to improve the existing conditions.

The existing gap in wastewater and sanitation service provision has to be closed at the soonest, especially in the key tourism areas. Adequate sanitation is essential to promote a healthy living environment and to protect the marine environment of Lombok.

There is a significant gap in existing solid waste collection, disposal and treatment systems in Lombok. Sustainable solid waste management is almost non-existent in Kab. Lombok Timur and Lombok Utara. It is thus recommended that adequate number of temporary disposal sites and effective waste collection systems be implemented particularly at areas where tourism activities are concentrated.

Development and installation of small-scale power generators should be continued to provide electricity to areas, which are out of reach of the PLN network. In the longer-term planning, expansion of power transmission and distribution systems should be in place to serve the rural community, especially in the key tourism areas.

The hotels and resorts are well served with existing telecommunication facilities. However, expansion of telecommunication facilities should be planned to support the growth of the population, as well as visitor arrivals.

Kota Mataram, Kab. Lombok Utara and Lombok Barat are categorized as high-risk flood zones. Flash floods happened in Kota Mataram during heavy downpours and in the rainy season. Upgrading and improvement of storm water drainage facilities is required.

BASIC CAPACITY INFRASTRUCTURE INVESTMENT NEEDS

15.9 FORECAST POPULATION & VISITOR ARRIVALS

Basic infrastructure analyses are carried out for the short and long term with reference to the projected population and visitor arrivals as shown in Figure 104, Figure 105, and Figure 106.

The population growth for each kabupaten is based on the growth rate produced by BPS at province level.

FIGURE 104 – FORECAST POPULATION

Kabupaten	2015	2021	2041
Kota Mataram	431,490	462,726	537,456
Kab. Lombok Utara	212,265	227,631	264,394
Kab. Lombok Barat	654,892	702,300	815,722
Kab. Lombok Tengah	912,879	978,963	1,137,066
Kab. Lombok Timur	1,164,018	1,248,283	1,449,880

The distribution of visitors staying at family & relatives by kapubaten is proportional to the residential population distribution.

The forecast of VFR visitors is presented in the Demand Forecast.

The peak day visitors are estimated at three times the average number of visitors per day.

FIGURE 105 – FORECAST OF PEAK DAY VISITORS STAYING AT FAMILY & RELATIVES (VFR)

Kabupaten	2015	2021	2041
Kota Mataram	2,868	3,075	3,572
Kab. Lombok Utara	4,301	4,613	5,358
Kab. Lombok Barat	2,757	2,957	3,434
Kab. Lombok Tengah	551	591	687
Kab. Lombok Timur	551	591	687

Visitors staying in commercial accommodation are assumed to be distributed in accordance with the existing and recommended location for new accommodation:

FIGURE 106 – FORECAST COMMERCIAL ROOMS REQUIRED

Kabupaten	2015	2021	2041
Kota Mataram	2,699	2,657	3,745
Kab. Lombok Utara	4,048	4,290	5,517
Kab. Lombok Barat	2,595	3,334	4,287
Kab. Lombok Tengah	519	2,754	23,425
Kab. Lombok Timur	519	564	726

Guest per room = 1.9

As existing and future key tourism areas are scattered across Lombok, basic infrastructure demand projections are carried out based on the projected population and visitor arrivals at the five local governments.

Basic Infrastructure Demand Projection = Domestic Demand (Population) + Overnight Guest Demand (VFR* + Commercial Accommodation**)

* VFR = Overnight guests staying at family and friends

** Commercial Accommodation = Overnight guest staying at commercial accommodation

15.10 WATER SUPPLY

15.10.1 FUTURE DEMAND

With reference to the projected population and visitor arrivals, and unit rate of water consumption (shown in Figure 110) water demand forecasts are tabulated in Figure 107. Note that these projections represent maximum requirements assuming that all piped water supply would be provided by PDAM. In reality, many non-PDAM local piped water supply networks exist, often community operated, that deliver sustainable water supply.

FIGURE 107 – WATER DEMAND PROJECTION (L/S)

			2015			2021	2041
			Demand*	Served by PDAM	Not Served by PDAM		
Domestic	Kota Mataram		499	310	190	643	746
	Lombok Utara		246	40	205	316	367
	Lombok Barat		758	161	597	975	1,133
	Lombok Tengah		1,057	165	892	1,360	1,579
	Lombok Timur		1,347	444	903	1,734	2,014
Overnight Guest	VFR (staying at family & friends)	Kota Mataram	3	2	1	4	4
		Lombok Utara	4	1	4	6	7
		Lombok Barat	3	1	2	4	4
		Lombok Tengah	1	0	0	1	1
		Lombok Timur	1	0	0	1	1
	Commercial Accommodation	Kota Mataram	12	7	5	15	21
		Lombok Utara	18	3	15	24	30
		Lombok Barat	11	2	9	18	24
		Lombok Tengah	2	0	2	15	129
		Lombok Timur	2	1	2	3	4
Total			3,963	1,137	2,827	5,117	6,063

**Water demand (L/s) for different categories of consumers for year 2015*
Source: Surbana Jurong

Figure 110 below showcases estimated water demand (L/s) by different categories of consumers in 2015, 2021 and 2041 (with amount of water served and not served by PDAM). Summary of existing and projected water demand for each of the local governments are tabulated in Figure 108; while the ratio of estimated water demand to support tourism activities with respect to overall demand is shown in Figure 109.

FIGURE 108 – SUMMARY OF WATER DEMAND PROJECTION (L/S)

Kabupaten	2015	2021	2041
Kota Mataram	514	661	771
Kab. Lombok Utara	268	345	404
Kab. Lombok Barat	772	997	1,161
Kab. Lombok Tengah	1,059	1,376	1,709
Kab. Lombok Timur	1,350	1,738	2,019
Total	**3,963**	**5,117**	**6,063**

FIGURE 109 – ESTIMATED WATER DEMAND RATIO

Type of Usage	2015	2021	2041
Domestic	3,907	5,028	5,840
Visitor	56	89	224
% of visitor/ total	1.42%	1.74%	3.69%

*Key Assumptions:

The average water demand for the study area is estimated by using unit water demand per capita for local residents and visitors. The SNI 3-7065-2005 standard has been used, meaning that the population and visitors should have access to sustainable piped water supply which is defined as having a house connection and 24 hours water supply at 120l/cap/day for domestic users and 250l/cap/day for visitors staying overnight. Our adopted water consumption rate in lpcd (litres per capita per day) for residents and visitors are tabulated in Figure 110. The projected water demand is then converted to L/s (litres per second). The unit rates of water consumption for different usages are expected to increase by 20% - 25% in 2021 due to upturn in living standards and water accessibility; and stay put until 2041, considering sufficient water conservation approach and awareness among residents.[38]

FIGURE 110 – WATER CONSUMPTION RATE

Type of Usage		Unit Rate (lpcd)		
		2015	2021	2041
Domestic		100	120	120
Overnight Guest	VFR (staying at family & friends)	85	105	105
	Commercial Accommodation	200	250	250

38 Reference: IS - 1172 (1993) - Code of Basic Requirements for Water Supply, Drainage and Sanitation De Stefano, L. Freshwater and Tourism in the Mediterranean. 2004. American Water Works Association Research Foundation, "Residential End Uses of Water", 1999.

Based on the above considerations, total water demand in 2015 is estimated to be 4,000 L/s (514 L/s in Kota Mataram, 268 L/s in Kab. Lombok Utara, 772 L/s in Kab. Lombok Barat, 1,059 L/s in Kab. Lombok Tengah, and 1,350 L/s in Kab. Lombok Timur).

From total demand, only 28.69% is provided by PDAM piped water supply. Water demand in 2021 and 2041 are estimated to be about 661 L/s and 771 L/s in Kota Mataram, 345 L/s and 404 L/s in Kab. Lombok Utara, 997 L/s and 1,161 L/s in Kab. Lombok Barat, 1,376 L/s and 1,709 L/s in Kab. Lombok Tengah, and 1,738 L/s and 2,019 L/s in Kab. Lombok Timur.

Total water demand at Lombok is estimated to be 5,200 L/s in 2021 and 6,100 L/s in 2041. Existing water demand for tourism activities is less than 5% of overall demand. In the Gili islands where tourism is the main activity, water demand for tourism usage is 40% of the total demand.

15.10.2 WATER SUPPLY INFRASTRUCTURE NEEDS

Existing capacity of raw water sources in Lombok is about 90,000 L/s. Considering 85% to be distributed for usage of irrigation and other industries, and 33% water loss during distribution, about 9,000 L/s is available to the end users. It is assumed that water loss in Indonesia be reduced to 20% by 2021 and 10% by 2041. With such assumptions, available water capacity delivered will be increased to 10,500 L/s in 2021 and 12,000 L/s in 2041.

FIGURE 111 – ESTIMATED CAPACITY OF RAW WATER SOURCE

	Existing	2021	2041
Raw Water Source (L/s)*	90,000	90,000	90,000
Water Loss **	~33%	To reduce to 20%	To reduce to 10%
Total Water Supply Capacity (L/s) ***	60,000	72,000	81,000
Water Supply Capacity (L/s) For Domestic & Tourism ****	9,000	10,000	12,000

Source: Surbana Jurong
* *Water sources identified by Public Works Department*
** *Water loss during distribution*
*** *Total water supply capacity, assuming full utilization/ production from the available raw water source, and water loss of 33% (existing), 20% (2021), 10% (2041)*
**** *Total water supply capacity to serve domestic and tourism purpose in Lombok, assuming 15% of total water supply capacity*

FIGURE 112 – COMPARISON OF WATER DEMAND AND WATER SUPPLY CAPACITY (L/S)

	Existing		2021		2041	
	Demand (L/s)	Capacity of water that can be delivered	Demand (L/s)	Capacity of water that can be delivered	Demand (L/s)	Capacity of water that can be delivered
Domestic	3,907	9,000	5,028	10,000	5,840	12,000
Visitor	56		89		224	
Total	3,963		5,117		6,064	

As can be seen from Figure 112, the availability of raw water sources in Lombok is sufficient to fulfil the overall water demand. However, in some parts of Lombok, especially in the South and on the Gili Islands, the lack of raw water is a major concern for tourism development.

As such, the following recommendations are made for the short term (2021).

- 100% piped water coverage at all the key tourism areas, i.e. kecamatan Pemenang, Tanjung, Batu Layar, Sekotong, Pujut, Praya Barat and Jerowaru.
- For the key tourism areas, the higher quality SNI 3-7065-2005 standard is assumed, meaning that the population and visitors in key tourism areas should have access to sustainable piped water supply which is defined as having a house connection and 24 hours water supply at 120l/cap/day for domestic users and 250l/cap/day for visitors staying overnight.
- Expansion of the existing water supply networks and construction of new networks to meet the above-mentioned targets.
- Expansion of existing water treatment facilities (if there is room for expansion) or construction of new water treatment facilities to utilize the existing water sources available.
- Construction of water storage facilities for usage during the dry season, particularly in southern Lombok.
- Effective and necessary efforts shall be made to reduce water losses to 20%.

Recommendations for the long term (2041) are as below.

- Construction of new water treatment plants to produce potable water from the proposed water sources.
- Expansion of existing water supply networks and construction of new networks to serve the potential growth of population and visitor arrivals.
- Effective and necessary efforts shall be put in place to reduce water losses to 10%.

15.11 WASTEWATER AND SANITATION

15.11.1 FUTURE DEMAND

With reference to the projected population and visitor arrivals, the forecasted sewage generation is tabulated in Figure 113. Sewage generation is assumed at 80% of water supplied. Note that current coverage of adequate sanitation in this analysis relates to STBM standards. Actual current sustainable sanitation coverage is lower because STBM quality standards are inferior to national standard SPM Permen PU 01/PRT/M/2014.

FIGURE 113 – SEWAGE GENERATION PROJECTION (L/S)

			2015			2021	2041
			Demand	Adequate Sanitation	Inadequate Sanitation		
Domestic	Kota Mataram		400	395	5	514	597
	Lombok Utara		197	115	82	253	294
	Lombok Barat		606	318	288	780	906
	Lombok Tengah		845	463	382	1,088	1,263
	Lombok Timur		1,078	598	480	1,387	1,611
Overnight Guest	VFR (staying at family & friends)	Kota Mataram	2.3	2.2	0.0	3	3
		Lombok Utara	3.4	2.0	1.4	4	5
		Lombok Barat	2.2	1.1	1.0	3	3
		Lombok Tengah	0.4	0.2	0.2	1	1
		Lombok Timur	0.4	0.2	0.2	1	1
	Commercial Accommodation	Kota Mataram	9	9	-	12	16
		Lombok Utara	14	14	-	19	24
		Lombok Barat	9	9	-	15	19
		Lombok Tengah	2	2	-	12	103
		Lombok Timur	2	2	-	2	3
Total			**3,171**	**1,931**	**1,239**	**4,093**	**4,851**

Source: Surbana Jurong

Figure 113 showcases estimated sewage generation (L/s) by different categories of consumers in 2015 (with amount of adequate and inadequate sanitation as per STBM standards). Projected sewage generation by different categories of consumers in 2021 and 2041 are also presented. The summary of existing and projected sewage generation for each of the local governments are tabulated in Figure 114; while ratio of estimated sewage generation from tourism activities with respect to overall generation is shown in Figure 115.

FIGURE 114 – SUMMARY OF SEWAGE GENERATION PROJECTION (L/S)

Kabupaten	2015	2021	2041
Kota Mataram	411	529	617
Kab. Lombok Utara	214	276	323
Kab. Lombok Barat	618	798	929
Kab. Lombok Tengah	848	1,100	1,367
Kab. Lombok Timur	1,080	1,390	1,615
Total	**3,171**	**4,093**	**4,851**

FIGURE 115 – ESTIMATED SEWAGE GENERATION RATIO

Type of Usage	2015	2021	2041
Domestic	3,126	4,022	4,672
Visitor	45	71	179
% of visitor/ total	1.42%	1.74%	3.69%

Total current sewage generation is estimated to be 3,171 L/s in Lombok. Out of the total generated sewage, 61% is discharged and managed by STBM standard sanitation facilities. Sewage generation in 2021 and 2041 is estimated to be 529 L/s and 617 L/s in Kota Mataram, 276 L/s and 323 L/s in Kab. Lombok Utara, 798 L/s and 929 L/s in Kab. Lombok Barat, 1,100 L/s and 1,367 L/s in Kab. Lombok Tengah, and 1,390 L/s and 1,615 L/s in Kab. Lombok Timur. Total sewage generation in Lombok is estimated to be 4,093 L/s in 2021, and 4,851 L/s in 2041. Current and future sewage generation from visitors is less than 5% of the total sewage generation.

15.11.2 WASTEWATER AND SANITATION INFRASTRUCTURE NEEDS

The following key projects for wastewater and sanitation infrastructure are recommended for the short term (2021):

- 100% coverage of sustainable sanitation at the key tourism areas, i.e. Kecamatan Pemenang, Tanjung, Batu Layar, Sekotong, Pujut, Praya Barat, Jerowaru and Sembalun.
- In accordance with the national service standards for public works and spatial planning (SPM Permen PU 01/PRT/M/2014) sustainable sanitation is defined as having access to a private or a communal (MCK) toilet connected to a septic tank or to a piped sewer system with downstream treatment facilities. If population density is higher than 300 inhabitants/ha an off-site sewer system is required with centralized wastewater treatment plant. Waste water treatment facilities must meet specified technical and effluent quality standards.

- Installation of sufficient numbers of septic tanks in residential areas in key tourism areas, with a focus on settlements along the coastline.
- Small-scale wastewater treatment plants are recommended at the proposed hotels/ resorts.
- Adequate public toilet and sanitation facilities (with septic tank) shall be provided at tourist attractions.

Recommendations for the long term (2041) are as below:

- 100% coverage of sustainable sanitation as per SPM Permen PU 01/PRT/M/2014 standard across Lombok.
- Development of integrated sewage treatment facilities, including sewage treatment plants and sewerage networks.

15.12 DRAINAGE

Areas along the west coast of Lombok (Kab. Lombok Utara & Lombok Tengah and Kota Mataram) are categorized as high-risk flood zones. Flash floods occur during heavy downpours and the wet season, especially from September to November.

Upgrading of storm water drainage facilities are required, especially in Kota Mataram. Other than deepening and widening of existing drainage system, the authorities should look into construction of detention and retention ponds to slow down the water runoff time.

15.13 SOLID WASTE INFRASTRUCTURE

15.13.1 FUTURE DEMAND

With reference to the projected population and visitor arrivals, and rate of solid waste generation (as shown in Figure 119), forecast solid waste generation is tabulated in Figure 116:

FIGURE 116 – SOLID WASTE GENERATION PROJECTION (L/DAY)

			2015			2021	2041
			Demand	Sustainable Management	Unsustainable Management		
Domestic	Kota Mataram		970,853	922,310	48,543	1,041,134	1,451,131
	Lombok Utara		477,596	-	477,596	512,170	713,864
	Lombok Barat		1,473,507	1,031,455	442,052	1,580,175	2,202,449
	Lombok Tengah		2,053,978	410,796	1,643,182	2,202,667	3,070,078
	Lombok Timur		2,619,041	-	2,619,041	2,808,637	3,914,676
Overnight Guest	VFR (staying at family & friends)	Kota Mataram	4,588	4,359	229	4,920	6,858
		Lombok Utara	6,882	-	6,882	7,380	10,287
		Lombok Barat	4,412	3,088	1,323	4,731	6,594
		Lombok Tengah	882	176	706	946	1,319
		Lombok Timur	882	-	882	946	1,319
	Commercial Accommodation	Kota Mataram	17,928	17,031	896	17,650	29,853
		Lombok Utara	26,892	-	26,892	28,498	43,978
		Lombok Barat	17,238	12,067	5,171	22,147	34,173
		Lombok Tengah	3,448	690	2,758	18,294	186,730
		Lombok Timur	3,448	-	3,448	3,747	5,787
Total			7,681,573	2,401,971	5,279,602	8,254,041	11,679,096

Source: Surbana Jurong

Figure 116 above showcases estimated solid waste generation (L/day) by different categories of consumers in 2015 (with amount of sustainable and unsustainable management). Projected solid waste generation by different categories of consumers in 2021 and 2041 are also presented. The summary of existing and projected solid waste generation for each of the local governments are tabulated in Figure 117; while the ratio of estimated solid waste generation from tourism activities with respect to overall generation is shown in Figure 118.

FIGURE 117 – SUMMARY OF SOLID WASTE GENERATION PROJECTION (L/DAY)

Kabupaten	2015	2021	2041
Kota Mataram	993,368	1,063,704	1,487,842
Kab. Lombok Utara	511,370	548,048	768,129
Kab. Lombok Barat	1,495,157	1,607,053	2,243,217
Kab. Lombok Tengah	2,058,308	2,221,907	3,258,127
Kab. Lombok Timur	2,623,370	2,813,329	3,921,782
Total	**7,681,573**	**8,254,041**	**11,679,096**

FIGURE 118 – ESTIMATED SOLID WASTE GENERATION

Type of Usage	2015	2021	2041
Domestic	7,594,974	8,144,782	11,352,199
Visitor	86,599	109,259	326,898
% of visitor/ total	1.13%	1.32%	2.80%

Key Assumptions

The average solid waste generation for the study area is estimated by using solid waste generation rate units per capita for local residents and visitors. The adopted rate in L/c/d (litres per capita per day) for residents and visitors are tabulated in the Figure 119. It is estimated that no changes will occur in unit rate of solid waste generation over the short term (2021), and will increase by 20% in the longer term (2041).

FIGURE 119 – RATE OF SOLID WASTE GENERATION[39]

Type of Usage		Unit Rate (L/capita/day)		
		2015	2041	2021
Domestic		2.25	2.25	2.7
Overnight Guest	VFR (staying at family & friends)	1.6	1.6	1.92
	Commercial Accommodation	3.5	3.5	4.2

Total solid waste generation in 2015 is estimated to be about 7,682,000 L/day in Lombok (993,368 L/day from Kota Mataram, 511,370 L/day from Kab. Lombok Utara, 1,495,157 L/day from Kab. Lombok Barat, 2,058,308 L/day from Kab. Lombok Tengah, and 2,623,370 L/day from Kab. Lombok Timur). Out of the total solid waste generated, only 31% is collected and disposed at the designated TPA. Solid waste generation in 2021 and 2041 is estimated to be 1,063,704 L/day and 1,487,842 L/day in Kota Mataram, 548,048 L/day and 768,129 L/day in Kab. Lombok Utara, 1,607,053 L/day and 2,243,217 L/day in Kab. Lombok Barat, 2,221,907 L/day and 3,258,127 L/day in Kab. Lombok Tengah, and 2,813,329 L/day and 3,921,782 L/day in Kab. Lombok Timur.

39 Reference: Standard for Setting of Town Environmental Sanitation Facilities, China and Ministry of the Environment and Water Resources, SingaporeKosuke. K, Tomohiro. T, Revisiting Estimates of Municipal Solid Wastes Generation per Capita and Their Reliability, 2015.

Total solid waste generation in Lombok is estimated to be 8,255,000 L/day in 2021 and 11,680,000 L/day in 2041. Solid waste generated from tourism activities is less than 3% of the overall generation. However, at some locations such as Senggigi and Gili Island, this percentage is substantially higher.

15.13.2 SOLID WASTE INFRASTRUCTURE NEEDS

Sustainable solid wastes management services shall be made available at all the key tourism areas. According to the national service standards for public works and spatial planning (SPM Permen PU 01/PRT/M/2014) sustainable solid waste management is defined as having access to a solid waste collection services of at least twice a week and transport of waste collected to a transfer station or a processing unit. Solid waste management operations must be in accordance with national technical standards for management of solid waste facilities (Permen PU 03-2013) and for urban waste management techniques (SNI 19-2454-2002).

As such, the following solid waste infrastructure projects are recommended for immediate implementation (2017):

- Sustainable solid waste collection and disposal service with 100% coverage to be provided at the Gili islands. Education and enforcement of laws are required to prohibit local residents and visitors from disposing solid wastes into the sea.
- Sufficient numbers of trash bin to be provided along the hiking tracks and at the camping sites of Mount Rinjani.

Recommendations for the short term (2021) are as below:

- 100% sustainable solid waste management in the key tourism areas, i.e. Kecamatan Pemenang, Tanjung, Batu Layar, Sekotong, Pujut, Praya Barat, Jerowaru and Sembalun.
- Allocation of sufficient numbers of Temporary Disposal Site (TPS) and improvement on solid waste collection system, at all the settlements along the coastline.
- Expansion of existing Final Disposal Site (if there is room for expansion) or allocation of new Final Disposal Site (to adopt sanitary landfill method) to cater for the amount of wastes delivered.

Recommendations for the long term (2041) are as below:

- 100% sustainable solid waste management at the entire island of Lombok.
- Solid waste collection and disposal facilities shall be increased and expanded accordingly
- Allocation of more Integrated Waste Processing Sites (TPST) will be needed so that solid wastes are sorted and segregated before being transported to Final Disposal Sites (TPA). This can reduce amount of wastes delivered to Final Disposal Sites (TPA), and is also a more sustainable and environmental friendly approach.
- Development of sanitary landfill site(s) with sufficient capacity. Location of the landfill site shall be studied taking into consideration future master plan of the study area, distance from the residential and tourist attractions, and environmental sensitivity.

15.14 POWER SUPPLY

15.14.1 FUTURE DEMAND

With reference to the projected population and visitor arrivals, and power consumption rate (as shown in Figure 123), forecasted power demand is tabulated in Figure 120:

FIGURE 120 – POWER DEMAND PROJECTION (MWH)

			2015			2021	2041
			Demand*	Served by PLN	Not Served by PLN		
Domestic	Kota Mataram		431,490	431,490	-	1,156,815	2,552,916
	Lombok Utara		212,265	144,680	67,585	569,078	1,255,872
	Lombok Barat		654,892	429,675	225,217	1,755,750	3,874,680
	Lombok Tengah		912,879	548,640	364,239	2,447,408	5,401,064
	Lombok Timur		1,164,018	385,756	778,262	3,120,708	6,886,930
Overnight Guest	VFR (staying at family & friends)	Kota Mataram	2,868	2,868	-	7,688	16,966
		Lombok Utara	4,301	2,932	1,370	11,531	25,448
		Lombok Barat	2,757	1,809	948	7,392	16,313
		Lombok Tengah	551	331	220	1,478	3,263
		Lombok Timur	551	183	369	1,478	3,263
	Commercial Accommodation**	Kota Mataram	10,795	10,795	-	13,285	22,470
		Lombok Utara	16,193	11,037	5,156	21,450	33,102
		Lombok Barat	10,380	6,810	3,570	16,670	25,722
		Lombok Tengah	2,076	1,248	828	13,770	140,550
		Lombok Timur	2,076	688	1,388	2,820	4,356
Total			3,428,093	1,978,941	1,449,152	9,147,320	20,262,913

Source: Surbana Jurong
**Power demand projection (MWH)*
***Commercial accommodation considers 1.9 guests per room as per visitor demand forecast.*

Figure 120 above showcases estimated power demand (Mwh) by different categories of consumers in 2015 (with amount of power served and not served by PLN). Projected power demand by different categories of consumers in 2021 and 2041 are also presented. Summary of existing and projected power demand for each of the key tourism kabupatens are tabulated in Figure 121; while ratio of estimated power demand to support tourism activities with respect to overall demand is shown in Figure 122.

FIGURE 121 – SUMMARY OF POWER DEMAND PROJECTION (MWH)

Kabupaten	2015	2021	2041
Kota Mataram	445,153	1,177,788	2,592,352
Kab. Lombok Utara	232,759	602,059	1,314,422
Kab. Lombok Barat	668,029	1,779,812	3,916,715
Kab. Lombok Tengah	915,506	2,462,656	5,544,876
Kab. Lombok Timur	1,166,645	3,125,006	6,894,549
Total	**3,428,093**	**9,147,320**	**20,262,913**

FIGURE 122 – ESTIMATED POWER DEMAND RATIO

Type of Usage	2015	2021	2041
Domestic	3,375,544	9,049,758	19,971,461
Visitor	52,549	97,562	291,452
% of visitor/ total	1.53%	1.07%	1.44%

Key Assumptions

The adopted rate Kwh (Kilowatt hours) for residents and visitors are tabulated in Figure 123. It is estimated that the unit rate of power consumption will increase for the short term (2021) and long term (2041) period.

FIGURE 123 – POWER CONSUMPTION RATE[40]

Type of Usage		Unit Rate (Kwh)		
		2015	2041	2021
Domestic (per person), including VFR		1,000	2,500	4,750
Overnight Guest	Commercial Accommodation (per room)	4,000	5,000	6,000

Based on the above consideration, existing power demand is estimated to be 3,429,000 Mwh in Lombok (445,153 Mwh in Kota Mataram, 232,759 Mwh in Kab. Lombok Utara, 668,029 Mwh in Kab. Lombok Barat, 915,506 in Kab. Lombok Tengah, and 1,166,645 Mwh in Kab. Lombok Timur). Out of the total demand, only 58% is fulfilled by PLN power network.

40 Reference: National Energy Council, Republic of Indonesia. Bin Su, Hotel Design and Energy Consumption, 2012.

Power demand in 2021 and 2041 are estimated to be about 1,177,788 Mwh and 2,592,352 Mwh in Kota Mataram, 602,059 Mwh and 1,314,422 Mwh in Kab. Lombok Utara, 1,779,812 Mwh and 3,916,715 Mwh in Kab. Lombok Barat, 2,462,656 Mwh and 5,544,876 Mwh in Kab. Lombok Tengah, and 3,125,006 Mwh and 6,894,549 Mwh in Kab. Lombok Timur.

The total power demand in Lombok is estimated to be 9,148,000 Mwh in 2021, and 20,263,000 Mwh in 2041. Power demand for tourism activities is less than of 2% of the total demand.

15.14.2 POWER SUPPLY INFRASTRUCTURE NEEDS

PLN coverage is comparatively low in Lombok as compared to other major tourist destinations in Indonesia. Sufficient power supply should be in place to support the growth of the tourism industry in Lombok.

The following key power supply infrastructure projects are recommended for the short term (2021):

- 100% coverage of PLN power supply at the key tourism areas, i.e. – Kec. Pemenang, Tanjung, Batu Layar, Sekotong, Pujut, Praya Barat, Jerowaru and Sembalun.
- Expansion of existing power transmission and distribution networks and construction of new networks to meet the above-mentioned target.

Recommendations for the long term (2041) are as below:

- Development of power generation, transmission and distribution systems to support the potential growth of power demand.
- Expansion of existing power plants (if there is room for expansion) and construction of new power plants to generate sufficient power.
- Expansion of existing power supply networks and construction of new networks to transmit and distribute generated power from PLN's power plant to support potential growth of power demand.

15.15 TELECOMMUNICATION INFRASTRUCTURE

15.15.1 TELECOMMUNICATION INFRASTRUCTURE NEEDS

Expansion of existing telecommunication coverage is required to cater for the additional population and visitor arrivals, particularly in the key tourism areas. This is important to ensure sufficient connectivity in case of emergencies, and for visitors to share their travel experiences. Collaboration between the authorities and the telecom companies is needed to improve the telecommunication infrastructure. Projected population and visitor arrivals should be made known to the telecom companies so that upgrading and expansion of telecommunication facilities can be planned in advanced.

KEY RECOMMENDATIONS

16. WHAT WILL TRIGGER INVESTMENT?

Investment responds to actual increases or future anticipated increases in demand. To mobilize private investment, investors need to be convinced that the anticipated future increases in demand will materialize and that the process of investment will be satisfactory.

In the following sections, we will provide:

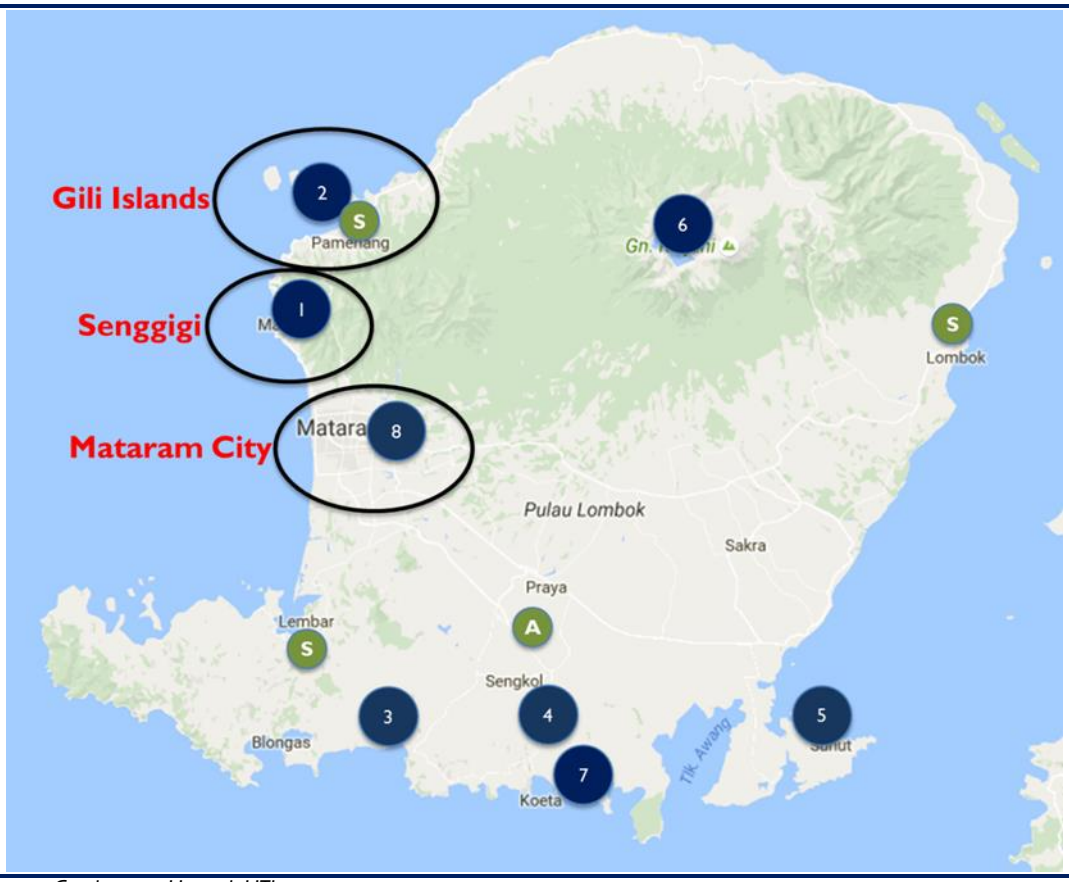
- a recap of the existing supply and demand dynamics in Lombok together with our projections for visitor arrivals (as discussed in detail above);
- recommendations for improvements in the regulatory environment and destination management;
- recommendations on products and services that are suitable for development and management by SMEs; and
- recommendations on tourism driven infrastructure investments, both transport and basic capacity.

16.1 RECAP OF LOMBOK'S SUPPLY & DEMAND DYNAMICS

16.1.1 KEY ATTRACTIONS & KEY TOURISM AREAS

To recap the above findings, Figure 124 identifies the existing identified key attractions and key tourism areas.

FIGURE 124 – KEY ATTRACTIONS & EXISTING KEY TOURISM AREAS



Source: Google maps, Horwath HTL

8 key attractions in Lombok have been identified (numbered)

1. Senggigi: composed of 3 main beaches and highest concentration of top tier accommodation
2. Gili Islands: boat access from Bali, backpackers and divers, small scale accommodation
3. Selong Belanak Beach: beautiful beach
4. Sade Village: authentic Sasak village
5. Pink Beach: pink sand, beautiful beach
6. Mount Rinjani: volcano, popular hiking site
7. Tanjung Aan: beautiful beach within Mandalika
8. Pura Meru Temple: Hindu temple

There are 3 existing key tourism areas: Gili Islands, Senggigi and Kota Mataram.

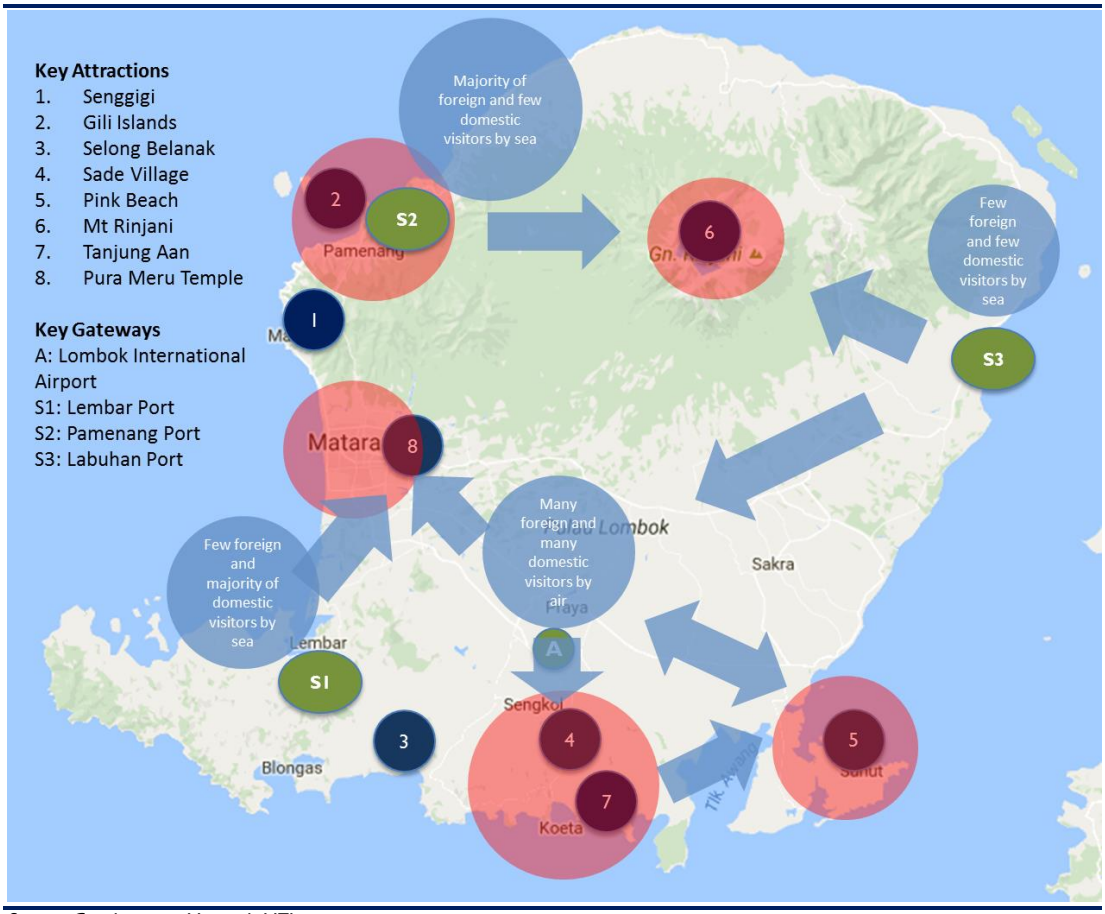
16.1.2 VISITORS TO LOMBOK ARRIVE MAINLY BY SEA AND FROM BALI

As seen in Figure 125: 68% of international visitors arrive by sea from Bali, mostly to the north (Gili Islands) and 70% of domestic visitors arrive by sea from Bali, mostly to the west (Lembar Port).

32% of international visitors arrive by air via a domestic flight, mostly from Bali. 7% come directly from Singapore or Kuala Lumpur; Lombok International Airport (2.5 million arrivals in 2015) is used mostly for domestic flights (90%).

Taxis are the main transport mode used from Lombok International Airport and to get around.

FIGURE 125 – MAIN ARRIVAL POINTS, DOMESTIC AND FOREIGN VISITORS (2015)



Source: Google maps, Horwath HTL

16.1.3 ACCOMMODATION SNAPSHOT

Accommodation is focussed in the key tourism areas of:

- Kab. Lombok Utara: Predominantly Gili Islands, with some small luxury hotel products in Tanjung. Leisure demand driven through Bali. Majority of non-star-rated hotels.
- Kab. Lombok Barat: majority of hotels clustered in and around Senggigi. Leisure demand with some MICE for larger resorts. Majority of star-rated hotels.
- Kota Mataram: demand driven by commercial and governmental activities, predominantly business demand.

The vast majority of accommodations in Lombok are non-star-rated hotels, which are mostly smaller, privately owned and operated properties. Few scattered international operators with limited growth since late 1990s.

Star-rated hotels outperform non-star rated hotels in terms of occupancy. This is largely attributed to management for reasons such as marketing & reservations reach and also to more developed facilities.

16.1.4 INVESTMENT SENTIMENT

Domestic investors are attracted by the market potential of Lombok but several factors do not favour investment including:

- Difficulty to find skilled labour (but fortunately Bali is close);
- The slow growth in the tourism industry since the late 1990s when Lombok tourism first developed full service hotels such as the Novotel. This has fostered skepticism for the destination; and
- Domestic investors suggested that Lombok needs a kick-start to develop tourism along the southern coast to accommodate a greater variety of visitors. This should be initiated by the Government.

Foreign investors prefer to invest in locations which are already popular for their country's citizens. This is not the case for Lombok, except for Australians.

16.1.5 SKILL LEVELS

Skill levels are low in Lombok, most training for hotel staff is done on-the-job. SMK training is insufficient and outdated for current market demands. There is inadequate training for more senior positions and it is difficult to recruit staff for entry, supervisory or managerial positions. Bali is used as a source of management staff, whilst rank & file staff and supervisors tend to be recruited locally.

Specific skills gaps identified include:

- Service, systems (reservations, cashier, etc.), culinary and language skills.

- Basic service excellence training (beneficiaries to include non-star hotel owners, taxi drivers, boat captains, etc.).
- Environmental conservation skills.
- Access to market training, particularly for homestay providers.

16.1.6 FOREIGN VISITOR ARRIVALS & DEMOGRAPHICS

- There were an estimated 1,030,000 foreign visitors in 2015, representing 52% of all visitors. This has increased strongly since 2009 by almost a factor of 5.
- Foreign visitors come mostly from Europe (50%, especially from Germany, the Netherlands, the UK and France) and Australia. Asian visitors are almost absent from Lombok, except for Malaysians, whereas Bali is already very popular in China, Japan, Taiwan and Korea. The reasons are the lack of awareness and poor direct links.
- Most foreign visitors arrive by boat via Bali as Lombok is generally considered a side trip.
- They come mostly for holidays (83%)* and their favorite place in Lombok is Lombok Utara (especially the Gili Islands).
- Average length of stay of 2.3 days for overnight guests.

16.1.7 DOMESTIC VISITOR ARRIVALS & DEMOGRAPHICS

- There were an estimated 952,650 domestic visitors in 2015, representing 48% of total visitors to Lombok.
- Lombok Island benefits from frequent connections by air and sea, which make it accessible for weekend getaways.
- There has been strong growth of domestic visitors in commercial accommodation in the past 5 years.
- Their main purpose of visit is leisure (48%). Business purpose accounts for only 11% of domestic arrivals.
- Almost 80% come from Java (DKI Jakarta 26%, East Java 20%, Central Java 18% and West Java 13%).
- 74% stay in commercial accommodation (hotels and villas).
- Their average length of stay in Lombok is 2.7 days.
- The average expenditure per day is USD 23.90.

16.1.8 LOMBOK'S POSITIVE IMAGE

Lombok has retained its allure as an "unspoiled paradise", in contrast to neighboring Bali, creating a possible unique selling point.

More specifically, the southern coast of Lombok is emphasised as a potential alternative to Bali because of its pristine beaches.

16.1.9 RECOMMENDED DESTINATION POSITIONING

Lombok is the unspoiled paradise; it fosters the development of sustainable and different key tourism areas offering various options to appeal to broader sources of tourism demand. It should not develop a single identity, e.g. Halal or eco-tourism (although they can be components). The diversity of tourism areas includes:

- Gili Islands and Senggigi: largely luxury or high-end beach destinations that are expected to develop further organically. Target markets: Australia, Europe.
- Kota Mataram: business driven, mid-tier. Target markets: Indonesia, Malaysia.
- Mount Rinjani and surroundings for nature based, niche tourism. Small / low impact. Not a principal focus, but identified as a secondary alternative. Target markets: Europe, China (niche).
- Southern coast:
  - South west, including Selong Balanak, low-density beach destination to cater for high yielding visitors, surfers, divers, particularly along coast line. Facilities should match this demand. Target markets: US, Europe (France), Australia, Japan, Germany, Singapore.
  - Central south, including Mandalika, developed as a high-density mass market tourism area. Close to airport. Multiple hotels, all price points, greater variety of facilities. Target markets: China, Malaysia, Singapore, Australia, Middle East, MICE.
  - South east, including Pink Beach, developed as a high-end, low-density accommodation area with supporting facilities (similar to south west). Target markets: US, Europe (France, Germany), Australia, Japan.

Four key areas have been identified for tourism development covering 8 kecamatan:

1. Gili Islands (Kec. Pemenang);
2. Senggigi area (Kec. Batu Layar and Tanjung);
3. Southern coast (Kec. Pujut, Praya Barat, Sekotong and Kec. Sekaroh/ Jerowaru); and
4. Mt Rinjani (Kec. Sembalun).

16.1.10 FUTURE DEMAND & SUPPLY

2 contrasted scenarios were developed to gauge the effectiveness of investment:

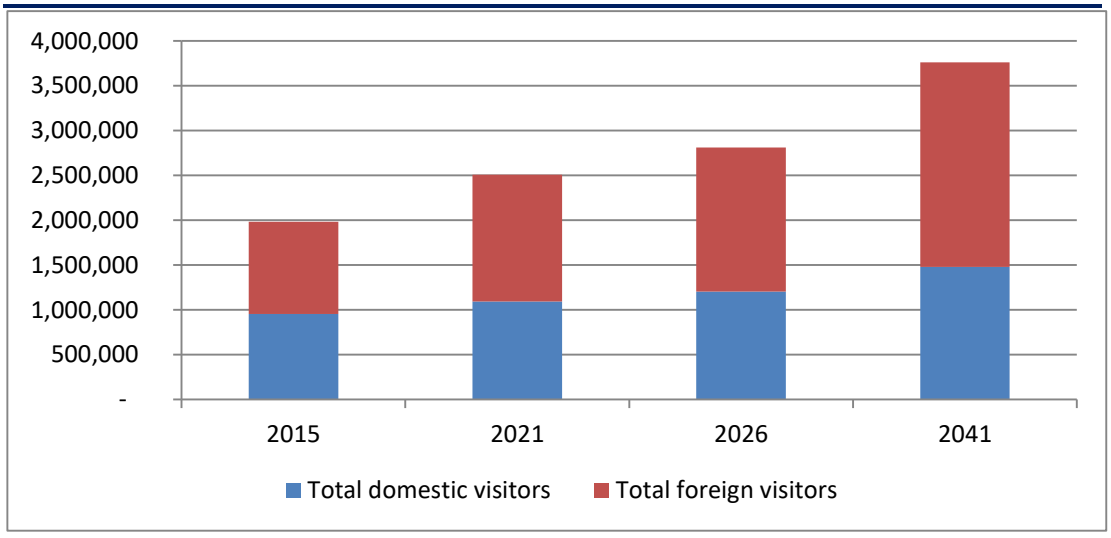
- Business as Usual scenario which is represented by:
  - "Organic" development of the destination driven by market forces;

- No significant level of government support for the development of a major destination resort project at Mandalika; and
- No integrated development vision and planning.

- Best Case scenario which is represented by:
  - Significant government support for the development of the southern coast of Lombok into several different tourism zones. This includes the mass market anchor of Mandalika & key high-end low-density zones in the south west and south east.
  - Gili Islands maintain their attractiveness through implementation of environmental sustainability best practices, addressing key basic services deficiencies.
  - For Senggigi's development, and northward to Tanjung, it will be particularly important to establish and enforce planning controls to maintain the 'boutique' character, which was successfully created through 20 years of small-scale hotel development.
  - Direct connectivity between Lombok and selected targeted markets will develop as the result of the creation of a new, attractive offer in the southern coast, further driving demand growth.

The repercussions on visitor arrivals of the Best-Case scenario are shown in Figure 126.

FIGURE 126 – VISITOR ARRIVALS PROJECTIONS, 2015 TO 2041 (BEST CASE SCENARIO)

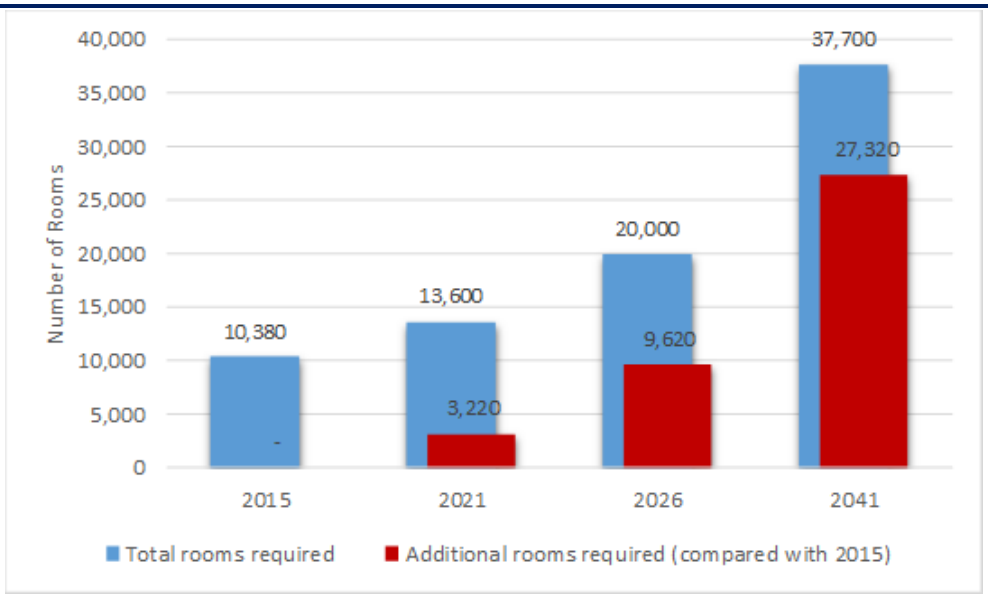


Source: Horwath HTL

Total visitors are projected to generate **estimated total annual expenditures** of USD 1.7 billion in 2041 (USD 505 million in 2021 and USD 821 million in 2026), which is 4.5 times the 2015 expenditure of domestic and foreign visitors.

The additional visitor arrivals will have a direct impact of the number of hotel rooms required (Figure 127) and the number of staff required to operate the hotels (Figure 128).

FIGURE 127 – NUMBER OF ROOMS REQUIRED, 2015 TO 2041 (BEST CASE SCENARIO)



Source: Horwath HTL

FIGURE 128 – NUMBER OF HOTEL STAFF REQUIRED, 2015 TO 2041 (BEST CASE SCENARIO)

	< USD 40	USD 40 - 80	USD 80 - 120	USD 120 - 240	> USD 240	Total
Staff / Room Ratio	0.53	0.83	1.15	1.56	2.70	
% Total Rooms	0.42	0.31	0.11	0.13	0.03	
Additional Rooms:						
Existing						10,380
2021	1,361	1,001	358	410	90	3,220
2026	2,705	1,990	711	814	179	6,400
2041	7,482	5,505	1,967	2,252	494	17,700
Total						37,700
Additional Staff:						
2021	**723**	**832**	**412**	**640**	**243**	**2,850**
Entry Level	651	707	350	544	207	2,459
Supervisor	-	83	41	64	24	213
Management	72	42	21	32	12	179
2026	**1,437**	**1,654**	**819**	**1,271**	**482**	**5,663**
Entry Level	1,293	1,406	696	1,080	410	4,885
Supervisor	-	165	82	127	48	422
Management	144	83	41	64	24	356
2041	**3,973**	**4,574**	**2,264**	**3,516**	**1,333**	**15,660**
Entry Level	3,576	3,888	1,924	2,989	1,133	13,510
Supervisor	-	457	226	352	133	1,168
Management	397	229	113	176	67	982

Source: Horwath HTL

Of course, in addition to hotel staff, further staff will be needed to work in all supporting tourism facilities such as restaurants and travel agencies.

16.2 RECOMMENDATIONS ON DESTINATION ENHANCEMENTS

The following destination enhancements will help foster investment which will facilitate Lombok reaching the projected visitor arrival levels:

- Development of a destination 'brand', an identity by which it can differentiate itself (from Bali particularly). This will likely lead to an improvement of destination image and awareness regionally and internationally;
- Development of tourism surrounding the Sasak cultural experience, through villages, performance, crafts etc. in Lombok;
- ITDC & the Government's commitment to Mandalika must be clear (hotel openings, convention center, capacity infrastructure (e.g. solar panels), etc.). This will reassure more investors given Lombok's long history of stagnation;
- Sustainable tourism development which involves the local community;
- Infrastructure enhancement such as that indicated in the accompanying transport & basic infrastructure needs sections; and
- Lombok itself has a history dotted with internal conflict, which is on-going today between villages. Different measures should be introduced to reduce crime rates and perception of security, including tourism police, higher security visibility, police stations/posts located in local town areas. Promoting low crime rates and high security will assist to promote a positive status for the island amongst domestic, international travellers and the media.

16.3 LEGAL & REGULATORY ENVIRONMENT ENHANCEMENTS

The following legal and regulatory environment enhancements will also help foster investor confidence and drive both domestic and foreign investment in Lombok:

- Government should encourage all sizes and scales of investment with clearly defined financial incentives. Currently, while the central government continues to offer financial incentives to encourage new businesses, the guidelines and parameters for these incentives are unclear.
- Regulatory enforcement of environmental regulations. The main focus of Lombok's development should be to preserve the island's natural and cultural heritage, learning from the errors of Bali. Tourism-related stakeholders should be required to employ sustainable operational practices. Regulations must be enforced by the kabupaten.
- Master planning of development in Lombok with clear zoning and vision for different areas across the island. For example, zoning for Senggigi should be low rise, good setbacks, low density ('low-density luxury beach zone') in comparison to Mandalika, which can be higher density and mixed commercial for example ('high-density tourism zone').
- Government should ensure continual improvement in providing a transparent and simple investment procedures, plus on-going support to potential investors by:

- simplifying registration process;
- providing more comprehensive guides and parameters regarding legal frameworks and tax incentives; and
- ensuring security of tenure for investors.

- Investors should be encouraged to prioritize the local work force over imported labour, to help build communities.

It is noted that there is further commentary gleaned from interviews with domestic and foreign investors as to how the government can promote investment in the supporting Indonesia-level report.

16.4 SME DEVELOPMENT INTERVENTIONS

For forecasts to be met, there must be a significant increase in businesses serving the tourism sector, many of which will be SMEs. They will deliver services supporting the larger investments. To encourage sufficient SME development to meet the demand the GoI may need to mobilize assistance specifically targeted at SMEs.

SMEs are integral to the success of a destination, as they play significantly role in creating local employment and engaging local people in tourism industry, with the potential to foster long-term and sustainable economic development.

16.4.1 SME: PRODUCTS & SERVICES

The following products and services, in line with the vision for future growth, provide opportunities for SMEs to develop.

- Small resorts located in the future key tourism areas. These accommodations should be affordable, budget and midscale quality that mainly target backpackers and transient travelers.
- Quality camping sites near Mount Rinjani.
- Retail for sales of local handicrafts and souvenirs.
- Food and beverage outlets that offer both local and international cuisines.
- Travel agencies focusing on the key attraction clusters and surrounding destinations.
- Local community specialist guides for attractions (cultural heritage guides, wildlife and trekking) & Sasak culture (performance & craft).
- Car rental and transportation services and boat rental services.
- Tour operators providing adventure tours such as trekking, cycling, and camping tours to inland mountains, waterfalls and forests.

16.4.2 SME: INTERVENTION OPTIONS

Our research has uncovered many different SME support programs used nationally and the following section will outline a few of these programs that could be implemented in Lombok to meet the needs of the above suggested SME products and services.

The Ministry of Cooperatives and Small and Medium Enterprises undertakes, amongst other things, the following 2 programmes to encourage the development of SMEs:

- **Kredit Usaha Rakyat (KUR)** is the main programme of the Usaha Kecil dan Menengah (Small and Medium Sized Enterprise) function of the Ministry. The KUR (low interest rate programme) is currently offering loans at 9% which is understood to be the best effective rate in the market.
- **Beginner's entrepreneur programme / training course** is also currently being implemented. The program being developed is funded by the federal government with a budget of IDR 100 billion. Beginner entrepreneurs (SMEs) will receive business licenses for export (manufacturing) and retail at no cost.
  - The program started in 2015 offering tourism-training courses. Select courses were introduced in 2016 and in 2017 they intend to increase the number of courses. In 2016, the program ran a human resource development for tourism course in Bali.
  - They are developing further courses for tour guides, home stay and other tourism entrepreneurs.
  - Bandung and Yogyakarta are planned as the next course locations.

Other possible SME interventions include:

- Development of community co-operatives (e.g. village co-operatives for cultural villages) to improve efficiency through shared access to management and development systems and product supply lines such as pooling resources, reservation systems and marketing activities. Village co-operatives could be funded to create an online platform displaying the various activities, events, routes and accommodations of the cultural villages, which can be accessed, by both FITs and tour operators for enquiries and reservations.
- SME Training Support for the local communities:
  - Hospitality training on service, language skills, hygiene, culinary and use of information technology for locals at the cultural villages.
  - Production of high quality handicrafts using traditional skills, patterns and local materials (bamboo, cane, stones, silver, or even volcanic ash), which would increase the local products appeal to visitors.
- Recruiting and retaining young talent is a challenge for SMEs, particularly in smaller towns however a steady flow of fresh talent is critical to the future success of SMEs. Options to encourage young talent include:

- Study awards covering tuition fees, allowances, a sign-on bonus and job opportunities can be introduced by local schools to encourage students to join SMEs upon graduation; and
- Government supported internship programmes. Internship program in accommodation or tourist facilities in the Borobudur area can be launched for tourism university students in Yogyakarta to bring in more dynamic and new ideas to the destination.

- Government support schemes to minimize various types of pollution such as water and air pollution as well as solid wastes. There is also a plague across Indonesia to improve energy efficiency as to support a more sustainable tourism industry.
- Government programs for infrastructure that supports SME development such as:
  - Basic infrastructure e.g. power and water;
  - Childcare services; and
  - Public facilities such as footpaths, parks and public transport.

16.5 KEY RECOMMENDATIONS FOR TRANSPORT INFRASTRUCTURE INVESTMENT

The key recommendations on investments needed for transport infrastructure is presented below.

Airport Infrastructure

Lombok International Airport has seen a steady growth in passenger traffic with passenger volume recorded at 2.5 million in 2015. The existing airport infrastructure can handle 3 million passengers and has a surplus capacity. Government has further plans to expand the Airport by increasing terminal building capacity to 3.25 million passengers including runway and apron expansions. The plan is currently being reviewed by JICA. The existing capacity of 3 million passengers will be adequate in the short term.

Sea Port Infrastructure

Lembar Port is the most important harbour in Lombok that connects to Bali, however mostly used for inter-island transport and by domestic visitors. The ferry port infrastructure at Lembar is adequate to meet the future demand if the occupancy of RORO ferries is managed. Currently, the ferry port can handle a maximum of 48 ferry trips, indicating the ferry port infrastructure has reached its capacity; however, the occupancy of ferries is quite low and can be optimized. Foreign visitors typically take the frequent and direct speedboats from Bali to the Gili Islands. The Gili Islands have jetties for handling small boats. There is a need to improve the jetty facilities in the Gili Islands. Additionally, the Lembar harbour receives cruise calls, which are forecast to increase in the future. The government (Pelindo III) has started construction of a new Gili Mas Port, which can accommodate Voyager-class cruise ships of up to 3000 passengers. Once Gili Mas Port becomes fully operational in 2021, it will have more than sufficient capacity to handle all cruise ships heading for Lombok.

Road Infrastructure

The road network on the island is adequate to provide access to the various attractions and tourism hotspots. However, all roads connecting tourism attractions need to be well maintained. Road widening is not necessary considering the low traffic volumes. Pedestrian facilities such as road side footpaths need to be developed in key tourism areas such as Senggigi.

Public Transport

Public buses, taxi, rental cars, ojek, and cidomo are the transport options available for visitors to travel around Lombok. Inter-city bus services connect Mataram to tourist attractions around Island. The proposed BRT system in Mataram will enhance the accessibility for visitors to access tourism resources at Senggigi beach. The public buses connect Lombok International Airport to Mataram and Senggigi as well. Existing public transport facilities are sufficient; however, need to be well maintained and improved to serve the visitors. Considering that there is no bus service from the airport to South Lombok, the transport service will need to be extended once the Mandalika SEZ is developed. Taxis and rental cars are the most convenient modes of transport for tourist but need to be regulated and better organised.

16.6 KEY RECOMMENDATIONS FOR BASIC INFRASTRUCTURE INVESTMENTS

Basic infrastructure such as water supply, wastewater and sanitation, and solid waste management is important as they result in unhygienic conditions posing health hazards that also impact the tourism development potential. Therefore, ensuring hygienic conditions and a clean environment is a prerequisite for tourism development. The overall coverage of basic service delivery in Lombok is low, and improvement and upgrading works are urgently required.

- As the capital city of West Nusa Tenggara Province, coverage of basic service delivery is much higher than in the remainder of Lombok. According to STBM standards 99% of its population has access to adequate sanitation and about 95% of solid waste generated in Kota Mataram is collected and properly disposed. However, conditions of basic infrastructure and service delivery are not up to standard in the other local governments in Lombok.
- Access to adequate sanitation as per STBM standards in the remaining four kabupaten is less than 60%. Although coverage at some of the key tourism kecamatan is higher (68% at Kec. Pemenang, 65% at Kec. Tanjung, 74% at Kec. Batu Layar), a large percentage of the population is not served. Note that with reference to the national SPM Permen PU 01/PRT/M/2014 standard for sanitation the actual current sanitation coverage is worse than indicated by the STBM standards.
- In terms of solid waste management Kabupaten Lombok Barat, including Senggigi has a coverage of 70% and Kabupaten Lombok Tengah (Mandalika) 20%. The remainder of Lombok, including the Gili Islands, has negligible/no formal solid waste management system.

- The lack of sanitation and solid waste management poses a serious health risk for the resident population and visitors alike and has an impact on the fragile marine environment especially the coral reefs. General cleanliness and litter problems already tarnish the image of Lombok as a tourism destination. Hence, investments in the short term will be needed for improvements in wastewater and solid waste management in key tourism Kecamatans.
- Generally, coverage of piped water supply by PDAM is low in Lombok. Water supply at the Gili islands and south Lombok is not self-sustained. Proposals have been announced to provide potable water though an underwater transmission main to the Gili islands. A newly constructed reverse osmosis treatment plant will contribute to fulfil the water demand of Mandalika Special Economic Zone. Hotels operators are willing and able to pay for high quality service provision and this offers ample opportunity for cross subsidy while eliminating existing infrastructure and service deficiencies in nearby low-income settlements. This requires careful and integrated spatial and investment planning in close collaboration with private developers and local communities, for which the integrated tourism master planning process will provide the platform.
- Some parts of Kota Mataram and some low-lying areas in the West of Lombok are prone to regular flooding. Upgrading of the storm water drainage system is required.
- Other basic infrastructures, such as for power and telecommunications, need improvement but are not hampering further tourism development.

16.7 RECOMMENDATIONS FOR MASTER PLANNING

16.7.1 EXISTING SPATIAL MASTER PLANS & REGULATORY FRAMEWORK

To ensure sustainable urban growth and tourism development, it is important to have a detailed spatial plan and development guidelines for tourist attraction areas where the development pressures are increasing at a rapid pace.

Indonesia has an established system for spatial planning and most of the destinations have a spatial plan from the Kabupaten, Province or Kota. As per the national Spatial Planning Act (Law No. 26/2007 amends Law No. 24/1992), the provincial governments and district governments are authorized to implement spatial planning. The Rencana Tata Ruang Wilayah (RTRW) and the Rencana Detail Tata Ruang (RDTR) are the two major spatial plans prepared at the regional level (Province and Kabupaten) and local level (Kecamatan or Special Areas within Kabupaten and Kota) respectively.

While the RTRW serves as the Regional Spatial Concept Plan providing broad directions for Provinces or Regencies, the RDTR serves as the Detailed Spatial Master Plan indicating detailed land uses such as residential uses by density, commercial uses, mixed uses, government uses, industrial uses, social facilities, etc., for the Kota or other designated areas within the Kabupaten.

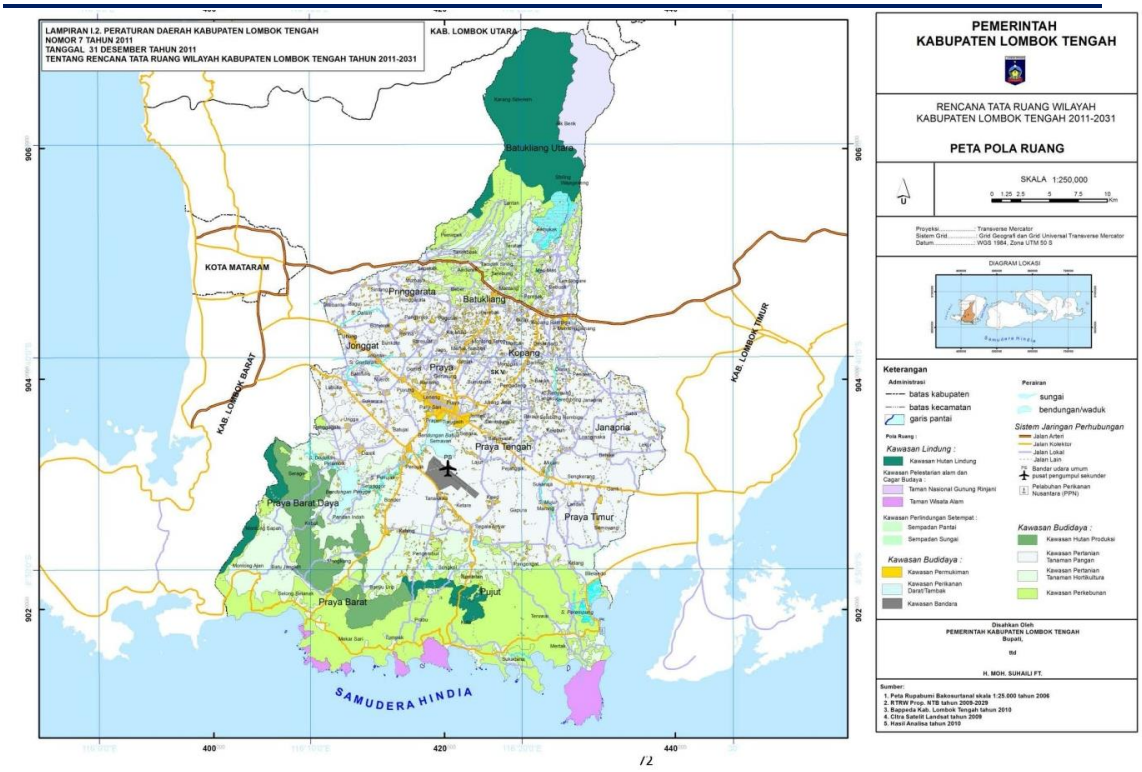
The Spatial Master Plans are managed by the Provincial or Kabupaten level Bappeda. It has been observed that the RTRW and RDTR are prepared for the time horizon of 20 years. It is important to review the Master Plan every five years considering the changing socio-economic conditions and infrastructure needs, including new tourism targets and plans. As discussed in the previous sections on Transport Infrastructure and Basic Services Infrastructure, there are several individual sector plans being prepared by the respective authorities, some of which are critical, while others are not needed. Based on the infrastructure needs assessment, the critical plans need to be incorporated into the revised RTRW. This reviewed Master Plan will remove duplication and provide unified planning direction to the respective implementing agencies to execute development programmes towards the common vision and goals.

This section assesses the availability of spatial plans and regulations to ensure that the tourism assets are protected. For Lombok, the main tourism asset is marine tourism (apart from Rinjani), as such it is critical to have regulation to ensure protection of the coastal areas and the eco-sensitive areas in all the potential tourism areas. Following is the overview of plans in place for Lombok.

Rencana Tata Ruang Wilayah (RTRW) West Nusa Tenggara Province Master Plan 2009 – 2029

- The above-mentioned RTRW Master Plan is the Province level structure plan prepared for West Nusa Tenggara Province. It provides broad directions on development structure with strategic areas for urbanization, and infrastructure such as major roads, airports (secondary and tertiary), ports (hub, feeder and passenger), and bus terminals within the Province.
- The plan clearly indicates the environmental protection zones such as protected areas, nature reserve, and mangrove areas. Some protected areas are marked to include the area underwater (3 Gili Islands) as well.
- Additionally, the plan shows the other cultivation zones indicating areas for production forest, agriculture areas, plantation area, livestock's area, residential area, mining area, lake area metro Mataram region and Coastal Tourism region.
- The RTRW is available at Kabupaten level for all Regencies within Pulau Lombok, including Lombok Barat (2011 – 2031), Lombok Tengah (2011 – 2031), Lombok Utara (2011 – 2031), Lombok Timur (2012 – 2032) and Kota Mataram (2011 – 2031). Following is the example of RTRW for Kab. Lombok Tengah.

FIGURE 129 – RENCANA TATA RUANG WILAYAH (RTRW) KAB. LOMBOK TENGAH MASTER PLAN, 2011 – 2031



Source: RTRW

- At the point of study, there is no approved RDTR for the Regencies in Pulau Lombok. In the absence of such Detailed Master Plan, there could be some inaccuracies in boundaries, especially with regards to the protected area delineations. RDTR is also essential to regulate urbanization, especially in tourist attractions areas and their immediate surroundings.

16.7.2 MANDALIKA KAWASAN EKONOMI KHUSUS (KEK) DEVELOPMENT PLAN (DETAILED MASTER PLAN)

Mandalika KEK Development Plan is prepared for the Mandalika SEZ. Mandalika SEZ is proposed by ITDC and has been established through the Government Regulation 52 of 2014. Development of the SEZ Mandalika focuses on tourism activities with an objective to attract tourism related investments with favourable tax policies.

While the Mandalika KEK Development Plan provides detailed development programme for the SEZ area, it also specifies boundaries identified for eco-sensitive areas such as mangrove, green zones, water bodies, and plantations. The Development Plan has the following coastal protection measures in place to ensure that there is no structure within the 40-metre coastal belt ensuring the natural state of the coastal areas:

- 20 metres of coastal zone measured from the highest tidal line is dedicated as publicly assessable areas; and

- The next 20 metres starting from property line is required to be publicly accessible (no perimeter fencing is allowed).

16.7.3 RECOMMENDATIONS FOR SPATIAL MASTER PLAN

For Lombok, the Provincial and Kabupaten RTRW provides the spatial planning framework for the entire Pulau Lombok. It is understood that the approved RDTR (Detail Spatial Master Plan) is unavailable for all Regencies. However, the KEK plan for Mandalika provides detailed development intentions for the SEZ area.

Government of Indonesia intends to develop the Integrated Tourism Master Plan for Lombok in the near future. There is a need to look at the entire Pulau Lombok to assess the tourism potential to complement the SEZ development. Hence, the Integrated Tourism Master Plan will need to incorporate the tourism potential of the entire Pulau Lombok: including the environmental strategies and the land use, transport, utilities infrastructure plans that are being planned and identified as needed. The RTRW will need to be revised based on the Integrated Tourism Master Plan.

Besides broad level spatial plans, the RDTR for the urban/ tourist areas such as Senggigi, Gili Islands, and Kota Mataram will be needed. Looking at the rapid growth of tourist accommodations in Senggigi and Gili Islands, a Detailed Master Plan (RDTR) for these areas is urgently needed.

The scope of a Detailed Master Plan (to feed into the RDTR) shall cover the following:

- Local level Land Use Plan including clear delineation of environmentally sensitive areas (indicating no development zones); and clear zones for residential uses, commercial uses and public facilities (including tourism facilities), and recommended urban densities.
- Transportation Plan including Road network, public transport, parking plans and provisions of non-motorized transport.
- Infrastructure Plan including water supply, power supply, and storm water management, wastewater, and solid waste management strategies.
- Zoning Plan and development guidelines regulating different types of developments. Further to this, special waterfront urban design plan and urban design guideline for key tourism areas will help to regulate intended development scale, type, and identity for Coastal Developments.

16.7.4 GAPS & NEEDS FOR IMPROVEMENT IN SPATIAL PLANNING FRAMEWORK

Figure 130 provides a summary of key gaps and improvements needed in planning framework.

FIGURE 130 – GAPS IN SPATIAL PLANNING FRAMEWORK, LOMBOK

Existing Plans	Assessment	Gaps /Needs for Improvement
Broad Spatial Concept Plans - RTRW West Nusa Tenggara Province (2009- 2029)	• The RTRW Province and Kabupaten Master Plan provides broad directions on development structure and broad level land uses.	• RTRW for Pulau Lombok needs to be reviewed based on the tourism demand, rationalized infrastructure needs, and

Existing Plans	Assessment	Gaps /Needs for Improvement
- RTRW for Lombok Barat (2011-2031), Lombok Tengah (2011-2031), Lombok Utara (2011-2031), Lombok Timur (2012-2032) and Kota Mataram (2011-2031)		detailed socio-economic assessments.
Detailed Spatial Master Plans - Mandalika KEK Development Plan	• Detailed Spatial Master Plan in place for Mandalika SEZ. • No approved RDTR at Kabupaten level	• Need for Detailed Master Plans (with development guidelines) for local development areas in other tourism clusters such as Senggigi Coastal Town and Gili Islands. This is important to regulate the urban development.

- The Provincial and Kabupaten RTRW Master Plans are the major spatial plan for Lombok that guide the overall development and identify eco-sensitive zones for environmental protection. It is important to review the RTRW such that it addresses the tourism demand and related infrastructure needs, along with the Island's future socio-economic potentials. The reviewed RTRW will help to establish common goals for all implementing agencies to execute the respective sector development plans.
- Urban or tourist areas without RDTR such as Senggigi Coastal Town and Gili Islands will need to prepare RDTR demarcating the clear boundaries of protection areas and to regulate the local urban development.

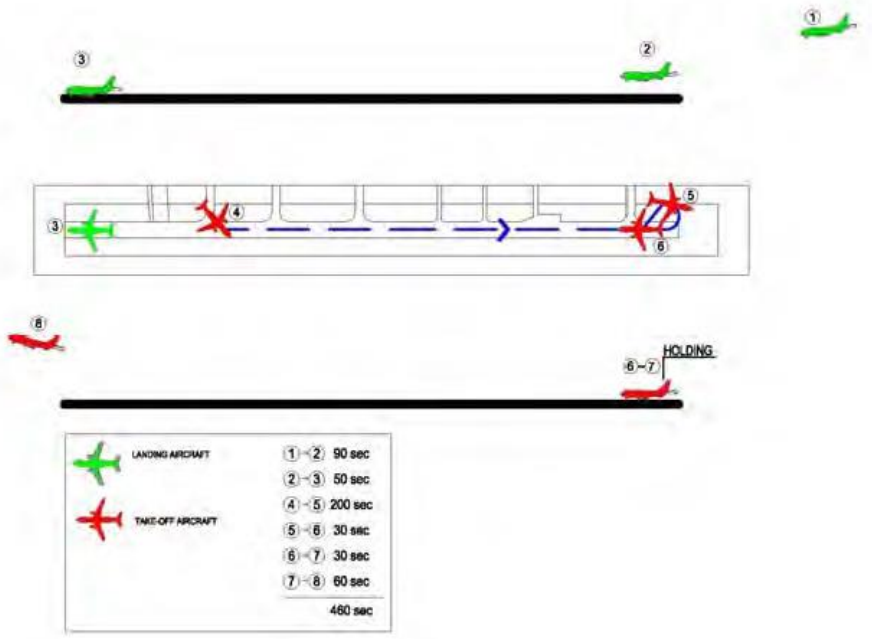
APPENDIX 1 – AIRPORT CAPACITY ANALYSIS

Possible Hourly Aircraft Movements

Since Lombok airport does not have a parallel taxiway similar to Halim Airport in Jakarta, landing aircrafts need to run up to the end of the runway, turn at the turn pad and taxi along the runway up to the exit taxiway. Similarly, departing aircrafts will taxi along the runway, turn at the turn pad and start for take-off. Since departing and landing aircrafts occupy the runway for a long time, the runway capacity decreases.

As shown, the runway occupancy time by landing and departing aircrafts is calculated at approximately 460 seconds. As a result, assuming that the situation in which a departing aircraft follows a landing aircraft is continuous, the hourly runway capacity is calculated at approximately 16 movements.

FIGURE 131 – SINGLE RUNWAY OCCUPANCY TIME



Source: Survey from Halim Airport Runway Occupancy Time (JICA, 2012)

APPENDIX II – ROAD CAPACITY ANALYSIS

A. GENERAL TRAFFIC VOLUME

Future traffic volume for general Traffic is estimated by using following method;

$$Traffic\ Volume\ in\ 2021 = Traffic\ Volume\ in\ 2015\ x\ \frac{Number\ of\ registered\ vehicles\ in\ 2021}{Number\ of\ registered\ vehicles\ in\ 2015}$$

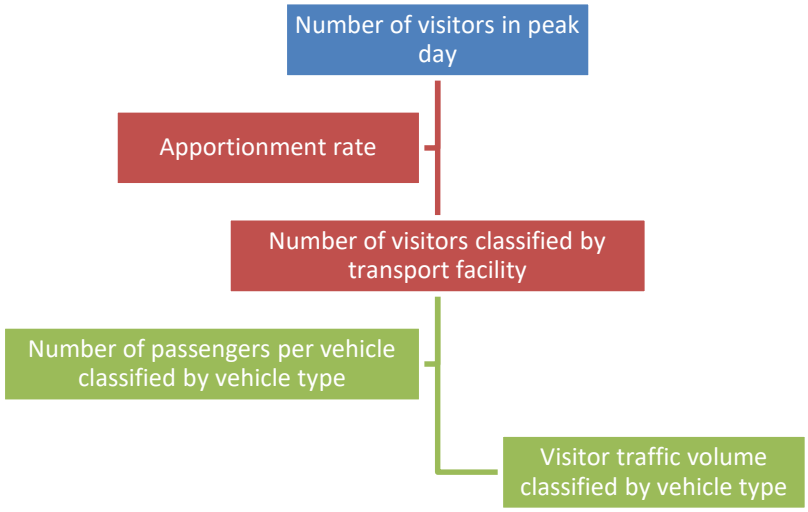
$$Traffic\ Volume\ in\ 2041 = Traffic\ Volume\ in\ 2015\ x\ \frac{Number\ of\ registered\ vehicles\ in\ 2041}{Number\ of\ registered\ vehicles\ in\ 2015}\ Number\ of\ registered\ vehicles\ in\ 2041 Number\ of\ registered\ vehicles\ in\ 2015$$

B. VISITORS TRAFFIC VOLUME

The traffic volume is estimated as follows:

- Obtain the number of visitors who enter each tourism destination and potential visitor's distribution around the destination.
- Distribute the number of the visitors in each transport facility.
- Based on the number of passengers per vehicle, the total visitors traffic volume is estimated.
- Following flowchart illustrates the methodology of visitors traffic volume estimation.

FIGURE 132 – FLOWCHART OF TOURIST TRAFFIC VOLUME ESTIMATION



Source: Surbana Jurong

GENERAL ROAD CAPACITY ASESSMENT

Road capacity is reviewed and calculated with the following formula.

$$C = C_o \times FC_w \times FC_{sp} \times FC_{SF} \times FC_{CS}$$

C capacity (PCU/hour)

C_o free flow capacity (PCU/hour)

FC_w link width capacity factor

FC_{SP} link separated capacity factor

FC_{SF} side friction capacity factor

Free Flow Capacity (Co)

		Urban	Inter Urban	
No	Type	Co (PCE/hour)		Notice
1	4 Lanes Divided or one way	1650	1900	each lane
2	4 Lanes undivided	1500	1700	each lane
3	2 Lanes undivided	2900	3100	all lanes

Link Width Capacity Factor (FCw)

Type	**Width (m)**	**FCw**	**Remark**
4L D or one way	3	0.92	Width for each line
	3.25	0.96	
	3.5	1	
	3.75	1.04	
	4	1.08	
4L UD	3	0.91	Width for each line
	3.25	0.95	
	3.5	1	
	3.75	1.05	
	4	1.09	
2L UD	5	0.56	Width mean for whole segment
	6	0.87	
	7	1	
	8	1.14	
	9	1.25	
	10	1.29	
	11	1.34	

Link Separated Capacity Factor (FCsp)

FC_{SP} (%-%)	50-50	55-45	60-40	65-35	70-30
2/2	1	0.97	0.94	0.91	0.88
4/2	1	0.985	0.97	0.955	0.94

Side Friction Capacity Factor Value for Road with Shoulder

Road Type	Side Friction Category	FC_{SF} Shoulder Wide (m) 0,5	1,0	1,5	2,0
4/2 D	VL	0,96	0,98	1,01	1,03
	L	0,94	0,97	1,00	1,02
	M	0,92	0,95	0,98	1,00
	H	0,88	0,92	0,95	0,98
	VH	0,84	0,88	0,92	0,96
4/2 UD	VL	0,96	0,99	1,01	1,03
	L	0,94	0,97	1,00	1,02
	M	0,92	0,95	0,98	1,00
	H	0,87	0,91	0,94	0,98
	VH	0,80	0,86	0,90	0,95
2/2 UD	VL	0,94	0,96	0,99	1,01
	L	0,92	0,94	0,97	1,00
	M	0,89	0,92	0,95	0,98
	H	0,82	0,86	0,90	0,95
	VH	0,73	0,79	0,85	0,91

Side Friction Capacity Factor Value for Road with Curbs

Road Type	**Side Friction Category**	**FC_{SF} Curbs (m)** <0.5m	1.0m	1.5m	>2.0m
4/2 D	VL	0,95	0,97	0,99	1,01
	L	0,94	0,96	O,98	1,00
	M	0,91	0,93	0,95	0,98
	H	0,86	0,89	0,92	0,95
	VH	0,81	0,85	0,88	0,92
4/2 UD	VL	0,95	0,97	0,99	1,01
	L	0,93	0,95	0,97	1,00
	M	0,90	0,92	0,95	0,97
	H	0,84	0,87	0,90	0,93
	VH	0,77	0,81	0,85	0,90
2/2 UD	VL	0,93	0,95	0,97	0,99
	L	0,90	0,92	0,95	0,97
	M	0,86	0,88	0,91	0,94

	H	0,78	0,81	0,84	0,88
	VH	0,68	0,72	0,77	0,82

City Size Factor

Population (in Millions)	FC_{CS}
<0.1	0.86
0.1-0.5	0.9
0.5-1.0	0.94
1.0-3.0	1
>3.0	1.04

FIGURE 133 – EXISTING ROAD CAPACITY

										2015			
Section	Road	Length	Carriageway	Type	Co	Fcw	FCsp	FCsf	FCcs	C	ADT	PCU	Peak	VCR
32	SP. PENUNJAK - TANAH AWU (BANDARA INTERN	4.54	14.00	4/2 D	7600	1	1	0.89	1.04	7,035	8,232	11,354	1,135	0.16
33	TANAH AWU - SENGKOL	9.66	7.00	2/2 UD	3100	1	1	0.89	1.04	2,869	4,156	5,364	536	0.19
34	SENGKOL - KUTA	17.07	8.57	2/2 UD	3100	1.14	1	0.89	1.04	3,271	1,079	1,474	147	0.05
42	AMPENAN - PAMENANG	11.15	7.06	2/2 UD	3100	1	1	0.92	1.04	2,966	1,423	2,141	214	0.07
42	JLN. SALEH SUNGKAR 2 (MATARAM)	1.43	8.00	2/2 UD	2900	1.14	1	0.92	1.04	3,163	9,317	14,199	1,420	0.45
43	PEMENANG - BAYAN	0.4	6.68	2/2 UD	3100	0.87	1	0.89	1.04	2,496	1,556	2,593	259	0.10
44	BAYAN - SEMBALUN BUBUNG	2.81	5.87	2/2 UD	3100	0.56	1	0.92	1.04	1,661	548	792	79	0.05
8.11	JLN. A. YANI 1 (GERUNG)	0.7	10.00	2/2 UD	3100	1.29	1	0.92	1.04	3,826	6,336	11,868	1,187	0.31
8.12	JLN. A. YANI 2 (GERUNG)	0.88	7.00	2/2 UD	2900	1	1	0.92	1.04	2,775	6,444	11,976	1,198	0.43
1	JLN. ADI SUCIPTO / AMPENAN - SELAPARANG	2.34	10.00	2/2 UD	2900	1.29	1	0.92	1.04	3,579	3,693	6,832	683	0.19
2.11	JLN. ADI SUCIPTO / SELAPARANG - REMBIGA (JL	0.89	11.00	2/2 UD	2900	1.34	1	0.92	1.04	3,718	6,505	11,898	1,190	0.32
3.11	JLN. SUDIRMAN (MATARAM)	3.74	10.00	2/2 UD	2900	1.29	1	0.92	1.04	3,579	7,584	13,473	1,347	0.38
3.12	JLN. JEND. A. YANI (MATARAM)	6.83	14.00	4/2 D	6600	1	1	0.92	1.04	6,315	5,346	9,785	978	0.15
4.11	JLN. SALEH SUNGKAR 1 (MATARAM)	2.88	7.00	2/2 UD	2900	1	1	0.92	1.04	2,775	11,666	17,367	1,737	0.63
4.12	JLN. ENERGI (MATARAM)	2.82	7.00	2/2 UD	2900	1	1	0.92	1.04	2,775	3,036	7,120	712	0.26
4.13	JLN. RAYA BANJAR GETAS (MATARAM)	5	7.00	2/2 UD	2900	0.92	1	0.92	1.04	2,553	5,267	12,484	1,248	0.49
4.14	JLN. DR. SUJONO (MATARAM)	5	14.00	4/2 D	6600	1	1	0.92	1.04	6,315	5,381	8,690	869	0.14
4.15	JLN. TM RAIS (MATARAM)	2.58	14.00	4/2 D	6600	1.34	1	0.89	1.04	8,186	8,499	16,104	1,610	0.20
4.16	JLN. T. ALI BATU (MATARAM)	2.55	14.00	4/2 D	6600	1	1	0.92	1.04	6,315	5,712	9,005	901	0.14
14	REMPUNG - LABUHAN LOMBOK	8.35	6.83	2/2 UD	3100	1.04	1	0.92	1.04	3,085	5,932	9,742	974	0.32
15	LABUHAN LOMBOK - LABUHAN KAYANGAN	9.89	6.83	2/2 UD	3100	0.87	1	0.92	1.04	2,580	601	968	97	0.04

FIGURE 134 – FUTURE ROAD CAPACITY

										2021				2041			
Section	Road	Length	Carriageway	Type	Co	Fcw	FCsp	FCsf	FCcs	C	ADT	PCU	Peak	VCR	ADT	PCU	Peak	VCR
32	SP. PENUNJAK - TANAH AWU (BANDARA INTERN	4.54	14.00	4/2 D	7600	1	1	0.89	1.04	7,035	11,624	16,032	1,603	0.23	22,395	30,888	3,398	0.48
33	TANAH AWU - SENGKOL	9.66	7.00	2/2 UD	3100	1	1	0.89	1.04	2,869	5,869	7,575	757	0.26	11,306	14,594	1,605	0.56
34	SENGKOL - KUTA	17.07	8.57	2/2 UD	3100	1.14	1	0.89	1.04	3,271	1,524	2,082	208	0.06	2,935	4,011	441	0.13
42	AMPENAN - PAMENANG	11.15	7.06	2/2 UD	3100	1	1	0.92	1.04	2,966	2,009	3,023	302	0.10	3,871	5,824	641	0.22
42	JLN. SALEH SUNGKAR 2 (MATARAM)	1.43	8.00	2/2 UD	2900	1.14	1	0.92	1.04	3,163	13,156	20,050	2,005	0.63	25,347	38,629	4,249	1.34
43	PEMENANG - BAYAN	0.4	6.68	2/2 UD	3100	0.87	1	0.89	1.04	2,496	2,197	3,661	366	0.15	4,233	7,053	776	0.31
44	BAYAN - SEMBALUN BUBUNG	2.81	5.87	2/2 UD	3100	0.56	1	0.92	1.04	1,661	774	1,119	112	0.07	1,491	2,155	237	0.14
8.11	JLN. A. YANI 1 (GERUNG)	0.7	10.00	2/2 UD	3100	1.29	1	0.92	1.04	3,826	8,947	16,758	1,676	0.44	17,237	32,287	3,552	0.93
8.12	JLN. A. YANI 2 (GERUNG)	0.88	7.00	2/2 UD	2900	1	1	0.92	1.04	2,775	9,099	16,911	1,691	0.61	17,531	32,581	3,584	1.29
1	JLN. ADI SUCIPTO / AMPENAN - SELAPARANG	2.34	10.00	2/2 UD	2900	1.29	1	0.92	1.04	3,579	5,215	9,647	965	0.27	10,047	18,587	2,045	0.57
2.11	JLN. ADI SUCIPTO / SELAPARANG - REMBIGA (JL	0.89	11.00	2/2 UD	2900	1.34	1	0.92	1.04	3,718	9,185	16,800	1,680	0.45	17,697	32,368	3,560	0.96
3.11	JLN. SUDIRMAN (MATARAM)	3.74	10.00	2/2 UD	2900	1.29	1	0.92	1.04	3,579	10,709	19,025	1,903	0.53	20,632	36,655	4,032	1.13
3.12	JLN. JEND. A. YANI (MATARAM)	6.83	14.00	4/2 D	6600	1	1	0.92	1.04	6,315	7,549	13,817	1,382	0.22	14,544	26,620	2,928	0.46
4.11	JLN. SALEH SUNGKAR 1 (MATARAM)	2.88	7.00	2/2 UD	2900	1	1	0.92	1.04	2,775	16,473	24,523	2,452	0.88	31,737	47,247	5,197	1.87
4.12	JLN. ENERGI (MATARAM)	2.82	7.00	2/2 UD	2900	1	1	0.92	1.04	2,775	4,287	10,054	1,005	0.36	8,259	19,371	2,131	0.77
4.13	JLN. RAYA BANJAR GETAS (MATARAM)	5	7.00	2/2 UD	2900	0.92	1	0.92	1.04	2,553	7,437	17,628	1,763	0.69	14,329	33,963	3,736	1.46
4.14	JLN. DR. SUJONO (MATARAM)	5	14.00	4/2 D	6600	1	1	0.92	1.04	6,315	7,598	12,270	1,227	0.19	14,639	23,640	2,600	0.41
4.15	JLN. TM RAIS (MATARAM)	2.58	14.00	4/2 D	6600	1.34	1	0.89	1.04	8,186	12,001	22,740	2,274	0.28	23,122	43,812	4,819	0.59
4.16	JLN. T. ALI BATU (MATARAM)	2.55	14.00	4/2 D	6600	1	1	0.92	1.04	6,315	8,066	12,716	1,272	0.20	15,540	24,498	2,695	0.43
14	REMPUNG - LABUHAN LOMBOK	8.35	6.83	2/2 UD	3100	1.04	1	0.92	1.04	3,085	8,376	13,756	1,376	0.45	16,138	26,502	2,915	0.95
15	LABUHAN LOMBOK - LABUHAN KAYANGAN	9.89	6.83	2/2 UD	3100	0.87	1	0.92	1.04	2,580	849	1,367	137	0.05	1,635	2,633	290	0.11

APPENDIX III – FERRY FLEET IN SERVICE

FIGURE 135 – FERRY FLEET SEAT CAPACITY

KMP	Type	Year	GRT	LOA	Operator	Capacity	
						Pax	Car
Citra Nusantara	RoRo	1992	1007	57	Jembatan Madura	333	25
Raja Enggano	RoRo	1969	510	-	PT.FerryASDP(Persero)Indonesia	-	-
Dharma Sentosa	RoRo	1984	536	46,7	DharmaUtamaLautan	300	25
Port Link II	RoRo	1973	908	-	PT.FerryASDP(Persero)Indonesia	-	-
Gerbang Samudra 3	RoRo	1990	824	-	SamuderaPT. GerbangSarana	-	-
Marina Primera	RoRo	1990	824	N/A	Jembatan Madura	233	20
Marina Segunda	RoRo	1990	824	N/A	Jembatan Madura	290	22
Nusa Penida	RoRo	1983	649	55	Putera Master SP	204	22
Nusa Shakti	RoRo	1985	676	48	Putera Master SP	348	16
Nusa Sejahtera	RoRo	1984	889	57,4	Putera Master SP	366	18
Andhika Nusantara	RoRo	1983	649	-	PT.NusantaraJembatan	-	-
Perdana Nusantara	RoRo	1992	1645	67,2	Jembatan Nusatara	358	25
Rhama Giri Nusa	RoRo	-	-	-	PT. SamoedraGiri NusaJaya	-	-
PBK Murjati	RoRo	-	-	-	PT. Pewete	-	-
Putri Gianyar	RoRo	1984	819	62,9	KSO PT. ASDP & PT 335		25
Rodhita	RoRo	1973	908	66,9	ASDP PT (Persero)	500	35
Salindo Mutiara I	RoRo	1976	1002	N/A	Gerbang Samudra	248	40
Nusa Bhakti	RoRo	1983	608	55	Putera Master SP	300	21
Permata Nusantara	RoRo	1983	673	-	PT. Jembatan Nusantara	-	-
Suramadu Nusantara	RoRo	1994	661	53,25	PT. Jembatan Nusantara	400	73
Swarna Kartika	RoRo	1979	625	-	PT. Jembatan Nusantara	-	-
Laskar Pelangi	RoRo	1994	672	-	PT. Jembatan Nusantara	-	-
Dharma Kosala	RoRo	1984	625	N/A	Dharma Lautan Utama	216	28
Swarna Cakra	RoRo	1968	1504	-	PT. Jembatan Nusantara	-	-
Dharma Kencana III	RoRo	1985	676	-	PT. DharmaUtamaLautan	-	-
Sindu Dwitama	RoRo	1985	511	N/A		220	26
Putri Yasmin	RoRo	1998	1380	-	PT. Jemla Ferry	-	-
Sindu Tritama	RoRo	-	-	-	PT. PelayaranBahariSindutama	-	-
Rafelia	RoRo	1996	818	-	PT. DharmaUtamaBahari	-	-
Tandemand	RoRo	1991	432	44.3	ASDP PT (Persero)	500	18

Average seats	320	/vessel	Load factor	0.32
Frequency	48	/day		
Capacity	5,606,400	/year		

APPENDIX IV – SOURCES OF INFORMATION USED

The methodology for evaluating the tourism potential of Lombok presented in this report has been developed using both primary fieldwork research and existing statistics. Quantitative data were provided by different government offices, while interviews provide qualitative information for the research. The source of primary and secondary data are referenced in the report and listed in the below section. However, in some cases the information presented is a product of experience and observation prior to and during the fieldwork, and as such it is not specifically attributed by source.

INTERVIEWS

Interviews were conducted with various government offices at central as well as provincial & kabupaten level. The interviews serve to gain a better understanding of tourism development and investment process in Indonesia and Lombok.

- Central Government
  - Badan Pusat Statistik
  - BKPM, Jakarta
  - Profil Kesehatan of each Kabupaten
  - Perusahaan Listrik Negara (PLN)
  - Sanitasi Total Berbasis Masyarakat (STBM)
  - Bappenas
  - Kementerian Pariwisata (International marketing, domestic marketing, investment, transport liaison, marketing communications)
  - Kawasan Economi Khusus, Jakarta
- Lombok (Provincial & Kabupaten)
  - Tourism Authorities of Lombok (Dinas Pariwisata, NTB & Kab. Lombok Tengah)
  - Lombok's regional marketing agency (BADAN Promosi Pariwisata Daerah - BPPD NTB)
  - BKPM-PT NTB
  - ASDP, Indonesia Ferry
  - Mandalika SEZ
  - Department of transportation in Lombok (Dinas Perhubungan West Nusa Tenggara Province)
  - Badan Pusat Statistik, NTB & Kab. Lombok Utara, Kab. Lombok Barat

- Public Works Department (Direktorat Jenderal Sumber Daya Air Balai Wilayah Sungai Nusa Tenggara I)
- Development Planning Agency (Bappeda) & Kab. Lombok Tengah

- Investment sentiment is gleaned from interviews with existing and potential tourism investors. The investors chosen had interests in various tourism-related assets including hotels, restaurants, ground transportation and travel agencies. The questions were aimed at gathering their thoughts on the pros and cons of SEZs, the tourism investment climate in Indonesia, the future of tourism investment and possible investment in Lombok. Potential and existing domestic investors (total of 6) and International investors (total of 25), from the current key arrivals source markets of Australia, China, Japan, Malaysia and Singapore.
- Tour operators/Travel agents:
  - Local (total of 9): Lombok, Bali and Jakarta; and
  - Foreign (total of 41): from the current key arrivals source markets of Australia, China, Japan, Malaysia and Singapore as well as France, Germany and the United Kingdom.
- Hotels in Lombok (total of 10): Mataram, Mandalika, and Senggigi.

STATISTICS

Quantitative data obtained from existing reports and surveys provide numerical information and allow statistical analysis of Indonesia and Lombok's tourism demand.

- BPS West Nusa Tenggara Tourism Survey based on interviews with domestic and foreign visitors, which provides data on arrivals, by nationality, mode of transport, accommodation, purpose of visit.
- BPS Accommodation Survey for the West Nusa Tenggara Province, with results available at Kabupaten Level.
- BPS Domestic Survey, with results available only at Province Level.
- BPS Exist survey with results available only at Province Level.
- BPS Census on population.
- Pelindo III Cruise statistics.
- Reviews on TripAdvisor Website.
- Horwath HTL Indonesia Hotel Industry Survey of Operations.