

Measuring the Rural Transport Premium in Shan State, Myanmar

Final Report



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Cover photo: Passengers and Transportation on LVRR of project villages in Shan State, Myanmar (Field Survey, 2020)

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Abstract

The objective of the study is to collect transport fares and transport service provision for a road connecting a cluster of hill villages (Zeyar, Kyaung Taung, Kyaung Shae, Thayet Pin, and Pantin) to He hoe in Shan State, Myanmar in order to achieve a single Rural Transport Premium figure calculated for the public transport mode with the largest market share for 2020.

The Rural Transport Premium indicator is defined as (fares per passenger-kilometres on LVRR relative to fares on long-distance bus services) tracked in four focus countries (Kenya, Tanzania, Nepal, and Myanmar).

The study aims to measure the rural transport premium for the year 2020 and compare it with the Research for Community Access Programme logframe transport fare ratio of 2014 for Myanmar. The result demonstrates the ratio between rural passenger fares relative to long-distance bus fares has reduced over the past 6-years period of the ReCAP programme from 3.3 in 2014 to 2.5 in 2020. Dyna truck is the primary mode of transportation service to the project villages.

It also details the socio-economic developments and changes of transport services, and the local economy after Low Volume Rural Road improvements.

Key words

Rural, Transport, Premium, Rural fares, Passengers, Shan State, Myanmar.

Research for Community Access Partnership (ReCAP)

Safe and sustainable transport for rural communities

ReCAP is a research programme, funded by UK Aid, with the aim of promoting safe and sustainable transport for rural communities in Africa and Asia. ReCAP comprises the Africa Community Access Partnership (AfCAP) and the Asia Community Access Partnership (AsCAP). These partnerships support knowledge sharing between participating countries in order to enhance the uptake of low cost, proven solutions for rural access that maximise the use of local resources. The ReCAP programme is managed by Cardno Emerging Markets (UK) Ltd.

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Acronyms, Units and Currencies

\$	United States Dollar (US\$ 1.00 ≈ 1400 MMK)
ADB	Asian Development Bank
AfCAP	Africa Community Access Partnership
AsCAP	Asia Community Access Partnership
DRRD	Department of Rural Road Development
FGD	Focus Group Discussion
KII	Key Informant Interview
LVRR	Low Volume Rural Roads
MIID	Myanmar Institute for Integrated Development
ReCAP	Research for Community Access Partnership
UK	United Kingdom (of Great Britain and Northern Ireland)
UKAid	United Kingdom Aid (Department for International Development, UK)

Executive summary

AsCAP (Asia Community Access Partnership) is a research programme, funded by UK Aid, with the aim of promoting safe and sustainable transport for rural communities in Asia. In Myanmar, the key AsCAP partner is the Department of Rural Road Development (DRRD), which is responsible for the construction and maintenance of rural road infrastructure.

The study objective was to obtain and calculate transport fares for Myanmar in 2020 that can be used to compare with the 2014 baseline figure for the ReCAP impact indicator. The indicator is defined as: “Rural transport premium (fares per passenger-kilometre on LVRR relative to fares on long-distance bus services) tracked in four focus countries (Kenya, Tanzania, Nepal and Myanmar)”.

The survey approach and methodology involved interviews with transport users, transport operators, village tract administrator and village administrators in the project area. The data was collected in the project area in June 2020, and the collected data is compared with the baseline survey which was conducted in 2014 on the same road in order to understand whether the ratio between rural passenger fares and long-distance bus fares has reduced over the 6-year period of the ReCAP programme, indicating that passenger fares in rural areas have improved, aligned to improvements in the road infrastructure (directly or indirectly as a result of the ReCAP programme).

The Rural Transport Premium for all modes of commercial transport (three-wheelers, dyna tracks, motorcycle etc.) is provided in Table 1. Dyna-truck is the only public transport mode travelling on low volume rural roads (LVRR) to project villages, and the fares per passenger kilometre on LVRR is USDc 3.7. Buses (with 45 seat capacity) are the most common mode of long-distance travel to Yangon on the national road from He hoe, Nyaung Shwe (near project villages), which costs USDc 1.5 per passenger km.

The Rural Transport Premium Ratio was calculated by fares per passenger kilometre on LVRR (USDc) divided by fares on long-distance buses on arterial national road (USDc). The result shows that the ratio between rural passenger fares and long-distance bus fares has reduced over the 6-year period of the ReCAP programme from 3.3 in 2014, to 2.5 in 2020.

In addition, due to improvements in the road infrastructure, overall accessibility to basic services has been improved in the project villages. Consequently, the livelihood of villagers has improved through increased sale volumes of agriculture produce, and increased household income.

1 Background

The Research for Community Access Programme (ReCAP) is a programme of research and knowledge dissemination funded by the UK government through the Department for International Development (DFID). ReCAP, and its AfCAP (Africa Community Access Partnership) and AsCAP (Asia Community Access Partnership) programmes for Africa and Asia, are promoting safe and sustainable rural access in Africa through research and knowledge sharing between participating countries and the wider community.

The purpose of this study was to collect data for the Impact indicator in the ReCAP logframe, which relates to the ratio of public transport costs between Low Volume Rural Roads (LVRR) and those on national roads for the year 2020 and compare it with the transport fare ratio of 2014 for four focus countries (Kenya, Tanzania, Nepal and Myanmar). The data will provide a 2020 figure for the ReCAP impact indicator. The indicator has been defined as “Rural transport premium (fares per passenger-kilometre on LVRR relative to fares on long-distance bus service) tracked in four focus countries (Kenya, Tanzania, Nepal and Myanmar)”.

ReCAP commissioned Kyawt Kay Khaing Tun to undertake data collection on the Rural Transport Premium in Myanmar on a road connecting a cluster of hill villages (Zeyar, Kyaung Taung (Kyaung Shae), Thayet Pin, Pantin) to He hoe in Shan State, in order to obtain a single Rural Transport Premium figure calculated for the public transport mode with the largest market share for 2020, and compare it with the Rural Transport Premium figure collected on the same road in 2014, to establish whether improvements in the road infrastructure have reduced passenger transport fares on the LVRR, as compared with long-distance national bus services.

2 Introduction

AsCAP supports knowledge sharing between participating countries in order to enhance the uptake of low cost, proven solutions for rural access that maximise the use of local resources. In Myanmar, the key AsCAP partner is the Department of Rural Road Development (DRRD), which is responsible for the construction and maintenance of rural road infrastructure.

The objective of the study and detailed information, facts and figures from the TOR were examined. Survey questions were developed to gather information (see Annex 1). An introductory letter of survey was sent to the project partner, DRRD (see Annex 2) during the inception period.

The survey aimed to collect transport fares and transport service provision for a road connecting a cluster of hill villages (Zeyar, Kyaung Taung (Kyaung Shae) Thayet Pin and Pantin) to He hoe in Shan State, Myanmar in order to achieve a single Rural Transport Premium figure calculated for the public transport mode with the largest market share for 2020.

The survey team conducted the field survey from 5th June to 9th June 2020 in the project area once the travel restrictions were lifted, although the survey team were required to bring a medical certificate of good health from the hospital of their respective provinces. The study followed a methodology of combining the field visit with information collected through a survey of transport users, dyna-truck operators, villagers, village tract and village administrators by using semi-structured questionnaires. The survey team also visited Department of Rural Road Department in Nyaung Shwe, and met with staff officer U Zaw Lin for a key informant interview.

The report presents the results of the field survey in terms of quantitative and qualitative data collection on LVRR improvements and impacts. The Rural Transport Premium for all modes of commercial transport (dyna tracks, three-wheelers (trailer jeep), motorcycle) are provided. The impacts of LVRR infrastructure improvement are discussed in the results section.

3 Project Survey Area

The project survey area consists of a five village cluster that includes two hilly townships in Southern Shan State. The villages are Zeyar from Bawnin Village Tract, Kalaw Township, and Kyaung Taung (Kyaung Shae), Thayet Pin, Pan Tin, and Kyaung Nar of Let Maung Gway Village Tract, Nyaung Shwe Township. It lies in the northern and western watershed areas of Inle Lake (fresh water lake). The cluster of villages are mainly close to the towns of He hoe and Naung Shwe, and approximately 9.66 km from the village cluster. However, the villages are isolated due to poor road accessibility through the two main existing roads, one connecting to He hoe and the other to Nyaung Shwe Township.

This village cluster is located 1300 metres above sea level. Hills dominate the topography with moderate to extreme sloping that consists of scattered permanent vegetation. Forest trees are scarce with natural forest only remaining in small areas. In the project area, there are 395 households and the total population is 2,035. The population is dominated by Danu and Taungyo (also written Taungyo) ethnic groups.¹

In general, the climate in this area is subtropical to temperate according to the Köppen climate classification system, marked by heavy rains from May to September and a significant dry period from November to April. The average maximum temperature is 27.2°C and the average minimum temperature is 13.5°C. March and April are the hottest months of the year, when temperatures rise to 31°C. December and January are the coldest months when the average temperature is about 15°C. The wet season begins in April or May, peaking in August and ending by November. Annual rainfall is heaviest at 336.3 mm (13.24 inches) in August and distributed between May and September. Total rainy days were 220 days from May 2019 – April 2020.²

Farmers in the project area rely predominately on a rain fed agricultural system with no supplementary water supply. Land preparation starts in April and crops are cultivated in May. The main livelihood is a mixture of subsistence and commercial farming on sloping land. Farmers still practice shifting cultivation (also known as “slash and burn”) in the hilly area. However, most of the households are considered smallholders with an overall access to less than two hectares of marginal and sub-marginal land per year.³

The primary crops are upland rice, ginger, niger, maize, groundnut and turmeric. Some vegetables (butterfly bean, long beans, cucumber, cauliflower, chillies, tomato and mustard) and fruits (banana, mango, oranges) are grown on the uplands as well as on home garden land (household plots). The crops are sold in local markets i.e. He hoe and Nyaung Shwe markets. They also engage in bamboo craft such as basket, mat, strip production for sale in the market.

¹ Field data collection, June 2020.

² <https://www.worldweatheronline.com/heho-weather-averages/shan-state/mm.aspx>

³ Myanmar Institute for Integrated Development (MIID). 2018. Supporting Sustainable Livelihoods and Reclaiming Degraded Land by Enhancing Agroforestry in Southern Shan State.

Figure 1 Project Survey Area

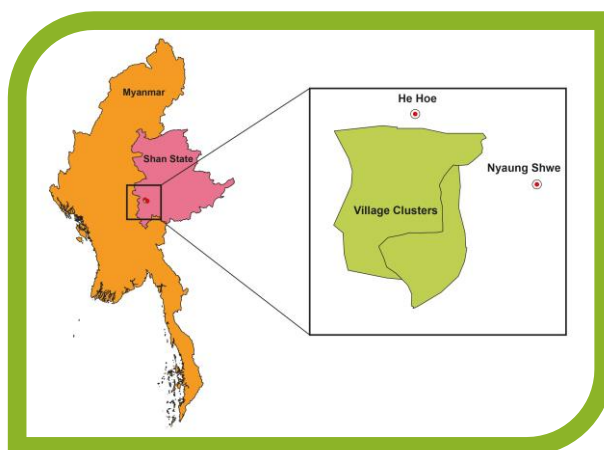


Figure 2 Project Villages



Source: Jhaveri, N., and Thomas, N., 2016.

4 Approach and Methodology

This study adopted a mixed methods approach, and consequently the following qualitative data collection methods were used to examine the impacts of changes to road infrastructure since 2014 on the provision of transport services. The question sets developed to gather required information are provided in Annex 1.

Rural transport users and operators on both LVRRs in the project area, and long-distance bus users and operators on national roads were surveyed to obtain quantitative data; transport fares for passengers, freight, and qualitative data; reliability and frequency of transport services, travelling time, and the differences of transportation sector before and after road rehabilitation. The constructed tables (shown in section 5.1) were used to obtain the quantitative data and the questionnaires were used to obtain the qualitative data. Eight transport operators; four from village clusters, two from Heho town, and two from Nyaung Shwe were interviewed as Key Informant Persons. A total of 37 transport users were interviewed and surveyed for required quantitative and qualitative data.

In addition, Key Informant Interviews were held with 12 key persons from village clusters; Lat Maung Kway village tract administrator, village administrators from Kyang Taung, Tha Yet Pin, Pan Tin, Zeyar, Kyaung Nar, village elderly persons and a monk were interviewed in order to obtain the conditions of the road and mode of transports in the past years and differences of transport services between 2014 and 2020, the direct and indirect impacts of road improvements.

Two separate focus group discussions were held with 5 participants respectively in Zeyar and Pan Tin to obtain the transport fares, transport services on LVRRs, past and current road conditions, mode of transportations before and after road rehabilitation, and direct and indirect impacts of road rehabilitation. The participants were grocery shop owners, farmers, transport users, village administrators, and village elderly persons.

A total of 45 people answered the survey questionnaire in the project villages. The list of participants is provided in Annex 2. Moreover, direct observations were made by a survey team.

5 Survey Results

5.1 Quantitative data results

LVRR tariff data was collected from ‘users’ (people who travel) rather than the transport operators, although the information was ‘triangulated’ (cross-checked) with transport operators. The data was collected based on the following tables (Table 1 to Table 4).

Table 1: Rural Transport Services fares on Low Volume Rural Roads (LVRR)

Transport type	Start place	Destination	Distance (km)	Passenger fare paid (MMK)	Cost per passenger-km (MMK)	Cost per passenger-km (USD¢)	Small freight example	Small freight weight (kg)	Small freight cost (MMK)	Small freight cost/tonne-km (USD)
Motorcycle	Project villages	He hoe market	9.6	500	52	3.7	-			
Two wheel tractors with trailers										
Three wheelers (Trailer jeep)	Project villages	He hoe market	9.6	500	52	3.7	1 rice bag, 1 fertilizer bag, 1 potato bag, etc.	54	1000	1.4
Mini bus	-									
Big bus	-									
Dyna truck	Project villages	He hoe market	9.6	500	52	3.7	1 rice bag, 1 fertilizer bag, 1 potato bag, etc.	54	1000	1.4

Table 2: Long-distance bus fares on national roads ("standard" services, not a luxury or international services)

Transport type	Start place	Destination	Distance (km)	Passenger fare paid (MMK)	Cost per passenger-km (MMK)	Cost per passenger-km (USD¢)	Small freight example	Small freight weight (kg)	Small freight cost (MMK)	Small freight cost per tonne-km (USD)
Bus (45 seats)	Nyaung Shwe	Yangon	635	13000	20.5	1.5	1 rice bag	54	5000	0.1
Bus (45 seats)	He hoe	Yangon	612	13000	21.2	1.5	1 rice bag	54	5000	0.1
Bus (45 seats)	Taunggyi	Yangon	644	13000	20.2	1.4	1 rice bag	54	5000	0.1
Bus (45 seats)	Nyaung Shwe	Mandalay	330	7500	22.7	1.6	1 rice bag	54	5000	0.1
Bus (45 seats)	He hoe	Mandalay	303	7500	24.8	1.8	1 rice bag	54	5000	0.1
Bus (45 seats)	Taunggyi	Mandalay	322	7500	23.3	1.7	1 rice bag	54	5000	0.1
Bus (45 seats)	Nyaung Shwe	Naypyitaw	281	7500	26.7	1.9	1 rice bag	54	5000	0.1
Bus (45 seats)	He hoe	Naypyitaw	254	7500	29.5	2.1	1 rice bag	54	5000	0.1
Bus (45 seats)	Taunggyi	Naypyitaw	288	7500	26.0	1.9	1 rice bag	54	5000	0.1

Table 3: Cost of inter-urban transport on narrow paved highways in Shan State, Myanmar

Transport mode	Origin	Destination	Distance (km)	Time (hr)	Tariff (MMK)	Tariff per passenger-km (USD)
Bus	-					
Minibus (rear seat)	Aung Ban	Taunggyi	56	1.30	1500	0.02
Minibus (front seat)	-					
Minibus (rear seat)	He hoe	Taunggyi	33	1	1000	0.02
Minibus (front seat)	-					
Car (rear seat)	-					
Car (front seat)	-					
Dyna truck (rear seat)	He hoe	Kalaw	38	1.30	1500	0.03
Dyna truck (front seat)	He hoe	Kalaw	38	1.30	2500	0.05
Dyna truck (rear seat)	He hoe	Shwe Nyaung	16	0.85	500	0.02
Dyna truck (front seat)	He hoe	Shwe Nyaung	16	0.85	1000	0.05

Table 4. ReCAP Logframe – Impact Indicator 2

Impact Indicator 2			Baseline (July 2014)	Milestone 1 (July 2015)	Milestone 2 (July 2016)	Milestone 3 (July 2017)	Milestone 4 (July 2020)
Rural transport premium (fares per passenger-kilometre on LVRR relative to fares on long-distance bus services) tracked in three focus countries (Kenya, Tanzania, and Nepal).	Planned						
	Kenya		5				2.3
	Tanzania		11				6.6
	Nepal		3				1.9
	Myanmar		3.3				2.5
			Source: ReCAP-supported studies and national authorities				

The study intends to provide a single Rural Transport Premium figure calculated for the public transport mode with the largest market share for 2020, which is dyna truck, whereas in 2014 the most common mode of transport were two-wheel tractor-trailers, although these were not in use on the project roads in 2020.

Dyna-truck is the only public transport mode on LVRR to the project villages, which is USDc 3.7 per passenger km. The long-distance buses on the national road from He hoe, Nyaung Shwe (near the village cluster) to Yangon is USDc 1.5 per passenger km.

The **Rural Transport Premium** has been calculated as follows:

$$\text{Rural Transport Premium} = \frac{\text{Fares per passenger kilometre on LVRR(USDc)}}{\text{Fares per passenger Kilometre on long distance buses on national roads (USDc)'}}$$

- RTP on Low Volume Rural Roads (5 village cluster in Shan State) - USDc 3.7 per passenger km
- RTP on long-distance transport services - USDc 1.5 per passenger km
- **The Rural Transport Premium pre-COVID (2020) = 2.5**

The Rural Transport Premium ratio after the onset of the COVID pandemic followed the same process.

- RTP on Low Volume Rural Roads (5 village cluster in Shan State) - USDc 3.7 per passenger km
- RTP on long-distance transport services - USDc 2.25 per passenger km
- **The Rural Transport Premium during COVID (2020) = 1.6**

While the passenger fares for rural transport services remained the same during the COVID pandemic, the long-distance bus fares were found to increase by around 50% (see Table 5).

5.2 Qualitative data results

The villagers expressed their gratitude to the Department of Rural Road Development since they reported several positive socio-economic impacts from the road improvements. The villagers answered the interviews very enthusiastically, and the results from the interviews is described as follows.

The road rehabilitation works started in 2016, and consisted primarily of widening and surfacing the original narrow earth road. The road has been upgraded from 2 metres to 4.6 metres wide and from an earth to aggregate surface, connecting the village cluster to He Hoe Town. It was upgraded to an all-weather road in 2018, which improved accessibility for over 400 households (2,400 residents) to the National Highway roads of Shan State, connecting He hoe Town, and Taung Gyi, capital city of Shan State, and other major cities of Myanmar Naypyitaw, Yangon and Mandalay, and improving overall accessibility to basic services.

Figure 3 Ways to Let Maung Kway, Zeyar (left picture) and Current road (right picture)



Previously, the primary mode of travel from project villages to He hoe town was walking and they had to walk at least two to three hours to get to He hoe Town which is approximately 9.66 km far

from village clusters. It took the whole day for a round trip when they went to market and they had to struggle walking through the mud during the rainy season. They said they faced a very difficult situation for travel to markets. A few villagers started to use motorcycles in 2013, but they would get stuck in the mud during the rainy season because the road was of earth construction.

After road rehabilitation, motorcycles and dyna-trucks became the primary mode of transportation, and both took 35 minutes to reach He hoe market. Villagers said this had a very positive impact for them, since the improved road reduced travel time to He hoe market, and they are able to access the market during all seasons. Before 2016, there were only 4 to 5 motorcycles and motorcycle use increased gradually from 2016. Now almost every household owns a motorcycle, with some households who own more than one motorcycle, and there are about 400 motorcycles in 2020. Dyna trucks started to operate along the LVRRs in 2017 and 2018 when the road condition became better. Some better off farmers also bought a dyna truck to commute to He hoe market. The total number of dyna trucks found in the project villages are eight: three in Zeyar village, two in Kyaung Taung village (Kyaung Shae village), two in Thayetpin village, and one in Kyaung Narr village. There are no dyna trucks in Pantin village. Vehicle ownership has increased in the project villages, and while the road is busier than before, no road accidents have been reported.

Men reportedly travel most by (privately owned) motorcycle, while women and older persons predominantly use dyna trucks to travel between the project villages to He hoe market. However, for public transport services, dyna truck is the only mode of transport, because motorcycle taxi services are not available in the project villages.

Figure 4 Dyna truck (left) and Motorcycle (right) on the LVRR



Villagers said they previously had difficulty transporting sick people to He hoe hospital for emergency care, including pregnant women and seriously ill patients, because of the poor road access. The road before was very narrow and filled up with mud and became slippery when it rained. Patients were being carried on foot by hammock with a bamboo stick bar to He hoe hospital, and it took several hours to reach the hospital, with reports of patients dying on route to hospital.

After the road improvements, patients could travel to hospital by motorcycle and dyna truck since they had access to the better road. They said that the road has been very beneficial to them.

Before, due to the difficulties of road access, households had to wait and combine a number of important tasks into one trip to avoid long travel times, since it was very time consuming and sometimes the road was inaccessible. However, following the road improvements, households travelled more frequently to He hoe for different purposes due to better road access and the all-weather condition of the road.

Villagers also said that they were able to transport their agricultural produce as much as they wished to the He hoe markets efficiently after the road improvements. Before, farmers could not transport

their entire produce from the farms because of poor road access. At that time, farmers carried their produce to market on foot in bamboo baskets. Women mostly carried produce in baskets carried on the back, and men carried two baskets on a shoulder pole and walked two to three hours to the He hoe 5-day market. Since the quality of the road has improved, farmers call traders directly to the villages to buy agricultural produce for sale at the He hoe market.

Villagers usually go to He hoe market to sell their produce and to buy goods and commodities, although Nyaung Shwe is about a mile closer than He hoe. The reason is that the road to Nyaung Shwe traverses steeper terrain and the road is not in good enough condition for the dyna trucks. Therefore, no dyna truck transport services are available from the villages to Nyaung Shwe market. Only a few people go to Nyaung Shwe market on foot and by motorcycle. It takes 2 to 3 hours on foot and 45 minutes by motorcycle to reach Nyaung Shwe market.

An estimated 70% of houses in the village cluster have also been improved from bamboo and thatch construction before the road improvements, to concrete construction with tin roofing sheet becoming more commonplace after the road improvements because of easy and low-cost transportation of construction materials.

Figure 5 Brick houses in the project villages



Prior to the road improvements, there were two primary schools in the village cluster, with no middle school or high school. The nearest middle and high school is located in Heho Town and the distance from the village clusters to He Hoe is 9.66 km. Therefore, most children could not finish their education. There were five teachers in each primary school. In 2018, one primary school was upgraded to post primary school and three additional teachers were assigned.

Students who complete their primary education now have the opportunity to attend middle school and finish their education. However, according to the villagers, most of the students who have completed primary education do not have a strong motivation to enrol in middle school because it is very new for them. However, parents encourage them to enrol. In the villages primary school-age children (both girls and boys) go to school, except children from extremely poor households.

Only a few students from better off families pursue secondary school education in He hoe. Two students are waiting for the results of the matriculation exam, and there is one university student living in the village cluster. Villagers hope more children graduate from secondary school and university in the near future.

Figure 6 Post-primary school, Let Maung Kway



The building of the rural health centre was initiated with a private donor in 2012, but the construction works had not been fully completed. In 2019, it was completed with government support. The government also assigned one full-time nurse to the health centre and provided necessary medical supplies. Before 2019, there was only a part-time nurse who was attached to the Let Maung Kway health centre and Kaung Tai village health centre. Villagers received treatment from the rural health centre for common illnesses. For major treatment, they used to visit the doctor at the hospital in He hoe.

Many villagers, particularly older people said that life had become better with the development of the roads, schools and health facilities.

Figure 7 Rural Health Centre, Let Maung Kway



6 Most Significant Stories

There were no significant individual stories in the villages. Nonetheless, the road improvement was beneficial to every household in the project area and overall village development had been observed, as mentioned in the qualitative results.

The villagers were able to transport their agricultural produce as much as they wished to the He hoe markets, and at low cost after the road improvements. Their incomes were increased, and the number of vehicles travelling along the road increased. Almost every household now owns a motorcycle, and some households own more than one motorcycle. Before 2016, there were only four or five motorcycles and no dyna trucks, and there were only two to three grocery shops in the village cluster. The number of grocery shops has increased to 12 in 2020.

The primary mode of travel from the villages to He hoe town was previously walking and they had to walk at least two to three hours to get to He hoe Town. It took the whole day for a round trip. Motorcycles and dyna-trucks became the primary mode of transport after road improvements, and now the trip to He hoe market only takes 35 minutes. Therefore, travel time has reduced significantly and the community are able to allocate time saved to farming and domestic chores. The survey respondents said that there had been many positive impacts since the road to He hoe was upgraded.

7 COVID-19 Impacts on Transport

Myanmar confirmed its first coronavirus infection in late March 2020. A total of 299 coronavirus cases have been confirmed with six fatalities and 221 recoveries in Myanmar as of 30 June 2020. The government, led by State Counselor Aung San Suu Kyi and in collaboration with the Ministry of Health and Sports, has taken steps to fight the virus. It began a partial lockdown in April, and the government urged people to stay at home as much as possible, banned gatherings of more than five people, imposed a curfew from 12am to 4am and stopped international commercial-passenger flights until 30 July. Wearing masks is mandatory when people go out and only one person from each household is allowed to go shopping. For health issues, two people are allowed to go to a clinic or hospital. All incoming nationals are subjected to 21 days quarantine. Anyone who fails to follow the instructions will be subjected to legal action under the Prevention and Control of Communicable Disease Law.

In Shan State, four coronavirus patients have been confirmed. To prevent the spread of coronavirus, a curfew was also imposed from 10pm to 4am, and significant places and pagodas have been temporarily closed. The township authorities of Kalaw Township came up with an alternative way to create temporary markets in less crowded circumstances. In Kalaw, Aung Ban, He hoe, and Nyaung Shwe Towns, the authorities created temporary markets in the parks, open spaces behind the markets and football grounds, as well as other public open areas in order to reduce the density of people gathering in one place.

At the temporary markets, authorities painted lines to position each seller 1.8 metres apart and maintained at least 2 metres of physical distance between sellers and buyers. Moreover, anyone entering the markets had to wash their hands at the entrance to reduce transmission risks.

There is a 'Five Day Market' that rotates between five local towns. Everything from fruits and vegetables to meats and fish is sold at five day market. The fruit and vegetables are harvested from the rural farms the previous day, and produce is very fresh. The market is usually very busy since it rotates each town every five days. Since the COVID outbreak, the authorities arranged to open for four days and close on the fifth day in order to avoid overcrowding of the markets.

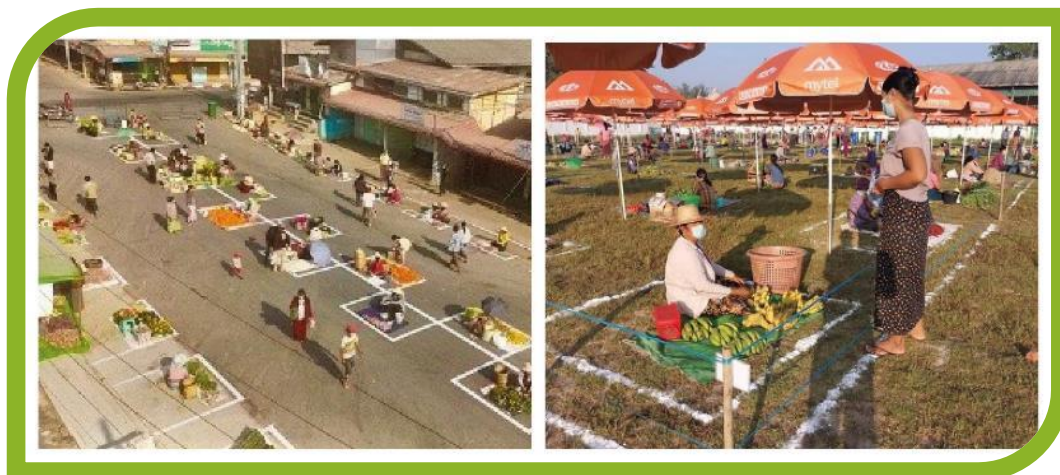
Since April, the main market has opened from 6am to 10am, closing every fifth day. All sellers must be residents of the respective town area. Normally, farmers from Nyaung Shwe, Taunggyi, Aung Ban, Taung Ni, Lawk Sauk come and sell at the 5 day market in He hoe. Likewise, farmers and traders from He hoe and others villages also go and sell at the Nyaung Shwe 5 day market. However, during

the coronavirus period, sellers have been prohibited from selling in other town markets. During the lockdown period (April and May) villagers from the project cluster did not travel to He hoe and Nyaung Shwe markets.

Figure 8 Temporary Market in the Park, Nyaung Shwe, Shan State



Figure 9 Temporary Market in Kalaw, Shan State (left) and Temporary Market in Pantanaw, Ayeyarwaddy Region (right)



Source: Social Media, 2020

For travel on the national highways, during the lockdown period (April and May), there was no express bus transportation service because all the operators had to temporarily close their services. From 1st June some of the bus operators have restarted their services with preventive measures provided by Ministry of Health and Sports. Passengers and bus crew members have to wear a mask and body temperature measured to be on the bus. If body temperature is over 37 degree Celsius, the passenger or crew members are not allowed to get onto the bus. The express bus transportation service has reduced the number of passengers to half in order to maintain social distancing. Passengers are required to buy two seats to travel, and hence the cost of travel has doubled. The price before the pandemic and current rates are shown in Table 5.

Table 5 Long Distance Transport Fares before and during Covid-19

Type of transport	Start Place	Destination	Price before covid (before March) (USD)	Price during covid period (June) (USD)
Bus (42 seats)	Nyaung Shwe	Yangon	9.3	14.3
Bus (42 seats)	He hoe	Yangon	8.9	14.3
Bus (42 seats)	Hopong	Yangon	9.3	14.3
Bus (42 seats)	Taunggyi	Yangon	9.3	14.3
Bus (42 seats)	Aung Ban	Yangon	9.3	14.3
Bus (45 seats)	Namsang	Mandaly	5.3	8.6
Bus (45 seats)	He Hoe	Mandalay	5.3	8.6
Bus (45 seats)	Nyaung Shwe	Mandaly	5.3	8.6
Bus (45 seats)	Hopong	Mandalay	5.3	8.6
Van (14 seats)	Nyaung Shwe	Mandalay	7.5	15
Van (14 seats)	Hehoe	Mandalay	7.5	15
Van (14 seats)	Aung Ban	Mandalay	7.5	15
Van (14 seats)	Kalaw	Mandalay	7.5	15
Bus (45 seats)	Taunggyi	Naypyitaw	5.3	8.5
Bus (45 seats)	Nyaung Shwe	Naypyitaw	5.3	8.5
Bus (45 seats)	He ho	Naypyitaw	5.3	8.5
Bus (45 seats)	Aung Ban	Naypyitaw	5.3	8.5
Bus (45 seats)	Kalaw	Naypyitaw	5.3	8.5

Figure 10 Precautionary Measures on Long-Distance Bus Services



Source: Social Media, 2020.

8 Conclusions

The Rural Transport Premium for all modes of commercial transport (dyna tracks, three-wheelers (trailer jeep), and motorcycles) has been provided. Although the motorcycle and dyna-truck were two main modes of transport on LVRR to the project villages, dyna-truck was the only public transport service. The Rural Transport Premium Ratio was calculated and the ratio between rural passenger fares and long-distance bus fares has reduced over the 6-year period of the ReCAP programme from 3.3 in 2014 to 2.5 in 2020. Rural Transport Premium has gone down between 2014-2020 because improvements in road infrastructure leading to reduced vehicle operating costs, higher frequency of transport services, greater demand for travel, and reduced trip duration due to the improved road condition – all of which have contributed to a reduction in LVRR fares, as compared with inter-city bus fares. However, the passenger fare was shown to increase for long distance bus travel (presumably due to reduced patronage), while rural transport service fares remained the same during the COVID pandemic and lockdown, and so the Rural Transport Premium declined to 1.6 during this period.

The benefits of the rural road improvements are significant for residents in the project area because the road provides the basic needs for village development. Improving transport reduces isolation of the villages and access to basic services, including health care provision and education, has also been increased for them. Consequently, travelling became easier and faster for villagers and the volume of agriculture produce that can be sold at the market has increased, with livelihoods improving, as evidenced by improvements to the construction materials used in people's homes, and also increased motorcycle ownership in the community. The road was rehabilitated in 2018, and the villagers have experienced many positive impacts which continue to strengthen their livelihoods.

9 Reference

Jhaveri, N., and Thomas, N. (2016). *Land Use and Tenure Assessment of Let Maung Kway, Nyaung Shwe Township*. Washington, DC: US AID Tenure and Global Climate Change Program.

Annex 1 Data Collection Form

CONTENTS

- **Part A: Direct effects of improved road infrastructure**
- **Part B: Indirect effects of improved road infrastructure**

Information Related to the Survey Team

No.	Item	Response
1	Interviewer Name:	
2	Date:	
3	Time:	

INSTRUCTIONS

- The survey should be conducted with passengers and operators.
- The survey code number is generated from a sequential list.

Survey Code No:	
Name of Respondent:	
Occupation:	
Age:	
Sex:	
Village:	
Village Tract:	
Township:	

PART A. Direct effects of improved road infrastructure

No.	Item	Response	
1.	Are there any changes/improvements in road infrastructure since 2014?	YES	NO

2.	If Yes, when has the road been maintained?	Dates and type of maintenance:
3.	How the road has been upgraded?	To what standard: (0) Full rehabilitation (1) Upgrade to gravel/paved surface taken place (2) Other (please specify)
4	What modes of commercial transport are available from your village to He ho town before 2014?	Type of commercial transport: (a) Two wheel tractors-trailers (b) Three-wheelers (c) dyna trucks (d) pickup trucks (e) bus (f) car (g) motorcycles (h) other (please specify)
5.	What modes of commercial transport are available from your village to He ho town between 2014 and 2020?	Type of commercial transport: (a) Two wheel tractors-trailers (b) Three-wheelers (c) dyna trucks (d) pickup trucks (e) bus (f) car (g) motorcycles (h) other (please specify)
6.	What is the most used mode of transportation for your travel before 2014?	Type of commercial transport: (a) Two wheel tractors-trailers (b) Three-wheelers (c) dyna trucks (d) pickup trucks (e) bus (f) car (g) motorcycles (h) other (please specify)
7.	What is the most used mode of transportation for your travel between 2014 and 2020?	Type of commercial transport: (a) Two wheel tractors-trailers (b) Three-wheelers (c) dyna trucks (d) pickup trucks (e) bus

		(f) car (g) motorcycles (h) other (please specify)	
8.	Why do you use it the most? How much does it cost for passenger only, for freight only and for both passenger and freight in 2020 (please state fares before COVID and during COVID)?	Before COVID During COVID Passenger fare: Freight fare/kg:	
9.	Which is the best mode of transportation in your opinion? Why? Please give reasons.		
10.	Has the improved road infrastructure significantly reduced travel times?	YES	NO
11.	If yes, by how much (%)?		
12.	Has the improved road infrastructure reduced transport fares for passengers, freight, and both passengers and freight?	YES	NO
13.	If yes, by how much for passenger only, freight only, and both passenger and freight?	(a)passenger only (b) freight only (c) both passenger and freight	----- Kyat ----- Kyat ----- Kyat
14.	How has the reliability and frequency of transport services improved between 2014 and 2020?		
15.	How are you able to travel during rainy periods?		
16.	Is there year-round passability of the roads?	YES	NO
17.	How has the road maintenance contributed to all-season access?		

18.	Did the costs of operating vehicles drop when the road infrastructure improved?	YES	NO
19.	If YES, explain your answer (fewer repairs, less fuel, etc.), and by how many percent did operating costs reduce?		
20.	Are daily vehicle traffic volumes (including trucks, motorcycle, trailer) increased?	YES	NO
21.	If YES, how many vehicles per day (by type of vehicles) (before and after road improvement)?		
22.	Which means of transport is most commonplace along the road?		
23.	Is ownership of motorised vehicles (by type of vehicles) increased in the village? Why is this?		

PART B: Indirect effects of improved road infrastructures

No.	Item	Response
1.	What are the benefits of the improved rural road infrastructure for the local economy, for example agriculture?	

2.	Does the improved road help expand production of crops?	YES	NO
3.	If YES, what types of crops, and have farmers diversified productivity? Please explain why?		
4.	Are farmers able to produce higher value crops, such as fruit and vegetables which could be brought to the markets more easily due to having access to year-round passability of the roads?	YES	NO
5.	If YES, please explain why?		
6.	Are farmers able to bring in more modern inputs such as fertilizer, pesticide, machine, etc. after 2014?	YES	NO
7.	If YES, please explain why?		
8.	Are farmers able to market their produce more easily than before 2014?	YES	NO

9.	If YES, please explain why?		
10.	Does the sale of agriculture products significantly increase?	YES	NO
11.	If YES, how has improved road increased the sale of agricultural product? How many percent?		
12.	How has the agricultural extension service improved due to the roads become better?		
13.	How has the improved road impacted on other economic activities such as value of land, productivity, number of heads of livestock, prices of agricultural products, etc.?		
14.	Does the improved road accessibility to the villages create new income-generating activities such as number of stores, etc.?	YES	NO

15.	If YES, please provide.		
16.	Are there more and better access to basic social services (education, health etc.)?	YES	NO
17.	If YES, how do you think?		
18.	Do improved road infrastructure make easier access to education?	YES	NO
19.	How has the enrolment status increased in primary and secondary education (by gender) due to better road access?		
20.	How has the use of health care facilities increased?		
21.	Has the quality of health services improved?	YES	NO
22.	If YES, please explain.	Type of Services: (a) Increase supply of medicines (b) Easier for the health personnel to reach the health centers	

		(c) Other (please specify)	
23.	Does the number of road accidents increase with increased traffic and speed on the roads due to the improved road surface (injuries and fatalities)?	YES	NO
24.	If YES, please explain your answer.		

Annex 2 Survey Participants

No.	Name of Respondent	Occupation	Age	Sex	Village	Village Tract	Township
1	U Kyaw	Village Tract Administrator	60	Male	Kyaung Taung	Lat Maung Gwe	Nyaung Shwe
2	U Yar	Farmer	31	Male	Kyaung Taung	Lat Maung Gwe	Nyaung Shwe
3	U Mar	Farmer	33	Male	Kyaung Taung	Lat Maung Gwe	Nyaung Shwe
4	U Mg Shwe	Farmer	35	Male	Kyaung Taung	Lat Maung Gwe	Nyaung Shwe
5	U Gyi	Farmer	60	Male	Kyaung Taung	Lat Maung Gwe	Nyaung Shwe
6	Daw Aye Hla	Farmer	65	Female	Kyaung Taung	Lat Maung Gwe	Nyaung Shwe
7	U Bote	Farmer/Grocery Shop	52	Male	Kyaung Taung	Lat Maung Gwe	Nyaung Shwe
8	U Tun Ngwe	Farmer	37	Male	Pan Tin	Lat Maung Gwe	Nyaung Shwe
9	Daw Aye	Farmer	35	Female	Pan Tin	Lat Maung Gwe	Nyaung Shwe
10	U Shwe Toe	Farmer	28	Male	Pan Tin	Lat Maung Gwe	Nyaung Shwe
11	Daw Hnin Ngwe	Farmer	27	Female	Pan Tin	Lat Maung Gwe	Nyaung Shwe
12	Daw Linn	Farmer	27	Female	Pan Tin	Lat Maung Gwe	Nyaung Shwe
13	U Sandi Bartha	Monk	38	Male	Pan Tin	Lat Maung Gwe	Nyaung Shwe
14	U Moe Zaw	Farmer	27	Male	Pan Tin	Lat Maung Gwe	Nyaung Shwe
15	U Tun Win	Village Administrator	55	Male	Tha Yet Pin	Lat Maung Gwe	Nyaung Shwe
16	U Phoe Sein	Farmer	60	Male	Tha Yet Pin	Lat Maung Gwe	Nyaung Shwe
17	U Ywel	Dyna Truck Operator/Farmer	45	Male	Tha Yet Pin	Lat Maung Gwe	Nyaung Shwe
18	U Kyaw Aye	Farmer	20	Male	Tha Yet Pin	Lat Maung Gwe	Nyaung Shwe
19	Daw Ohn	Farmer	60	Female	Tha Yet Pin	Lat Maung Gwe	Nyaung Shwe
20	Daw Khin Hnin Wai	Farmer	17	Female	Tha Yet Pin	Lat Maung Gwe	Nyaung Shwe
21	U San	Farmer	80	Male	Tha Yet Pin	Lat Maung Gwe	Nyaung Shwe

22	U Tun Aung	Farmer	45	Male	Tha Yet Pin	Lat Maung Gwe	Nyaung Shwe
23	U Myo Thant	Farmer	44	Male	Tha Yet Pin	Lat Maung Gwe	Nyaung Shwe
24	Daw Ye	Farmer	40	Female	Tha Yet Pin	Lat Maung Gwe	Nyaung Shwe
25	U Nyo	Farmer	51	Male	Kyaung Nar	Lat Maung Gwe	Nyaung Shwe
26	Daw Saw Myaing	Farmer	40	Female	Kyaung Nar	Lat Maung Gwe	Nyaung Shwe
27	Daw Oe	Farmer	52	Female	Kyaung Nar	Lat Maung Gwe	Nyaung Shwe
28	U Apo	Farmer	31	Male	Kyaung Nar	Lat Maung Gwe	Nyaung Shwe
29	U Mg Ni	Farmer	36	Male	Kyaung Nar	Lat Maung Gwe	Nyaung Shwe
30	U San Min	Village Administrator	32	Male	Kyaung Nar	Lat Maung Gwe	Nyaung Shwe
31	U Tun Kyi	Farmer	37	Male	Zeyar	Baw Nin	Kalaw
32	U Yo	Farmer	60	Male	Zeyar	Baw Nin	Kalaw
33	U Tun Shwe	Farmer	46	Male	Zeyar	Baw Nin	Kalaw
34	U Kyaw Oo	Farmer	29	Male	Zeyar	Baw Nin	Kalaw
35	U Nge'	Farmer	54	Male	Zeyar	Baw Nin	Kalaw
36	U Hmwe	Farmer	32	Male	Zeyar	Baw Nin	Kalaw
37	U Maung Htee	Farmer	44	Male	Zeyar	Baw Nin	Kalaw
38	Daw Khan War	Grocery Shop	17	Female	Zeyar	Baw Nin	Kalaw
39	U Ni	Farmer	50	Male	Zeyar	Baw Nin	Kalaw
40	U Soe	Farmer	60	Male	Zeyar	Baw Nin	Kalaw
41	U Lan	Farmer	65	Male	Zeyar	Baw Nin	Kalaw
42	U Tun Yin	Farmer	47	Male	Zeyar	Baw Nin	Kalaw
43	U Shwe Key	Dyna Truck Operator	37	Male	Zeyar	Baw Nin	Kalaw
44	U Japan	Dyna Truck Operator	45	Male	Zeyar	Baw Nin	Kalaw
45	U Kywe	Dyna Truck Operator	56	Male	Zeyar	Baw Nin	Kalaw

Annex 3 Introductory Letter to DRRD

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Daw Tin Moe Myint
Department of Rural Road Development
Pyinmana
Myanmar

19 March 2020

Dear Aunty Moe

Re: ReCAP project GEN2158A - Rural Transport Premium for Impact Indicator in Shan State, Myanmar

The Research for Community Access Programme (ReCAP) is a programme of research and knowledge dissemination funded by the UK government through the Department for International Development (DFID).

The Impact indicator in the ReCAP logframe relates to the ratio of public transport costs between Low Volume Rural Roads (LVRR) and those on national roads. The indicator has been defined as:

“Rural transport premium (fares per passenger-kilometre on LVRR relative to fares on long-distance bus services) tracked in four focus countries (Kenya, Tanzania, Nepal and Myanmar)”.

The purpose of this small field study will be to collect the Rural Transport Premium data for Myanmar. ReCAP has commissioned Kyawt Kay Khaing Tun to collect data on transport service indicators, including passenger fares per kilometre on rural roads compared with long-distance bus fares in the He Hoe Village Cluster (Zeyar, Kyaung Shae Ywa, Kyaung Tang, Thayet Pin and Pantin), Shan State, Myanmar.

Kyawt Kay Khaing Tun will be supported by a small team to undertake data collection between March and May 2020.

The ReCAP Deputy Team Leader, Dr Annabel Bradbury will be supervising the project, which ends on 30th May 2020.

We would be very grateful if you could accord the team all the necessary support during the exercise.

Yours faithfully

DocuSigned by:
Dave Runganaikaloo
19213981.0577402

Dave Runganaikaloo
ReCAP Programme Director

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