

# Background Papers **2**

## ERIA Trilateral Highway Study: Myanmar Country Report

By Myanmar Survey Research

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# ERIA Trilateral Highway Study: Myanmar Country Report

Background paper

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## 1. Introduction of the Trilateral Highway

The Trilateral Highway (TLH) is one of the crucial regional transportation projects to enhance connectivity between India and Southeast Asian countries for trade and commercial activities. The project was first realised at the ministerial level at the Trilateral Ministerial Meeting on Transport Linkages in Yangon in April 2002. It was agreed to construct a highway from Moreh, India, to Mae Sot, Thailand through Myanmar. Though the TLH project initially pertained to India, Myanmar, and Thailand, in recent years, there have been significant steps to extend it eastward to connect to the Lao People's Democratic Republic (Lao PDR), Cambodia, and Viet Nam.

The Indian government is keen to develop the TLH project, as it enhances the connectivity eastward with Myanmar and the Mekong subregions. This is intended to aid two of India's foreign policy initiatives known as 'Act East' and 'Neighborhood First'. To complement this, the Thai government adopted its 'Look West' policy to enhance the regional linkage between its western neighbours.

Implementing the project requires upgrading the road infrastructure and institutional arrangements to realise and encourage smoother trade flows. This research focuses on the current utilisation and existing and potential bottlenecks, as well as forwarding recommendations for implementation of the TLH project in Myanmar.

## 2. Historical Background of TLH in Myanmar

Myanmar has been working on the TLH project for nearly 2 decades. During the initial talks with the Indian and Thai governments in 2002–03, Myanmar's Ministry of Foreign Affairs, then headed by U Win Aung, who served as the Minister for Foreign Affairs from 1998 until 2004, took the leading role (Government of India, 2003). The plan was to construct a highway from Moreh in India and terminating in Mae Sot in Thailand. The route was initially planned to go through the city of Bagan in Myanmar and was to be completed within 2 years. In April of 2003, a technical field survey was completed of the 1,360 km long highway and a route alignment was agreed upon. At that time, General Khin Nyunt was the Prime Minister.

However, between 2004 and 2011, many of the infrastructure projects were put on hold or discontinued, and the TLH project was no exception.

During the reforms under Thein Sein's administration that extended from 2011–16, foreign relations were re-established, with investments coming into Myanmar through both private and public sources. In 2012, Myanmar and India held a top-level bilateral talk in Nay Pyi Taw during the State visit of Indian Prime Minister Dr. Manmohan Singh. Both parties agreed to emphasise improving the connectivity by re-establishing the joint task force that was in its initial stages. Specifically, India was to build the Kalewa–Yargi road segment to highway standard, while Myanmar would upgrade the Yargi–Monywa stretch to the same standard by 2016 (Government of India, 2012).

As part of the bilateral agreement in 2015, the Indian government under Prime Minister Modi approved the construction of 69 bridges, including approach roads to the 149.70 km long Tamu–Kyigone–Kalewa section of the TLH in Myanmar (InsightsIAS, 2019). The latest development of this plan will be mentioned in the relevant section of the report.

Building these bridges was conducted with a tender system. However, there were some issues between the Indian government and the Indian company that won the tender the first time. The Indian government called out the tender for second time, with the process restarting from the beginning, thus delaying the implementation.

### 3. Significance of the Greater Mekong Subregion and TLH for Myanmar

Myanmar plans to participate more actively in the regional framework, notably the Greater Mekong Subregion (GMS) agreement sponsored by the Asian Development Bank (ADB) to serve as a 'land bridge' between three regions of Southeast Asia, South Asia, and China. Myanmar emphasises the GMS programme because it brings six countries<sup>1</sup> together, five of which it shares a land border with. Myanmar constitutes the western part of the GMS's three designated economic corridors<sup>2</sup> and this western front is considered the missing link to connect the Association of Southeast Asian Nations (ASEAN) region with South Asia, particularly India and Bangladesh. Myanmar can stimulate economic activities along its routes through programmes such as the Cross-Border Trade Agreement. The TLH is one of the vital projects mentioned under the GMS plan (ADB, 2018a), and it is finally progressing with the acknowledgement of the current administration (UNESCAP, 2017), which considers it to be aligned with national logistic plans. The TLH project, along with other logistics development plans, is likely to be carried forward in the next administration as the NLD party is projected to keep its majority.

### 4. Current Status of TLH

The TLH route in Myanmar is assessed in four sections:

1. Tamu–Mandalay section;
2. Yangon–Myawaddy section;
3. Mandalay–Lao PDR border extension section; and
4. Yangon–Mandalay Highway Section.

The assessments examine the current road and physical infrastructure conditions, as well as border point trade and the existence of any institutional arrangements. The team conducted in-depth analysis and observation for the Tamu–Mandalay section, as there are upgrades that have taken place in recent years.

#### **Methodology**

The MSR team conducted field surveys and test runs from November 2019 to January 2020 to observe the current conditions. The road distance and daily number of vehicles passing have been referenced to the 'Assessment of Greater Mekong Subregion Economic Corridors (Myanmar)' report published by GMS in 2018.

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<sup>1</sup> China, Lao PDR, Myanmar, Thailand, and Viet Nam.

<sup>2</sup> Myanmar is part of the East–West, North–South, and Southern economic corridors.



## Assessment

As one of the main objectives of this field survey is to update the information relative to the GMS Secretariat (ADB) report 'Assessment of Greater Mekong Sub-Region Economic Corridors (Myanmar)' published in December 2018, the team made an assessment using the following criteria:

Physical condition is reported in five assessments, such as, 'very good', 'good', 'fair', 'bad', and 'very bad'. Observations regarding road conditions are based on factors such as the state of the road surface, road maintenance, and adequacy of road signs and drainage facilities.

The road classification is based on the Asian Highway Standard: Primary (four or more lanes, controlled access); Class I (four or more lanes); Class II (two lanes); and Class III (two lanes). Pavement is asphalt or cement for Primary, Class I, and Class II, and double bituminous treatment for Class III.

### 4.1. Tamu-Mandalay Route

#### 4.1.1. Overview of Routes

The 474 km route (through Yargi route) stretches from the cross-border point of Moreh (India) and Tamu (Myanmar) through Kalay, Kalewa, and Monywa in Sagaing region to Mandalay. The route can be divided into three sections as shown in Figure 1 Table 1: The first and shortest is the Yargi route, the second is the Gangaw route that runs south from the city of Kalay to Monywa then to Mandalay, and the third is the Ye U-Shwe Bo route, which runs north from Kalewa though Ye U and Shwe Bo, bypassing the city of Monywa.

**Figure 1: Three Routes between Tamu–Mandalay Section**



Source: Created by MSR based on ©googlemap2020.

**Table 1: Comparison of Three Routes from Mandalay–Tamu**

	<b>Total Distance/Time (MDL→Tamu)*<sup>3</sup></b>	<b>Road Utilisation</b>	<b>Pros (+) / Cons (-) Assessment</b>
<b>Gangaw Route</b> (Mandalay–Monywa–Gangaw–Kalay–Tamu)	613 km (13 h 16 min)	Most used road amongst the three routes for both passenger vehicles and trucks. About 90%* <sup>1</sup> of the trucks use this route.	+ ) Road condition is good and logistic companies that carry goods from MDL–Tamu utilise the Gangaw Route.* <sup>2</sup> - ) Longest distance amongst the three routes.
<b>Ye U / Shwe Bo Route</b> (Mandalay–Shwe Bo–Ye U–Kalewa–Tamu)	478 km (12 h 10 min)	About 10%* <sup>1</sup> of trucks are utilising it as the shortest route to Mandalay.	+ ) Shortest distance directly from Mandalay to Tamu through Ye U. + ) Compared to the Yargi route, the road condition is better.* <sup>2</sup> - ) Some sections are in poor condition, with difficult curves and unpaved surfaces.
<b>Yargi Route</b> (Mandalay–Monywa–Yargi–Kalewa–Tamu)	480 km (11 h 57 min)	Only used by inhabitants on the Yargi route or construction upgrade-related trucks and vehicles.	+ ) Shortest route from Mandalay going through the Sagaing state capital of Monywa. - ) Many sections are in poor condition, with difficult curves and unpaved surfaces; logistics companies do not use the road. Inaccessible during the rainy season.

MDL = Mandalay.

\*1: MSR interview with Ministry of Commerce official.

\*2: MSR interview with logistics companies based in Mandalay.

\*3: Measured with ©Googlemap from Mandalay to Tamu section, taking each route (January 2020).

The Gangaw route is the most common for commercial use because of its relatively well-maintained road. From interviews with logistics companies based in Mandalay,<sup>3</sup> about 90% use the Gangaw route when sending goods to Tamu. Logistics companies stay away from the Yargi route as there are hilly roads with many curves and unpaved segments that can damage vehicles. For the Ye U / Shwe Bo route, the section from Mandalay to Shwe Bo is easy to travel. However, Kaduma to Kalewa is difficult to travel due to its mountainous terrain.

During the rainy season, which generally runs from June to September, the Myanmar government does not prohibit vehicles taking any of its routes. The Ye U-Shwe Bo route is also accessible during the rainy season. Logistics companies, of their own accord, avoid the Yargi route in both seasons.

#### *4.1.2. Overview of the Upgrade Plan*

The upgrading plans for the road and bridge infrastructure from Tamu to Monywa missed their original deadlines and were modified in recent years. In 2012, during bilateral talks, former Myanmar President Thein Sein and Indian Prime Minister Singh agreed that India would repair and upgrade 71 bridges on the Tamu–Kalewa Friendship Road and the Kalewa–Yargi road segment to Asian Highway Standard. While Myanmar was to upgrade the Yargi–Monywa stretch to highway standard by 2016 (Government of India, 2012), that was not completed as planned.

The current Modi administration of India is aligned with the decisions made by the previous Singh administration, and, in 2015, it approved constructing 69 bridges on the Tamu–Kyigone–Kalewa section at the cost of 371 crores (US\$52 million),<sup>4</sup> with a projected completion date of mid-2019 (Government of India, 2015); however, again, the route was not completed on schedule.

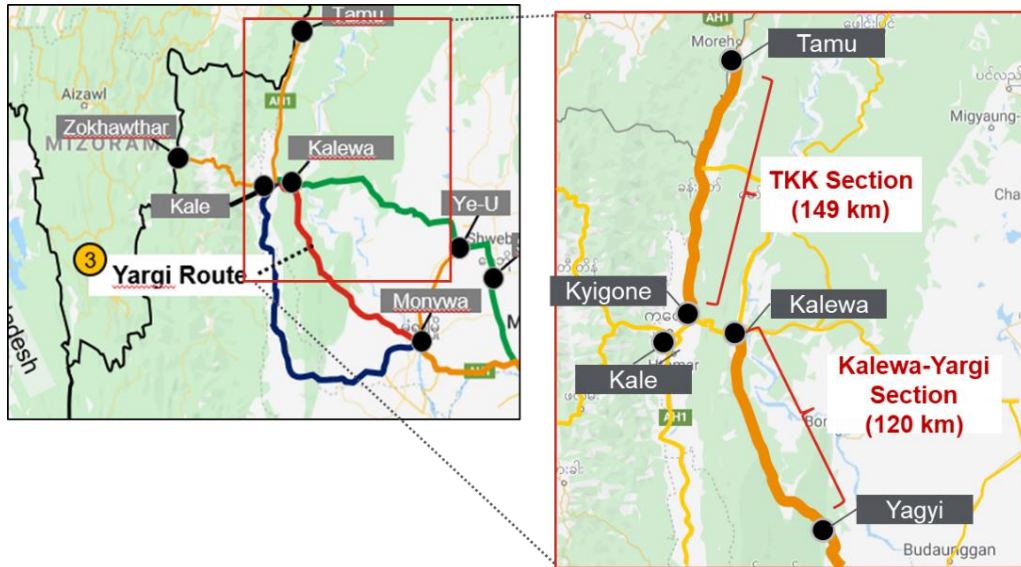
In 2019, the Ministry of Road Transport and Highways in India announced that it would upgrade and construct bridges and roads on the 149.7 km Tamu–Kyigone–Kalewa road section and upgrade the 120.7 km of the Kalewa–Yargi road section, as shown in Figure 2. This was planned in accordance with a grant from the Indian government (Government of India, 2019). According to information from a meeting with the Ministry of Construction's (MOC) Department of Highways, the Kalewa section was supported by India grant aid with INR11.77 billion (US\$200 million). On the Myanmar side, the Yargi–Monywa section is being upgraded by Monywa Group of Companies under a build-operate-transfer (BOT) system.

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<sup>3</sup> MSR team interviewed Mandalay-based logistic companies such as Shwe Pyi Tan Logistics, Tint Tine Aung Logistics, etc. in January 2020.

<sup>4</sup> Exchanged at 2019 rate of US\$1=INR71.385.

**Figure 2: Road Sections Planned to be Upgraded**



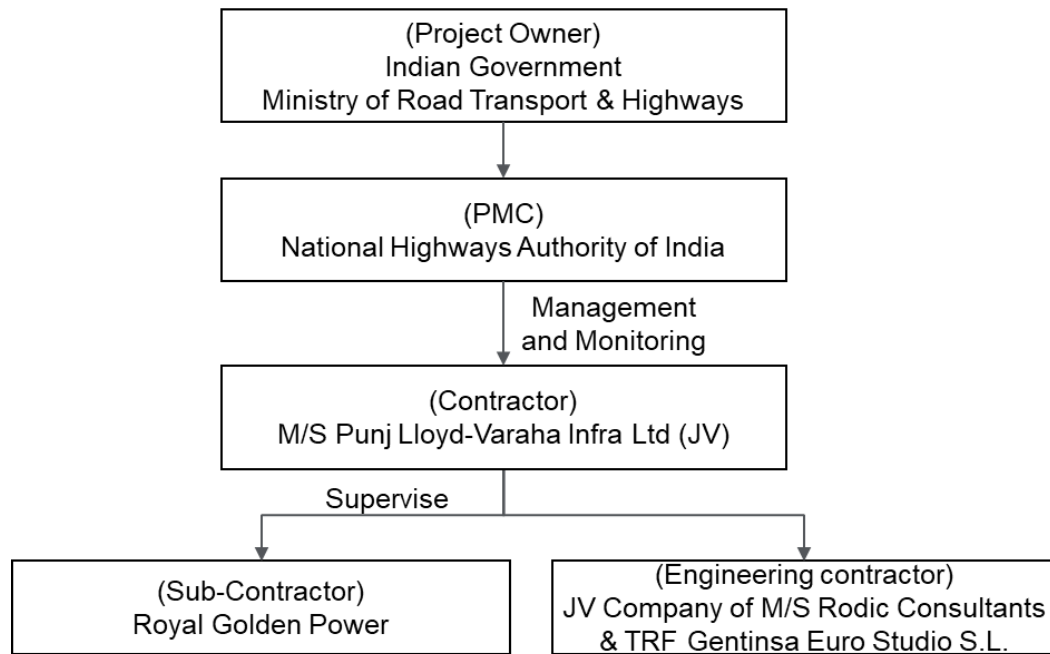
Source: Created by MSR based on ©googlemap2020.

The construction was scheduled to be completed 3 years from the date of commencement in 2018.<sup>5</sup> The Ministry of Road Transport and Highways in India approved 1,459 crores (US\$205 million) for the Kalewa–Yargi section and 371.58 crores (US\$51.8 million) for the Tamu–Kyigone–Kalewa section. From the total amount, in 2019, the Indian government fund has released 188.32 crores (US\$26 million) for Kalewa–Yargi, and 4.84 crores (US\$700,000) for the Kalewa–Yargi section (Government of India, 2019). The structure of the Kalewa–Yargi road section is shown in Figure 3 and Table 2 after it was decided that the project would be handled using the methods of both engineering procurement and construction and project management consulting.

The project owner, India's Ministry of External Affairs, hired the National Highways Authority of India as consultant and authority engineer for both the owner and client sides, and a contractor with engineering procurement and construction experience does all related work. Up to now, about 20% has been completed, leaving 1 year and 2 months to complete the project as scheduled. Although the Myanmar government asked India to provide a revised schedule for the remaining time, India has not done so. As a result, the Myanmar government has been asking India for monthly progress reports.

<sup>5</sup> The commencement date is according to the interview with the border official.

**Figure 3: Kalewa–Yargi Road Construction Arrangements**



PMC: project management contractor

Source: Created by MSR from various sources.

**Table 2: Details of Organisations Involved in the Kalewa–Yargi Upgrades**

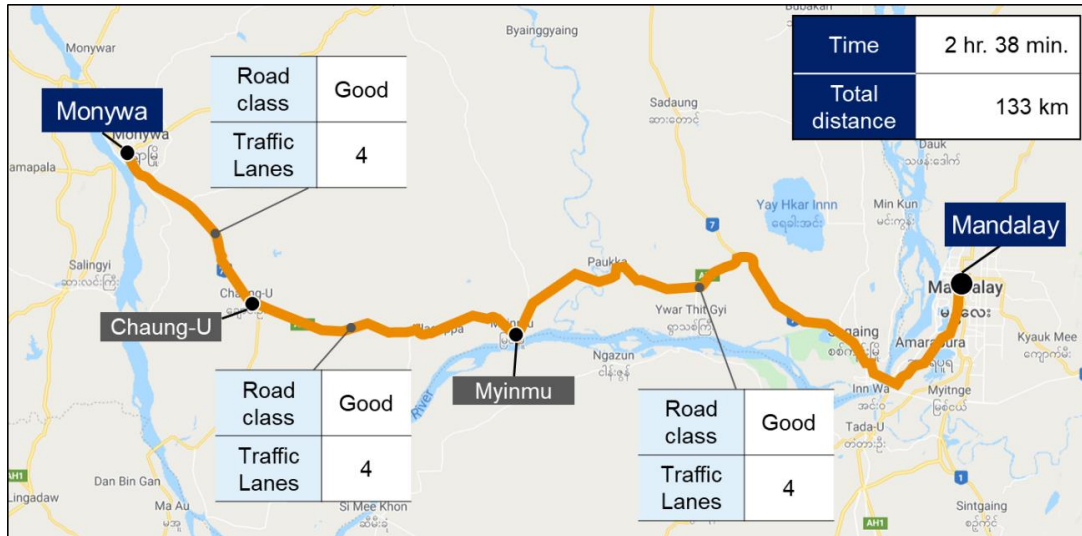
	Nationality	Remarks
National Highways Authority of India	India	Autonomous agency of the Government of India, set up in 1988. It is under the Ministry of Road Transport and Highways. Signed an agreement to upgrade the India–Myanmar Friendship Road in Myanmar.
M/S Punj Lloyd–Varaha Infra Ltd.	India	Awarded the construction of Kalewa–Yargi section in 2018. Punj Lloyd is an international engineering procurement and construction contractor. Varaha Infra Ltd. is an Indian construction company.
M/S Rodic Consultants	India	Established in 2000, Rodic Consultants is one of the premier engineering and project management consultancy.
TPF Gentinsa Euro Studio S.L.	Spain	TPF is an engineering company based in Madrid, Spain.
Royal Golden Power	Myanmar	Local company which provides engineering, civil construction, construction machinery leasing etc.

Source: Compiled by MSR from various sources.

#### 4.1.3 Sectional Assessment

##### Mandalay–Monywa:

**Figure 4: Mandalay–Monywa Section Overview**



Source: Created by MSR based on ©googlemap2020.

##### **a. Route assessment**

- In sum, the Mandalay–Monywa route, which serves as the Asian Highway 1 (AH1), runs smoothly and commercial vehicles such as trucks can easily travel on both lanes (AH1 goes from Ayeyarwady bridge to Yadanarpon before entering Chaung-U).
- It took the team 2 hours and 38 minutes travel time from Mandalay airport to the centre of Monywa city. Throughout the route, there are two lanes on both sides. The team assessed the road condition as ‘good’ throughout.

##### **b. Distinctive junction points**

- At 44.6 km, the road diverges to Monywa (left) and Shwe Bo (right).
- At 76.6 km, there is Myinmu bypass road where trucks and passenger cars can pass through this without entering Myinmu.
- At 97 km, near Chaung-U, Mandalay–Monywa road divides, with one road continuing to Monywa, and the AH1 going to Gangaw through MaAu, Lingadaw, KyarTet, and Pale.



Figure 5: Road Condition at Mandalay–Monywa Section



Source: MSR.

Figure 6: Junction Points in Mandalay–Monywa Section



Source: MSR.

**c. Significant bridges**

The Ayeyarwaddy Bridge (Yatanarpon) was constructed in 2008. It is a four-lane bridge, with a pedestrian lane. There is one further small bridge after Nyaung Bin Wun, spanning the Mu river.

**d. Toll gates**

There are four toll gates, one for Ayeyarwaddy Bridge and three set up by the Shwe Taung Highway company, who constructed the road under the BOT system. Toll fees are MK450 for the bridge and MK900, MK700, and MK900, respectively, for the three others for passenger vehicles.

**e. Ongoing upgrades**

The team observed the road being upgraded at the 112 km point of the Chaung–U Monywa–Amyint road (Figure 7). The new road will stretch around 7 km, and will connect to the Sagaing–Monywa Highway. It will be paved in concrete and the construction is being undertaken by Monywa District Rural Road Development Department.

**f. Issues and necessary upgrades**

The road in Monywa is in good condition, but it is narrow, with two lanes of asphalt road. The road, however, cannot expand into four lanes because trees line both sides.

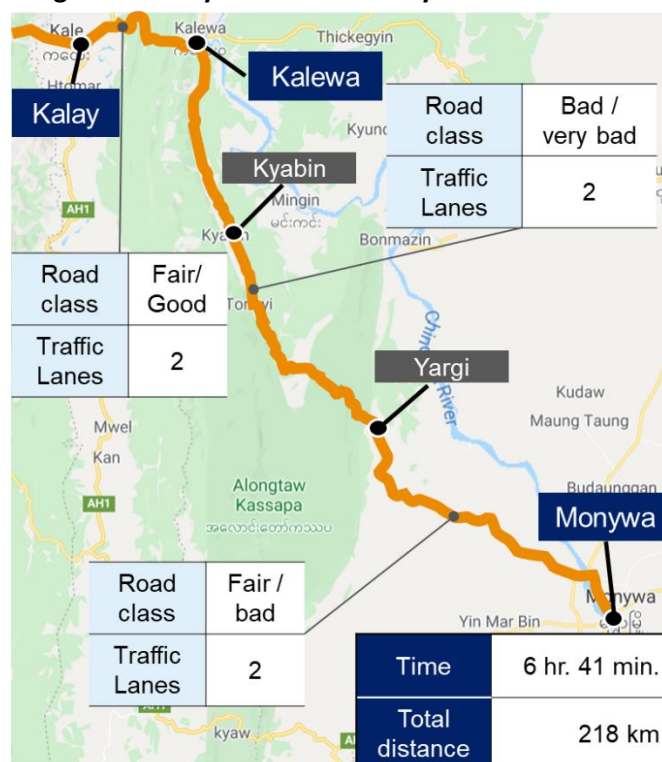
**g. Traffic volume and vehicles**

12,000 vehicles per day pass through the bridge point at Ayeyarwaddy Bridge (GMS, 2018a). The team observed 12-wheeler commercial trucks passing by this road; however, there are more passenger vehicles than trucks.



## Monywa–Yargi–Kalewa–Kalay:

**Figure 7: Monywa–Kalewa–Kalay Section Overview**



Source: Created by MSR based on ©googlemap2020.

### **a. Route assessment**

- The funding nations divided the Monywa–Yargi–Kalewa road into two sections.
- The Monywa–Yargi section is constructed and managed by the Myanmar side, specifically the Monywa Group of Companies.
- The Yargi–Kalewa section, which is characterised by mountainous roads with many turns, slopes, and narrow, unpaved gravel roads, is being upgraded through the funding of the Indian government.

### **Monywa–Yargi–Kalewa**

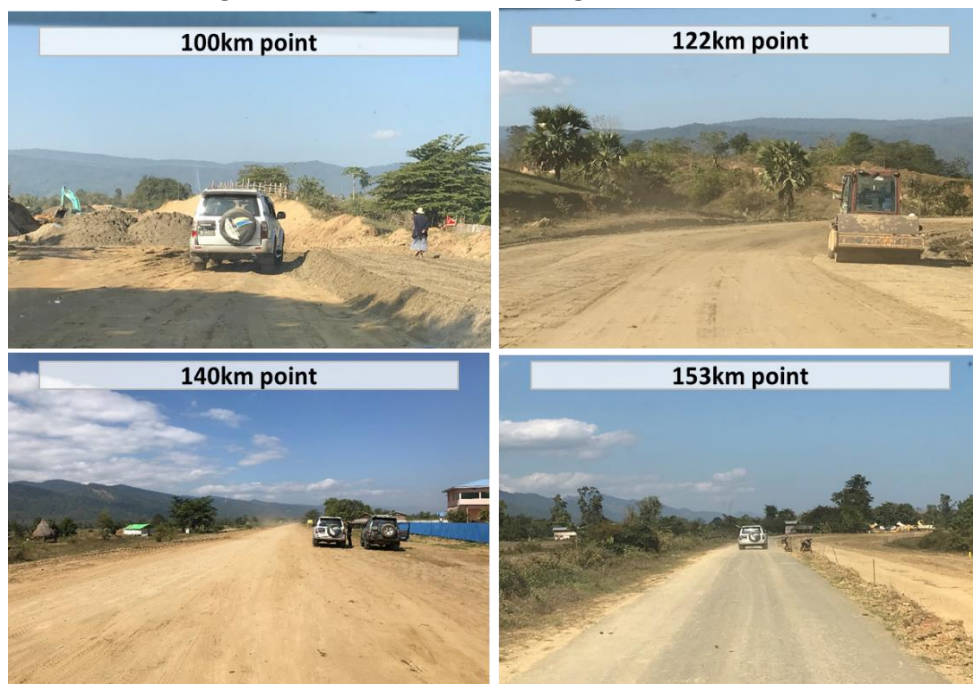
The Monywa–Yargi part of the road, which is in relatively good condition, has two lanes throughout, with the gravel sections being upgraded to asphalt. Yargi to Kalewa (up to Myit Thar bridge) is under construction and requires special vehicles with elevated bumpers to use this road part. The team graded the Monywa–Yargi part ‘fair’ to ‘bad’ and the Yargi–Kalewa part ‘bad’ to ‘very bad’. It took the team 5 hours and 40 minutes to reach Myit Thar bridge from Monywa. The India road authority office is on the Yargi–Kalewa road 140 km from Monywa.

**Figure 8: Road Condition at the Monywa–Yargi Section**



Source: MSR.

**Figure 9: Road Condition at Yargi–Kalewa Section**

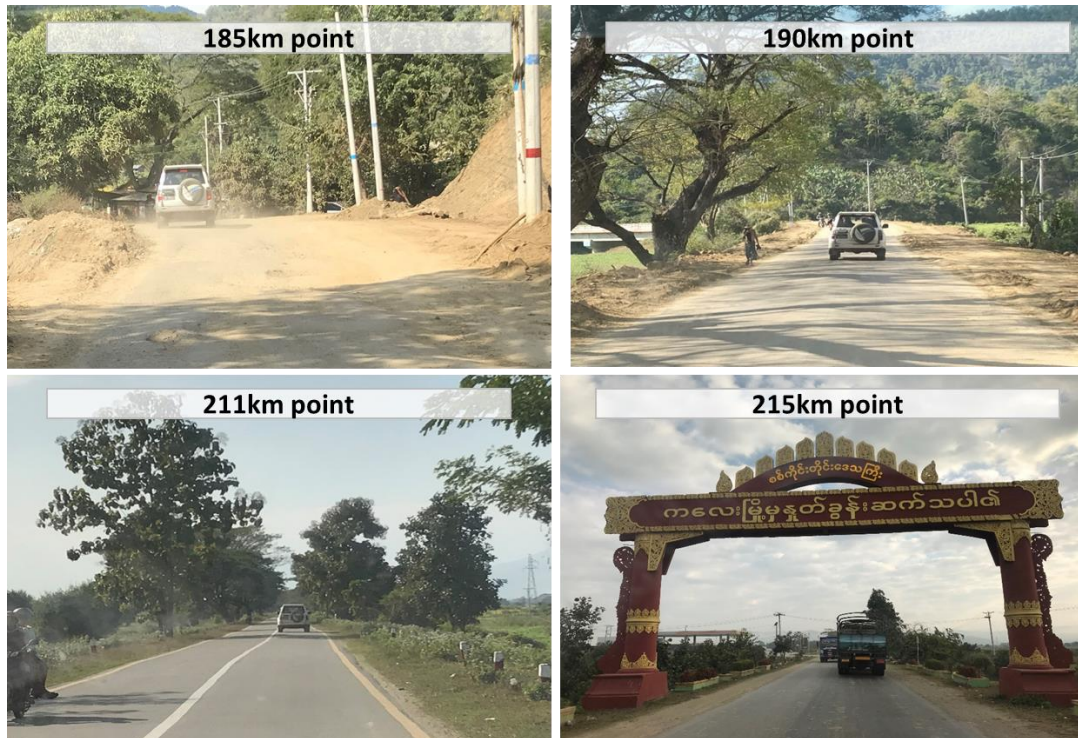


Source: MSR.

## Kalewa–Kalay

The road section between Kalewa and Kalay is narrow and has two lanes, with Myit Thar river on one side and mountainous terrain on the other. In addition, there are 21 old bridges, which have a load-bearing capacity of 13 tonnes. It took about 50 minutes to reach Kyigone from Kalewa and about 1 hour to reach Kalay and the team assessed a 2.5 rating for Kalewa–Kalay road.

**Figure 10: Road Condition at Kalewa–Kalay Section**



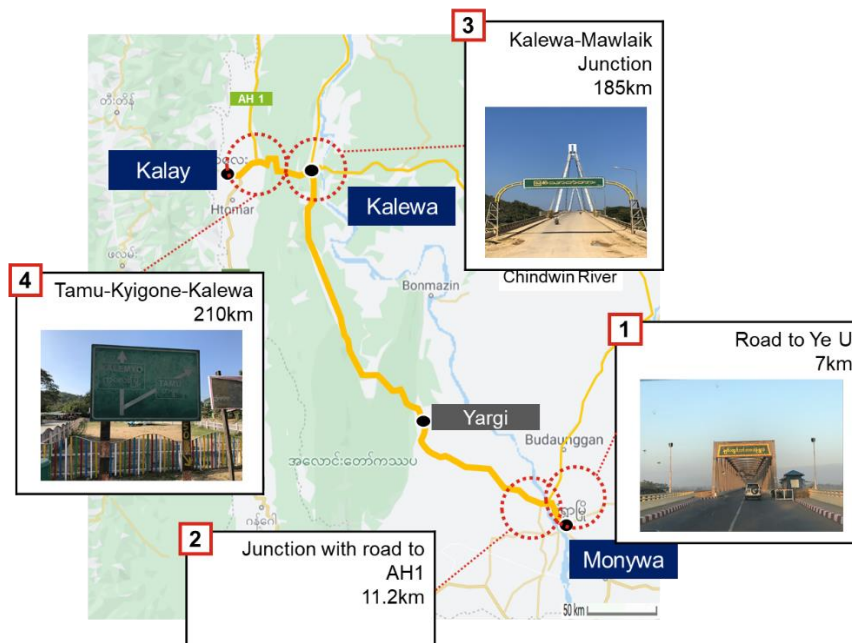
Source: MSR.

### b. Distinctive junction points

- At 7 km, exiting from Monywa city, the road diverges, with one section heading left to Chindwin Bridge (Monywa), and the other heading right to Ye U through Budalin and Tapayin.
- At 11.2 km, after crossing Chindwin Bridge, the road divides into a branch from the Monywa–Yargi road at the left side that meets up with AH1 at Pale and Lingadaw. If continuing, the road extends till Pathein.
- At 184.6 km, after crossing Myit Thar Bridge near Kalewa, the road divides into three sections, with the right branch going to Kalewa, the straight-ahead going to Mawlaik, and the left branch becoming the Kalewa–Kalay road through Kyigone.
- At Kyigone, 25.4 km from the previous Kalewa junction, a right branch road goes to Tamu.



**Figure 11: Junction Point from Monywa–Kalewa–Kalay**



Source: Created by MSR based on ©googlemap2020.

**c. Significant bridges**

- After exiting Monywa, the road reaches the Chindwin Bridge, which is two lanes with a pedestrian lane on both sides (the bridge approach is a four-lane asphalt road).
- The Myit Thar Bridge (Kalewa), which crosses Myit Thar river near Kalewa, and which was opened in June 2004, is a 1,320 ft long and 28 ft wide two-lane suspension bridge with a 4 ft wide pedestrian lane on each side.
- There are altogether 21 small, old bridges on the Kalewa–Kalay road.

**d. Toll gates**

There are two toll gates, one for Chindwin Bridge that costs MK300, and another 16 km from Monywa on the Monywa–Yargi route that costs MK600.

**e. Ongoing upgrades**

- The Yargi–Kalewa road is now being refurbished through the funding of the Indian Government (National Highway Authority of India) with an expected completion date of June 2021. In addition, the Indian government is also planning to construct new bridges to replace 69 old bridges along the Tamu–Kyigone–Kalewa road.
- During the survey, the team observed the construction going on to expand the road. A new road is under construction that runs directly in the mountainous area, with spaces for further expansion.

**Figure 12: Upgrades Being Conducted in Yargi–Kyigone–Kalewa Section**



Source: MSR.

**f. Issues and necessary upgrades**

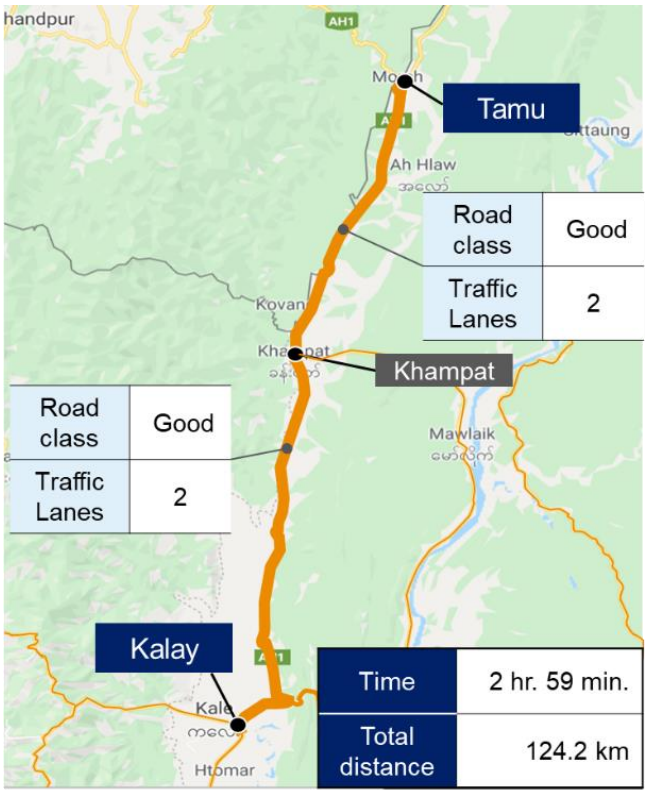
- The Yargi road is not convenient in the rainy season because it is sometimes flooded.
- Moreover, the Yargi road has many sharp turns, uphill, downhill and, in some parts, it is very steep and covered by soil. Mostly, the road is made of gravel and earth.
- Currently, a project to be implemented from Indian government will level the Yargi road and smooth out its curves.

**g. Traffic volume and vehicles**

According to the GMS survey, 2,300 vehicles per day pass through the bridge point at Chindwin Bridge. The team observed 12-wheeler trucks passing through these areas. However, there were more passenger vehicles.

Kalay–Tamu:

**Figure 13: Kalay–Tamu Section Overview**



Source: Created by MSR based on ©googlemap2020.

**a. Route assessment**

Throughout the route, there is one wide lane on both sides. It took the team 2 hours and 58 minutes of travel time from Kalay to the India–Myanmar Friendship Bridge in Tamu. The team assessed the road as ‘fair’.

**b. Junction point**

Departing from Kalay to Tamu, Kyigone Junction is 8 km from Kalay along AH1. The road diverges there, with one section heading north to Tamu and another heading east to Kalewa.



**Figure 14: Junction Point in Kalay–Tamu Section**



Source: Created by MSR based on ©googlemap2020.

**c. Significant bridges**

There are 49 small, one-lane bridges between Kalay and Tamu, all constructed since 1940.

**Figure 15: Road and Bridge Conditions between Kalay–Tamu**



Source: MSR.

**d. Toll gates**

There are no toll gates between Kalay and Tamu, as the road was constructed under the India–Myanmar Friendship project in 1996.

**e. Ongoing upgrades**

The Indian government provided additional funds to upgrade the road in 2008 (GMS, 2018a). Moreover, the India and Myanmar governments agreed on terms for India to upgrade the old bridges along the Tamu–Kyigone–Kalewa road.

**f. Issues and necessary upgrades**

- All 49 of the bridges are too old to be used. In some long, single-lane bridges, the vehicles need to wait in long queues on both sides.
- In addition, the capacity of these old bridges varies from 13 tonnes to 24 tonnes, which makes 6 wheelers the most commonly seen truck type in this road segment.

**Figure 16: Trucks Travelling the bridge (Kalay–Tamu)**



Source: MSR.

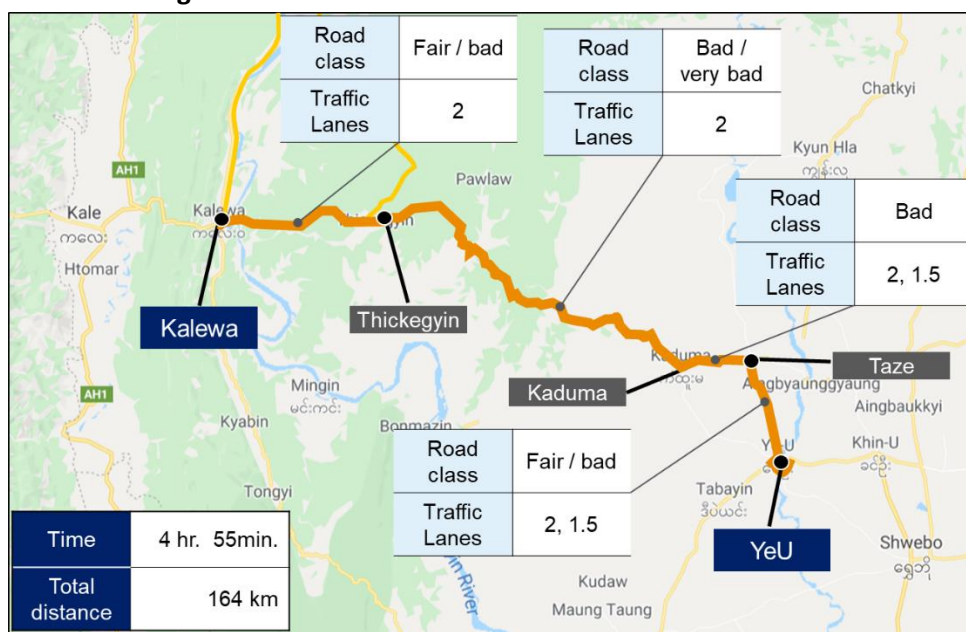
**g. Traffic volume and vehicles**

The team observed 12-wheeler trucks passing by these areas, as well as small passenger vehicles.



## Kalewa–Ye U–Shwe Bo–Mandalay:

**Figure 17: Kalewa–Kaduma–Taze–Ye U Section Overview**



Source: Created by MSR based on ©googlemap2020.

### a. Route assessment

- The Kalewa–Ye U–Mandalay route runs 348.2 km, with the road condition throughout varying in each segment. It took the team 6 hours and 11 minutes of travel time from Kalewa to reach Ye U, and another 3 hours and 40 minutes from Ye U to cross Ayeyarwaddy Bridge (Yadanarpon) and reach Mandalay.
- The Kalewa–PyinGaing road is mountainous, and while some parts are being upgraded, the team rated it as ‘bad’ to ‘very bad’. From Kaduma to Ye U, the single-lane road is flat, but narrow on both sides and needs widening to facilitate modern transport.
- The road from Ye U to Shwe Bo is relatively fine when compared with previous roads. Roads in Shwe Bo are high quality and four lanes wide, with lampposts, and the Shwe Bo–Mandalay road is also good quality.

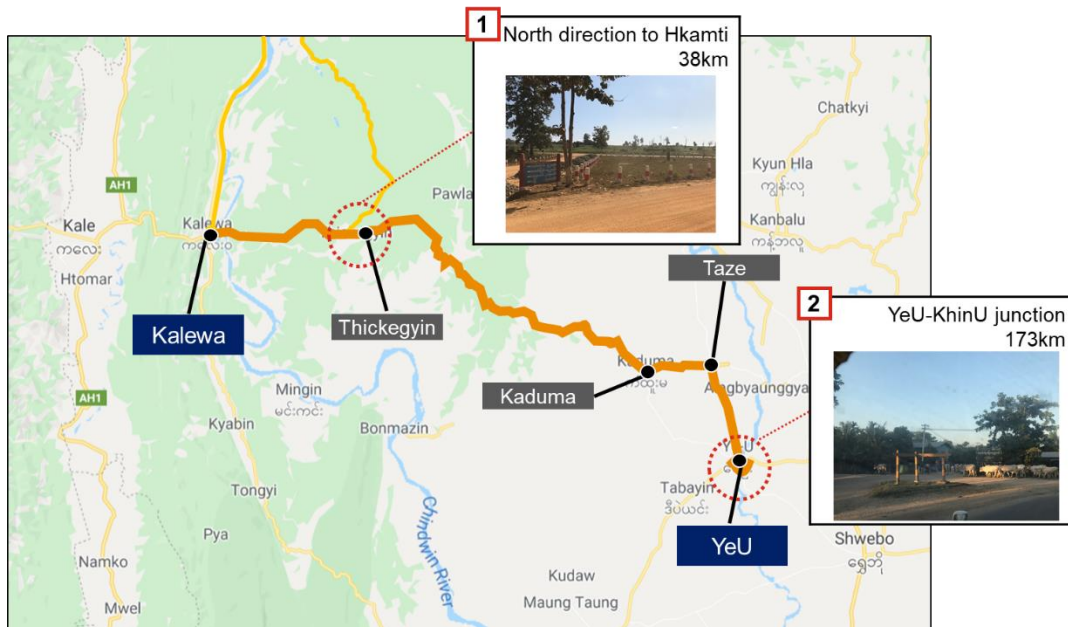
**Figure 18: Ye U–Shwe Bo–Mandalay Section Overview**



Source: Created by MSR based on ©googlemap2020.

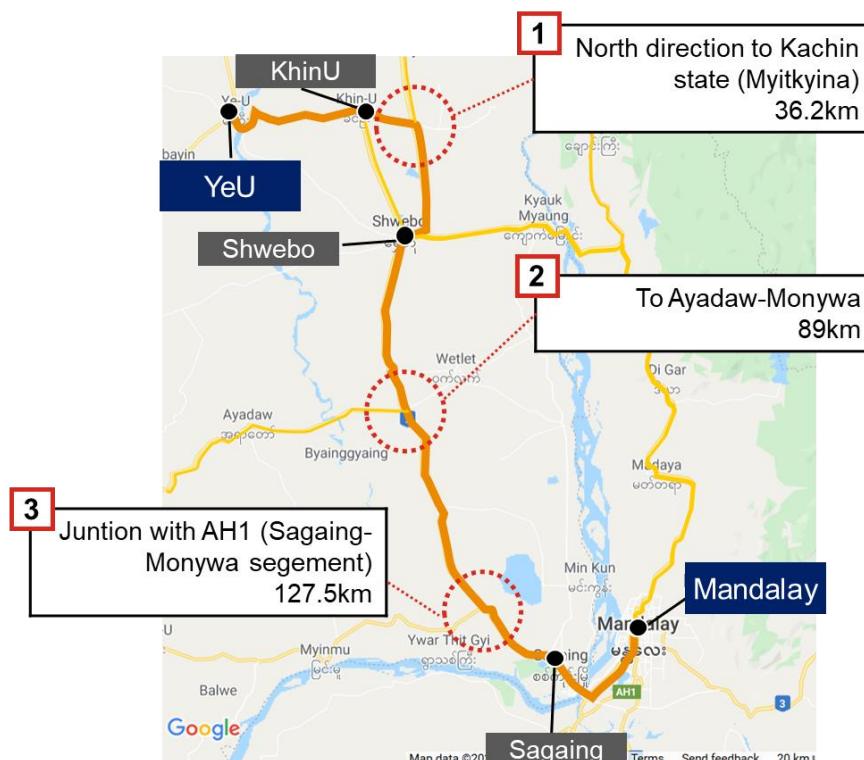
**b. Distinctive junction points**

**Figure 19: Junction Points in Kalewa–Ye U Section**



Source: Created by MSR based on ©googlemap2020.

**Figure 20: Junction points in Ye U-Shwe Bo–Mandalay section**



Source: Created by MSR based on ©googlemap2020.

- The route is very long, and there are important junction points, including between Kalay–Ye U, which is at 201.5 km, and Ye U–Mandalay, which is at 147 km.
- At 36.8 km, near the Myit Thar Bridge before entering Kalewa, the road divides into three, with the right section going to Myit Thar Bridge and then the Yargi road, while the straight-ahead section goes to Kalewa and the left section goes to Mawlite.
- After crossing Chindwin Bridge at AungChanThar village, which is 38 km from Kalewa, the road branches north to PaungByin, Homalin, and Hkamti.
- At 36.2 km from Ye U (between KhinOo and Shwe Bo), the left direction at the junction continues till Kachin state (MoeKaung and Myitkyina).
- At 127.5 km from Ye U, the road meets up with AH1 at the Sagaing–Monywa segment.

#### **c. Significant bridges**

Chindwin Bridge Kalewa, which is on the Chindwin river, was officially opened in April 2017. There are also several small bridges along the road between Kalewa and Ye U. After exiting Ye U 206 km from Kalay, the team crossed Mu river, which is a one-lane (car+train) bridge and had to wait a little to cross the bridge, whose toll cost MK300.

#### **d. Toll gates**

There are two bridge tolls, one at the Mu river near Ye U, which costs MK300, and one at Ayeyarwaddy Bridge Yadanarpon, which costs MK450. Further, after exiting Shwe Bo is a toll gate costing MK700, as well as one at OhnTaw for the Mandalay–Shwe Bo road, which costs MK300.

**e. Ongoing upgrades**

- The MOC is upgrading the road between Kalewa and Kaduma (Kalewa–PyinGaing road), which is mountainous and rocky.
- They are also upgrading the branch routes to Mawlite and to Hkamti, from gravel and earth to concrete and asphalt.

**Figure 21: Ongoing Upgrade Section between Kalewa–Kaduma**



Source: MSR.

**f. Issues and necessary upgrades**

- There are several narrow, one-lane bridges between Kalewa and Kaduma that need to be upgraded.
- From Kaduma, Taze to 3 km before Ye U, the road is narrow. If two vehicles come in opposite directions, one needs to yield for the other to pass through.
- This is also the case for a part of the road between Ye U-KhinOo–Shwe Bo that needs to be expanded.
- In addition, the Mu river bridge at Ye U must be upgraded into a two-lane bridge to ease transport in the area.



**Figure 22: Bridge between Kalewa–Kaduma Section**



Source: MSR.

**Figure 23: Road between Ye U**



Source: MSR.

## 4.2. Yangon–Myawaddy (Maesot) Route

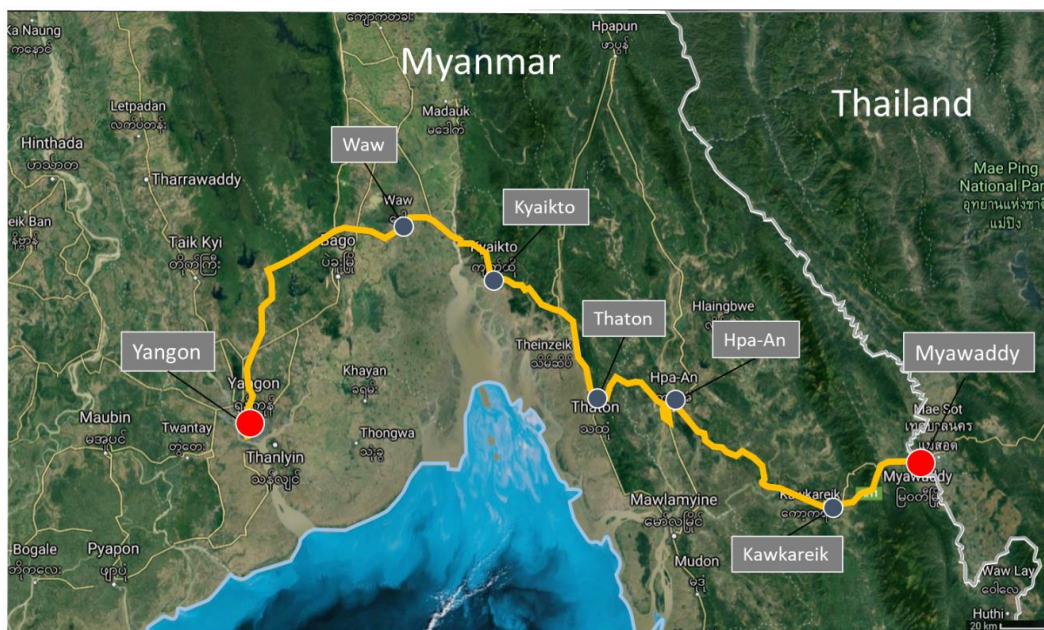
### 4.2.1. Overview of Routes

The East–West Economic Corridor in Myanmar, which starts from Yangon and ends in the Thai border town of Myawaddy, lies on the 457 km route through the southeastern Bago Region, Mon and Kayin States in areas such as Pha Yar Gyi, Waw, Kyaikto, Bilin, Thaton, Hpa An, and Kawkareik, as shown in Figure 24. This distance stretches from Yangon Thilawa port to the Myawaddy first Friendship Bridge on the Thailand–Myanmar border.

The importance of this route has increased in recent years with the opening of second Thai–Myanmar Friendship Bridge in 2019. This route is essential for increased connectivity, particularly between the industrial zones in Thailand to the Thilawa industrial zones on the outskirts of Yangon.

Moreover, that route will be the lifeblood of Myanmar as far as trade and commerce is concerned since it will connect the regional hubs like Bago and Mawlamyine with the business capital of Myanmar, that is, Yangon. The linkage of the major state development plans such as Hanthawaddy New International Airport (Bago), the Thilawa special economic zone, and the Dawei special economic zone will greatly enhance the economic activity of that route.

**Figure 24: East–West Economic Corridor in Myanmar (Yangon to Myawaddy)**



Source: Created by MSR based on ©googlemap2020.

#### 4.2.2. Overview of the Upgrade Plan

This route has been upgraded using finances originating from ADB, along with the Thailand and Myanmar governments and private companies under the BOT system.

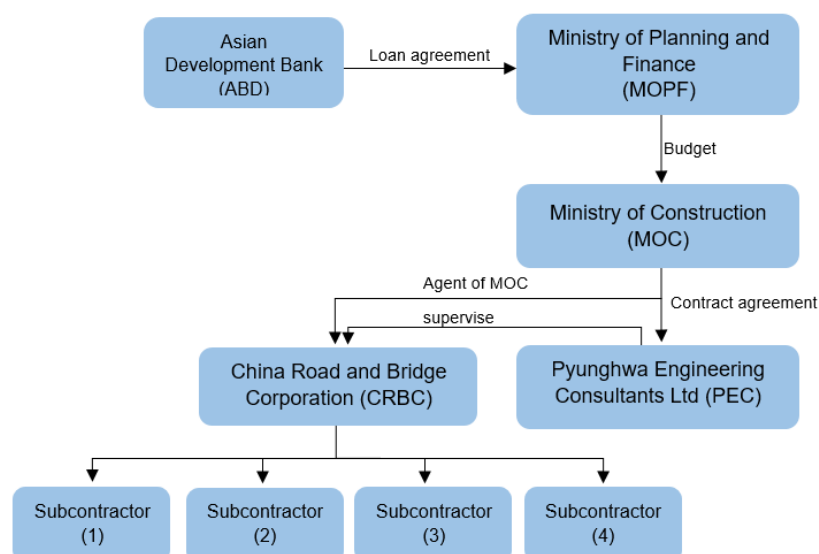
Some parts of the road between Pha Yar Gyi and Thaton were developed by Shwe Than Lwin Highway Co., Ltd. under the BOT system. Moreover, a project to develop a new 70 km arterial highway between Bago and Kyaikto, which is along AH1, as well as the East–West Economic Corridor, was proposed to ADB with a US\$476 million budget (ADB, 2018b).

As of September 2018, the Myanmar and Thailand governments agreed in principle to improve the 68 km road section between Thaton in Mon State and Eindu in Kayin State, since Thailand will be assisting Myanmar with US\$52 million to boost trade between the two countries (GMS, 2018b).

Currently, most of the road areas are surrounded by farmland, except in the areas crossing towns and villages, which are in a relatively good condition. However, in the urban areas, many existing houses and shops on either side of the road limit expansions. For example, in Thaton and Pha Yar Gyi, which is a confluence of major roads, increased urbanisation and traffic congestion make the area prone to accidents and vulnerable to increased social issues. In such a situation, building a bypass road is essential.

For the road section between Hpa An and Myawaddy, ADB has approved US\$100 million; together with US\$20 million from ASEAN infrastructure funds and US\$1.8 million from the Myanmar government, this will improve a 66.4 km road segment connecting Eindu and Kawkareik in Kayin State, the missing link of the GMS East–West Economic Corridor. The arrangement is described in Figure 25.

**Figure 25: Eindu–Kawkareik Road Project Implementation Structure**



Source: ADB Report 2018.



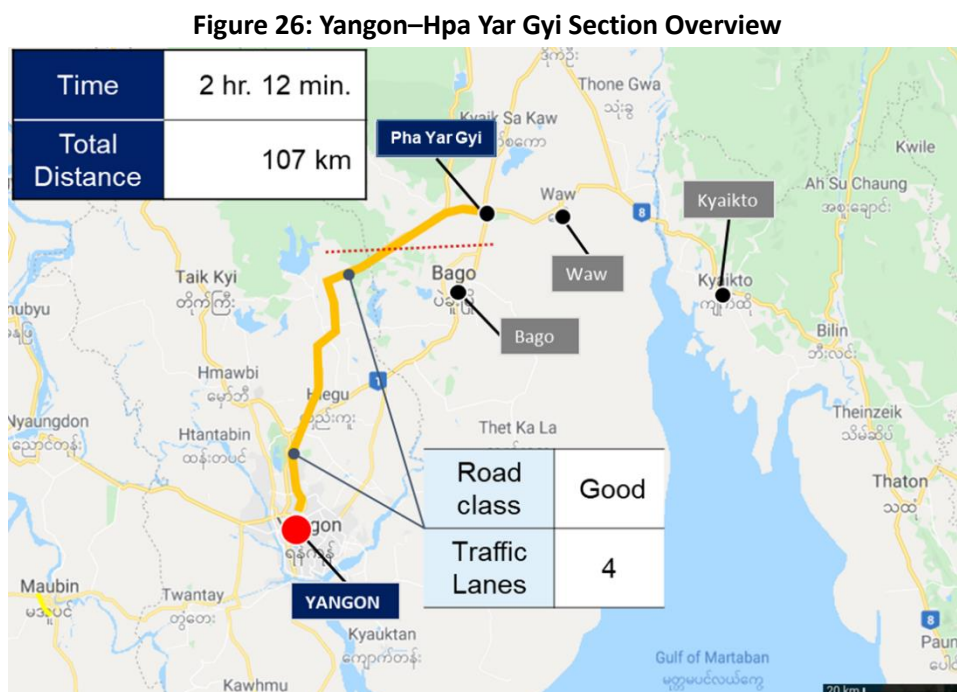
Pyunghwa Engineering Consultants is Myanmar’s representative to supervise the project, with the construction itself being done by China Road and Bridge Corporation as the main contractor.

Initially the upgrade was to be completed by 2019. However, as of September 2019, the overall progress is 57.4% according to ADB (ADB, 2020). The main delay is due to non-compliance of contractors on environmental issues.

The current state of the road will be further described in the sectional assessment.

#### 4.2.3 Sectional Assessment

##### Yangon–Hpa Yar Gyi:



Source: Created by MSR based on ©googlemap2020.

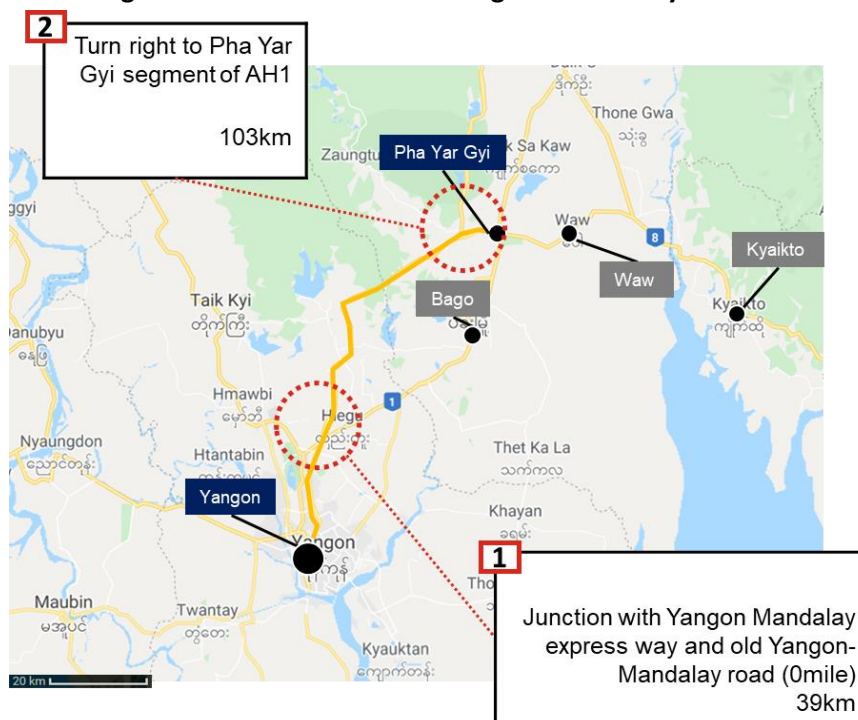
##### **a. Route assessment**

- The team started the journey from Yangon Central Railway Station and used No. 3 main road to exit Yangon. According to interviews with logistics companies, trucks mostly use this road since it reaches the old Yangon–Mandalay highway (now mostly used by cargo trucks, as they are prohibited from the new Yangon–Naypyidaw–Mandalay highway) without passing through the city of Bago. Under a BOT scheme, Max Highway Co., Ltd. manages this well-maintained part of road that was assessed as ‘good’.
- Then, the team followed the Yangon–Naypyidaw–Mandalay expressway, which is four lanes of asphalt, with an overall condition assessed as ‘good’.
- After crossing Bago river along the highway at Baw Net Gyi, the team reached Pha Yar Gyi by using the Pha Yar Gyi road segment of AH1 which can be graded ‘fair’.



- It took the team approximately 2 hours of travel time from Yangon to Pha Yar Gyi. There are mostly two lanes on both sides throughout the route, which is in good condition, with some parts being asphalt and other parts concrete.
- b. Distinctive junction points**
- At the 39 km point, the zero mile is the junction of No. 3 main road, Yangon–Naypyidaw–Mandalay highway and old Yangon Mandalay road.
  - At 103 km near Baw Net Gyi, the northward branch of the road on the right is the Pha Yar Gyi road segment of AH1, which goes to Pha Yar Gyi.
  - At Pha Yar Gyi, the road intersects with the old Yangon–Mandalay Road again.

**Figure 27: Junction Points in Yangon–Pha Yar Gyi Section**



Source: created by MSR based on ©googlemap2020.

**c. Significant bridges**

There are no significant bridges on that part of the road.

**d. Toll gates**

- There are three toll gates, with the first in use for No. 3 main road and set up by Max Highway company, which built the road under the BOT system.
- Another toll gate is at the start of Yangon–Nay Pyi Daw–Mandalay highway and is managed by the MOC, with toll fees on its first 115 miles varying from MK2,500 to MK7,500 depending on the different types of vehicles and weights.
- The last toll is at Baw Net Gyi, which is the start of the Pha Yar Gyi road segment of AH1.

**Figure 28: Road Conditions in Pha Yar Gyi**



Source: MSR.

**Figure 29: Shwe Than Lwin Toll Gate for Pha Yar Gyi–Kyaikto Road Section**



Source: MSR.

**e. Ongoing upgrades**

The team observed that that part of the road had neither been upgraded nor repaired recently. Since the overall road condition is good, these were likely not necessary.

**f. Issues and necessary upgrades**

As the Yangon–Naypyidaw–Mandalay highway is the most-used road in Myanmar, the MOC could implement a digital card payment system at toll gates (the same system that they are starting to introduce in the Yangon bus system) because traffic is intense with long queues during public holidays and weekends.

**g. Traffic volume and vehicles**

11,300 vehicles per day pass through the highway toll gate, including many kinds of trucks, express buses, and family cars.

Pha Yar Gyi–Thaton:

**Figure 30: Pha Yar Gyi–Thaton Section Overview**



Source: Created by MSR based on ©googlemap2020.

**a. Route assessment**

- The road section between Pha Yar Gyi to Thaton, which also serves as AH1 and is also part of the new Yangon–Mawlamyine highway, is in good condition, with a four-lane, mostly asphalt road that is upgraded and maintained regularly.
- After exiting Waw, the team crossed Sittaung river bridge at Moke Pa Lin before reaching Kyaikto. The road segment between Moke Pa Lin and Kyaikto is in very good condition.
- From Kyaikto, AH1 passes through Bilin and Theinzeik and reaches Thaton.

**b. Distinctive junction points**

- At 140 km, between Waw and Sittaung Bridge, the northbound road goes to Daik-U.
- At 207 km from Yangon, AH1 reaches Bilin where a northbound branch road goes to Loikaw in Kayah State, eventually leading to Hopong (near Taunggyi) in Shan State.
- At 246 km in Thaton, AH1 deviates from the Yangon–Mawlamyine highway.

**Figure 31: Pha Yar Gyi–Thaton Distinctive Junction Points**



Source: Created by MSR based on ©googlemap2020.

**c. Significant bridges**

Sittaung Bridge at Moke Pa Lin is situated at 151 km and there is another bridge at the exit of Bilin across Bilin creek.



**d. Toll gates**

- There are five toll gates between the Pha Yar Gyi and Thaton segments of AH1.
- Shwe Than Lwin Highway company, which is responsible for the road segment 90 km from Pha Yar Gyi, operates toll gates at the start of the Yangon–Mawlamyine Highway and 90 km from the starting point.
- Before entering Waw, the team had to pay a wheel tax for crossing the city at a gate run by the local development committee.
- There is also a toll gate for Sittaung Bridge, which connects Bago Region and Mon State, and which opened in July 2008.
- There are also two wheel-tax toll gates for passing both Kyaikto and Bilin.

**e. Ongoing upgrades**

- The new Waw Bridge, which is located on AH1 across Waw creek, is under construction beside the old bridge.
- The four-lane concrete road section at Waw was upgraded to asphalt in 2019.

**Figure 32: New Waw Bridge Construction Site beside Old Bridge**



Source: MSR.

**f. Issues and necessary upgrades**

- As mentioned above, bypass roads are required in some towns.
- Due to increased settlement, especially in the inner part of the town, houses and shops occupy the roadside area and the road becomes narrow.

**g. Traffic volume and vehicles**

Over 4,000 vehicles pass through the Sittaung Bridge toll gate daily as of 2017.

**Figure 33: Road Conditions in Pha Yar Gyi–Thaton Road Section**



Source: MSR.

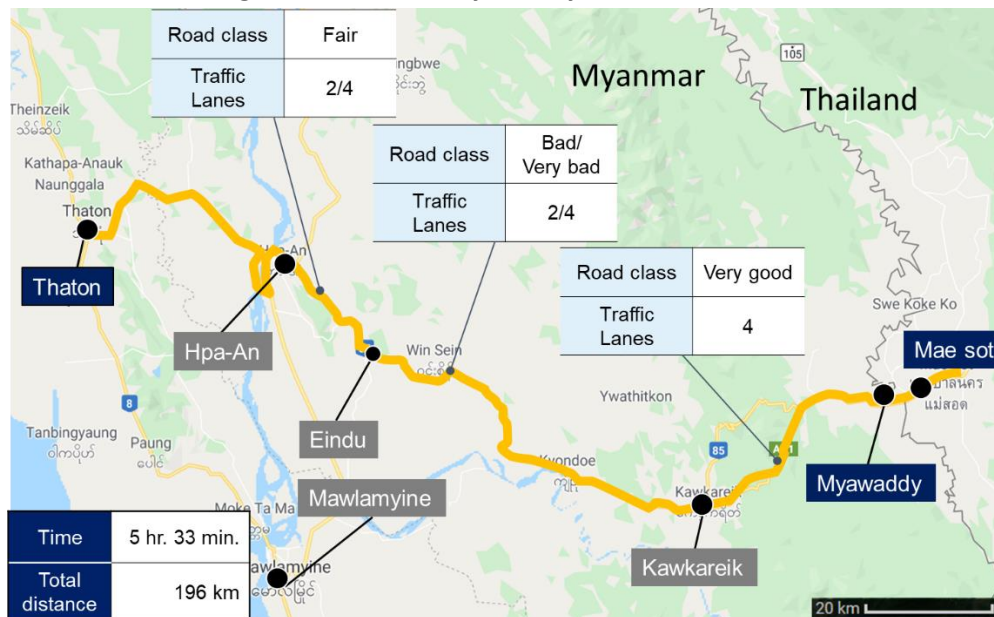
**Figure 34: Sittaung Bridge (Moke Pa Lin)**



Source: MSR.

## Thaton–Myawaddy:

**Figure 35: Thaton–Myawaddy Section Overview**



Source: Created by MSR based on ©googlemap2020.

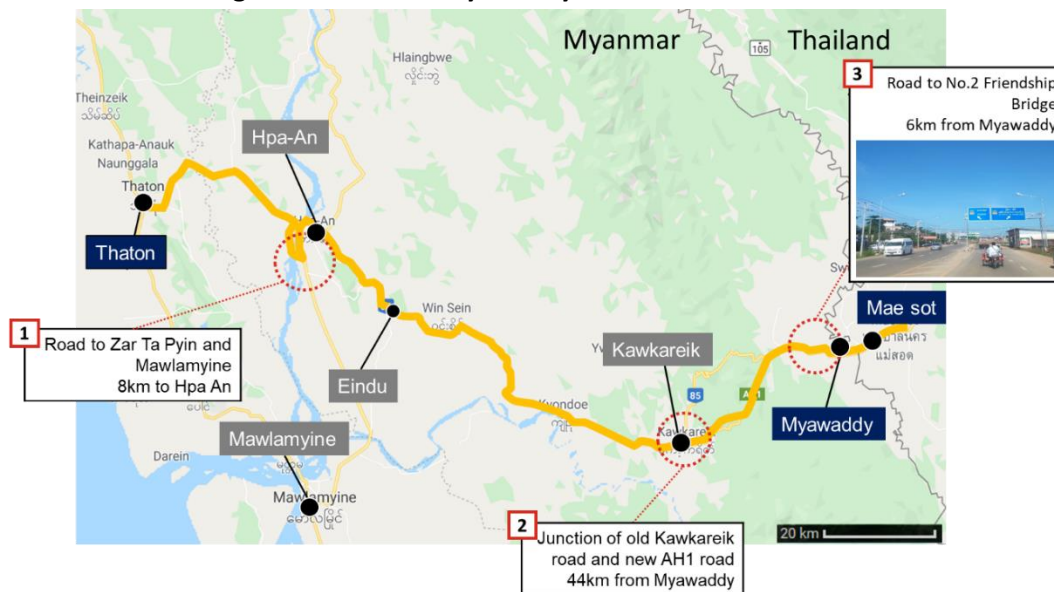
### a. Route assessment

- The road between Thaton and Myawaddy is divided into two sections.
- The team assessed the section running from Thaton through Hpa An till Eindu as ‘fair’ to ‘good’; by contrast, the road from Eindu to Kawkareik still needs upgrading.
- The road from Kawkareik to Myawaddy, which was upgraded in 2015 with help from Thailand, is considered one of the best roads in Myanmar.
- It took the team about 10 hours travel time to go from Yangon to Myawaddy, which is 428 km away.

### b. Distinctive junction points

- After crossing Thanlwin bridge (Hpa An) and 8 km before reaching Hpa An, the road diverges, with one branch going to Zar Tha Pyin and then Mawlamyine, and the other branch leading to the Hpa An bypass road.
- At Kawkareik, the road again splits into two, with the branch on the right (also part of AH1) having been refurbished in 2015.
- At 6 km from No.1 Friendship Bridge along AH1, there is a branch road that leads to the new Myanmar–Thailand border trade centre and No. 2 Friendship Bridge.

**Figure 36: Thaton–Myawaddy Distinctive Junction Points**



Source: Created by MSR based on ©googlemap2020.

**c. Significant bridges**

- Between Thaton and Hpa An, the road passes over two bridges, one of which crosses Donthami creek, which constitutes the border between Mon State and Kayin State.
- Another is the Thanlwin Bridge (Hpa An), built over the famous Thanlwin river.
- Near Kyondoe, the team crossed Gyaing Bridge (Kawkareik), which is an old suspension bridge. There is also a temporary bridge nearby for large vehicles. Gyaing Bridge was closed in 2018 June due to flooding, but reopened after 2 months.

**d. Toll gates**

There is one toll gate to collect a wheel tax at Hpa An, which is located just a few km from Thanlwin Bridge.

**e. Ongoing upgrades**

The 66.4 km road section between Eindu and Kawkareik is under construction; as of 2019 September, about 60% of the project is finished (ADB, 2020).

**f. Issues and necessary upgrades**

- The Eindu–Kawkareik road was mainly funded with US\$100 million from ADB, and a further US\$20 million from ASEAN infrastructure funds. The project, scheduled to be completed in 2019, was delayed due to noncompliance of contractors on environmental issues.
- Although the project needs to solve some environmental and local resettlement issues, it is expected to resume in the coming dry season, which begins in October 2020.



**g. Traffic volume and vehicles**

The number of vehicles passing through Eindu varies from 1,200 to 1,600 according to 2017 data.

**Figure 37: Road Conditions between Hpa An and Myawaddy**



Source: MSR.

**4.3. Mandalay–Keng Lap Route (Lao PDR border)**

**4.3.1. Overview of Routes**

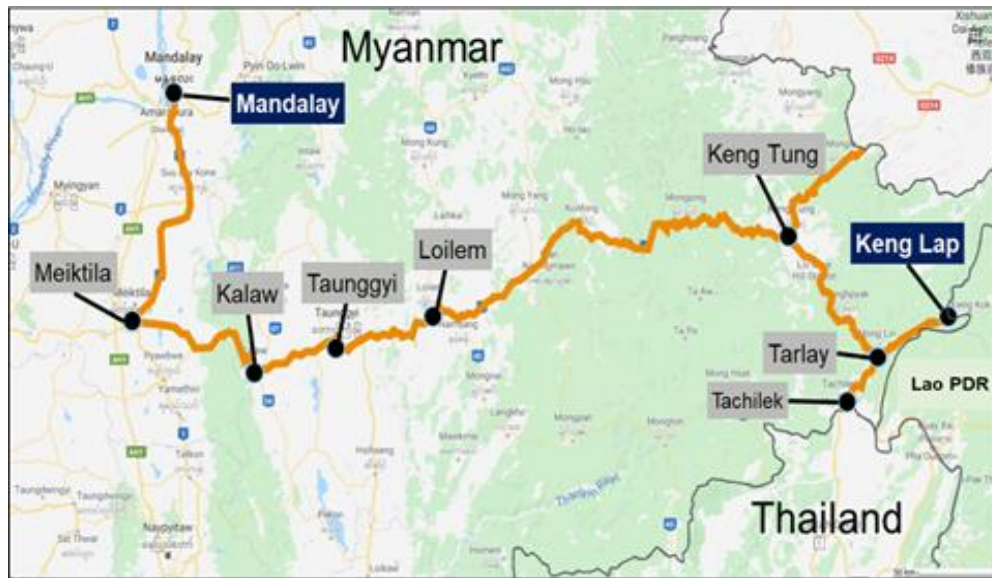
The Mandalay–Keng Lap route is 935 km long, as shown in Figure 38, and takes approximately 21 hours and 24 minutes to cover.<sup>6</sup> The road can be divided into the following three sections:

- a. Mandalay–Meiktila–Taunggyi;
- b. Taunggyi–Loilem–Keng Tung; and
- c. Keng Tung–Tarlay–Keng Lap.

The Mandalay–Meiktila route serves as Asian Highway 2 (AH2)/National Highway 1 (NH1), while the Meiktila–Taunggyi route is AH2, and the Taunggyi–Tachilek route is AH2/National Highway 4 (NH4).

<sup>6</sup> Mandalay–Taunggyi–Loilem–Keng Tung–Tarlay–Keng Lap.

**Figure 38: Mandalay–Taunggyi–Keng Tung–Keng Lap Route**



Source: Created by MSR based on ©googlemap2020.

#### **4.3.2. Overview of the Upgrade Plan**

There are two upgrade plans along the road of Meiktila to Taunggyi, one of which has been completed. There is a further upgrade ongoing along the Tarlay–Keng Lap route.

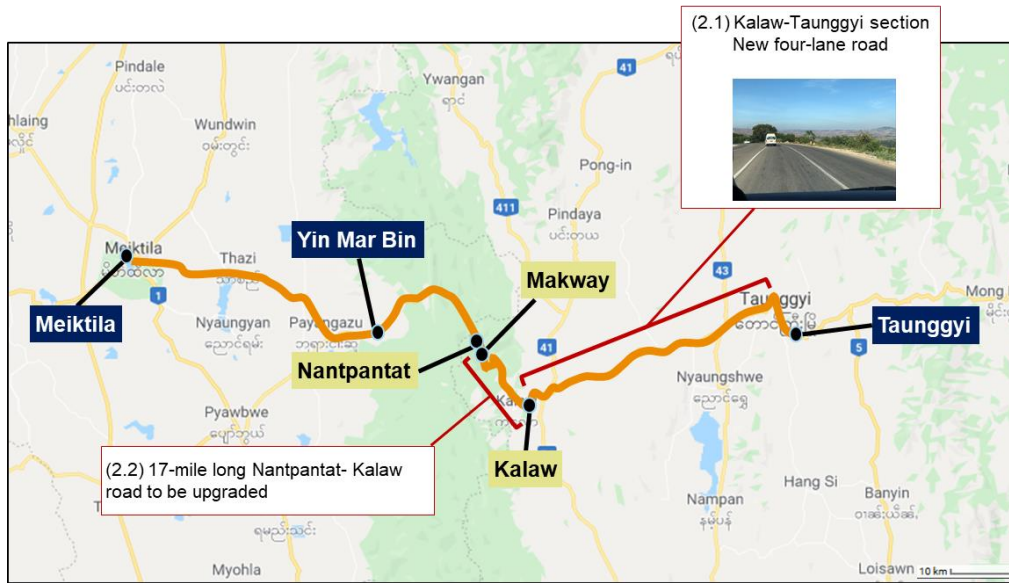
##### **New Four-Lane Asphalt Concrete Road**

A section from Kalaw to Taunggyi in southern Shan State was upgraded to an asphalt concrete road, as shown in Figure 39. The four-lane road is 48 ft wide. It was completed under the BOT system by the Highland Road Construction Company.

##### **Bridge Construction**

Of the 200 bridges planned for the Meiktila–Kalaw road, 194 were built prior to 2019 and the Highland Road Construction Company will complete the remaining bridges in the open season beginning in 2020, as noted by Tun Tun Lin, construction director of Highland Road Construction Co. Ltd. The company had been contracted to build Meiktila–Kalaw–Taunggyi road under a 40-year agreement through the BOT system and the opening ceremony for the Kalaw–Taunggyi road was held on 1 May 2019. The 45-mile (72.4 km) long Kalaw–Taunggyi road, a section of Meiktila–Taunggyi–Keng Tung–Kalaw road, has been completed, and the 17-mile (27.3 km) long Nantpantat–Kalaw road (Nantpantat is a village situated near Shan Yoma Elephant Camp on the Meiktila–Taunggyi road) has yet to be built.

**Figure 39: Road Sections Planned to Be Upgraded**



Source: Created by MSR based on ©googlemap2020.

Of the six remaining bridges to be built, the longest is a 40 m long bridge near Makway Village continuous with Nanphantat village along the Kalaw uphill. The cost of a mile-long road is over MK1.7 billion, and if the Nantphantat–Kalaw road has many bends, the expense will be over MK2 billion per mile (Eleven; 2019).

#### Ongoing Upgrades along Tarlay–Keng Lap Route

- Along the Tarlay–Keng Lap route, the MOC is now upgrading some small parts of the road, as shown in Figure 40.
- Starting from Keng Lap town entrance to the downtown area, the MOC is now expanding the road from 15 feet to 18 feet using crushed rock (quarry).<sup>7</sup>

**Figure 40: Road Sections Planned to Be Upgraded**



Source: Created by MSR based on ©googlemap2020.

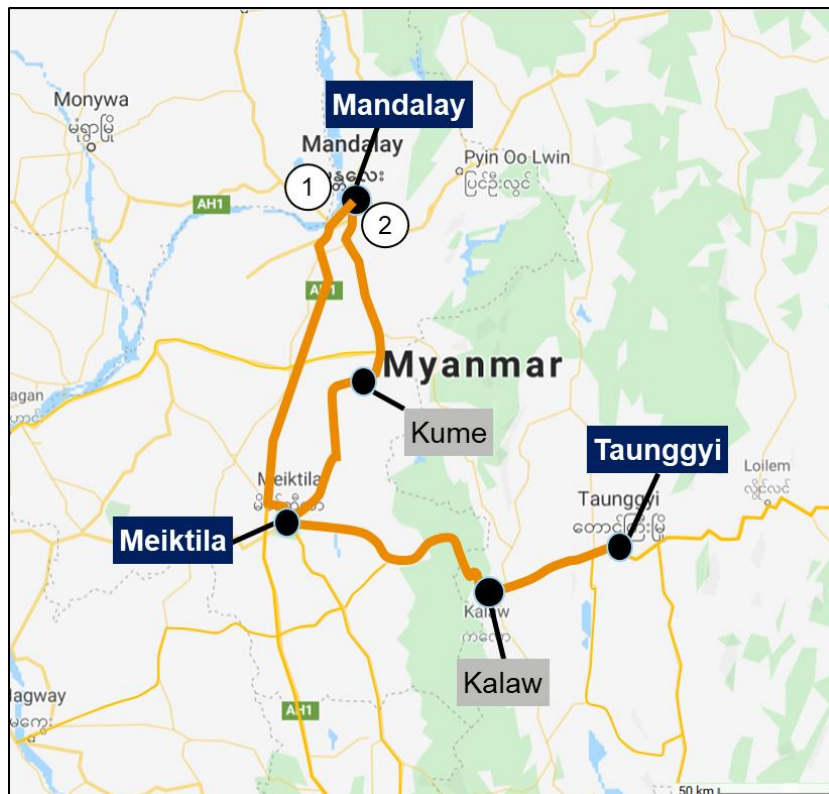
<sup>7</sup> Keng Lap border official.

#### 4.3.3. Sectional Assessment

##### Mandalay–Taunggyi:

There are two routes from Mandalay to Taunggyi: the first is Mandalay–Meiktila–Kalaw–Taunggyi through the Yangon–Mandalay highway route (AH1), and the second is through NH1/AH2, which travels through Mandalay–Kume–Meiktila–Kalaw–Taunggyi, as shown in Figure 41. The team used the second route to travel from Mandalay to Taunggyi, as it is the shortest and most frequently used by logistics companies. The route is in good condition over 336.8 km.

**Figure 41: Two Routes from Mandalay to Taunggyi**



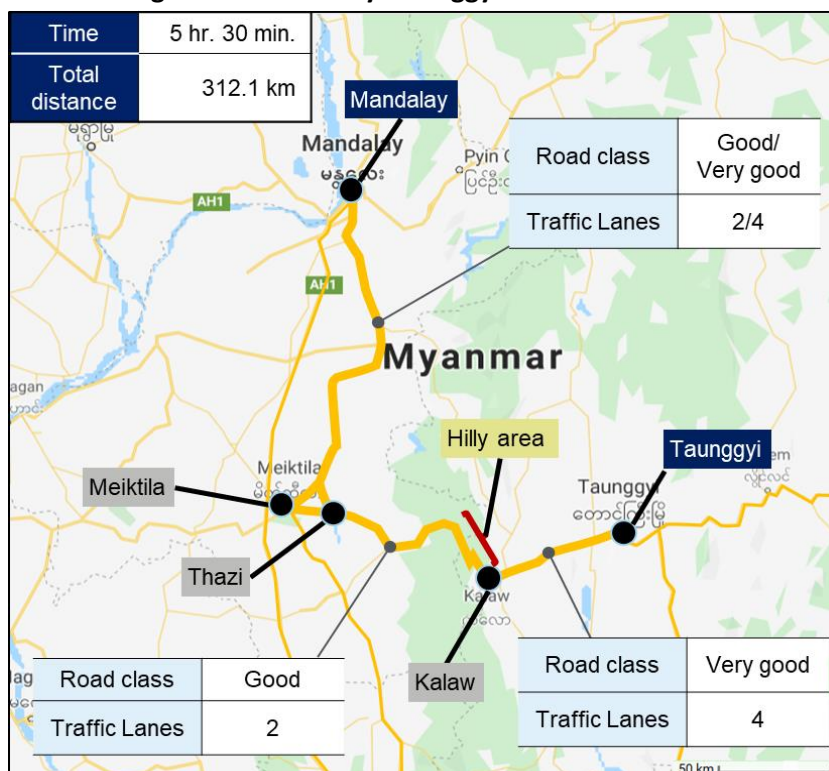
Source: Created by MSR based on ©googlemap2020.

##### **a. Route assessment**

- The Mandalay–Meiktila road is 48 ft wide and made of asphalt, and is in good condition.
- The Meiktila–Kalaw section is wide enough for two cars going in opposition directions to pass at the same time and is in good condition. The hilly section starts from Yin Mar Bin to Kalaw, which is an uphill climb with curves along the road.
- The Kalaw–Taunggyi section is in very good condition, with a 48 ft wide, four-lane asphalt road. It has recently been upgraded by the Highland Road Construction company under the BOT system.



**Figure 42: Mandalay–Taunggyi Section Overview**



Source: Created by MSR based on ©googlemap2020.

**Figure 43: Road Condition at Mandalay–Taunggyi Section**



Source: MSR.

**b. Distinctive junction points**

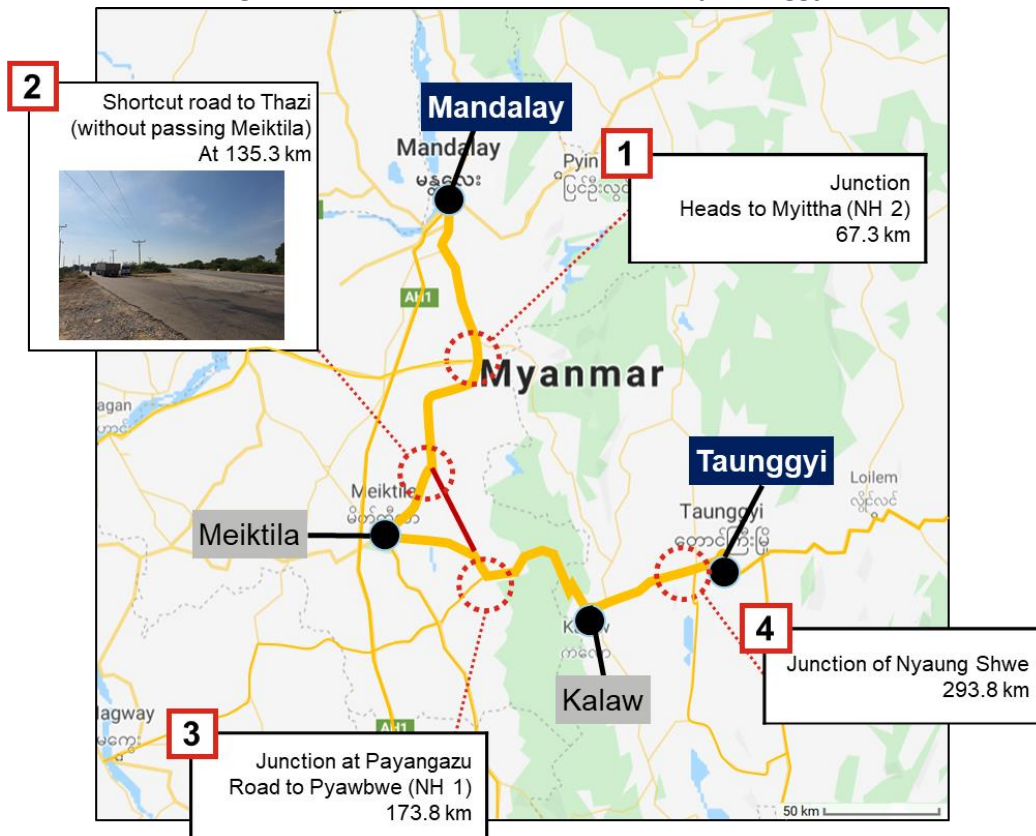
Mandalay to Thazi:

- At 67.3 km, the road divides into two roads (the right direction goes to NH2)
- At 135.3 km, there is a shortcut to NH4 (the right direction heads to Meiktila)

Thazi to Taunggyi:

- At 173.8 km, the road separates (right to Pyawbwe [NH1])
- At 293.8 km, the right direction is the Shwenyaung–Nyaungshwe road, which can take passengers to Inle lake in Nyaung Shwe Township.

**Figure 44: Junction Point from Mandalay–Taunggyi**



Source: Created by MSR based on ©googlemap2020.

**c. Significant bridges**

- Myitnge Bridge crosses the Myitnge river, which is situated between Amarapura and Myitnge Township, and lies along NH1, which connects to Mandalay in the north. Myitnge River is 700 ft long and 27 ft wide for motor traffic, flanked on each side by a footpath 6 ft wide that was opened in 1999.<sup>8</sup>
- There is a small bridge in Kyaukse, which is the capital of Kyaukse District in Mandalay Region, that crosses the Zawgi river.

<sup>8</sup> [https://en.wikipedia.org/wiki/Myitnge\\_River](https://en.wikipedia.org/wiki/Myitnge_River) (accessed 26 April 2020).

**d. Toll gates**

- There are six toll gates on the Mandalay–Taunggyi route. Locations and costs are as follows:
  - Near Myitnge and Sintgaing: MK200/MK900.
  - Meiktila Toll Plaza: MK900.
  - Shortcut road not entering Meiktila: MK600.
  - Pha-ya-nga-zu/Yin Mar Bin: MK500.
  - Aungpan toll gate: MK1,000.
  - Between Shwe Nyaung and Ayetharyar: MK600.

**e. Ongoing upgrades**

(\*refer to 4.3.2 overview)

**f. Issues and necessary upgrades**

Currently, there are no significant issues and necessary upgrades.

**g. Traffic volume and vehicles**

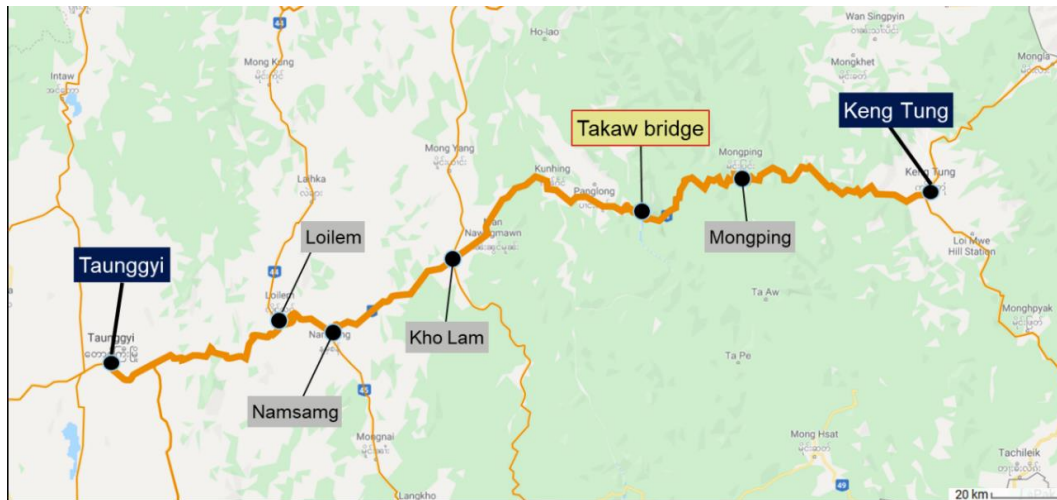
Over 5,000 vehicles typically pass through Thapyay Wa gate daily on the Meiktila–Mandalay road section (GMS, 2018a).

**Taunggyi–Loilem–Keng Tung**

According to a Keng Tung border trade official, the road condition between Taunggyi and Keng Tung is similar to the section between Keng Tung and Tachilek. Taunggyi to Keng Tung road is 48 ft wide, with two lanes of asphalt, and has many turns and some narrow curves. The Tachilek–Keng Tung route takes about 13 hours by car and is 488 km long.

According to meetings with officials from the MOC, the main bottleneck of that route is Wa Ta Lone hill, a rocky mountain near Loilem. Also, there are sand hills in the eastern part of Keng Tung, which makes the existing road impossible to expand because they tend to collapse whenever it is done. The government is now trying to conduct a feasibility study to get loans from ADB to upgrade the current road.

**Figure 45: Taunggyi–Keng Tung Section Overview**



Source: Created by MSR based on ©googlemap2020.

The Takaw Bridge, which crosses Thanlyin river, is situated on AH2/NH4, the only route that connects the southern part of Shan State to the eastern part. It is open from 6am to 6pm every day. Due to the bridge's limited hours, the transportation of the route is not convenient. In addition, the bridge is heavily guarded by the Myanmar military for security concerns.

There is no official document that shows the night-time closure of Takaw Bridge. It was constructed in 1973, with a maximum truck weight of 24 tonnes. Currently, the Department of Bridges is building the Nang Seng–Takaw Bridge at a different location from the old Takaw Bridge to cross Than Lwin river. It is expected that the bridge will be completed by 2022.

**Figure 46: Takaw Bridge**

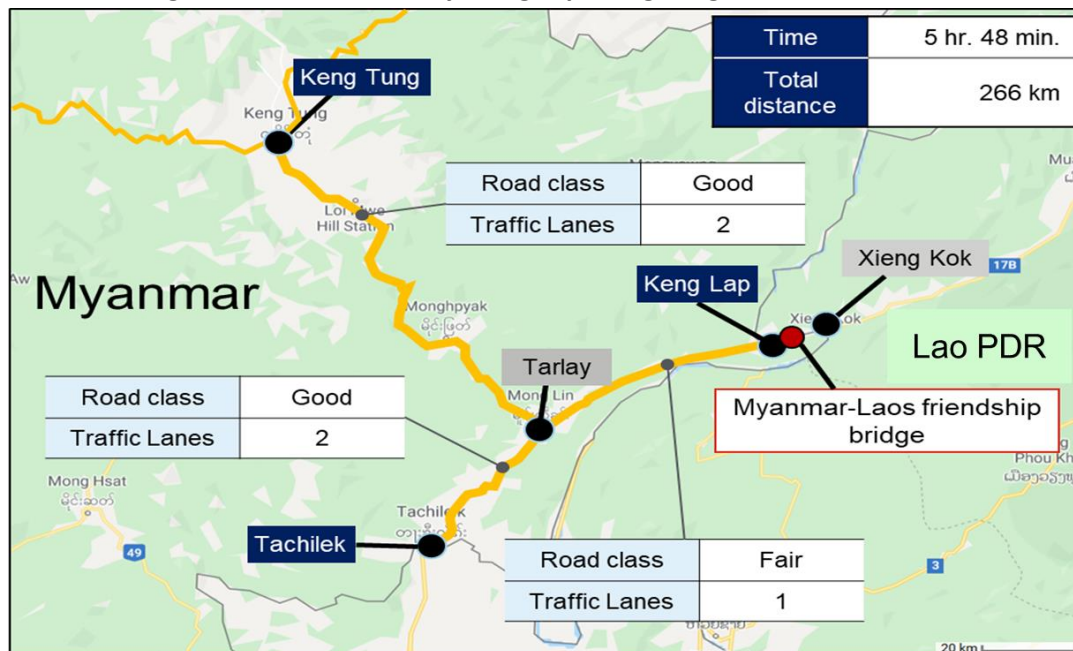


Source: Photo taken by Fatima Martin.



## Tachilek–Keng Lap–Keng Tung:

**Figure 47: Tachilek–Tarlay–Keng Lap–Keng Tung Section Overview**



Source: Created by MSR based on ©googlemap2020.

### a. Route assessment

- The Tachilek–Keng Lap–Keng Tung route, which serves as NH4, is 266 km long, with a total driving time of 5 hours and 48 min.
- Tachilek–Keng Lap–Keng Tung route can be divided into two parts:
  1. Tachilek–Tarlay–Keng Lap route; and,
  2. Tarlay–Keng Tung route.
- The road condition from Tachilek to Tarlay was assessed as ‘fair’. Both trucks and passenger cars going in opposite directions can easily pass each other at the same time.
- The Tarlay–Keng Lap route condition is also fair, but there are some narrow parts that cross the villages and some parts are mountainous.

### Tachilek–Tarlay–Keng Lap Route

The route takes around 2.5 hours by car. The Tachilek–Tarlay route has some hills, but generally it is in a good condition. Starting from Tarlay to Keng Lap, the route section is in fair condition, with narrow asphalt coverage. There are some small curves along the road. The trucks and passenger cars may find it difficult to pass each other at the same time.

**Figure 48: Road Condition at Tachilek–Tar Lay–Keng Lap section**

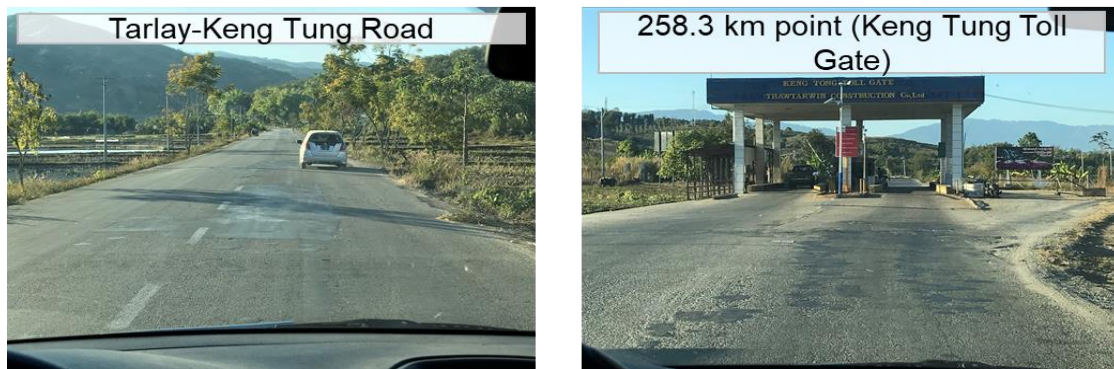


Source: MSR.

#### **Tarlay–Keng Tung route**

Tarlay–Keng Tung route is in good condition and wide enough with two lanes. Even though the location is in a mountainous area, the road is smooth, with only small curves. It takes around 3 hours by car.

**Figure 49: Road Condition at Tar Lay–Keng Tung Section**



Source: MSR.

**b. Distinctive junction points**

Tachilek to Keng Lap:

- At 47.1 km, the Tarlay junction point is where three routes (Tachilek, Keng Lap, and Keng Tung) meet. Turning left leads to Mong Hpyak and Keng Tung, while turning right leads to Keng Lap, which is on National Highway 29 (NH29) road.

Tarlay to Keng Tung:

- At 188.3 km in Mong Hpyak, the northeast route is NH29, which heads to Mongyawng Township.
- At 228.3 km, the northeast route will lead to Loi Mwe (Misty Mountain), which is 9.14 km away from the junction.

**Figure 50: Junction Points in Tachilek–Keng Lap–Keng Tung**



Source: Created by MSR based on ©googlemap2020.

**c. Significant bridges**

At 97.2 km from Tachilek is the Myanmar–Lao PDR Friendship Bridge. It is constructed across the Mekong river.

**d. Toll gates**

There are three toll gates along the Tachilek–Keng Lap–Keng Tung road.

- 9.8 km: Tachilek toll plaza, which was constructed by Thaw Tar Win Construction Co. Ltd. It costs MK600 for passenger cars.
- 161.1 km: Tarlay toll gate, which costs MK1,000 for passenger cars.
- 258.3 km: Keng Tung toll gate, which costs MK1,000 for passenger cars.

**e. Ongoing upgrades**

(\*refer to 4.3.2 overview)

**f. Issues and necessary upgrades**

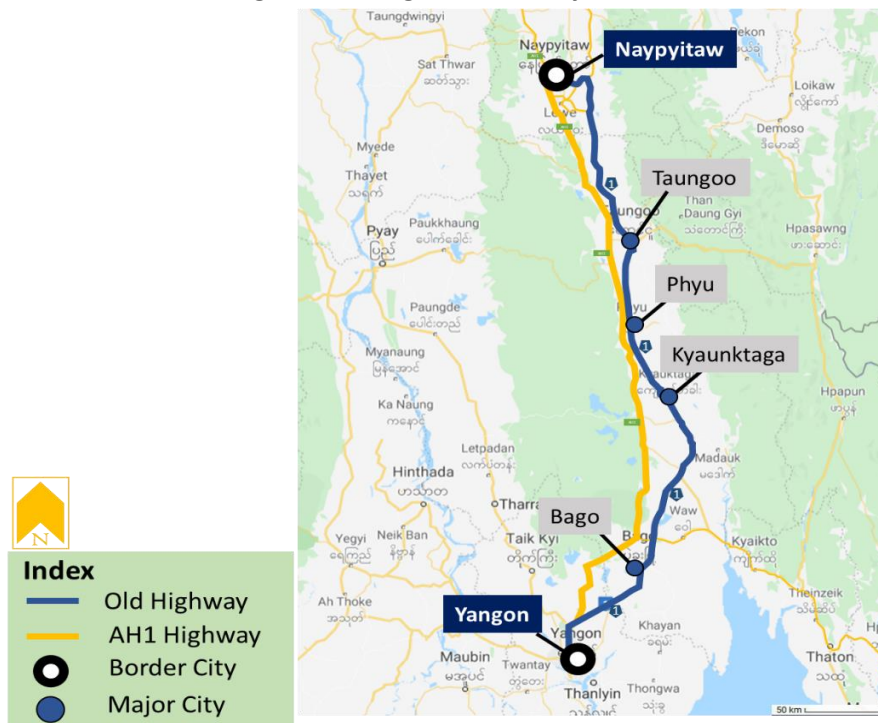
- The Tarlay–Keng Lap route is too narrow, as two cars going in opposite directions can barely pass at the same time. It is necessary to expand, but there are villages along the road with houses that are built too close to the road, which hinders upgrading.
- The Keng Lap border office does not own its own land; currently, it is rented from the monastery.<sup>9</sup> There are efforts to find alternative land.

**g. Traffic volume and vehicles**

- There are about 60–70 trucks (12-wheelers) that pass through the Keng Lap border checkpoint daily.

**4.4. Yangon–Mandalay Highway Section**

**Figure 51: Yangon–Mandalay Route**



Source: Created by MSR based on ©googlemap2020.

<sup>9</sup> Keng Lap border official (Ministry of Commerce).



Figure 52: Yangon–Nay Pyi Taw Route



Source: Created by MSR based on ©googlemap2020.

#### 4.4.1. Distinguishing Points<sup>10</sup>

The distinguishing points between Yangon–Mandalay highway (old route) and Yangon–Mandalay expressway (new route) are as follows:

##### Yangon–Mandalay Highway (Old Route)

- It is approximately 680 km (423 miles) long.
- It is situated through four major cities, including Bago, Taunggoo, Pynmana, and Meiktila.
- It is a two-to-four-lane single carriageway.
- It has a 4.8 roughness rating based on the international roughness index.
- It takes about 14 hours to travel.

<sup>10</sup> <https://frontiermyanmar.net/en/the-road-rule-costing-myanmar-billions> (accessed 26 April 2020).

**Figure 53: Road Condition at Yangon–Mandalay Highway Section (Old Route)**



Source: MSR.

#### **Yangon–Mandalay Express Highway (New Route)**

- It is 586 km (364 miles) long.
- It was firstly planned in late 1950s and rebuilt from October 2005 to December 2010.
- It is a four-lane dual carriageway.
- It has a 3.0 roughness rating based on the international roughness index.
- It takes about 7 hours to travel.
- It is closed to trucks except those carrying perishable goods.

**Figure 54: Road Condition at Yangon–Mandalay Highway Section (Old Route)**



Source: MSR.

#### *4.4.2. Historical Background*

##### **Yangon–Mandalay Expressway**

The Yangon–Mandalay expressway stretches from Yangon (a major commercial city), to Nay Pyi Taw (the administrative capital city) and Mandalay (second-largest city in Myanmar). A US consultant carried out the first expressway feasibility study in 1959 and reported to the Myanmar government in 1960. Although some work was carried out before 2005, it was stopped by the government for budgetary reasons. The Yangon–Nay Pyi Taw–Mandalay expressway was developed by the MOC's Public Works office and the Ministry of Defence's Directorate of Military Engineering. Construction began in October 2005 and opened to the public in three sections as follows:

- Yangon–Nay Pyi Taw (325.12 km; 202 miles), 25 March 2009.
- Nay Pyi Taw–Mandalay (Sagar-Inn) (242.28 km; 149 miles), 29 December 2010.
- Mandalay (Sagar-Inn)-Mandalay (21.92 km; 13.5 miles), 23 November 2011.

### Total Number of Bridges

The total number of bridges is 124 from Yangon to Nay Pyi Taw, and 99 from Nay Pyi Taw to Mandalay (JICA, 2015).

### Total Project Cost

Total cost was MK1.2 trillion (Manch and Htoon, 2017).

### Toll Gates

#### *Yangon–Mandalay Highway (Old Route)*

Seven companies (Oriental Highway [Asia World], Max Myanmar, ShweThan Lwin, Shwe Taung, Kanbawza, Yuzana, and Thawdawin) operate the toll gates and control the highway, with 40-year BOT contracts with the MOC. Trucks must pay tolls of about MK300,000 per return trip (Manch and Htoon, 2017).

**Figure 55: Toll Gates at Yangon–Mandalay Highway Section (Old Route)**



Source: MSR.

#### *Yangon–Mandalay Expressway (New Route)*

Only the MOC operates toll gates along the Yangon–Mandalay expressway. There are five toll stations on the Yangon–Mandalay expressway located at Yangon, Phyu, Nay Pyi Taw, Meiktila, and Mandalay, collectively generating US\$11 million per annum (Manch and Htoon, 2017).

**Table 3: Toll rate of Yangon–Mandalay Expressway**

Section	Class 1	Class 2	Class 3	Class 4
Yangon–Nay Pyi Taw	2,500	5,000	7,500	12,500
Nay Pyi Taw–Mandalay	2,000	4,000	6,000	10,000

Source: JICA, 2015.



**Figure 56: Toll Gates at Yangon–Mandalay Expressway Section (New Route)**



Source: MSR.

#### *4.4.3. Current Situation of Upgrade (2016 to present)*

##### **Yangon–Mandalay Highway (old route)**

Seven local companies are working on stretches of road by section under Build – Operate – Transfer (BOT) system: Max, Shwe Thanlwin, Shwe Taung (Hi Star), Kambawza Highway, Asia World, Yuzana and Thawdawin are working on stretches of road from Yangon to Bago, Bago to Nyaunglaybin, Nyaunglaybin to Kyauktada, Kyauktada to Phyu, Phyu to Nay Pyi Taw, and Nay Pyi Taw to Meiktila.<sup>11</sup>

##### **Yangon–Mandalay Expressway (new route)**

Maintenance of the Yangon–Mandalay Expressway was carried out in two parts: the Yangon–Nay Pyi Taw section, followed by the Nay Pyi Taw–Mandalay section. For the Yangon–Nay Pyi Taw section, 133 miles were covered with asphalt concrete, changing from raised medians to depressed medians. For the Nay Pyi Taw–Mandalay section, 43 miles were paved with asphalt concrete and fixed with 27,798 reflector bulbs. Guard rails were installed along 69 miles, with 1,459 warning signposts installed.

Total maintenance costs in 2018–19 were MK538.58 million from the Union Central Fund, as follows:

- Yangon Section: MK52.6 million;
- Bago Section: MK50.848 million;
- Nay Pyi Taw Section: MK103.01 million; and
- Mandalay Section: MK332.1 million.

MK5.6 million from the Union Central Fund was used for water gates, road shoulders, drainage systems, asphalt concrete, and maintenance of traffic islands (Republic of the Union of Myanmar, 2020).

<sup>11</sup> Htoo, Than (2016), *Yangon–Nay Pyi Taw highway upgrade to finish within five years*. Myanmar Times 18 August 2016. Available at: <https://www.mmtimes.com/national-news/nay-pyi-taw/22010-yangon-nay-pyi-taw-highway-upgrade-to-finish-within-five-years.html>

#### 4.4.4. Future Government Plans

The government has plans to upgrade the Yangon–Nay Pyi Taw Highway during the 5 years of its current term, and has asked foreign investors for financial help. Changing the highway to six lanes with traffic medians and fences on each side to keep out animals and pedestrians, along with a ban on motorcycle usage, were included in the master plan according to Mr. Kyaw Lin, MOC Permanent Secretary at an August 2016 press conference.<sup>12</sup> In February 2018, Mr. Kyaw Lin, since promoted to MOC Deputy Minister, told the Lower House Parliament that MOC had already planned to begin upgrading 40 miles of the Yangon–Mandalay expressway into an international-class facility with loans from ADB (Consult-Myanmar, 2018).

According to information from a meeting with the MOC Department of Highways at Nay Pyi Taw, there is a plan to upgrade the Yangon–Mandalay expressway from two lanes to four to meet international standards and allow for faster speeds. Currently, there is a plan to upgrade Yangon Main No. 3 road–Bawnatgyi section with an ADB loan. There is also a plan to upgrade the Bawnatgyi–Nay Pyi Taw–Mandalay section. As there is no adequate budget for it, the Department of Highways is considering collaborating with the private sector in a public–private partnership. There is no base outline for the project regarding organising work, the amount of work, work area decisions, and number of participant companies; as a result, these will depend on how much interested companies can invest.

#### 4.4.5. Issues

##### Accidents

To improve the safety of the Yangon–Mandalay expressway, 16 roadside police stations were established in 2012, offering 24-hour service (Aung, 2019). Traffic police and the MOC Department of Public Works installed safety countermeasures such as speed enforcement and chatter bar and pavement bump emplacement. For emergency phone service, the MOC established the ‘1880’ hotline connected to the Yangon–Mandalay Express Call Centre in July 2014. However, the numbers of the accidents from 2009 to 2014 did not decline, as shown in the table 4 below (JICA, 2015).

**Table 4: Number of Accidents Taking Place on Yangon-Mandalay Expressway**

Item	2009–10	2010–11	2011–12	2012–13	2013–14
No. of accidents	103	73	55	186	259
No. of injured (person)	170	145	148	192	622
No. of deaths (person)	47	38	47	78	113

Source: JICA, 2015.

<sup>12</sup> Htoo, Than (2016) *Yangon–Nay Pyi Taw highway upgrade to finish within five years*. Myanmar Times 18 August 2016. Available at: <https://www.mmtimes.com/national-news/nay-pyi-taw/22010-yangon-nay-pyi-taw-highway-upgrade-to-finish-within-five-years.html>

There were 473 accidents, 103 deaths, and 877 injured in 2018, and 521 accidents, 106 deaths, and 1,014 injured in 2019, respectively, on the Yangon–Mandalay expressway (Mizzima, 2019).

### **Causes**

The Yangon–Mandalay expressway is notorious for its high death rate from road accidents. Reckless driving, speeding, defective vehicles, and inclement weather are main causes of accidents according to the office of Highway Police (Consult–Myanmar, 2019).

### **Usage of Yangon–Mandalay Expressway by Trucks**

Only trucks equipped with Telematics systems and that have fewer than 22 wheels and six axles and are carrying perishable items can apply to use the Yangon–Mandalay expressway. The maximum weight for loaded trucks is 48 tonnes in the rainy season and 50.5 tonnes in the dry season, with the Department of Highways providing lists of numbers of trucks allowed to use the Yangon–Mandalay expressway and applications for use permissions. Since trucks equipped with Telematics systems can be traced, they are unpopular with drivers, while owners also do not want to pay the fee of MK20,000 for one trip. So, although the system is good, the number of trucks applying for permission to legally use the Yangon–Mandalay expressway has not increased much.

## **5. Border Points**

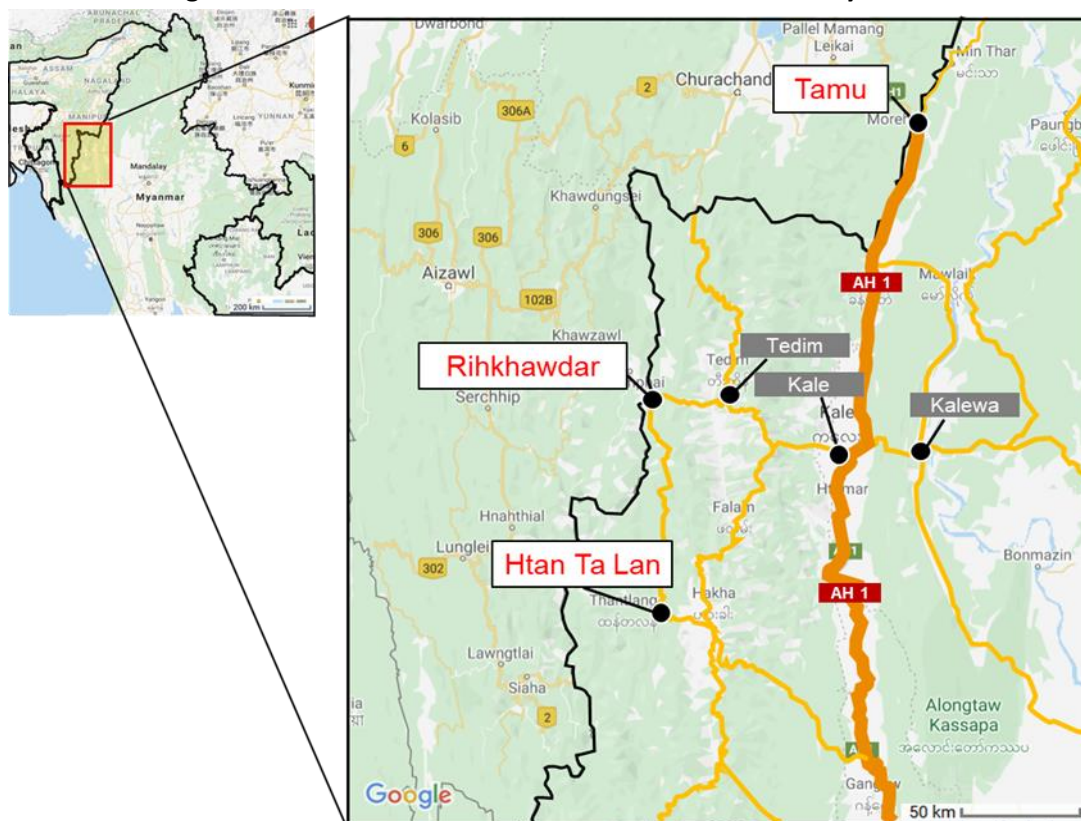
This section examines 1) cross-border trade; 2) existence of physical infrastructure; and 3) institutional arrangements on the route of TLH project. The border points are those of Tamu with Moreh in India, Myawaddy with Mae Sot in Thailand, and Kyaington (Kengtung) with Lao PDR.

### **5.1. Tamu/Moreh**

#### *5.1.1. Cross-border trade*

Tamu is a town in the Sagaing region adjacent to the city of Moreh in India and serves as the largest of three main cross-border trading points, the other two being Rhi (Reed), and Htan Ta Lan, as shown in Figure 57. The Tamu border customs post was opened in 1995 after Myanmar and India signed a border trade agreement that also enabled opening of Rhi/Zowkhathar border point, which is the second-largest in trade volume after Tamu.

**Figure 57: Location of Three Border Points with India–Myanmar**



Source: Created by MSR based on ©googlemap2020.

Tamu accounts for only 0.5% of total cross-border trade (Table 5), but in the past 5 years, trade has increased over 21% annually on average (Figure 58). According to border officials, exports are still limited as the threat of ethnic minority armed groups like Kathae (Khasi) and Naga occasionally disrupt trade. Imports from India are declining since the road from Imphal to Moreh is not well maintained. As a result, these imported Indian products face tough conditions to compete in local markets like Mandalay and Yangon.



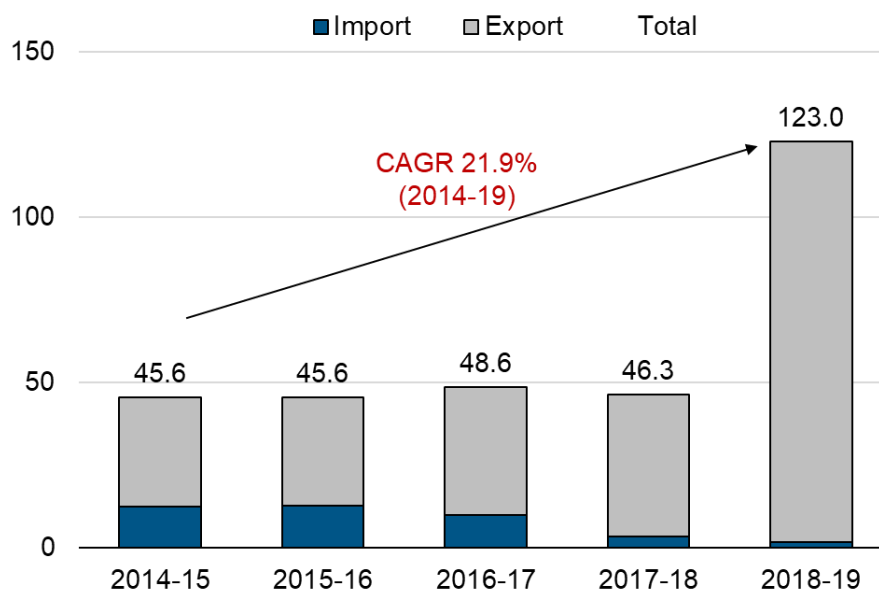
**Table 5: Tamu Border's Contribution to Total Border Trade**

Border Trade Point	Border country	Trade Value (export + Import) (USD)		% of total 2017-2018
		2016-2017	2017-2018	
Muse	China	5410.1	5841.9	68.6%
Myawaddy	Thailand	931.7	942.3	11.1%
Chin Shwe Haw	China	573.4	572.2	6.7%
Myeik	Thailand	209.5	259.4	3.0%
Lwejel	China	202.1	237.8	2.8%
Kaw Thauung	Thailand	133.9	202.9	2.4%
Nabulae/Htee Khee	Thailand	106.6	122.3	1.4%
Kanpitetee	China	90.8	116.6	1.4%
Tachileik	Thailand	48.6	92.7	1.1%
Tamu	India	39.7	46.3	0.5%
Rhi (Reed)	India	11.9	44.4	0.5%
Sittwe	Bangladesh	5.9	14.8	0.2%
Maung Daw	Bangladesh	4.6	14.3	0.2%
Mawtaung	Thailand	4.5	7.4	0.1%
Keng Tung	China	3.2	1.9	0.0%
Mese	Thailand	0.4	1.0	0.0%
Htan Ta Lan	India		0.0	0.0%
Total	-	7777.0	8518.3	100.0%

Source: Ministry of Commerce.

**Figure 58: Myanmar's Border Trade Value**

Unit: Million USD



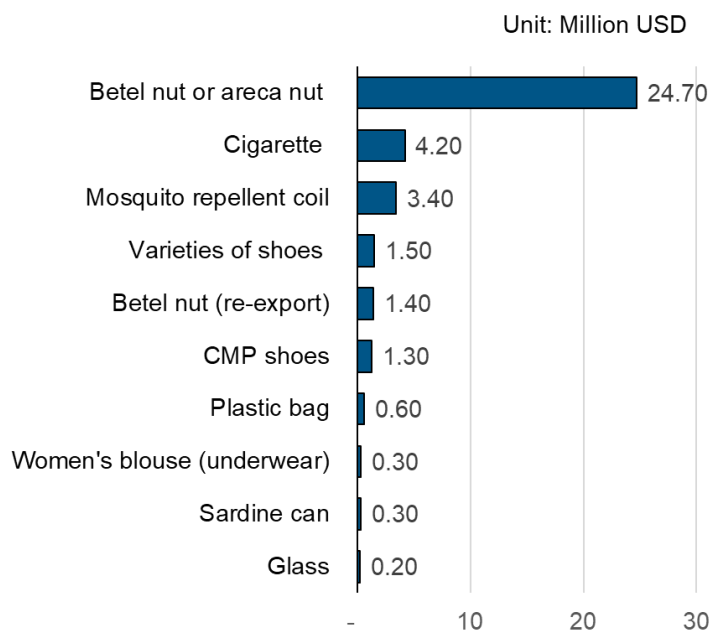
CAGR = Compound Annual Growth rate.

Source: Ministry of Commerce.

### 5.1.2. Exports

Traditionally, the top Myanmar export at Tamu is areca nuts (also known as betel nuts), which are widely consumed both in Myanmar and in India (see Figure 59). In Myanmar, about 10,000 tonnes of areca nuts are grown each year in areas such as Tanintharyi, Ayeyarwaddy, and Mon. India is one of the world's largest producers of areca nuts, but due to the large demand in the Indian market, the competitive price of importing them from Myanmar, and the similarity of taste between Myanmar and Indian products, India imports them from Myanmar.

**Figure 59: Tamu Border Top Export Items (2016–17)**



CMP shoes=cut – make – pack shoes<sup>13</sup>

Source: Ministry of Commerce.

In 2018, India increased the tax associated with Myanmar areca nuts to curb illegal imports. India pointed out that about 75% of areca nuts are illegally imported to Myanmar through the Myawaddy border point with Thailand (Htwa, 2018). The Indian government claimed these illegally imported areca nuts are not taxed properly by the Myanmar government. According to the border official in Tamu, local areca nut exports have nearly diminished because of increased duties and strict regulations to combat illegal exports. The most recent export figures (Table 6), show areca nuts off the list of top 10 exported items from the Tamu border point. Now areca nuts are exported mainly from the Rhi border trade point, which costs less in taxes and has fewer restrictions than the Tamu border trade point; in some cases, they are illegally smuggled into India.<sup>14</sup>

<sup>13</sup> <https://consult-myanmar.com/2019/07/29/myanmar-spends-1-8-bln-on-import-of-cmp-raw-materials/>

<sup>14</sup> Interview with border trade officer in Tamu.

**Table 6: Tamu Border Export Trade Top Items (\*2018–19 September)**

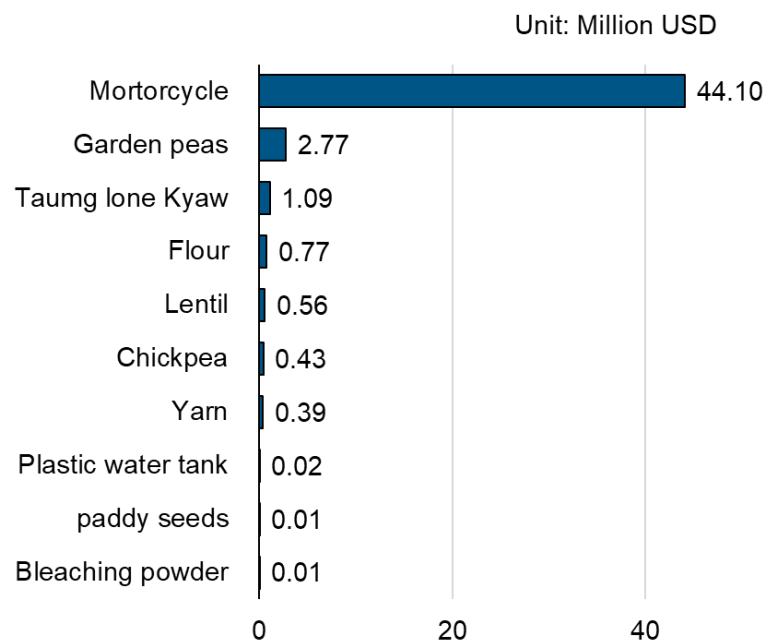
No.	Items / Goods
1	Black gram
2	Pigeon Pea
3	Processed wood
4	Chick Pea
5	Rubber (raw)
6	Hard wood
7	Metal & ore
8	Red kidney bean
9	Maize
10	Black pepper

Source: Tamu border office.

#### 5.1.3. Imports

As shown in Figure 60, motorcycles are the top Tamu import followed by garden peas and *taumg lone kyaw* (ginseng).

**Figure 60: Tamu Border Top Import Items (2016–17)**



Source: Ministry of Commerce.

According to the updated information on imports for 2018–19, medical equipment remains predominant, followed by petroleum products and medicines and medical equipment, as shown in Table 7. Due to the small volume of imports from India, the items may change based on year-to-year demand from Myanmar.

**Table 7: Tamu Border Import Top Items (\*2018–19 September)**

No.	Items / Goods
1	Medical Equipment
2	Petroleum Products
3	Machine Equipment
4	Electrical Distribution Equipment
5	Iron and Iron Construction Equipment
6	Chemical Products
7	Tractors
8	Fertilizers
9	Automobiles and Parts
10	Plastic Raw Materials

Source: Tamu border office.

#### *5.1.4. Institutional arrangements*

##### **Motor Vehicle Agreement**

Implementation of the Motor Vehicles Agreement, which allows member states to transport cargo and passengers in their territory more freely under certain conditions, has been under negotiation by the Indian, Myanmar, and Thai governments in recent years. The Indian government, through its embassy in Yangon, has emphasised the Motor Vehicles Agreement for efficient traffic and trade between the two nations (E-Pao, 2018). However, as of January 2020, the agreement has not been implemented and remains at the negotiation stage at the ministerial level.

##### **One Stop Service**

Tamu gate provides 'One Stop Service' to facilitate trade with India. One Stop Service was established under Myanmar's law aimed at expediting trade and inviting more investment for the country. In Tamu, there is an office and an area designated for vehicle inspection.



**Figure 61: Vehicle Inspection Area**



Source: MSR.

At this inspection area, the officials in charge of the Tamu Border Trade Department, Customs Department, Immigration Department, Myanmar Police Force, and Internal Revenue Department monitor trade activities (see Table 8).

**Table 8: Responsibility of Each Party Providing One Stop Service at Tamu Border**

<b>1.Ministry of Commerce, Department of Trade</b>	Rapidly and accurately issue export/import license in line with notification and procedures.
<b>2. Ministry of Planning, Finance and Industry, Department of Custom</b>	Inspect goods.
<b>3. Ministry of Planning, Finance and Industry, Department of Internal Revenue</b>	Levy duties on export/import commodities.
<b>4. Ministry of Planning, Finance and Industry, Myanmar Economic Bank</b>	Supervise deposit accounts of each department.
<b>5. Ministry of Labor, Immigration and Population, Department of Immigration</b>	Inspect entry and departure of people.
<b>6. Ministry of Home Affairs, Myanmar Police Force</b>	Inquire about arms, ammunition, and narcotic drugs, and provide border trade station security.

Source: Compiled by MSR based on Tamu border office.

### **Land Border Crossing Agreement**

As part of a Land Border Crossing Agreement signed on May 2018, citizens of India and Myanmar are allowed free movement up to 16 km (within the border town) of each other's territory by showing a valid ID at the border gates. However, travellers who want to explore beyond 16 km need special permission from both sides (Samom, 2018). According to the Myanmar immigration department, 453 people in 2018 and 495 people in 2019 passed through the Tamu border gate into Myanmar.

#### *5.1.5. Physical infrastructure*

### **India–Myanmar Friendship Bridge**

The India–Myanmar Friendship Bridge, built in 2001 by the Indian government, is 3.8 m wide, 51.8 m long, and can withstand up to 24 tonnes. The bridge spans the Yu river (Menal river), which flows into the Chindwin river near Mawlaik in Myanmar. In May 2018, after the Land Border Crossing Agreement was signed between the two countries, the bridge was designated solely for travellers and vehicles going further than 16 km. At the Indian side, an integrated check post stands on top of a small hill overlooking the bridge.

**Figure 62: India–Myanmar Friendship Bridge**



Source: MSR.

### **Border Gates**

There are three border gates between Myanmar and India at Tamu. Gate number 1 is at the Friendship Bridge, and requires travellers to show a valid passport and visa and fill out documents. Gate number 2 is at Namphalong market, which is mostly for locals who want to

visit Tamu and Moreh (within 16 km) or shop at the market. Gate number 3 is between Namphalong market and the Friendship Bridge 400 m from the latter and is located on zero mile (border area), which is used only for trade (border trade zone) purposes.

The plot encompasses 10 acres, and currently there are One Stop Services and warehouses. According to the border officials, from seven to as many as 40 trucks come to border gate 3 to unload goods depending on the weather, road condition, and regional stability, amongst other factors. During the field survey, the MSR team observed three trucks unloading goods at that border trade area.

### **Border Trade Checkpoints**

As mentioned earlier, One Stop Service at Tamu is offered at the border gates, and there is also a Tamu border trade office with a vehicle inspection centre located about 3.3 km from the bridge on the India–Myanmar Friendship Road (also called AH1).

The operating hours are from 6am to 6pm (same for border gates) and there are 31 permanent staff members. There is an inspection facility to check not only the trucks, but also passenger cars and express buses.

On the India–Myanmar Friendship Road to Kalewa, 3.3 km outbound from the Tamu border point, there is one final check for illegal entry and departure of people and to control drug and ammunition smuggling.

#### *5.1.6. Physical infrastructure (future plans)*

### **MAR-22 Road**

In 2016, the Myanmar government implemented a US\$41.5 billion master plan to develop an arterial road network, with a projected completion date of 2035.<sup>15</sup>

Myanmar Arterial Road (MAR)-22 will connect Tamu and Muse directly through Pinlebu, Wuntho, Kyauktan, Hteegyaik, Myataung, Sinkhan, Mansi, and Nankham.

After completion of MAR-22, Tamu and Muse will be only 560 km apart and the development of the Tamu–Moreh border will be greatly enhanced.

### **Establishment of the Border Market (Border *Haat*)**

A border *haat* marketplace will be opened 1 day a week in the India–Myanmar border area (Chin State and Sagaing region) by both countries. Both sides agreed in principle to set up five border *haat* in Chin state, then five in Sagaing region.

### **Expansion of the Border Trade Zone**

According to the interview with the border officials, there have been talks to upgrade the trade area. The proposed plan to upgrade the former 10-acre trade zone into a 24-acre trade hub with an industrial zone and modern warehouses, as well as cold storage facilities, has been approved by the authorities concerned.

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<sup>15</sup> The current situation and future plan of infrastructure developments in Myanmar by MOC Department of Highways, June 2016.

## 5.2. Myawaddy / Mae Sot

### 5.2.1. Cross-border trade

There are seven border trade zones between Myanmar and Thailand, one each from Mese of Kayah State, Tachileik in Shan State, and Myawaddy of Kayin State, with four in Tanintharyi region: Hteekhee, Mawtaung, Kawthoung, and Myeik (see Figure 63).

Myawaddy is located in the southeastern part of Myanmar (Kayin State). Separated from the Thai border town of Mae Sot by the Moei River (Thaung Yinn River), Myawaddy is one of the most important border trade zones between Myanmar and Thailand, as well as the second-biggest of Myanmar's 18 border trade points.

**Figure 63: Location of Seven Border Points between Myanmar and Thailand**



SEZ=special enterprise zone.

Source: Created by MSR based on ©googlemap2020.



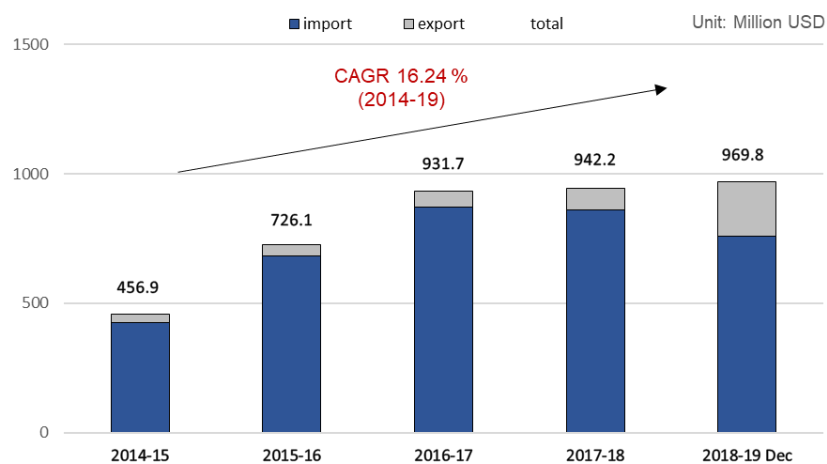
In terms of the total border trade, Myawaddy accounts for 11.1% (Table 9), but in the past 5 years, trade has been increasing significantly (16.24% Compound Annual Growth rate) from 2014 to 2019 (Figure 64). According to border officials at Myawaddy, although border trade is increasing yearly at Myawaddy, it is estimated that the illegal trade may be five times higher than legal trade. Recently, Chang beer from Thailand entered the rapidly growing beverage market in Myanmar by establishing a joint venture with a local brewery. As a result, Chang is competing with its own products available on the black market. Since Myanmar does not allow beer imports, it is proof that the government is still combatting smuggling at the border areas (Han and Kean, 2020).

**Table 9: Myawaddy Border Trade Contribution to Total Border Trade**

Border Trade Point	Border country	Trade Value (export + Import) (USD)		% of total 2017-2018
		2016-2017	2017-2018	
Muse	China	5410.1	5841.9	68.6%
Myawaddy	Thailand	931.7	942.3	11.1%
Chin Shwe Haw	China	573.4	572.2	6.7%
Myeik	Thailand	209.5	259.4	3.0%
Lwejel	China	202.1	237.8	2.8%
Kaw Thauang	Thailand	133.9	202.9	2.4%
Nabulae/Htee Khee	Thailand	106.6	122.3	1.4%
Kanpitetee	China	90.8	116.6	1.4%
Tachileik	Thailand	48.6	92.7	1.1%
Tamu	India	39.7	46.3	0.5%
Rhi (Reed)	India	11.9	44.4	0.5%
Sittwe	Bangladesh	5.9	14.8	0.2%
Maung Daw	Bangladesh	4.6	14.3	0.2%
Mawtaung	Thailand	4.5	7.4	0.1%
Keng Tung	China	3.2	1.9	0.0%
Mese	Thailand	0.4	1.0	0.0%
Htan Ta Lan	India		0.0	0.0%
Total	-	7777.0	8518.3	100.0%

Source: Ministry of Commerce.

**Figure 64: Myawaddy Border Trade Value**



CAGR = Compound Annual Growth rate.

Source: Ministry of Commerce.

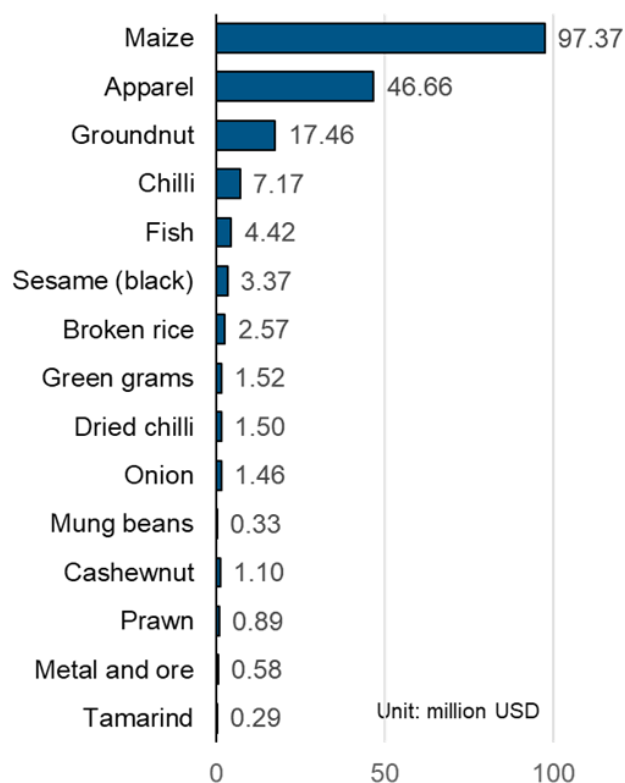
### 5.2.2. Exports

Since Myanmar is still an agriculture-based country, most of its exports are agricultural and marine products. Comparing the top 15 export items between 2017–18 and 2018–19 shows that the lists are more or less the same. However, while maize topped the 2018–19 export list, it is not even on it for 2017–18. The border trade officer at Myawaddy pointed out that although the Myanmar and Thai governments signed cross-border trade agreements, they still need to negotiate an equal taxation policy on certain goods throughout the year.

### 5.2.3. Imports

For imports, which are shown on Figures 65 and 66, motorcycles are the top item for 2017–18, followed by automobile parts, agricultural machinery, and beverages. According to the updated information on imports for 2018–19, motorcycles remain on top, followed by beverages and construction materials and automobile parts, which, though previously in second place, had dropped to fifth place. Due to the relatively small volume of imports from India, year-to-year demand from the Myanmar side can change. However, while official trade on which the government collects duties may be rising, the amount of illegal trade across the long, mountainous border, where ethnic armed forces are active, is still unknown. Due to strict actions taken against illegal trade at Myawaddy, the imported trade volume rose significantly.

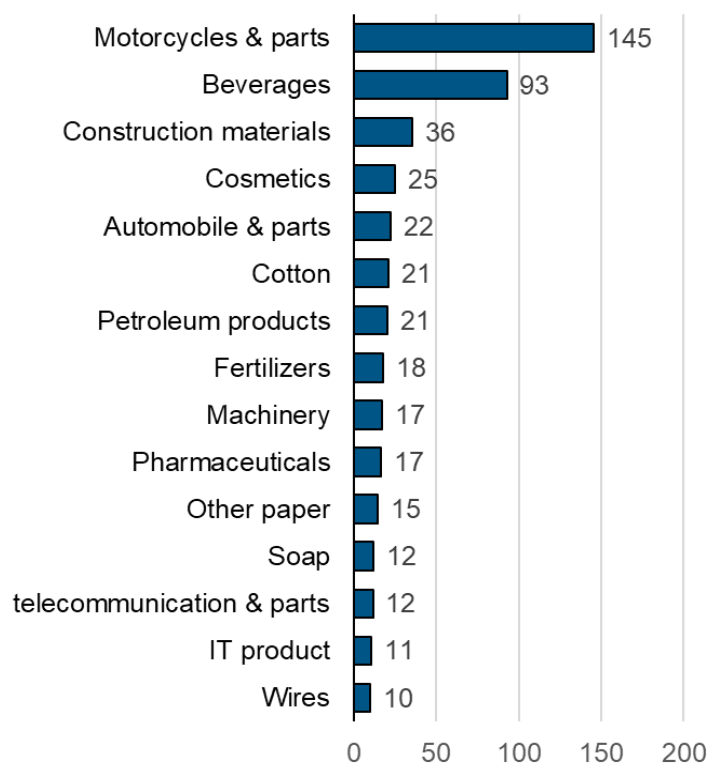
**Figure 65: Myawaddy Border Export Items, 2018 to 2019 September**



Source: On data from Myawaddy border trade office.

**Figure 66: Myawaddy Border Import Items 2018 to 2019 September**

Unit: million USD



Source: Data from Myawaddy border trade office.

#### 5.2.4. Institutional arrangements

##### **Cross-Border Transport Agreement**

Myanmar and Thailand signed a Cross-Border Transport Agreement in March 1996. Thailand is the fourth country to sign such an agreement with Myanmar after China, India, and Bangladesh. In 2019, Myanmar and Thailand signed a subsequent Cross-Border Transport Agreement that allows both countries' licensed logistics companies to transport goods overland through the Yangon (Thilawa) Myawaddy–Mae Sot–Bangkok (Laem Chabang) route. Vehicles from Thailand can travel to the Thilawa special economic zone before being stopped for customs inspections, while vehicles from Myanmar need to go through customs inspections at Mae Sot.

Under the agreement, 100 vehicles from each country are permitted to stay in the other country for 30 days. Three licenses were given to logistics companies in each country. For Myanmar, MK transportation, Hercules Logistics, and Resources Group Logistics were granted permission to transport goods through the border. According to an interview with Myanmar Container Trucking Association, local logistics firms and experts are cautious about this new Cross-Border Transport Agreement between Myanmar and Thailand, since, due to a heavy imbalance of imports from Thailand to Myanmar, it could benefit Thailand more. In addition, local logistics companies will not be utilised as their Thai counterparts can carry goods directly into the Thilawa special economic zone.

**Table 10: Interviews with Officials / Experts:**

Myanmar Container Trucking Association (Chairman/ Vice Chairman)	‘Thailand and Myanmar have the new Cross-Border Transport Agreement, which will grant licenses to 100 cargo vehicles that will allow them to drive into each other’s countries without having to unload their cargoes at the border point. Thailand wants to be able to travel up to Thilawa in the future as many Japanese manufacturers have production sites in Thailand. But this is something to be considered since Myanmar will also need to protect its logistics companies.’
Aung Khin Myint (chairman at Myanmar International Freight Forwarders Association)	‘The Myanmar side will also have to do their part in allowing Thai vehicles to use routes other than that agreed upon. We are now able to go to Laem Chabang only since Thai vehicles are only allowed to go to Thilawa.’
Border trade official in Myawaddy	‘According to a border trade officer, he wants to get rid of illicit trades. But he said it is not an easy task because Myanmar considers border trades only at the new friendship bridge trade centre and border trade zone legal, but over 30 border gates (mostly managed by ethnic armed groups such as Kayin State Border Guard Force, Karen National Union, and Democratic Karen Benevolent Army) along Moei river are regarded legal from Thailand side.’

#### 5.2.5. Physical infrastructure

##### **Thai–Myanmar Friendship Bridge**

The Thai–Myanmar Friendship Bridge was constructed in 1997 following the signing of the Cross-Border Transport Agreement and was the first bridge to connect Myawaddy and Mae Sot, southern towns of Myanmar and Thailand, respectively. The bridge is 420 m long and 13 m wide.<sup>16</sup> Since 2015, the border gate at the bridge opens at 5am and closes at 8pm. Before 2015, it was open from 6am to 6pm, like the Tamu–Moreh border gate.

<sup>16</sup> Kayin State Investment Opportunities Survey 2017.



**Figure 67: Old Thai–Myanmar Friendship Bridge Border Gate**



*Source: MSR.*

### **Second Thai–Myanmar Friendship Bridge**

The 270 m long second Thai–Myanmar Friendship Bridge opened in December 2019, and is located 4 km northwest of the first bridge. The bridge was constructed in 2015 at a cost of THB3.9 billion, with Thailand contributing about THB3 billion and Myanmar making up the difference. Its main purpose is to alleviate the congestion on the first bridge and enhance bilateral trade. The first bridge will now serve passenger cars and buses. Border passes can be issued easily for day-return visitors from Thailand and third countries to Myawaddy, along with day-return visitors from Myanmar to Mae Sot who show their passports with a valid visa or their national registration cards at the old bridge. The second bridge serves commercial vehicles (trucks), with the ‘customs, immigration and quarantine check’ team assigned at border checkpoints (at the end of each bridge approach road).

According to the border official, the commercial vehicles and trucks must go through vehicle inspection at the Myawaddy trade zone, which is situated 8.2 km from the second friendship bridge. Trucks without special permission to enter Myanmar must unload and load goods at the trade zone; a One Stop Service team is available to assist those vehicles to go through the process.

The opening of the second bridge was coupled with the Cross-Border Transport Agreement, as mentioned earlier.

**Figure 68: Second Thai–Myanmar Friendship Bridge**



Source: MSR.

### **Myawaddy Industrial Zone**

The Myawaddy industrial zone is built on a 200-acre site 11 km from the Thai–Myanmar Friendship Bridge and along the Thai–Myanmar border. The project has been developed by the Nyi Naung Oo company since 2013. Although it was expected to be finished in 2017, it was delayed due to lack of electricity and instability in the region, as well as speculative land investors.

Currently, 10 businesses are in operation and many of them have their headquarters in Thailand, employing more than 400 local people (Htwe, 2015).

**Figure 69: Location of Myawaddy Industrial Zone**



Source: Created by MSR based on ©googlemap2020.

**Figure 70: Myawaddy Border Trade Zone**



Source: MSR.

**Figure 71: Inside Myawaddy Trade Zone**



Source: MSR.

#### **5.2.6. Physical infrastructure (future plans)**

##### **New Bridges**

Although there are some talks between Myanmar and Thailand for a third Friendship Bridge in the future, it is still in negotiation, with no published plan.

Myanmar will build/upgrade three bridges along the Gyaing–Zarthapyin–Kawkareik route with the help of the Japan International Cooperation Agency according to MOC information.

### **Shwe Kokko Project**

Shwe Kokko special industrial zone is being developed on a sweeping bend of the Moei river 16 km north of Myawaddy, on the border with Thailand. The area is under the control of the Kayin State Border Guard Force. The project will cover an area of 72,843 ha of land, with estimated investment of US\$15 billion. The project was started in 2017 and is expected to be completed by 2027.

The master plan of this project includes a high-tech hub, with an airport, luxury housing, a 1,200-room hotel, casinos, an entertainment complex, supermarkets, department stores, police station, industrial zone, and freight depots.

The developer, Yatai International Holding Groups, a self-proclaimed Bangkok-based and Hong Kong-registered conglomerate, formed a partnership with the Border Guard Force and obtained a 70-year land lease from the Myanmar government, with an option to extend up to 99 years.

The first phase, which is construction of about 60 luxury villas on 10.3 ha of land with an initial investment of US\$22.5 million, will be completed by 2021 (Han, 2019). On the other hand, local protesters have claimed that many Chinese workers are employed illegally at the construction sites and are causing problems (Lwin, 2019). Local residents called on the government to crack down on illegal Chinese immigration, warning that they would stage a protest if it failed to take action.

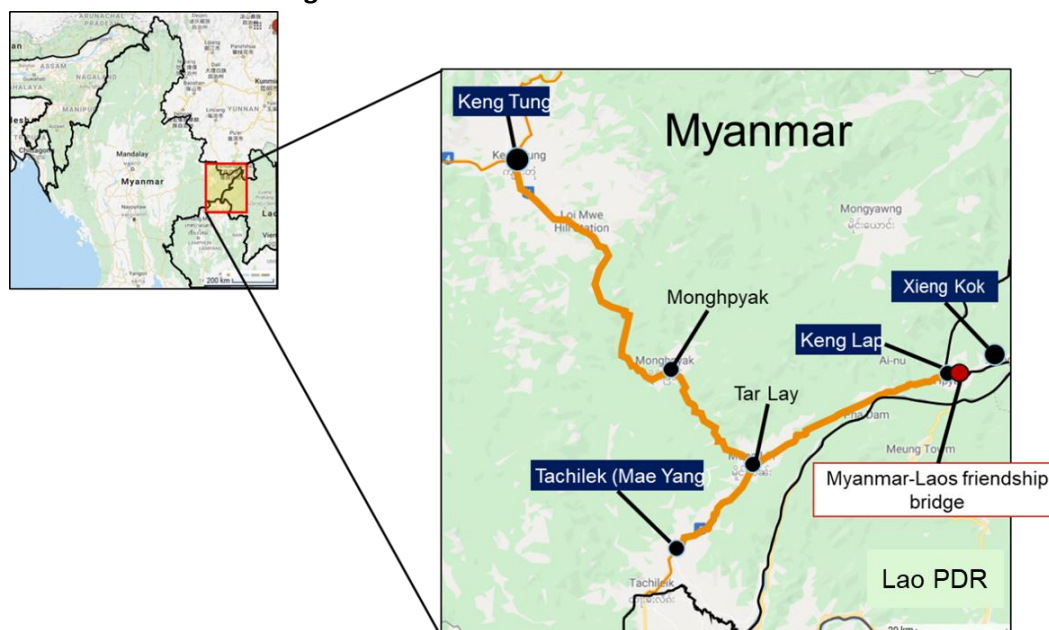
### **5.3. Keng Lap–Xieng Kok**

#### *5.3.1 Cross-border trade*

Keng Lap is a small town in Myanmar that is situated along the border with Xieng Kok in Lao PDR. In October 2019, border trade opened in Keng Lap. The border station started issuing licenses and permits for Myanmar exporters to enable them to trade not only with Lao PDR, but also with China. As shown in Figure 72, there are three border check points that the team visited:

1. Mae Yang border check point, which is situated in Tachilek for trade with Thailand;
2. Keng Lap border check point for trade with Lao PDR; and
3. Keng Tung trade station, which is not the border trade station, but where licenses are issued for border trade with the countries adjacent to the eastern part of Shan State.

**Figure 72: Location of Three Border Points**



Source: Created by MSR based on @googlemap2020.

### 5.3.2. Exports

Keng Lap is a new border trade station opened in 2019. According to the Keng Lap border official, from 2018–19, there were only exports from Myanmar and no imports. Currently, exporters are tax-exempt, with rice, maize, livestock (goats) and rubber the only four items being exported. According to the Ministry of Commerce, the trade value of 2018–19 (September–October) was US\$18,000, and for 2019–20 (September–November) it was US\$81,000 (see Table 11). Rice is the main export from Myanmar.

**Table 11: Trade Value at Keng Lap Border Point**

Unit: Mil USD

STATION	2018-2019 FY			2019-2020 FY (November)		
	Export	Import	Trade Volume	Export	Import	Trade Volume
KENG LAP	0.018	-	0.018	0.081	-	0.081

Source: Ministry of Commerce.

According to a Keng Lap border official, in 2019, the export quota of rice from Myanmar to China, which goes through Muse, has reached its limits. As a result, the Keng Lap border trade station has become the main alternative transit gate for Myanmar rice to China. Chinese importers directly pick up the Myanmar products at Xieng Kok to import. The official also added that, starting from this year, traders are exporting rice directly to China without using



the Lao PDR bypass route. However, they may again use the Lao PDR border in the latter half of 2020 when they use up the export quota to China.

### *5.3.3. Export situation in 2020*

As of February 2020, the border gate is temporarily closed because of the coronavirus situation. The export of rice to China could be reactivated upon the Myanmar government's decision. In addition to the goat export, livestock such as cows and buffaloes are in line to be exported to Lao PDR through the Keng Lap border gate later in 2020.<sup>17</sup>

### *5.3.4. Imports situation in 2020*

There are no imports yet at the Keng Lap border trade station.

### *5.3.5. Institutional arrangements*

#### **One Stop Service**

Tachilek gate provides One Stop Service to facilitate trade with Thailand, while Keng Lap gate provides it for trade with Lao PDR, and Keng Tung for trade with China, Lao PDR, and Thailand.

**Figure 73: Vehicle Inspection Area in Keng Lap**



Source: MSR.

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<sup>17</sup> Interview with Keng Lap border trade officials.

**Figure 74: Vehicle Inspection Area in Tachilek**



Source: MSR.

#### *5.3.6. Physical infrastructure*

##### **Myanmar–Lao PDR Friendship Bridge**

The Myanmar–Lao PDR Friendship Bridge links Keng Lap in Tachilek district and Xieng Kok in Luang Namtha, Lao PDR. The bridge, which runs across the Mekong river and is 691.6 m long, was constructed on 2015 at a cost of US\$26 million. The bridge is capable of withstanding 75 tonnes per vehicle. Currently, local people who are from Xieng Kok and Keng Lap are allowed to cross the bridge (Mizzima, 2015).

According to information from meetings with the MOC Department of Highways, the bridge was constructed as a result of the military government's goals for boosting bilateral trade. At the initial stage, ministries from both Myanmar and Lao PDR agreed to build the bridge based on the water border and each country took responsibility to construct their own side. However, this bridge could not be used because of conflicting views on border points. If there is mutual understanding between both countries, it is more beneficial to each. A recent trip to the Ministry of Commerce revealed trucks carrying corn passing through the Myanmar–Lao PDR bridge; most of them were doing so without official permission.

**Figure 75: Myanmar–Lao PDR Friendship Bridge**



Source: MSR.

#### **Border Trade Station and Checkpoints**

There are three border checkpoints in eastern Shan State:

- Keng Lap Border Checkpoint;
- Tachilek Border Trade Station; and
- Keng Tung Trade Station.

#### **Keng Lap Border Checkpoint (Keng Lap checkpoint and One Stop Service Department)**

The Keng Lap border checkpoint is mainly controlled by the Tachilek border trade station (Mae Yang checkpoint). The Keng Lap border checkpoint issues export/import licenses and both export and import declarations. There are about 70 trucks per day that pass through the Keng Lap border checkpoint. On the Lao PDR border side, there is no customs office.

#### **Tachilek Border Trade Station (Mae Yang Checkpoint and One Stop Service Department)**

Mae Yang border checkpoint was established on 1 July 1996. The 3-acre station area is situated along NH4, 8 miles from Tachilek Township. The checkpoint is under the control of the Ministry of Commerce's Department of Trade One Stop Service, which operates along the border trade station. It is jointly organised by six departments, including the Customs Department, Trade Department, Internal Revenue Department, Immigration Department, Security Office (Police) and Myanmar Economic Bank. These departments issue licenses for exporters and importers, along with export and import declarations based on the licensed and non-licensed items. Currently, the department employs 61 staff.

There are two bridges connecting Tachilek to Thailand (Mae Sai Township) across the Mekong river. Bridge 1 is solely for passengers with cars and travellers, while Bridge 2 is only for export and import trucks. The roads are in good condition at Tachilek and Mae Sai border.

The trade values of Mae Yang border check point are:

- US\$92.7 million in 2017–18;
- US\$83.71 million in 2018–19; and
- US\$8.09 million in 2019–20 (October monthly).

#### **Wang Pong Harbour (Wang Pong Checkpoint)**

Wang Pong harbour started its trade on 1 August 1996. That checkpoint is 33 miles away (1.5 hours' drive) from Tachilek Township and it mainly trades with China.<sup>18</sup>

#### **Keng Tung Trade Station (One Stop Service Department)**

Keng Tung trading station is not the border trade station itself, but mainly issues licenses for doing business in Tachilek, Keng Lap, Mong Khat, Mong Yang, and Mong La. It is responsible for the issuance of licenses for three bordering countries: China, Thailand, and Lao PDR. The station is under the control of the Tachilek border trade station. One Stop Service is featured at Keng Tung, but the offices are scattered over the township, unlike at Mae Yang and Keng Lap checkpoints. Trade for Mong Khak, Mong Yang, and Mong La, which constitute the route from Taunggyi, must apply in Keng Tung because of its route condition. The main route for this station is Mong La to China.

#### *5.3.7. Physical infrastructure (future plans)*

There is no significant plan.

#### *5.3.8. Restriction areas in Shan State*

As shown in Table 12, there are some restricted areas in Shan State where foreigners are not allowed. Keng Lap township is not in the restricted area, but both locals (excluding the citizens of nearby towns) and foreigners are restricted to crossing the Lao PDR–Myanmar friendship bridge.

Generally, due to several ethnic armed forces, foreigners and tourists travelling in Shan State need permission to visit rural and remote areas.

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<sup>18</sup> Mae Yang border checkpoint (Tachilek)

**Table 12: Restricted Areas for Foreigners in Shan State**

No.	Restriction areas for foreigners	No.	Restriction areas for foreigners
1.	Yatsauk Township	14.	Kunlon Township
2.	Loilin Township	15.	Mineye Township
3.	Panglong Town	16.	Kyaukme Township
4.	Namhsam Township	17.	Hsipaw Township
5.	Kholan Town	18.	Naung Hkio Township
6.	Kunhing Township	19.	Namtu Township
7.	Karli Town	20.	Namhsam Township
8.	Lechar Township	21.	Momeik Township
9.	Linkhe Township	22.	Mabane Township
10.	Mone Township	23.	Minesat Township
11.	Lashio Township	24.	Mine Tung Township
12.	Theinni Township	25.	Makman Township
13.	Tantyan Township		

Source: Ministry of Labour, Immigration and Population.

#### **Allocation of Budgets to Develop Highways in Myanmar**

There are three sources for budgets to improve highways in Myanmar, according to MOC:

- 1) national/regional funds;
- 2) private funds; and
- 3) loans and grants from external sources.

The estimated annual budget needed for upgrading highways is MK3 trillion. Although each source of funding (MK1 trillion) is expected to contribute equally to this budget, only national/regional funds are able to furnish up to MK1 trillion. Funds from local private sources are between MK100–200 billion and external loans and grants come to MK200 billion. Maintenance is about 2% of the total expenditures.



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