

**YANGON UNIVERSITY OF ECONOMICS
DEPARTMENT OF APPLIED ECONOMICS
MASTER OF PUBLIC ADMINISTRATION PROGRAMME**

**A STUDY ON DIGITALIZED TIMBER TRACKING SYSTEM
WITH QR CODE IN MYANMAR**

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EMPA - 22 (18th BATCH)

SEPTEMBER, 2023

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**A thesis submitted as a partial fulfillment towards the requirement for the degree of
Master of Public Administration (MPA)**

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This is to certify that this thesis entitled “**A Study on Digitalized Timber Tracking System with QR Code in Myanmar**”, submitted in partial fulfilment towards the requirements for the degree of Executive Master of Public Administration (EMPA) has been accepted by the Board of Examiners.

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ABSTRACT

Digitalized Timber Tracking with QR code is crucial Measures to improve transparency and accountability of timber trade by Myanmar. The purpose of the study is to determine how to assist timber buyers from MTE that the timber can be tracked and has been legally produced , so quick of timber flow . The objectives of this study are to study timber tracking system in Myanmar, to examine quickly get Legality Documents for timber flow, to examine the traceability of logs purchased from MTE. A random sampling method used to collect 10 Companies from timber purchasing clients of MTE in Yangon. The study found that QR Code is essential of timer sale by MTE for providing buyers with legality documents, which can help the timber tracking mechanism and quick of timber flow from the timber stump to the export. Before not developed the QR Code System, clients of MTE was facing too many issues that printed labels with Iron Hammer Mark on top of logs are difficult to recognize/not obvious/incomplete information through these labels, tracking to the stump is not carried out and delay of timber flow from rural depot to Yangon industries. Now, developed QR Code System, there is no need to repeatedly request / wait / maintain a large number of documents as a hard copy. Just by scanning the QR Code on log with mobile phone, all the information will be accessed easily and improve quick of timber flow. The study suggested that MTE should change from the currently implemented Central Station system to a Multi Station system which is the system of QR code related on log start at of local depot . Therefore increasing the technical capacity of MTE and Governments implement timber tracking systems in order to regain control over their timber sector to increase tax revenue as a positive side effect or to have trade advantages such as increased access to premium markets.

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LIST OF ABBREVIATIONS

AAC	-	Annual Allowable Cut
AD	-	Assistant Director (FD)
AGM	-	Assistant General Manager (MTE)
AHP	-	Annual Harvesting Plan
AM	-	Assistant Manager (MTE)
CoC	-	Chain of Custody
DFMP	-	District Forest Management Plan
DG	-	Director General(FD)
DGM	-	Deputy General Manager (MTE)
DO	-	Delivery Order
EAM	-	Extraction Agency Manager (MTE)
FD	-	Forest Department
FIEGT	-	Forest law Enforcement Governance and Trade
FMU	-	Forest Management Unit
GM	-	General Manager (MTE)
MD	-	Managing Director (MTE)
MONREC	-	Ministry of Natural Resources and Environmental Conservation
MSS	-	Myanmar Selection System
MTE	-	Myanma Timber Enterprise
MTE EXP	-	MTE Export Department
MTE EXT	-	MTE Extraction Department
PPF	-	Protected Public Forests
RO	-	Range Officer (FD)
STN	-	Standing Tree Number
STR	-	Senior Timber Ranger (MTE)
SO	-	Staff Officer (FD)
TCFPE	-	Team for Certifying Forest Products for Exporting (FD) Timber
TR	-	Timber Ranger (MTE)
UCF	-	Un-classified Forests

CHAPTER I

INTRODUCTION

1.1 Rationale of the Study

In Myanmar, almost all of the forests are the natural forests and plantation which was initially intended only for restoration of denuded forest areas is still the minor role. Timber supply mainly relies on natural forest and timber from plantations and community forest is not yet considered contribution to the national. Moreover, an estimated 70% of population is heavily dependent on forests for their basic needs. Therefore, the effective and efficient ways of extracting the forest resources are paramount important to reach a sustainable development of Myanmar natural forest and to support decision-making for policymaking process in forestry sector.

Harvesting, transporting, processing and marketing of timber and timber products are the main responsibilities of Myanmar Timber Enterprise (MTE) which is a State-Owned Economic Enterprise under the Ministry of Natural Resources and Environmental Conservation (MONREC). Extraction agencies are set up throughout the country to perform the harvesting operations such as felling and logging, log skidding from stump to measuring point, log transporting from the measuring point to the permanent depots and log transportation by means of rafting, railing and trucking until the final destination.

Under MONREC, the Forest Department (FD) is responsible for management and conservation of forests, while the Myanmar Timber Enterprise (MTE), a state-owned enterprise, is solely responsible for extraction and sale of timber. MTE also operates timber processing facilities, in some cases in joint venture or joint production¹ with private companies.

Private operators purchase legal timbers from the Myanmar Timber Enterprise through public open tenders, direct sale or contractors' quota; and then process and export them in accordance with the existing laws, rules and regulations. Private operators/buyers who are responsible for providing documentation to demonstrate the traceability and legality of the timber products they trade.

In order for local and international timber trade, the Myanmar Timber Enterprise provide the following (12) documents to each timber consignment to verify and support for the legality of timber Harvested , transported and exported in line with

the existing laws, rules and regulations of Myanmar: All relevant documents produced at each control point can be used to trace the timber in a product and It describes the controls in the timber trace back mechanism from the timber stump to the export ,

It is part of crucial Measures to improve transparency and accountability of timber trade by Myanmar. It aims to assist operators who trade Myanmar timber products to demonstrate that the timber in those products has been legally sourced and the products have been legally produced. It also provides operators with information on documents, which can help prove traceability to support their efforts in conducting due diligence on their timber purchases from Myanmar.

1.2 Objectives of the Study

The objectives of this study are :

- (i) To study timber tracking system in Myanmar.
- (ii) To examine quickly get Legality Documents for timber flow
- (iii) To examine the traceability of logs purchased from MTE.

1.3 Method of Study

This thesis has used a descriptive method based on secondary data, The secondary data were collected from published articles, journals, books, and internet websites and from Posts and Telecommunications Department, Ministry of Natural Resources and Environmental Conservation. Most of the references were obtained from the official publication of MTE, FD, private Sawmills and some relevant information were downloaded from internet websites.

1.4 Scope and Limitation of the Study

This thesis has covered the assessment on Digitalized Timber Tracking with QR Code to trace back the stump of Teak 209 Logs 139.546 Tons from 98 Teak Trees. produced from Compartment (26), Mindone Reserved Forest, Thayet Extraction Agency, Magway Division in fiscal year 2020-2021. Production operations have conducted in 9 extraction agencies under the extraction department throughout the country where the Teaks 24768 logs 9819.600 tons were produced in 2020-2021.

Table (1.1) (9) Extraction Agencies of Harvested Teaks in 2020-2021

State / Region	Agency Name	Logs	Tons
Chin	Kalay	1684	1141.214
Sagaing	Kawlin	4049	1182.344
Sagaing	Katha (East)	2681	689.614
Sagaing	Katha(West)	5521`	2190.276
Sagaing	Mawlaik(West)	829	584.496
Magway	Gangaw	2098	1084.322
Magway	Thayet	726	479.182
Sagaing	Mawlaik(East)	1075	915.714
Mandalay	PyinOolwin	6105	1552.438
Total		24768	9819.600

Source: Myanmar Timber Enterprise (MTE), 2021

1.5 Organization of the Study

The study is organized into five chapters Chapter 1 includes rationale of the study, objectives of the study, method of study, scope and limitations of the study and organization of the study . Chapter II describes literature review of duty & Responsibility of MTE, Vision, Mission and Objectives of MTE, Export and Harvest Restriction, Timber Sources of Myanmar, the harvesting steps, related documents and Responsible actors, Log Distribution Forest Legislation. Chapter III describes the Main Actors (or) Regulations of Myanmar’s forest sector, Importance of Traceability, Legality and Transparency for timber harvesting and international timber trade of Myanmar, Timber Tracking System with Hammer Mark on Log, Digitalized Timber Tracking System with QR Code. Chapter IV is analysis of Steps of Exported Timber, Timber Tracking System, and Documents in QR Code for legality of Harvest and Transport, Costs for QR Code System, Challenges and Opportunity of Timber Tracking in Myanmar. Chapter V includes the summary and the conclusions of this study, as well as some specific recommendations.

CHAPTER II

LITERATURE REVIEW

2.1 Timber Production

The forest harvesting system commonly applied in timber permit form forest department for the entire targeted area and a pre-harvest survey (mapping and pre-logging inventory) of each cutting unit. One of the main responsibilities is to monitor and control logging operations in the field. Monitoring and control are undertaken in particular in order to :

- a. Ensure that logging proceeds in an orderly manner, and in accordance with the terms and conditions specified in the Timber Permit
- b. Ensure that environmentally and socially sensitive areas are excluded from logging and
- c. Ensure that logging takes place in accordance with sound silvicultural and environmental principles, thus ensuring sustainable wood production and the future of the industry.

All harvesting operations undertaken are to be guided by the consideration that unless the forest is left in a condition that will permit the attainment of a desired future condition, sustainability cannot be assured. To meet the requirements of environmentally sound forest harvesting, all harvesting operations must be well-planned.

2.1.1 Annual Allowable Cut Allocations(AAC)

The Annual Allowable Cut (AAC) represents the maximum number of trees and the equivalent volume that can be harvested in a logging season (April – March) within identified compartments of each district. It is determined separately for teak and other hardwoods by FD, Planning and Statistics Division, on the basis of the 10-years District Forest Management Plan, growing stock inventories and a felling cycle of 30 years. The AAC also takes into account 10-year district forest management plans. The actual permitted number of trees to be cut is assigned by state or region and is normally less than the allocated AAC. These are allocated by District (FMU), which have been identified as having sufficient growing stock for harvest on the basis of the aforementioned process.

2.1.2 MTE Annual Harvesting Plan

Upon receipt of the AAC declaration, MTE prepares an Annual Harvesting Plan (AHP). The MTE Managing Director (MD) submits the AHP to the MONREC Minister. The Minister forwards it to the Cabinet, for the President’s approval. Once the President has approved the AHP, the MONREC Minister informs the MTE MD and the DG of the FD. The AHP describes the harvesting amount (in hoppus tons) by Agency and proposed compartment within that Agency. It includes the total amount that MTE is going to harvest and the “rejected teak”.¹ It also includes the plan and amount of timber to be transferred to the MTE export department, local department and wood-based industry respectively. Each of these departments can dispose of timber according to their quota.

2.1.3 Tree Marking

Once the AAC is determined, rangers (or, when there is insufficient staff, Deputy Rangers and/or Ranger officers) with responsibility for each compartment included in the current year’s harvest plan carry out **selection and marking** of trees to be green-felled² within that year. Trees are marked with a **Standing Tree Number or Stump Number** (hereinafter Standing Tree Number – STN), which is a sequential number for all marked trees in the compartment. The number is hammer-marked in two places, one at root level, to be left on the stump after felling, and the other at breast high, which will appear on the felled tree (and also marked on all logs produced from that tree). Forest Rangers record trees selected for harvest by number and girth in a **Tree Marking Book**. They also prepare a **sketch map** of the compartment indicating the location of each marked tree. Trees with a girth at breast height above 4 feet, but less than the felling limit are not marked, but annotated in the **Green Teak Marking Book** in order to be considered for harvest in the next felling cycle.

2.1.4 Request to Enter the Forest to Conduct Harvesting Operations

¹ Rejected teak is described as teak belonging to a marked tree, normally a branch of a main tree whose middle girth is between 3 and 4 feet, whose length below 10 feet and volume is below 18 ft³, which is sold 10 times cheaper than the timber belonging to the same tree.

² The minimum girth limit for trees to be felled is at breast height for teak is set at 6 feet and 6 inches and that for other hardwoods at above 6 feet, depending on the regions, species and type of forests.

Upon receipt of the Tree Marking Book, the MTE Agency-in-Charge prepares a **Request for Permission to Enter the Forest and Conduct Harvesting Operations** in the compartment. The request is sent by the Extraction Agency Manager (EAM) to the DFO. The request is accompanied by the list of people accessing the compartment including: MTE staff, fellers, skidders, chainsaw, machinery and elephants. The request is valid only for that compartment and specifies the name of the forest area, the compartment, the felling year, the tree species to be harvested and the planned date of entering the forest.

2.1.5 Permit to Enter the Forest to Conduct Harvesting Operations

Upon receipt of the request from MTE, the DFO issues a **Permit to Enter in the Forest and to Harvest**. The permit is valid only for the named compartment and includes:

- The name of the forest/compartment;
- Number of trees which MTE is allowed to cut
- Name of the institution company which has the right to harvest (MTE)
- Number of elephants allowed to enter
- Date of validity
- Fiscal year
- Quantity of timber to be harvested
- Place of revenue marking
- Name of the FD staff who will measure logs and put FD revenue hammer mark
- An order to the FD Staff Officer responsible for the compartment, to allow access to the compartment as per permit issued.

The entry permit is issued to MTE. In cases where MTE has subcontracted harvesting operations to sub-contractors, MTE has to accompany them to the forest and supervise their operations.

2.1.6 Tree Felling and Bucking

Upon receipt of the permit to enter in the forest and conduct harvesting operations, MTE Extraction Department carries out tree felling operations. Operations are carried out by MTE through hiring the required labour (fellers), while directly supervising their work. MTE can sub-contract, on a timber sharing-based system, for such operations. In case of harvesting through the Timber Sharing System, sub-

contractors are responsible for hiring fellers on behalf of MTE. Trees are felled according to the instructions contained in MTE Extraction Manual.

A Felling Order (Form AG) issued by MTE Range-in-Charge for all felling operations. All operations have to be conducted in accordance with instructions contained in the Felling Order, Standing Orders for Extraction Staff (SOS) and the MTE Extraction Manual. Felling is overseen by the MTE Compartment-in-Charge.

At the felling site, MTE scalers decide where to buck (cross-cut) the felled trees in accordance with existing rules and orders with emphasis given to maximising log value. Hammer-marks are placed on each bucked log, including:

- **Standing Tree Number** and log number (in sequence of each felled tree - e.g., 1/234, 2/234);
- MTE extraction agency hammer-mark, including compartment number;
- Compartment-in-Charge personal hammer mark;
- Range-in-Charge personal hammer mark;
- extraction year;
- group and species code (e.g. Padauk 12; Kanyin 21)
- type or stars for teak³

At the felling site, the MTE Compartment-in-Charge completes **Form B**, which is included in a logging notebook.

Form B contains the following information:

- standing tree number;
- log end section measurement;
- total number of rejected trees and reasons for rejection;

total number of accepted logs and their measurement.

2.1.7 Daily Summaries and Compilation of Form C

At the end of each day, when returning to the forest camp, the MTE Compartment in Charge compiles **Form C or logging notebook** as a summary of the daily activities.

Form C contains the following information:

³ Not applicable as of 2017-2018 harvesting season.

- **Standing Tree Number** and log number (in sequence of each felled tree - e.g., 1/234, 2/234);
- **Log measurements** length, mid-girth, calculated volume;

The **Revenue Number**, a unique log serial number assigned to logs in each compartment is added in the remarks after re-measuring of logs and compilation of Form D and S-18 (step 11), at the measuring point, in order to double check correspondence between standing tree number and revenue number.

Form C is sent to the Extraction Agency Manager after the logs are sent to the Extraction Agency Depot.

Form F is also filled at the end of each day at the camp site. It shows the progress of felling (one page of Form B is one line of Form F) with administrative and financial purposes (i.e. pay the fellers)

2.1.8 Skidding Logs to the Measuring Point

After all felled trees within a compartment have been bucked, the Compartment-in-Charge inspects all bucked logs and imprints his personal hammer-mark (inspection hammer), which means the logs can be skidded to the measuring point (or landing site).

Bucked logs are skidded to the measuring point (or landing site) using elephants. MTE also supervises skidding operations when operations are being carried out by sub-contractors, in accordance with the timber sharing system.

The Compartment-in-Charge checks that logs are skidded in accordance with the information contained in Form B (which includes information on rejected logs)

2.1.9 Measurement and Marking of Logs by FD and MTE

At the measuring point, the MTE Range-in-Charge receives the logs, checking them in accordance with Form C. Once all logs arrive at the measuring point, MTE informs the FD DFO. FD and MTE officers re-measure logs.

The FD Ranger puts the FD **Revenue Mark** and the **Revenue Number/Royalty Number** on each log. The Revenue Mark indicates region/state and township where the log has been harvested and the extraction year.

The FD Ranger Officer completes **Form S-18** with all relevant information on each log, including

- **Standing Tree Number** and log number (in sequence of each felled tree - e.g., 1/234, 2/234);
- Revenue number;
- Revenue mark (state/region, township and extraction year);
- Log dimensions [length and mid-girth, volume].

The MTE Range-in-Charge and Compartment-in-Charge put their hammer marks on the logs in accordance with the MTE Departmental Instructions (DI) and compile **Form D**. Form D contains the following information:

- **Standing Tree Number** and log number (in sequence of each felled tree - e.g., 1/234, 2/234);
- Revenue mark (compartment/and extraction year)
- Log dimensions [length, mid-girth, volume].
- Personal hammer-marks (MTE officials)
- species name and quality grade.

There is no explicit column for Revenue Number on Form D, but this is entered in the “Remarks” column. From the 2018/2019 extraction year, Form D will explicitly include a column for Revenue Number.

A copy of Form D (which is also signed by the FD Deputy Ranger) is sent to the Agency Depot-in-Charge prior to the arrival of logs in order for the Agency Depot-in-Charge to check logs received against the form. Another copy of Form D is sent to MTE Agency Manager. The Revenue/Royalty Mark indicates that the logs have been measured, which forms the basis of royalty from MTE to FD.

2.1.10 Forest Road Construction by MTE

After the rainy season the MTE Range-in-Charge, together with the MTE Timber Ranger, starts forest road construction to move measured logs from the compartment to the depot.

The road construction operations are conducted in accordance with the **Reduced Impact Logging Guidelines**.

There are two kinds of road operations: the main forest road from the depot to the junction of all compartments; and feeder roads within each compartment.

Road construction is done by MTE machinery in accordance with instructions in the Reduced Impact Logging Guidelines. In case of the timber sharing system, sub-contractors carry out road construction operations under the supervision of MTE.

The progress of road construction is reported weekly to the Agency Manager who sends reports to the Extraction Department (MTE) Head Office, and forwards them to the State Deputy General Manager/Region-in-Charge.

2.1.11 Transportation of Logs from Measuring Point to Agency Depot

Transportation of logs from the measuring point in the forest to the Agency Depot is done only by truck.

In case of harvesting through the Timber Sharing System, contractors are responsible to organize transport of logs to the Agency depot on behalf of MTE, and under the supervision of the MTE Compartment-in-Charge.

In order to transport logs a **Trucking Note** is prepared by the MTE Compartment-in-Charge.

The Trucking Note contains the following information:

- Trucking Note serial number;
- species name;
- Revenue Number;
- **Standing Tree Number** and log number (in sequence of each felled tree - e.g., 1/234, 2/234);
- log measurements (dimension);
- agency and compartment number from which the logs are originated;
- date;
- driver name and truck number;
- agency depot to which the logs will be transported;

The Trucking Note must accompany the logs during transportation.

During loading logs onto the truck, the MTE Compartment-in-Charge (or Range-in-Charge if present) checks logs against Form D and compiles the Trucking Note accordingly.

FD staff do not control the truck loading operation. Normally checkpoints are established by FD between the forest measuring point and the Extraction Agency depot. FD staff check revenue marks on the logs and whether the transported logs correspond to those mentioned on the Trucking Note. However, neither the truck

driver nor the FD checkpoint staff maintain records of these controls. FD staff only prepare a report to inform the TFO when they find out irregularities have occurred. There are four copies of Trucking Note: one each for the Compartment-in-Charge, the Depot-in-Charge, the Store-in-Charge (responsible for truck fuel), and the driver.

2.1.12 Receiving Logs at MTE Agency Depot

When a truckload of logs arrives at an MTE Agency Depot (from the measuring point), the Depot-in-Charge receives them. The logs are checked against Form D (received by the Depot-in-Charge prior to the arrival of the logs) before unloading and generally manually recorded in at least three different ways:

- Depot entry register book by truck
- Depot entry register book by compartment
- Depot entry register book by species

All log registration books have the following information on their cover: year of extraction, compartment, range, Agency and depot name.

Information recorded generally includes:

- Depot entry number;
- **Standing Tree Number** and log number (in sequence of each felled tree - e.g., 1/234, 2/234);
- Revenue number;
- Log dimensions;
- Arrival date;
- Truck plate and driver name;
- Trucking slip serial number;
- Tree species.

There is no specific format for a log book. Generally it is a legal size notebook handwritten by the relevant officer.

Monthly records of logs entering and exiting the Agency depot are kept in the AO form. Normally, FD does not conduct any checks or inspection at MTE Agency depots.

2.1.13 Log Transportation from MTE Agency Depot to another MTE Extraction Agency Depot or to MTE Export Depot in Yangon

Logs at MTE Extraction Agency depots are often transported by MTE (or by MTE sub-contractors on MTE's behalf) to MTE Export Department depots in Yangon or to other MTE Extraction Department depots (for logistic/transportation reasons). Since the logs are still government property, FD removal passes are not required for transporting them to another district. Logs can be transported by truck, barge, train or raft. When logs are loaded on the barge/raft/train/truck, they are recorded on a depot exit log book (depot out ledger) and checked by the Depot-in-Charge. Logs to be transported are recorded either in the **Trucking Slip** (if transport is to be by truck) or in the **AU Form** (for all other means of transportation), which contains specific information on the transported logs. The AU Form is always accompanied by the **MTE Removal Pass or AT Form** and by the **AS Form** or acceptance form, which is signed by the end receiver when receiving logs.

2.2 Timber Tracking

It is a system that can trace back timber and timber products exported/imported by countries and companies from the timber importing country to the timber producing region/forest in the timber exporting country.

2.3 Timber Tracking with Hammer Mark On log surface

For traceability They have been doing it since ancient times. Since 1948 when the State Timber Board (STB) was engaged in timber production, we have been printing logs/stumps. Through these labels, tracing back to the stump is carried out. The labels on the logs are difficult to recognize/not obvious/read easily for those who are not familiar with the department's work. From about 1948 until today, the system of printing a seal on the log has been used.

FD & MTE practice the Hammer Marking system on the log for the purpose of tracing back to the source of original. All of the Hammer marks represents the information of Harvesting Year, Harvesting Sites, Harvested Trees & Personal In-charges. Numerical and Alphabetical code are used. Moreover, all of the documents related to each log are manually recorded.

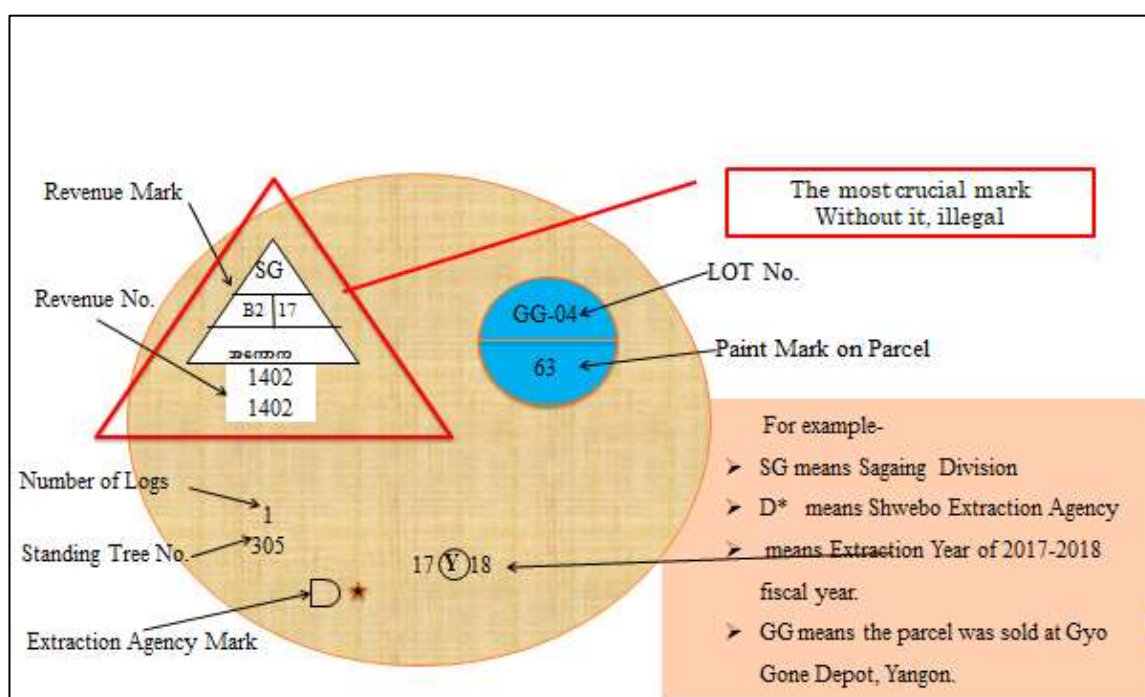
Necessary documents for source and sale to the private are provided by MTE itself as MTE is a whole seller of logs, on behalf of the Government. Further documents after selling the logs to the private shall be issued by the Forest Department, and other associated departments such as Department of Trade, Myanmar Customs Department and Myanma Port Authority. All of the respective

government organizations throughout the timber supply chain shall have responsibility of for their own actions of issuing documents..

All of the logs extracted by MTE and counter-checked by FD shall be considered as legal as those two government organizations are responsible for sustainable management and production of forest resources on behalf of the Government. Every log has its unique hammer marks by FD and MTE and has been well documented in every steps of its flow such as felling, skidding, transporting, processing and exporting.

The whole system of timber supply chain is **counter checked by the Forest Department (FD).Third party verification** is initiated by the Myanmar Forest Certification Committee (MFCC) which is a national governing body for developing certification scheme.

Figure 2.1 Hammer Mark on Log Surface



2.4 Digitalized Timber Tracking

Today with increasing sustainability concerns, it is difficult to know the source of timber and timber products, however there is an increasing interest to be able to track this information. The reasons why companies or governments implement tracking systems can be very varied. A company in the timber sector may simply wish

to know more about their timber flow or there could be a need to reduce the risk of any illegal entering their timber flow.

Timber tracking systems are able to link timber with new attributes such as ‘sustainable sourced’ or ‘proof of origin’. Governments implement timber and timber product tracking systems in order to regain control over their forest and timber sector to increase tax revenue as a positive side effect or to have trade advantages such as increased access to premium markets.

Users of tracking systems are wood producing, transforming, and converting, trading and selling companies. Stakeholders within the product chain includes a wide variety of organizations and people such as those involved in verifying information or end-users who scan a code and are able to see the legality documents of timber flow of the logs.

2.5 QR Code

QR Code is a Quick Response Code that automatically generates a square shape with black and white image waves by entering the information you want to know into the QR Software. After entering information into the QR software, the resulting image can be quickly read with a QR reader that is easily available on mobile phones.

Using a QR Code (Quick Response) tracking system means that the information you want to express / want to know / support as a hard copy, so that you don't need to print and save a lot of documents, you can easily access and save all the information in your mobile phone by simply scanning the QR Code with a QR Code Scanner.

2.6 Previous Study

Dr. Kevin Grace, Mr. Souksompong Prixar, Dr. Kaison Phengsopha. Study for understanding timber flows and control in Lao . This study found wood is transported to the next wood gathering facility. It stores wood from all related sites so that the representatives of the regional forest office could measure it and prepare information on harvested timber which is subsequently transferred to the Industry and Commerce Office for further sale of wood at the auction. Representatives of the Forestry Inspection Department, while at wood gathering facility, carry out reconciliation of incoming volumes of wood together with all accompanying documentation (inventory, logging contracts, timber transport permits) .When transporting wood for further processing, waybill indicates the location of sawmill production. The inspectors are in charge of scheduled and unscheduled processors

inspections. They study the incoming and outgoing information of the log, review the composition of raw materials and supporting documents.

Timer tracking system in Lao has the following features:

- Control along the timber movement chain is exercised over by a separate body Forestry Inspection Department;
- Authorities identified the number of processing enterprises in the country, they determine the need for wood;
- Special chalk and paint are used for the purposes of tagging.

Timber tracking system in Lao belongs to the state mandatory systems and involves the use of a balance and individual identification method.

Felix Seidel, Emily Fripp, Annie Adams and Ian Denty studied Tracking Sustainability Review of Electronic and Semi-Electronic Timber Tracking Technologies (ITTO. Technical Series No. 40, P. 0) .This study found that Data related to logs received at the mill is entered as a log receipt against relevant log agreements setup in Timber Smart. In some circumstances this information is contained on bar codes and can be entered by scanning. However, in this case it is entered by manual keying. Almost all of the systems reviewed in this report are electronic timber tracking systems. The product is electronically recorded and a set of information is added to the product ID. This is followed by a data upload either by physical movement of (PDA) personal digital assist or USB stick, or simply via an internet data uploads. Two companies, TimberSmart and Microbois, included in this project as providing electronic tracking systems are able to offer Enterprise Resource Planning (ERP), for customers whose information management needs go beyond tracking requirements Table 3 provides an overview of the features of tracking system service providers reviewed in this report.

Guyana Forestry Commission studied National Wood Tracking System .This study found that Exporters of wood products from Guyana must complete an Application for Export of Forest Produce. On this form the exporter must declare the wood source of the export product indicating RP and/or receipt numbers. This form will be used by the GFC officers as the basis for conducting checks to verify that the produce intended for export was legally obtained. The exporter must also apply for a Timber Marketing Certificate and all produce to be exported must be graded by a GFC-licenced independent grader in accordance with the Guyana Grading Rules for Hardwood. The grader will brand the produce and complete the relevant sections of

the TMC. For tracking export logs the GFC tag number provides a robust means to verify legal source of the asset. In the case of large concessions it is possible to track to the source block via the RP or the tag issuance range. Since the concessionaire must enter the enumeration number of logs on the production register, and submit a stock map per block, tracking back to source stump is also possible. For processed wood products the Application for Export of Forest Produce provides the means to identify relevant RPs and sales receipts to track to a batch of potential source logs. Using the GFC tag numbers identified it is possible to track to source concession (or private/ agricultural/mining property).

CHAPTER III

OVERVIEW OF DIGITALIZED TIMBER TRACKING SYSTEM WITH QR CODE

3.1 Duty & Responsibility of MTE

Myanma Timber Enterprise (MTE) is responsible for harvesting, milling, downstream processing and marketing of forest products by adhering to all of the rules /regulations/ order/ instructions issued by its own institution such as Departmental Instructions (DIs) , Standard Orders for Extraction Staff (SOS), Extraction Manual and Guidelines for Reduced Impact Logging (RIL) in addition to Forests Laws and Rules.

3.2 Vision, Mission and Objectives of MTE

3.2.1 Vision

Healthy survival with effective transformation by participative efficiency.

3.2.2 Mission

Myanma Timber Enterprise has been a long lasting economic organization which loves and respects the environment and national values. It often pays attention on doing business beyond timber for creating value in environmentally friendly and socially responsible manners. It mutually and respectfully values its customs and competent and efficient employees with increased care for their common benefits.

3.2.3 Objectives

- (i) To harvest the optimum amount of timber that the forest can supply.
- (ii) To provide forest conservation by spurring effective timber utilization.

- (iii) To encourage private sector participation in value-adding timber.
- (iv) To improve socio-economic development of the nation and its people by realizing wood-based industry development.

3.3 Timber Sources of Myanmar

There are five broad sources of timber in Myanmar

- (i) Natural production forests under State management. These form the main source of timber, and currently the only source of timber for export. They are managed by FD using the Myanmar Selection System (MSS). The harvest is allocated by AAC and timber harvest and sales are conducted by MTE. This category includes: Reserved Forests (RF), Protected Public Forests (PPF) and Un-classified Forests (UCF).
- (ii) Natural Forest logging Concessions. Although provided for in the Forest Law, these are not currently being awarded.
- (iii) Natural Forest Conversion. This includes timber from land clearing operations in concessions awarded for agricultural or infrastructure development.
- (iv) Plantations. This includes timber sourced from tree farms although at the moment this is not yet a source of timber for export.
- (v) Community Forests. Production currently includes timber produced for non-commercial use from forests co-managed with FD by rural communities. The Community Forestry Instructions allow communities to commercialise some of the timber they produce.
- (vi) Imports. These represents a relatively minor source, but steep reductions in the domestic harvest and a recent elimination of import duties on raw timber is likely to see increasing in this source of timber.

This thesis covers only timber from natural production forests under the first point.

Table 3.2 Apply Forms of Harvesting Operation

Form	Contents	Remarks
Form AG	Felling Order to Fellers by MTE	

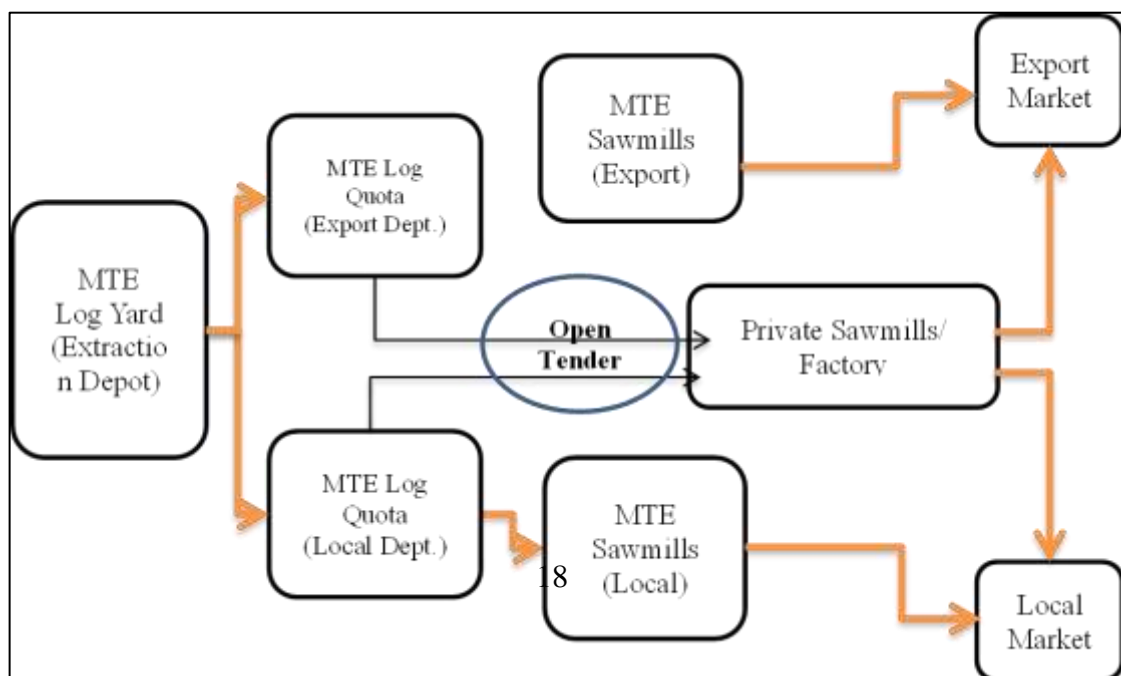
Form B	Felling Register at Field	
Form C	Marked Trees Register at Field	
Form D	Log Measurement Book	The most important one
Form F	Monthly Felling Summary at Field	
Form AJ	Completion Report	
Form AT	(Removal Pass)	
Form AU	Detail List of Logs (attached with AT)	
Form AO	Depot Register	
Form AS	Acceptance Statement	
Trucking Slips	Transportation Note	

3.4 Timber Sale system

Log sale to the private sector is mainly managed by the two Milling & Marketing Departments (Local / Export) of MTE. As MTE is only one supplier of logs, whoever is desirous to purchase raw materials of log has to pass the Open Tender held at MTE. For log sale, parceling Logs can be done at the Depot of the Extraction Agency (Agency Depot) or at the Yangon Depot.

After selling of log to the private, it is no longer owned by MTE and it becomes private property and all of timber supply chain for that sold timber has to be managed by the private itself. MTE just provide Delivery Order (DO) attached with Lot specification. Further necessary documents for transportation, processing, selling has to be passed under the FD channel.

Figure 3.2 : Flow Chart for Sale system of MTE



Source: MTE

3.5 Digitalized Timber Tracking with QR Code

In teak logs produced and sold by Myanmar Timber Enterprise, legal production evidences related to the logs (Legality). The documents related to the legal transport from the relevant log plot to the destination timber port (the timber port to be sold) have been transparently inserted together with the provided QR Code attached to the top of the log.

The QR Code contains (12) points related to the relevant log extraction and transportation. Using this information, the original source of the log will be known. By scanning the QR Code with a mobile phone, the information about the source of origin of the log provided by the digitized system (information about the direction of the log such as the production circle / log plot / logging area / district / log port, etc.), Documents related to log extraction and transportation will be found.

Through these evidences, it will be possible to easily connect and trace the timber extraction and transportation along the chain of ownership (timber flow path). In addition, through the Location link included in the QR Code, you will be able to access and view the log extraction area on Google Map.

Log extraction and transportation will be easily linked through the documents provided by the digitized system along the chain of ownership. The following 12 documents inserted in QR Code support for legality and traceability. Documents 2 to 5 are official letters of National Level and Documents 6 to 9 are Official letter of Departmental level . All of those can support for Legality . Documents 1 , 10 ,11,12 are information of logs and transport note which can support for tracking the timber .

For each Teak log produced and sold by Myanmar Timber Industry, the official production evidence related to that timber. We have attached a QR Code that clearly supports the transportation evidence (Legality + Transport) from the relevant plot of land to the destination new port (the new port to be sold).

There is no need to repeatedly request / wait / maintain a large number of documents as a hard copy of these credentials. Just by scanning the QR Code included in the log with your mobile phone, you will be able to access all the information easily in your mobile phone.

Log extraction and transportation will be easily linked through the documents provided by the digitized system along the chain of ownership.

Figure 4.2 IT Solution for QR Code System



Source: On line

3.5.1 Documents in QR Code for legality of Harvest + Transport

The following 12 documents inserted in QR Code support for legality and traceability. Documents 2 to 5 are official letters of National Level and Documents 6 to 9 are Official letter of Departmental level . All of those can support for Legality . Documents 1 , 10 ,11,12 are information of logs and transport note which can support for tracking the timber .

1. General information of a Log (including information of where it was harvested) (Place/ Extraction Year/Species/Revenue No. & Mark...)
 - (1) Forest Administrative Township - Thayet
 - (2) Reserve and Compartment - Mindon Yoma(27)
 - (3) Agency - Thayet
 - (4) Range - Mindon(1)
 - (5) Depot - Win twin
 - (6) Extraction Year - 2018-2019
 - (7) Species - Teak
 - (8) Standing Tree No/Log No - 21/1
 - (9) Revenue Number - 699
 - (10) Revenue Mark (Akauk) - ME/E1/18
 - (11) Compartment Location - <http://tiny.cc/Mindom-27>
2. Request by MONREC to the President Office
3. Approval by the President Office
4. AAC Allocation for each State & Region by FD
5. AHP (Annual Harvesting Plan) by MTE
6. Marking Note attached with Standing Trees' Location Map sent by District Forest Office (FD) to the respective Extraction Agency (MTE)
7. Compartment Entry Request by MTE

8. Compartment Entry Permit by FD
9. Log Specification (Form D)
10. Trucking Note (Compartment to the nearest agency depot)
11. Removal Pass(AT) +
12. Log Specifications attached with each removal pass (AU)

3.5.2 Evidence to be found by scanning the QR Code

When the buyers scan the QR code on log with QR Scanner the 12 documents are found which will support to trace back the source of origin of log.

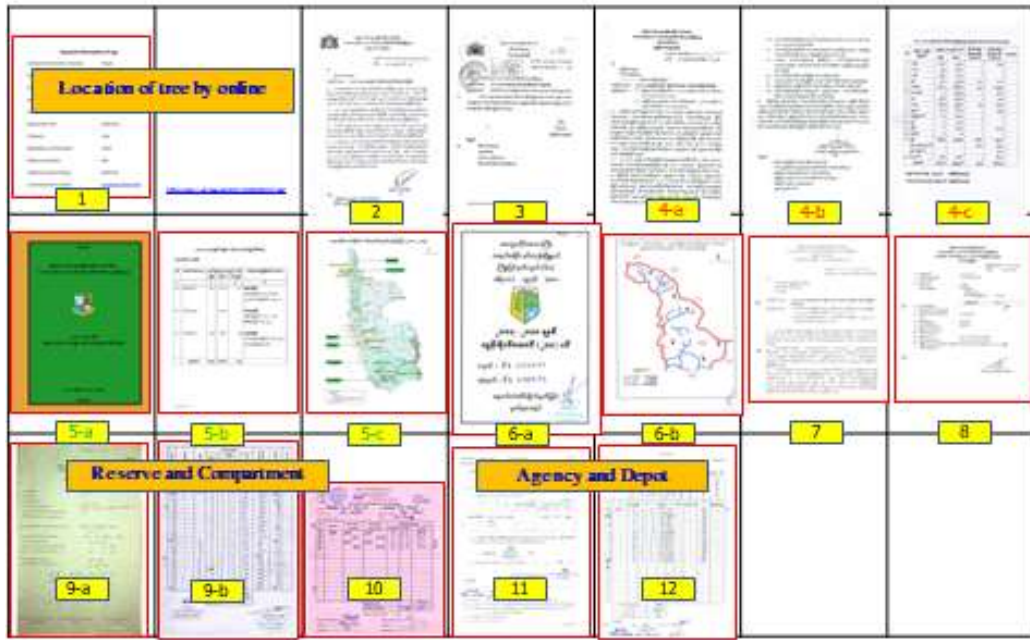
Figure 4.3 Documents to be found by scanning the QR Code with scanner



3.5.3 Tracing the source of tree

To trace back the log transportation, the buyers will be able to know the agency and depot where the logs transported through Document (11)and(12) .And then the reserve and compartment can be known through Documents (9)(10) .

Figure 4.4 Documents for tracing the source of tree



3.5.4 Accessing the location of Tree harvested

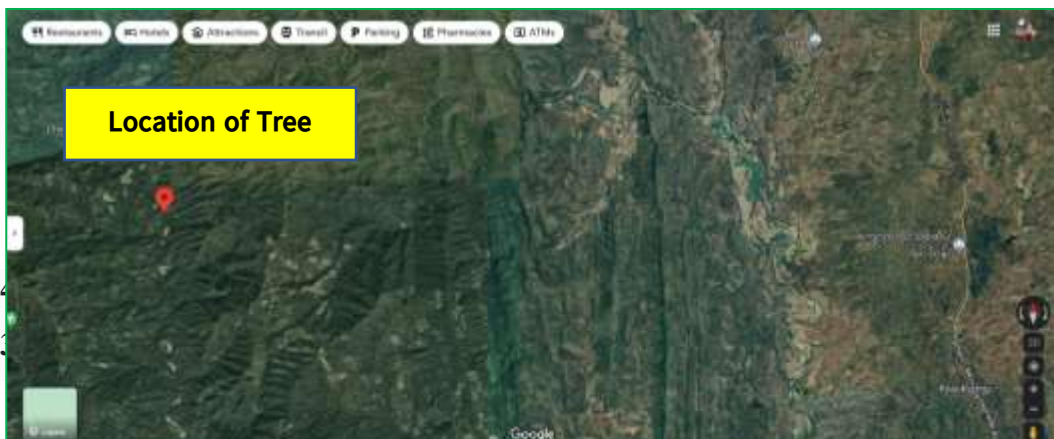
To access the location of Tree where the logs harvested, the buyers can press the compartment links of Document 1. The buyers will see the tree location through Google Map .

Figure 4.5 QR code on log surface and Scanning with QR Code Scanner



Figure 4.6
The

location of Tree on Google Map

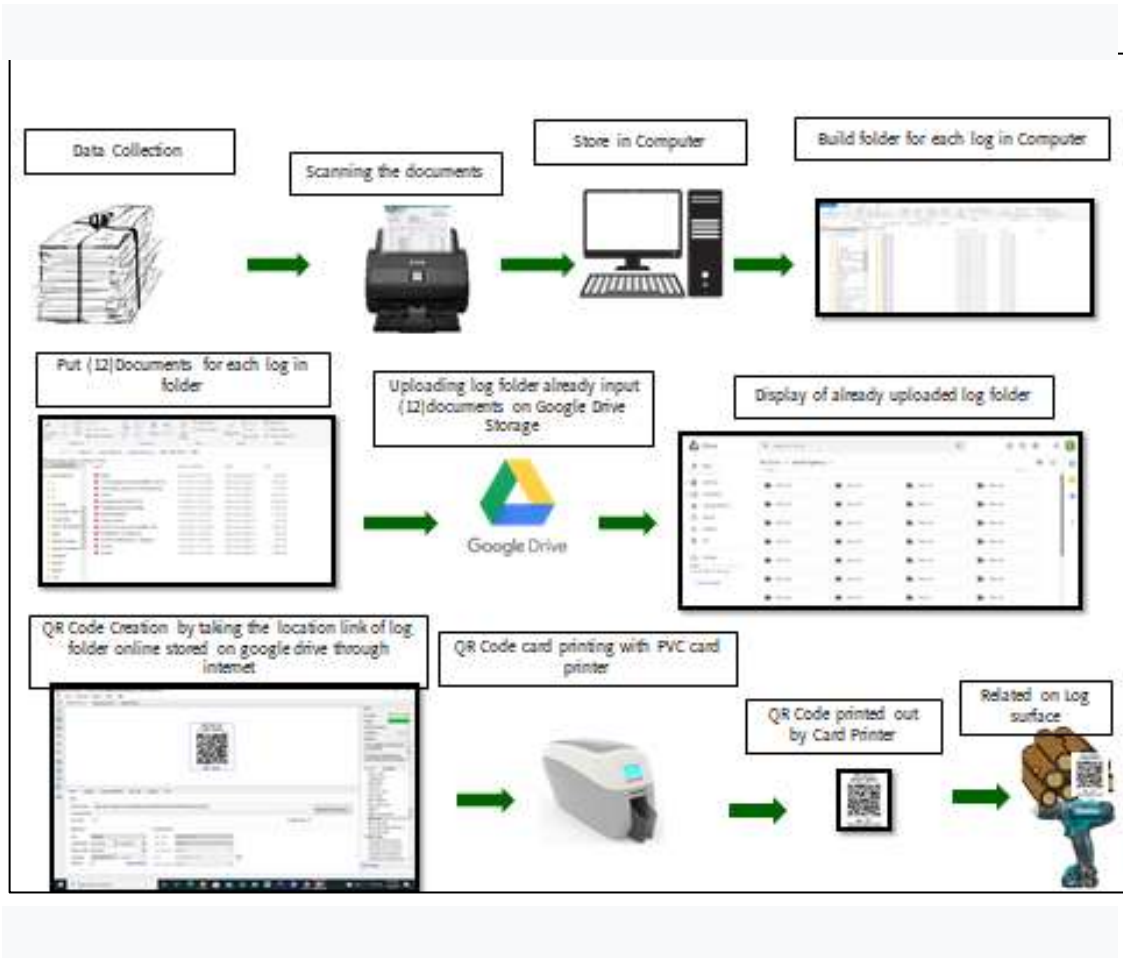


To develop QR Code System, the processing steps and accessories requirements are as following;

Table 5.3.1 The Steps, process and accessories for QR Code System

Steps	Process	Accessories Requirement
Step(1)	Data Collection from the offices where harvest was done	Staff
Step(2)	Scanning all collected data by Digital Scanner as transforming physical document to Digital document	Digital Scanner
Step(3)	All scanned data are stored in Computer	Computer
Step(4)	Build folder for each log in Computer	Computer storage
Step(5)	Collect and input (12)Documents for each log in folder	Staff
Step(6)	Uploading such all log folder already inputted (12) documents on Google Drive online Storage	Official Purchased Google Drive Storage/Space
Step(7)	Check the google drive display of already uploaded log folder for uploaded completion	Internet and Staff
Step(8)	QR Code Creation by taking the location link of log folder online stored on google drive through internet	QR Code Generator Software
Step(9)	Printing QR Code card with PVC card printer	PVC card printer
Step(10)	Check and Test Scanning For each log QR Code printed out by Card Printer	QR Code Scanner
Step(11)	Related PVC QR Code on Log surface	Screw motor

Figure 5.7 The Steps , process and accessories for QR Code System



CHAPTER IV

Survey Analysis

4.1 Survey Profile

MTE is a State-owned Economic Enterprise (SOE) under the Ministry of Natural Resources and Environmental Conservation (MONREC). MTE is solely authorized to extract timber from the forest in compliance with relevant laws, rules,

regulations and procedure prescribed by the State. The main functions of MTE stand for timber harvesting, transporting, processing and marketing of timber and timber products. MTE have conducted Teaks production in 9 extraction agencies throughout the country where the Teaks 24768 logs 9819.600 tons were produced in 2020-2021. MTE distributed logs to Private Company through different ways such as delivery order, binding tender and open tender. Moreover, sawn timber are distributed to domestic by different purposes such as for local use, for the special plan, for the development plan and, some are distributed to private company through tender. Auctions for timber for export take place in Yangon and lots are priced in US Dollars. Timber is sold to the bidders who offer the best price for each lot if it is equal to or greater than a set floor price.

When each sale is finalized, the buyer signs the sales contract and makes payment to MTE. And then MTE provides the buyer legality support documents with the QR Code. Receipt of the documents, ownership of the logs passes to the buyer, who can organize their transportation to his log yard .

4.2 Survey Design

In this thesis was used to descriptive method based on primary and secondary data. Tracking systems were identified based and selected on knowledge and sector experience. A questionnaire was designed to frame the information requirements for the system review and sent to 10 organizations which purchased teaks logs produced from Mindone Reserved forest , compartment (26). All of these 10 companies, replied with completed questionnaires. The questionnaires were followed up by telephone or face to face interviews to verify information gathered and complete any missing sections of the analysis. Completed questionnaires are contained in the Annex. The secondary data for this study are obtained from Extraction Department branch of Myanma Timber Enterprise (MTE).The respondents were explained about the questionnaires. A self-administered structured questionnaire was used as a data collection tool.

Table (4.1) Sample of Study

No.	Respondents	Address
1.	Kandar Seinn And Yadanar Seinn Co., Ltd.,	No.908(B)Hill Top Vista, Min Ye Kyaw Swar Street, Lanmadaw Township, Yangon, Myanmar.

2.	Yingrong Wood Co., Ltd.,	No.(1), Htauk Kyaunt (South) Quarter, Mingalardon Township, Yangon Region, Myanmar.
3.	Kanbawza Thitsa Hlaing Co., Ltd.,	No.75, 76, 77, R 2 Street, Yangon Industrial Zone, Mingalardon Township, Yangon, Myanmar. (hereinaf
4.	Jewellery Lucky Production Co., Ltd.,	Olympic Hotel, National Swimming Pool Compound, U Wisara Road, Dagon Township, Yangon Region,
5.	Yamona Nadi Trading Company Limited,	No.(138), Kyauk Sein Yadanar Street-1, Thanlyin Yadanar Housing Compound, Thanlyin Township,
6.	Shwe Sin Linn Htun Company Limited,	No.(763), Thandar(1) Street, (35) Quarter, North Dagon Township, Yangon Region, Myanmar.
7.	San May Trading Co., Ltd.,	No.790, Room No.703, Corner of Bogyoke Road & War Dan Street, Lanmadaw Township, Yangon, Myanmar.
8.	Pa Pa Wadi Co., Ltd.,	G-40, Hninsi Street, Myittar Road, Ward 14/1, Myinthar, South Okkalapa Township, Yangon, Myanmar.
9.	KMI Company Limited,	No.185, Padewun U Shwe Bin Road, East Dagon Industrial Zone, Dagon Myothit (East) Township, Yangon, Myanmar.
10.	Zayyar Moe Myint Co., Ltd.,	No.(7/A), Royal River View Tower, Corner of 30th Street & Merchant Road, Pabedan Township, Yangon, Myanmar.

4.3 Survey Result

Today with increasing sustainability concerns, global trade and opaque supply chains, it is difficult to know the source of timber and timber products, however there is an increasing interest to be able to track this information. The reasons why companies or governments implement tracking systems can be very varied. A

company in the timber sector may simply wish to know more about their supply chain or there could be a need to reduce the risk of any illegal or unsustainable material entering the supply chain.

A timber tracking system can be used to fulfil the requirements of Chain of Custody certification for forest certification schemes and it can also be implemented as part of a due diligence system, to gain knowledge of the supply chain structure (Figure 1). Timber tracking systems are able to link timber with new attributes such as ‘sustainably sourced’ or ‘proof of origin’. Therefore companies can show they are being different (better) than their competitors by using tracking systems. Governments implement timber and timber product tracking systems in order to regain control over their forest and timber sector to increase tax revenue as a positive side effect or to have trade advantages such as increased access to premium markets. Users of tracking systems are wood producing, transforming, and converting, trading and selling companies.

Stakeholders within the product chain include a wide variety of organizations and those involved in verifying information or end-users who scan a code and are able to see a photo of the forest. Access rights secures confidentiality and provides access to as much and as little information as necessary, i.e. actors in the supply chain can simply have access solely to the node underneath, and auditors to full supply chain information or different staff within a company to only the attributes that are of relevance to them.

4.3.1 General Information of Respondents

The following Table (4.2) presents general information of respondents such as Existing Since , Office Staff , Field Staff and Timber Export Country .

Table (4.2) Over view of Respondents purchased 2020-2021 harvested timber from Thayet Agency

No.	Description	Existing Since	Office Staff	Field Staff	Timber Purchased	Timber Export Country
1.	Kandar Seinn And Yadanar Seinn Co., Ltd.,	2005	9	45	11 logs	Singapore Norway Italy
2.	Yingrong Wood	2013	12	62	18 logs	India

	Co., Ltd.,					China
3.	Kanbawza Thitsa Hlaing Co., Ltd.,	2013	21	48	30 logs	Thailand Italy
4.	Jewellery Lucky Production Co., Ltd.,	2008	5	24	73 logs	Malaysia Singapore
5.	Yamona Nadi Trading Company Limited,	2019	14	33	45 logs	Thai China
6.	Shwe Sin Linn Htun Company Limited,	2019	20	64	32 logs	India
7.	San May Trading Co., Ltd.,	2005	25	60	11 logs	India
8.	Pa Pa Wadi Co., Ltd.,	2019	22	38	18 logs	India Malaysia
9.	KMI Company Limited,	2008	13	29	30 logs	Italy China
10.	Zayyar Moe Myint Co., Ltd.,	2005	13	36	73 logs	Singapore India

From Table (4.2), the majority of respondents (3) are established 2005 (18)years' service , (2) are established 2008 (15)years' service , (2) are established 2013 (10)years' service and (3) are established 2019 (4)years' service . These Companies purchased logs from MTE yearly and Processes downstream of the sawmill include kiln drying, band sawing of boards, cut line, planning, optimising, finger jointing, preservative treatment, laminating, packet wrapping, dispatch, freighting destination as a finished product and export shipping.

4.3.1 Timber Transportation of Respondents

Table (4.3) Mode of Timber Transport

No.	Description	Respondents	Percentages
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1.	Truck	8	80
2.	Burge	2	20
3.	Train	-	-
	Total	10	100

Table (4.4) Condition of Check point for Timber Legality Assistant

No.	Description	Respondents	Percentages
1.	Forest	3	30
2.	Police	5	50
	Other	2	20
3.	Total	10	100

Table (4.5) Before QR Code System Development Condition of Legality Support Documents Get

No.	Description(Office Letters)	No of Respondents	Percentages
1	General Information of Log		
	Waiting Time to get Not get (days) 1-2 2-3	10	100
	Total	10	100
2.	Request by MONREC to the President Office		
	Waiting Time to get Not get (days) 1-2 2-3	10	100
	Total	10	100
3.	Approval by the President Office		
	Waiting Time to get Not get (days)	10	100

	1-2 2-3		
	Total	10	100
4.	AAC Allocation for each State & Region by FD		
	Waiting Time to get Not get (days) 1-2 2-3	10	100
	Total	10	100
5.	AHP (Annual Harvesting Plan) by MTE		
	Waiting Time to get Not get (days) 1-2 2-3	10	100
	Total	10	100
6.	Marking Note attached with Standing Trees' Location Map sent by District Forest Office(FD) to the respective Extraction Agency (MTE)		
	Waiting Time to get Not get (days) 1-2 2-3	10	100
	Total	10	100
7.	Compartment Entry Request by the Extraction Agency (MTE)		
	Waiting Time to get Not get (days) 1-2 2-3	10	100
	Total	10	100
8	Compartment Entry Permit by the respective		

	DFO (FD)		
	Waiting Time to get Not get (days) 1-2 2-3	10	100
	Total	10	100
9	Form D (Log Specification measured and approved by both FD & MTE)		
	Waiting Time to get Not get (days) 1-2 2-3	10	100
	Total	10	100
10	Trucking Note (Compartment to the nearest agency depot)		
	Waiting Time to get Not get (days) 1-2 2-3	10	100
	Total	10	100
11	Removal Pass		
	Waiting Time to get Not get (days) 1-2 2-3	10	100
	Total	10	100
12	AU (Log Specifications attached with each removal pass)		
	Waiting Time to get Not get (days) 1-2 2-3	10	100
	Total	10	100

Table (4.6) Duration of Timber Flow Before QR Code System development

Description	No. of Respondents	Percentage
Transporting from Agency Depot to Yangon		
Waiting Time to get 1-2 2-3 3-4		
Legality support Documents Collection to request Sawing permit		
Waiting Time to get 1-2 2-3 3-4		
Total	10	100
Sawing Permit		
Waiting Time to get 1-2 2-3 3-4		
Total	10	100

Source: Survey data, 2022

Table (4.6) Examination Condition of log information for Tracking before QR Code System Development

Sr No	Description		No of Respondents	Percentages
1	I can examine Harvesting Year and tracking the source of timber	Yes		
		No	10	100
	Total		10	100
2	I can examine Akauk No and	Yes	5	50

	tracking the source of timber	No	5	50
	Total		10	100
3	I can examine Standing tree Number and Log No and tracking the source of timber	Yes	2	20
		No	8	80
	Total		10	100
4	I can examine Agency Hammer Mark and tracking the source of timber	Yes		
		No	10	100
	Total		10	100
5	I can examine Akauk Mark and tracking the source of timber	Yes		
		No	10	100
	Total		10	100
6	I can examine Depot Name and tracking the source of timber	Yes		
		No	10	100
	Total		10	100
7	I can examine Agency Name and tracking the source of timber	Yes		
		No	10	100
	Total		10	100
8	I can examine Range Name and tracking the source of timber	Yes		
		No	10	100
	Total		10	100
9	I can examine Reserve and Compartment Name and tracking the source of timber	Yes		
		No	10	100
	Total		10	100
10	I can examine stump location and tracking the source of	Yes		
		No	10	100

	timber			
	Total		10	100

Source: Survey data, 2022

CHAPTER V

CONCLUSION

5.1 Findings

This study was aimed to assess the Digitalized Timber tracking with QR Code and the legality , transparency of Teak between QR Code and Hammer Mark on log surface extracted the nine Agency in Myanmar . The data was collection by interviewing the byers of Teak Tender and Departmental data .This comparison was carried out based on 2020-2021 extracted years. According to analysis on QR Code System and Hammer Mark System, this study found out the following points:

- a. It aims to assist buyer who trade timber products to demonstrate that the timber in those products has been legally sourced and the products have been legally produced.
- b. It describes the controls in the harvesting and transportation from the declaration of Annual Allowable Cut (AAC) to the point of product export, showing all relevant documents produced at each control point, and explaining how the documents can be used to trace the timber in a product.

- c. It also provides buyers with information on documents which can help prove traceability to support their efforts in conducting due diligence on their timber purchases from Myanmar.
- d. Providing a compilation solely comprising documents as included in this dossier covering the supply chain of given shipment of timber products should not be considered sufficient evidence of a claim of legality of that shipment.
- e. by describing all steps in the harvesting and transportation , and identifying control points, relevant actors and respective responsibilities, this paper can help legality verification or auditing entities to conduct appropriate checks to prove legality of their purchases.

5.2 Suggestions

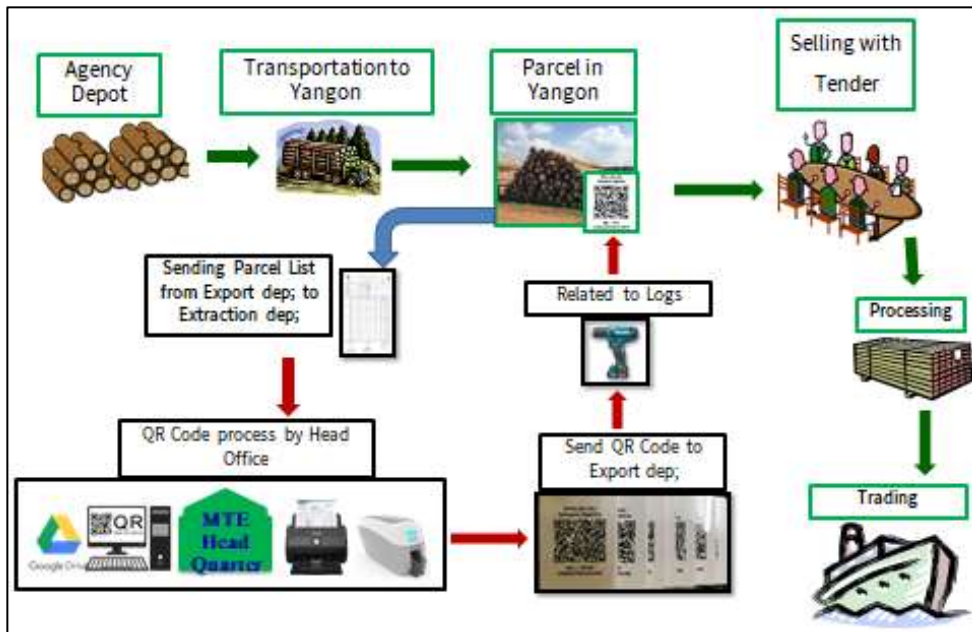
MTE implement the Digitalized Timber Tracking System with the following points ;

- (i) In order to be informed in a timely manner about the basic information about the legal production and origin that should be known about the logs produced by the MTE
- (ii) To develop transparency (Transparency),
- (iii) To support traceability
- (iv) MTE work by using technology developed according to modern system as Trust Building
- (v) To support the legality/transparency of the logs produced and transported by the Myanmar timber industry by providing not only the source of origin of the logs but also the evidence of production and transportation through QR Code as a One Stop Service in the sale of teak logs sold abroad, and to strengthen the value of the logs.

Currently QR Code system is being processed by the head office for teak logs from all teak-producing regions system as following figure;

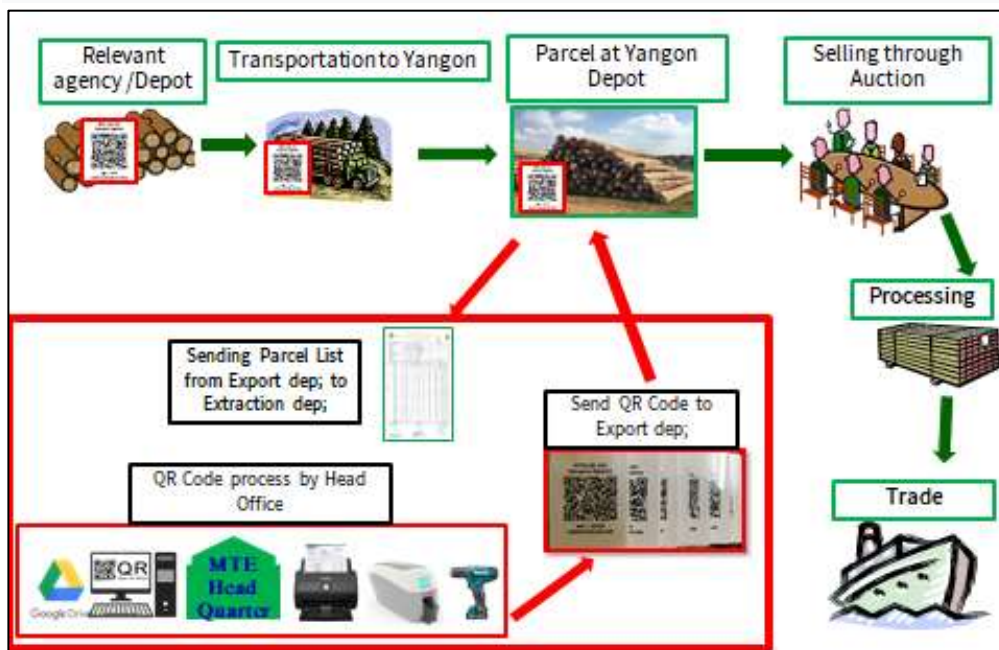
By doing so, not being able to attach a QR Code during the transport journey from Agency/Depot to Yangon. The QR Code can only be attached before the operator comes into possession, so the essence of the process is weak .

Figure 5.1 Central Station System



The currently implemented Central Station system should be changed to a Multi Station system which is the system of Carrying out transportation to Yangon from the relevant depot implemented QR code system and related QR code on log surface as following figure ;

Figure 5.2 Multi Station System(Each Station Process)



In order to do this, regional offices/depots need to have QR Code System processing units installed. Since practicing Multi Station System (MSS) instead of Central Station System (CSS), this study found out the following points in MTE ;

- (i) Increasing the essence of the QR Code process by being able to attach QR Codes along the entire route of transporting teak logs.
- (ii) Being able to sell teak logs as soon as they arrive in Yangon
- (iii) Increasing the technical capacity of regional/port staff of logging department. Being able to think of ways to improve further.
- (iv) Evolving from Ledger type accounting to Digital type accounting currently used in the region/ports. Able to convert log production data from file system to computer system storage.

Now, the teak logs produced and sold by MTE are being auctioned to local timber industry owners with QR Code Cards attached. These entrepreneurs continue to export to the international market after processing the wood. It is necessary to continuously improve the QR Code system that can easily and quickly identify the Source of Origin depending on the department's replenishment capacity.

5.2.1 Challenges

In Myanmar, Ministry of Natural Resources and Environmental Conservation (MONREC) is empowered by the State to manage forest resources in a sustainable manner. Under MONREC, the Forest Department is mainly responsible for the management of the forest resources while the Myanma Timber Enterprise take responsibility of timber extraction, milling and marketing in compliance with the existing laws, rules and regulations. Private operators purchase legal timbers from the Myanma Timber Enterprise, process and export them in accordance with the existing laws, rules and regulations. Accordingly MTE legally extracts the Timber from the State Forests, and Export Department on behalf of MTE sells the raw logs in Foreign Currency to the foreign & local entrepreneurs, it is to inform that the Department will transparently issue to the buyer the legal sale documents with QR Code can trace back the legality of timber sold out in Foreign Currency.

Before 2018-2019, MTE practiced the hammer mark system on log surface by manual. But it is hard to trace back because it is difficult for people who are not familiar with the work of the department to recognize the hammer marks on the logs and it is difficult to find out the history of log production through the marks and it can only be found out by someone who understands the hammer marks and then the hammer marks on the logs are damaged over a long period of time and the resin from the log often hides the hammer marks.

5.2.2 Opportunities

In order for interactional timber trade, the Forest Department, the Myanmar Timber Enterprise, the Department of Trade and the Myanmar Customs Department fit provide the twelve documents to each timber to verify the legality of timber extracted and exported in line with the existing laws, rules and regulations of Myanmar . In 2018, MTE had been developed legality and transparently for the public and interactional timber traders to realize the legal timber extraction, milling and marketing process of Myanmar.

Currently, we are planning to designate Certified Forests and Certified Plantations in accordance with the Forest Certification Scheme developed by the Myanmar Forest Certification Committee (MFCC). Moreover, verification and assessment on the legality of timber are being conducted by Myanmar Timber Legality Assurance System (MILAS) that was being revised to be stronger and more robust in line with ASEAN and international standards.

Therefore more advance and simple mechanisms of QR Code system are being practiced to trace back to the stump of timber harvested after 2018-2019. To support the traceability of those timbers, QR Code System is also being developed as an information sharing mechanism.

. In regard to timber which is sold/exported, according to the existing laws of Myanmar, we provide twelve documents to each timber consignment in order for traceability of the timber back to the sources of origin.

Besides, with the support of FAO-FLEGT Programme, we are preparing to translate laws, procedures and instructions related to the legality of timber into English so that we can provide transparency and legal information access to buyer countries in accordance with EUTR. Hence, we kindly suggest EU operators to buy and import only the timbers from Myanmar which related QR Code.

Now the QR Code provides information about the production of logs will be easily known through the mobile phone, which is used daily without the need of someone's help.

Depending on the type of phone and the QR Code Scanner installed in his phone, the way to do it varies; The location of the tree can be viewed in different ways through the information sent, but the log information is easily viewed the same. Even if it is not possible to show the location of all the trees that were felled and produced on a national scale, at least being able to show the location of the trees that were produced will give some satisfaction.

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- Statement of The legality of Timber in Myanmar, Ministry of Natural Resources and Environmental Conservation (MONREC)

Websites

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<http://www.myanmaritimer.com.mm>,

APPENDIX

QUESTIONARIES
SECTION (A)

I. Socioeconomic and Demographic Characteristics

II. No	Variables	
1	Gender	
	Male	
	Female	
2	Age	
	Less than 20	
	21 to 30	
	31 to 40	
	41 to 50	
	Above 50	
3	Level of Education	
	Primary School	
	Middle School	
	High School	
	College	
	University	
	Other	
4	Monthly Income	
	Less than 200000 MMK	
	200001 to 300000 MMK	
	300001 to 400000 MMK	
	400001 to 500000 MMK	
	Above 500000 MMK	
5	Occupation	
	Government Staff	
	Company Staff	
	Self-Employed	
	Dependent	
	Other	

SECTION (B)
CHOICE AND REASONS OF TELECOMMUNICATIONS SERVICES

I. Choice of Main Telecommunications Service Provider

No	Operator	
1	MPT	
2	ATOM	
3	Ooredoo	
4	Mytel	

II. Reasons for choosing Main Telecommunications Service Provider

No	Variables	
1	Price	
2	Service Quality	
3	Network Quality	
4	Social Lifestyle	

III. Duration of Using Main Telecom Service Provider

No	Variables	
1	Less than 1 year	
2	1 to 5 years	
3	6 to 9 years	
4	Above 10 years	

SECTION (C)
FACTORS AFFECTING USER'S CHOICE OF TELECOMMUNICATIONS
SERVICE PROVIDER

I. Factors of price on choice of telecommunications service provider

No	Items	SD	D	N	A	SA
1	By using services of this mobile operator, I am getting my money's worth.					
2	The prices of voice calls are cheap.					
3	The prices of SMS messages are cheap.					
4	The prices of Data Package are cheap.					
5	Any increased price would hinder my purchase intentions of either data or voice calls.					
6	I will switch to other mobile services providers whenever the price of any product or service I use increases.					
7	The price plans are simple and easy to understand.					
8	I like this mobile operator as it meets my needs for a reasonable price.					

II. Factors of service quality on choice of telecommunications service provider

No	Items	SD	D	N	A	SA
1	The company provides clear guidelines on their products and services.					
2	The customer care services are good, they offer readily available help.					
3	Customer care service agents resolve my issues on time and provide feedback.					
4	Customer care service agents are knowledgeable about the products and services on offer					
5	Customer care service agents treat their users courteously and with respect.					
6	Customer care service agents listen to their users and they empathize					
7	Customer care service agents do not discriminate their users.					
8	I feel that I can rely on this mobile operator to serve me well.					

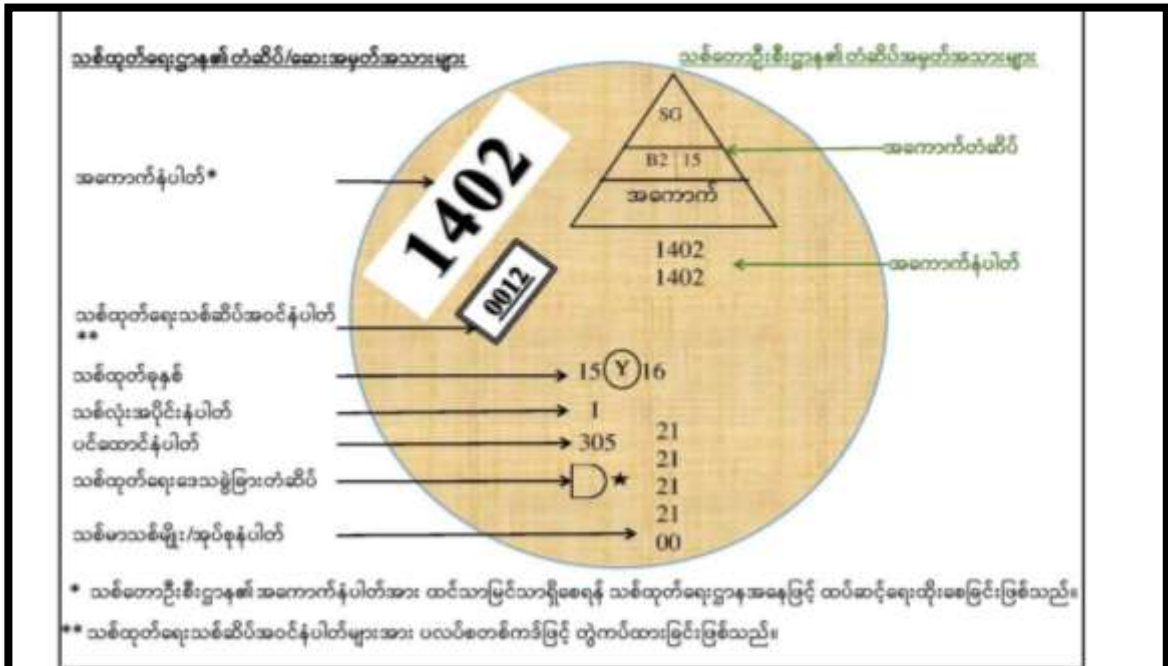
III. Factors of network quality on choice of telecommunications service provider

No	Items	SD	D	N	A	SA
1	My mobile operator provides sufficient geographical coverage					
2	My mobile operator provides good network coverage inside the buildings					
3	I like the network coverage since it's effective for voice, data, graphics, video, music.					
4	I do not experience drop calls or silent calls.					
5	I get clear and undisturbed voice quality.					
6	Voice call quality is an important factor for me in my choice of mobile network operator.					
7	Download speed is good enough.					
8	Good download speed is more important than voice call quality for me in my choice of mobile network operator.					

IV. Effect of social lifestyle on choice of telecommunications service provider

No	Items	SD	D	N	A	SA
1	I believe that my choice of mobile service provider depends on the class/ group that I relate with (e.g. family members, youth, business owners, students)					
2	I will purchase airtime regardless of my social group.					
3	Prepaid services are the best for me.					
4	Postpaid services are the best for me.					
5	Free on-net calls are keys in my decision to select the mobile operator to use.					
6	I will consider the calling rates before making calls to avoid any disconnections					
7	The mobile service provider is used by my family/friends					
8	I like the mobile service provider because it is used by many other people, popular and famous.					

SECTION (C)
DOCUMENTS OF MTE FOR LEGALITY AND TRACKING



သစ်လုံးပေါ်တွင်ရှိရမည့် တံဆိပ်/ဆေးအမှတ်အသားများ

နမူနာပုံစံ-ဂ



Compare Hammer Mark and QR Code on log surface for Traceability

General Information of Log

(1)Forest Administrative Township:	Gangaw
(2)Reserve and Compartment:	Laung Htung R.F, Compartment (5)
(3)Agency:	Gangaw
(4)Range:	Kyawtazan Range
(5)Depot:	Lema
(6)Extraction Year:	2020-2021
(7)Species:	Teak
(8)Standing Tree No/Log No:	25/1
(9)Revenue Number:	68
(10)Revenue Mark (Akauk):	ME/A1/20/AK-6
(11)Compartment Location:	https://goo.gl/maps/xvYGuYhhfTcE8k3T8

General Information of Log



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ
 သယံဇာတနှင့်သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန
 ပြည်ထောင်စုဝန်ကြီးရုံး

စာအမှတ် (သစ်တော)၄(၁)/၀၄(က)(၁)/(၁၂၆၇/၂၀၂၀)
 ရက်စွဲ ၂၀၂၀ ပြည့်နှစ် ဇွန်လ ၁၀ ရက်

သို့

နိုင်ငံတော်သမ္မတရုံး

အကြောင်းအရာ။ ၂၀၂၀-၂၀၂၁ ဘဏ္ဍာနှစ် သစ်ထုတ်မည့် အစီအစဉ်တင်ပြခြင်း

၁။ သယံဇာတနှင့်သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနသည် ၂၀၂၀-၂၀၂၁ ဘဏ္ဍာနှစ် တွင် သစ်တောဦးစီးဌာန၏ နှစ်စဉ်တောထွက် (Annual Allowable Cut - AAC) ထက် လျော့ချ၍ နှစ်စဉ်တောထွက် (AAC) ၏ ကျွန်း (၃၉.၃%) နှင့် သစ်မာ (၂၀.၁%) ဖြစ်သည့် ကျွန်းတန် (၈,၀၀၀)၊ သစ်မာတန် (၂၀၀,၀၀၀) အား ထုတ်လုပ်ရန် လျာထားရာ သဘာဝတောမှ ကျွန်းတန် (၄,၀၀၀) နှင့် နှစ် (၃၀) နှင့် အထက် ကျွန်းစိုက်ခင်းများမှ တန် (၄,၀၀၀)၊ သဘာဝတောမှ သစ်မာတန် (၂၀၀,၀၀၀) ထုတ်လုပ် ဆောင်ရွက်သွားမည်ဖြစ်ပါသည်။

၂။ ၂၀၂၀-၂၀၂၁ ဘဏ္ဍာနှစ်အတွင်း ကုမ္ပဏီများသို့ သစ်ထုတ်ခွင့်မပြုဘဲ ဌာနပိုင်ဆိုင်/ ယာဉ် ယန္တရားတို့ဖြင့် စွမ်းအားပြည့်ဆောင်ရွက်မည်ဖြစ်ပြီး ဌာနအင်အားဖြင့်မလုံလောက်သည့်သစ်တန် အတွက်သာ ပြင်ပမှသစ်ထုတ်အင်အား ငှားရမ်းဆောင်ရွက်သွားမည်ဖြစ်ပါသည်။

၃။ အထက်ပါ ကျွန်း တန် (၈,၀၀၀)၊ သစ်မာ တန်(၂၀၀,၀၀၀) ထုတ်လုပ်ရောင်းချခြင်းဖြင့် ပြည်ပဝင်ငွေ အမေရိကန်ဒေါ်လာ (၇၆.၃) သန်းနှင့် ပြည်တွင်းဝင်ငွေ ကျပ်သန်း (၂၈,၂၁၆.၀) ရရှိရေး အကောင်အထည်ဖော် ဆောင်ရွက်သွားမည်ဖြစ်ပါသည်။

၄။ အဆိုပါထုတ်လုပ်ထွက်ရှိသည့် ကျွန်း/သစ်မာ/ကျွန်းတိုင်/မျှော သစ်လုံးများအား အောက်ပါ အစီအစဉ်အတိုင်း ဆောင်ရွက်သွားမည်ဖြစ်ပါသည်-

စဉ်	ဌာန	ကျွန်း (တန်)	သစ်မာ (တန်)	ကျွန်းတိုင်/ မျှော(တန်)
(က)	ပြည်ပရောင်းဝယ်ရေးနှင့်သစ်စက်ဌာန			
(၁)	အိတ်ဖွင့်တင်ဒါ	၈,၀၀၀	၁၃၀,၀၀၀	-
(ခ)	သစ်အခြေခံစက်မှုလုပ်ငန်းဌာန			
(၁)	သစ်အခြေခံစက်ရုံများ	-	၃၀,၀၀၀	-

To President From MONREC (2020-2021)

စဉ်	ဌာန	ကျွန်း (တန်)	သစ်မာ (တန်)	ကျွန်းတိုင်/ မျှော (တန်)
(ဂ)	ပြည်တွင်းရောင်းဝယ်ရေးနှင့်သစ်စက်ဌာန			
	(၁) အိတ်ဖွင့်တင်ဒါ	-	၁၀,၀၀၀	
	(၂) သစ်စက်	-	၃၀,၀၀၀	၈၀၀
	စုစုပေါင်း	၈,၀၀၀	၂၀၀,၀၀၀	၈၀၀

၅။ သယံဇာတနှင့် သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာနမှ မြန်မာ့သစ်လုပ်ငန်းသို့ တာဝန်ပေးအပ်ထားသည့် သတ်မှတ်နိုင်ငံခြားငွေရရှိရေး၊ ပြည်တွင်းဝင်ငွေရရှိရေးတို့အတွက် တိုင်းဒေသကြီး/ ပြည်နယ်များအလိုက် စီမံလျာထားသည့် ကျွန်း/သစ်မာ/ပယ်ကျွန်းများအား ၂၀၂၀-၂၀၂၁ ဘဏ္ဍာနှစ်တွင် အောင်မြင်စွာ အကောင်အထည်ဖော် ဆောင်ရွက်သွားမည်ဖြစ်ပါ၍ ၂၀၂၀-၂၀၂၁ ခုနှစ် ကျွန်း/သစ်မာ/ကျွန်းတိုင်/မျှော ထုတ်လုပ်မည့် လုပ်ငန်းစီမံချက်စာအုပ်အား လိုအပ်သည်များ လမ်းညွှန်မှုပြုနိုင်ပါရန် ပူးတွဲတင်ပြအပ်ပါသည်။

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၁၈-၆
(Handwritten signature)

(Handwritten signature)
၁၈ (၆/၂၀)
(အုန်းဝင်း)
ပြည်ထောင်စုဝန်ကြီး
(Handwritten mark)

မိတ္တူကို

- ညွှန်ကြားရေးမှူးချုပ်၊ သစ်တောဦးစီးဌာန
- ဦးဆောင်ညွှန်ကြားရေးမှူး၊ မြန်မာ့သစ်လုပ်ငန်း
- အမှုတွဲချုပ်
- မျှောစာတွဲ
- ရုံးလက်ခံ

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(Handwritten signature)
၁၈ (၆/၂၀)
၂၀-၂၁ ၆/၆/၂၀၂၀



ပြည်ထောင်စုသမ္မတမြန်မာနိုင်ငံတော်အစိုးရ
 သယံဇာတနှင့်သဘာဝပတ်ဝန်းကျင်ထိန်းသိမ်းရေးဝန်ကြီးဌာန
 ပြည်ထောင်စုဝန်ကြီးရုံး

စာအမှတ်(သစ်တော)၄(၁)/၀၄(က)(၄)/(၁၃၅၂/၂၀၂၀)
 ရက်စွဲ ၂၀၂၀ ပြည့်နှစ် ဇွန်လ ၁၄ ရက်

- အကြောင်းအရာ။ ၂၀၂၀-၂၀၂၁ ဘဏ္ဍာနှစ် သစ်ထုတ်စီမံချက်တင်ပြမှုကိစ္စ
- ရည်ညွှန်းချက်။ (၁) ပြည်ထောင်စုဝန်ကြီးရုံး၏ ၁၀-၆-၂၀၂၀ ရက်စွဲပါစာအမှတ်(သစ်တော) ၄(၁)/၀၄(က)(၁)/(၁၂၆၇/၂၀၂၀)
- (၂) နိုင်ငံတော်သမ္မတရုံး၊ စီးပွားရေးရာဌာနကြီး၏ ၁၈-၆-၂၀၂၀ ရက်စွဲပါ စာအမှတ်၊ ၂၃(၁၅/၉၆၇)/၇/သမ္မတရုံး (မိတ္ထူပူးတွဲ)

၂၀၂၀-၂၀၂၁ ဘဏ္ဍာနှစ်တွင် တိုင်းဒေသကြီး/ပြည်နယ်များအလိုက် ကျွန်းသစ်၊ သစ်မာ၊ ကျွန်းတိုင်/မျော ထုတ်လုပ်မည့်လုပ်ငန်းစီမံချက်ကို ရည်ညွှန်း (၁) ပါစာဖြင့် တင်ပြခဲ့ခြင်းနှင့်စပ်လျဉ်း၍ လုပ်ထုံးလုပ်နည်းနှင့်အညီ ဆက်လက်ဆောင်ရွက်ရန် ရည်ညွှန်း (၂) ပါစာဖြင့် အကြောင်းကြား လာခြင်းအပေါ် ပြည်ထောင်စုဝန်ကြီး၏ မိန့်မှတ်ချက်အရ လုပ်ထုံးလုပ်နည်းနှင့်အညီ ဆက်လက် ဆောင်ရွက်နိုင်ပါရန် အကြောင်းကြားအပ်ပါသည်။

ပြည်ထောင်စုဝန်ကြီး(ကိုယ်စား)
 (ကျော်စော၊ ဒုတိယအမြဲတမ်းအတွင်းဝန်)

ဦးဆောင်ညွှန်ကြားရေးမှူး
 မြန်မာ့သစ်လုပ်ငန်း
 မိတ္ထူကို
 ညွှန်ကြားရေးမှူးချုပ်၊ သစ်တောဦးစီးဌာန
 အမှုတွဲချုပ်
 မျှောစာတွဲ
 ရုံးလက်ခံ

President Permit (2020-2021)

စဉ်	ခရိုင်	ကျွန်းနှစ်စဉ် တောထွက် (ပင်ရေ)	သစ်မာနှစ်စဉ် တောထွက် (ပင်ရေ)	မှတ် ချက်
	ကချင်ပြည်နယ်			
1	မြစ်ကြီးနားခရိုင်	160	5460	
2	ပူတာအိုခရိုင်	0	0	
3	ဗန်းမော်ခရိုင်	150	7500	
4	မိုးညှင်းခရိုင်	1560	9540	
	ကချင်ပြည်နယ်ပေါင်း	1870	22500	
	ကယားပြည်နယ်			
5	ဘော်လခဲခရိုင်	170	9950	
6	လွိုင်ကော်ခရိုင်	120	3770	
	ကယားပြည်နယ်ပေါင်း	290	13720	
	ကရင်ပြည်နယ်			
7	မြဝတီခရိုင်	100	22380	
8	ဘားအံခရိုင်	500	45310	
9	ကျောက်စိမ်းခရိုင်	690	13590	
	ကရင်ပြည်နယ်ပေါင်း	1290	81280	
	ချင်းပြည်နယ်			
10	ဖလမ်းခရိုင်	0	3990	
11	မင်းတပ်ခရိုင်	650	26630	
12	ဟားခါးခရိုင်	50	830	
	ချင်းပြည်နယ်ပေါင်း	700	31450	
	စစ်ကိုင်းတိုင်းဒေသကြီး			
13	စစ်ကိုင်းခရိုင်	0	0	
14	ရွှေဘိုခရိုင်	170	5950	
15	မုံရွာခရိုင်	0	0	
16	ကလေးခရိုင်	650	29740	
17	တမူးခရိုင်	500	1960	
18	ကသာခရိုင်	2820	20990	

3. AAC (2016-2017 to 2025-2026)(FD)

စဉ်	ခရိုင်	ကျွန်းနှစ်စဉ် တောထွက် (ပင်ရေ)	သစ်မာနှစ်စဉ် တောထွက် (ပင်ရေ)	မှတ် ချက်
19	မော်လိုက်ခရိုင်	1860	77100	
20	ခန္တီးခရိုင်	400	25100	
21	ယင်းမာပင်	10	2800	
	စစ်ကိုင်းတိုင်းပေါင်း	6410	163640	
	တနင်္သာရီတိုင်းဒေသကြီး			
22	မြိတ်ခရိုင်	0	33110	
23	ထားဝယ်ခရိုင်	0	9150	
24	ကျော့သောင်းခရိုင်	0	15270	
	တနင်္သာရီတိုင်းပေါင်း	0	57530	
	ပဲခူးတိုင်းဒေသကြီး(အရှေ့)			
25	ပဲခူးခရိုင်	890	19410	
26	တောင်ငူခရိုင်	980	13100	
	ပဲခူးတိုင်း(အရှေ့)ပေါင်း	1870	32510	
	ပဲခူးတိုင်းဒေသကြီး(အနောက်)			
27	သာယာဝတီခရိုင်	220	6070	
28	ပြည်ခရိုင်	170	7190	
	ပဲခူးတိုင်း(အနောက်)ပေါင်း	390	13260	
	မကွေးတိုင်းဒေသကြီး			
29	မကွေးခရိုင်	0	0	
30	မင်းဘူးခရိုင်	10	4080	
31	သရက်ခရိုင်	330	12410	
32	ပခုက္ကူခရိုင်	0	510	
33	ဂန့်ဂေါခရိုင်	1050	12910	
	မကွေးတိုင်းပေါင်း	1390	29910	
	မန္တလေးတိုင်းဒေသကြီး			
34	မန္တလေးခရိုင်	0	130	
35	ပြင်ဦးလွင်ခရိုင်	20	14260	

3. AAC (2016-2017 to 2025-2026)(FD)

စဉ်	ခရိုင်	ကျွန်းနှစ်စဉ် တောထွက် (ပင်ရေ)	သစ်မာနှစ်စဉ် တောထွက် (ပင်ရေ)	မှတ် ချက်
36	ကျောက်ဆည်ခရိုင်	80	1960	
37	မြင်းခြံခရိုင်	0	0	
38	ရမည်းသင်းခရိုင်	0	950	
39	မိတ္ထီလာခရိုင်	0	820	
40	ညောင်ဦးခရိုင်	0	0	
	မန္တလေးတိုင်းပေါင်း	100	18120	
	မွန်ပြည်နယ်			
41	မော်လမြိုင်ခရိုင်	0	930	
42	သထုံခရိုင်	0	1250	
	မွန်ပြည်နယ်ပေါင်း	0	2180	
	ရခိုင်ပြည်နယ်			
43	စစ်တွေခရိုင်	0	0	
44	မြောက်ဦး	0	0	
45	သံတွဲခရိုင်	0	10710	
46	ကျောက်ဖြူခရိုင်	0	2060	
47	မောင်တောခရိုင်	0	0	
	ရခိုင်ပြည်နယ်ပေါင်း	0	12770	
	ရန်ကုန်တိုင်း			
48	ရန်ကုန်(မြောက်ပိုင်း)	0	50	
49	ရန်ကုန်(အနောက်ပိုင်း)	0	0	
	ရန်ကုန်တိုင်းပေါင်း	0	50	
	ရှမ်းပြည်နယ်(တောင်ပိုင်း)			
50	တောင်ကြီးခရိုင်	0	12450	
51	လွိုင်လင်ခရိုင်	870	6020	
52	လင်းခေးခရိုင်	2260	37540	
	ရှမ်း(တောင်ပိုင်း)ပေါင်း	3130	56010	

3. AAC (2016-2017 to 2025-2026)(FD)

စဉ်	ခရိုင်	ကျွန်းနှစ်စဉ် တောထွက် (ပင်ရေ)	သစ်မာနှစ်စဉ် တောထွက် (ပင်ရေ)	မှတ် ချက်
	ရှမ်းပြည်နယ်(မြောက်ပိုင်း)			
53	လားရှိုးခရိုင်	0	0	
54	မူဆယ်ခရိုင်	0	0	
55	ဟိုပန်	0	0	
56	ကျောက်မဲခရိုင်	1540	22380	
57	ကွမ်းလုံခရိုင်	0	0	
58	လောက်ကိုင်ခရိုင်	0	0	
	ရှမ်း(မြောက်ပိုင်း)ပေါင်း	1540	22380	
	ရှမ်းပြည်နယ်(အရှေ့ပိုင်း)			
59	ကျိုင်းတုံခရိုင်	0	1630	
60	တာချီလိတ်ခရိုင်	0	230	
61	မိုင်းဆတ်ခရိုင်	0	10540	
	ရှမ်း(အရှေ့ပိုင်း)ပေါင်း	0	12400	
	ရှမ်းပြည်နယ်ပေါင်း	4670	90790	
	ဧရာဝတီတိုင်းဒေသကြီး			
62	ပုသိမ်ခရိုင်	0	3670	
63	မြောင်းမြခရိုင်	0	0	
64	ဟင်္သာတခရိုင်	150	4210	
65	ဖျာပုံခရိုင်	0	0	
66	လပွတ္တာခရိုင်	0	0	
67	မအူပင်ခရိုင်	0	0	
	ဧရာဝတီတိုင်းပေါင်း	150	7880	
	နေပြည်တော်ကောင်စီနယ်မြေ			
68	ဒဂုံဇာ	80	12120	
69	ဥတ္တရ	0	2620	
	နေပြည်တော်ပေါင်း	80	14740	
	စုစုပေါင်း	19210	592330	

3. AAC (2016-2017 to 2025-2026)(FD)

Annual Harvesting Plan of Teak and Hardwood in 2020-2021

Sr. No	Region and State	MTE Extraction Agency	Harvest Plan			
			Tree		Ton(Estimated)	
			Teak	Hardwood	Teak	Hardwood
1	Nay Pyi Taw		0	2998	0	6500
		Nay Pyi Taw	0	2998	0	6500
2	Kachin		0	7121	0	16000
		Myitkyina	0	5093	0	11000
		Bhamo	0	2028	0	5000
3	Chin		800	4438	800	7500
		Kalay	800	4438	800	7500
4	Sagaing(East)		939	12668	1200	27000
		Katha(East)	0	2317	0	5000
		Katha(West)	939	3423	1200	8000
		Kawlin	0	4050	0	10000
		Shwebo	0	2878	0	4000
5	Sagaing(West)		810	41145	1000	92000
		Homelin	0	5732	0	17000
		Mawlaik(East)	450	19653	500	40000
		Mawlaik(North)	0	6667	0	20000
		Malak(West)	360	6718	500	10000
		Monywa	0	2375	0	5000
6	Tanintharyi		0	2564	0	8000
		Myeik	0	2564	0	8000
7	Bago		0	3556	0	4000
		Pyay	0	3556	0	4000
8	Magway		1000	13187	1000	16000
		Gangaw	700	5932	700	7000
		Minbu	0	3088		4000
		Thayet	300	4167	300	5000

Sr. No	Region and State	MTE Extraction Agency	Harvest Plan			
			Tree		Ton(Estimated)	
			Teak	Hardwood	Teak	Hardwood
9	Mandalay		0	1713	0	4000
		Pyinoolwin	0	1713	0	4000
10	Shan(North)		0	4685	0	8000
		Mongmit	0	2985	0	4000
		Shweli-mabein	0	1700	0	4000
11	Shan(East/South)		0	2230	0	6000
		Taunggyi	0	2230	0	6000
12	Ayeyarwaddy		0	3509	0	5000
		Hinthada	0	3509	0	5000
Total			3549	99814	4000	200000

4. Operation Plan(2020-2021)

Forest

S.32 (a)



ကျွန်းစိုပင်ထောင် တံဆိပ်ရိုက်မှတ်သားရန်စာအုပ်

GREEN TEAK NOTE – BOOK

ခရိုင်/မြို့နယ် - ရန်ကင်းမြို့နယ်၊ ရန်ကင်းမြို့နယ်

District / Township

ကြီးစိုင်း / ကြီးပြင်ကာကွယ်တော / ကြီးပြင်တော - ရန်ကင်းမြို့နယ်၊ ရန်ကင်းမြို့နယ်

(Reserved / Protected Public Forest/
Unclassed forest)

အကွက်/ခုတ်ကွက်အမှတ် - (၆).....

Compartment / Coupe

ရိုက်မှတ်သည့်ခုနှစ် - ၂၀၂၀.....

Year of Marking

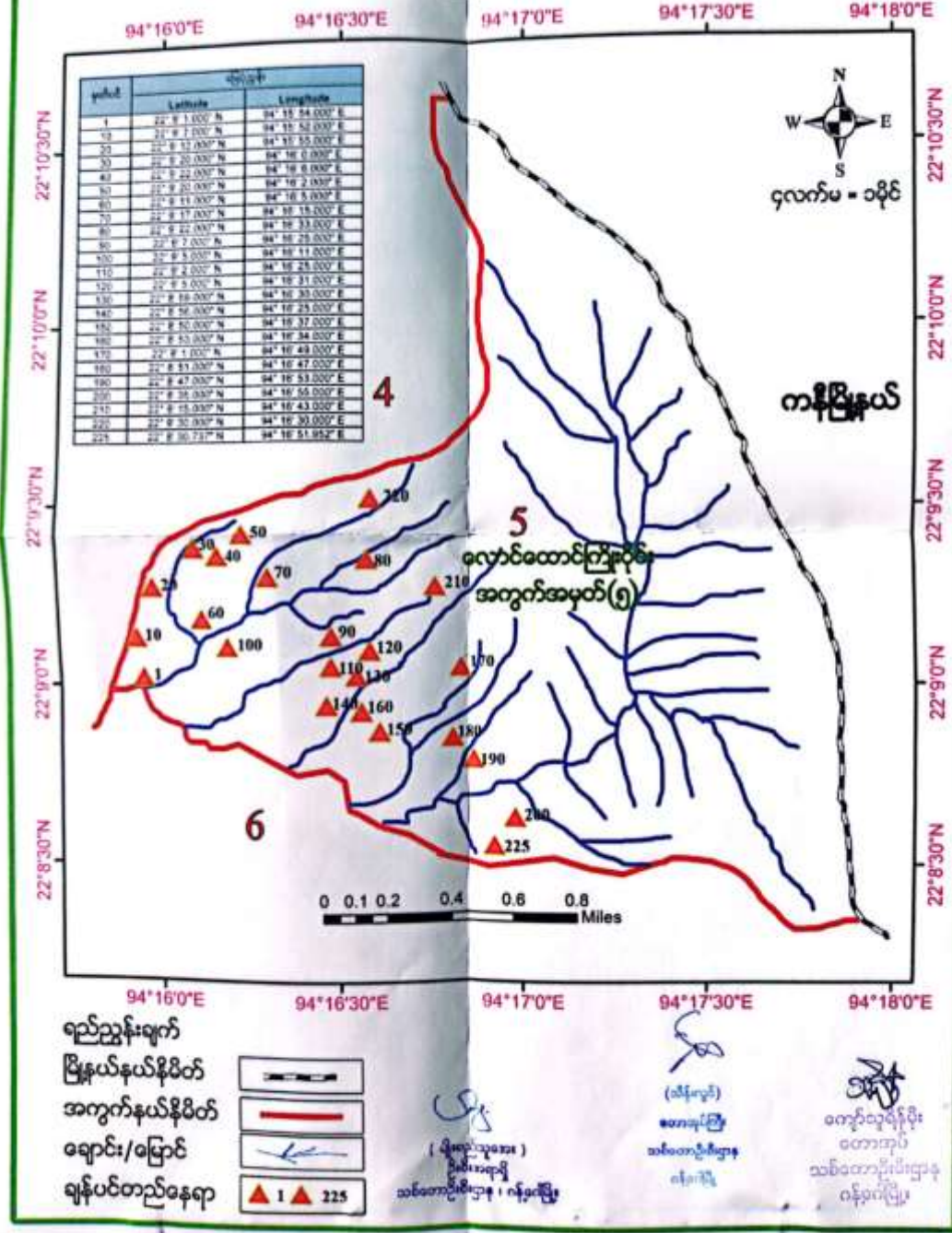
မှတ်ပင်နံပါတ် - (၇)..... TO (၂၂၅).....

Marked No.

စာအုပ်အမှတ် 00129
(Serial No.)

5. Marking Note Cover _ Map(LH-5)

၂၀၁၉-၂၀၂၀ ဘဏ္ဍာရေးနှစ်တွင် ဂန့်ဂေါမြို့နယ်၊ သစ်တောဦးစီးဌာန၊ လောင်ထောင်ကြီးပိုင်း အတွက်အမှတ်(၅)အတွင်း ကျွန်းစိပ်ထောင်ရှိက်မှတ်ခြင်း ဆောင်ရွက်ခဲ့သည့် မှတ်ပင်တည်နေရာပြမြေပုံ



5. Marking Note Cover _ Map(LH-5)

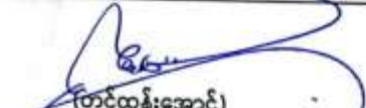
ဂန့်ဂေါသစ်ထုတ်ရေးဒေသရုံး
 မကွေးတိုင်းဒေသကြီး
 သစ်ထုတ်ရေးဌာန
 မြန်မာ့သစ်လုပ်ငန်း
 ဂန့်ဂေါမြို့
 စာအမှတ်၊ ၁၆၄၈ / သထ (ဂ) ၁၂ ။
 ရက်စွဲ ၂၀၂၀ ပြည့်နှစ်၊ ဇူလိုင်လ ၂၉ ရက်။

သို့
 လက်ထောက်ညွှန်ကြားရေးမှူး
 ခရိုင်သစ်တောဦးစီးဌာန
 ဂန့်ဂေါခရိုင်၊ ဂန့်ဂေါမြို့။

အကြောင်းအရာ။ ။ ကွင်းဝင်ခွင့်ပြုပါရန်ကိစ္စ။
 ရည်ညွှန်းချက် ။ ။ အထွေထွေမန်နေဂျာ(သစ်ထုတ်ရေး) ၏ ၂၃.၇.၂၀၂၀ ရက်စွဲပါစာအမှတ် - ၈၇၂၈/
 သထရ/ သထ (ဂ) ၁ ။

အကြောင်းအရာပါကိစ္စနှင့်ပတ်သက်၍ ဂန့်ဂေါသစ်ထုတ်ရေးဒေသ ၊ ကျောတခန်း/ မြစ်သာ / မိုးစိုနယ်
 တို့မှ ၂၀၂၀/၂၀၂၁ ခုနှစ် သစ်ထုတ်ရာသီအတွင်း အောက်ဖော်ပြပါ သစ်ကွက်များမှ ခုတ်လှဲနိုင်ရန် အတွက်
 (၁ .၈.၂၀၂၀)ရက်နေ့မှစ၍ ကွင်းဝင်ခုတ်လှဲ ထုတ်လုပ်ခွင့်ပြုပါရန် မေတ္တာရပ်ခံအပ်ပါသည်။

စဉ်	မြို့နယ်	သင်းသတ်/မှတ်ရိုက်နှစ်	ကြီးဝိုင်း/ကြီးပြင်	သစ်ကွက်	သစ်မျိုး
၁။	ဂန့်ဂေါ	၂၀၁၉-၂၀၂၀	လောင်ထောင်	၅	ကျွန်း/သစ်မာ
		၂၀၁၉-၂၀၂၀	လောင်ထောင်	၂၂	ကျွန်း
		၂၀၁၉-၂၀၂၀	ထုံးကျောက်	၄၇	သစ်မာ
		၂၀၁၉-၂၀၂၀	ထုံးကျောက်	၄၈	သစ်မာ
		၂၀၁၉-၂၀၂၀	ကွမ်းခဲ	၃၂	ကျွန်း
		၂၀၁၉-၂၀၂၀	ကွမ်းခဲ	၃၆	ကျွန်း/သစ်မာ


 (တင်ထွန်းအောင်)
 လက်ထောက်အထွေထွေမန်နေဂျာ(သစ်ထုတ်ရေး)

မိတ္တူကို
 ဒုတိယအထွေထွေမန်နေဂျာ၊ မကွေးတိုင်းဒေသကြီး ၊ မကွေးမြို့။
 နယ်တာဝန်ခံ (ကျောတခန်း/မြစ်သာ/မိုးစို)နယ်
 ညာစာရင်းဌာနစိတ်၊ ဒေသရုံး။/အကွက်ပိုင်။
 မျှောစာတွဲ။/ ရုံးလက်ခံ။

Acer-3 Timber P-32

6. Entry Request

လက်ထောက်ညွှန်ကြားရေးမှူးရုံး
သစ်တောဦးစီးဌာန ဂန့်ဂေါ်ခရိုင်
ကွင်းဝင်ခွင့်ပြုခြင်း



ကွင်းဝင်ခွင့်ပြုမိန့်အမှတ်၊ ၁ / ၂၀၁၉-၂၀၂၀။
၂၀၂၀ ခုနှစ်၊ ဇူလိုင်လ (၃၀) ရက်။

- ၁။ စာချုပ်အမှတ်နှင့်ရက်စွဲ - လက်ထောက်အထွေထွေမန်နေဂျာ ၊ မြန်မာ့သစ်လုပ်ငန်းဂန့်ဂေါ်သစ်ထုတ်ရေးဒေသ(၂၉.၇.၂၀၂၀) ရက်စွဲပါ စာအမှတ်၊ ၁၆၄၀ /သထ(ဂ)၁၂။
- ၂။ ထုတ်လုပ်ခွင့်ရယူသူအမည် - ဂန့်ဂေါ်သစ်ထုတ်ရေးဒေသ(မိုးစိုနယ်/မြစ်သာနယ် ၊ ကျောတစန်းနယ်)
- ၃။ နေရပ်လိပ်စာ - ဂန့်ဂေါ်သစ်ထုတ်ရေးဒေသ ၊ ဂန့်ဂေါ်မြို့
- ၄။ ထုတ်လုပ်ခွင့်ပြုကြိုးဝိုင်း/အကွက်များ- လောင်ထောင်ကြိုးဝိုင်းအကွက်(၅၊ ၂၂) ကွမ်းခဲကြိုးဝိုင်း အကွက် (၃၂၊ ၃၆) ထုံးကျောက်ကြိုးဝိုင်းအကွက်(၄၇၊ ၄၈)
- ၅။ ထုတ်လုပ်ခွင့်ပြုသစ်များ - ကျွန်းစို (၇၀၀)ပင် ၊ သစ်မာ (၅၉၃)ပင် (အသေးစိတ်စာရင်း ပူးတွဲ)
- ၆။ မှတ်ပုံတင်ပြီးမြန်မာ့သစ်လုပ်ငန်းတံဆိပ်
- ၇။ ခုတ်လှဲပြီးသစ်များတံဆိပ်ရှိမှတ် - (၇၂)နာရီအတွင်း ရန် ကာလ
- ၈။ စစ်ရိုက်ရန်နေရာ - အကွက်အတွင်း
- ၉။ အကောက်ရိုက်ရန်နေရာ - စုပုံတိုင်းဆိပ်
- ၁၀။ ဘီလ်ပြေစာထုတ်ရန် - -
- ၁၁။ စာချုပ်သက်တမ်း - (၁.၄.၂၀၂၀) မှ (၃၁.၅.၂၀၂၁) ထိ
- ၁၂။ ကွင်းဝင်ခွင့်ပြုသည့်ကာလ - (၁.၈.၂၀၂၀) မှ (၃၁.၅.၂၀၂၁) ထိ
- ၁၃။ ကွင်းဝင်ခွင့်ပြုသည့် ကြိုးဝိုင်း/အကွက်အတွင်း ဆင်ကွင်းဝင်ခွင့်နှင့်အတူ ကျွန်းစိုနှင့် သစ်မာ ထုတ်လုပ်ခြင်းအား လုပ်ထုံးလုပ်နည်း ညွှန်ကြားချက်နှင့်အညီ ကွင်းဝင်၍ ထုတ်လုပ်ရန် ပူးတွဲပါယာဉ်များအား ကွင်းဝင်ထုတ်လုပ်ခွင့် ပြုလိုက်သည်။

(Signature)
(ဝင်းမြင့် - ၅)
လက်ထောက်ညွှန်ကြားရေးမှူး
ခရိုင်သစ်တောဦးစီးဌာန-ဂန့်ဂေါ်မြို့

စာအမှတ်၊ ၆၀၉၃ - ၈၆ /အ(စာ)၆။
ရက် စွဲ၊ ၂၀၂၀ ခုနှစ်၊ ဇူလိုင်လ (၃၀)ရက်။

7. Entry Permit

FORM D
MYANMA TIMBER ENTERPRISE
EXTRACTION DEPARTMENT
AGENCY
MEASUREMENT BOOK

Commodity - Green Teak
 Book No. - I
 Extraction Year - 2020 - 2021
 District / Township (FD) - Magway District / CamGaw Township
 Agency Classification Hammer Mark - ၁၂၀
 Reserved Forest & Compartment - Laung Hlaung
 Protected Public Forest & Sub-Coupe - (၄)
 Measured by Range In-charge - U. Win Mying (Asst. Mgr)
 Date of Measurement - 7. 12. 2020
 Serial No. of logs measured by MTE - 1 to 500
 Serial No. of logs measured by FD - 1 to 335
 AEG to 540
 Total Number of Logs - 500 Logs
 Total Volume of Log(tons) - 204. 622 Ton.

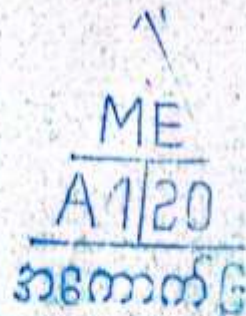


Personal Hammer Mark by Range In-charge (MTE)

U. Win Mying (Asst. Mgr)



Agency Classification Hammer Mark (MTE)



Revenue Hammer Mark (FD)

8. form D Cover _ List(LH-5)(51-75)

Sr. No	Species	Group	Measurement				Standing Tree No/ Log No	Revenue No.	Remarks
			Length (Feet)	Girth		Cubit Feet			
				ft	in				
1	2	3	4	5	6	7	8	9	10
51	ပဲခူး	(ခတ်)	19	5	0	29.7	01/2	51	
2	ပဲခူး	ခတ်	17	5	10	36.2	01/1	52	
3	ပဲခူး	ခတ်	17	5	9	35.1	4/1	53	
4	ပဲခူး	ခတ်	23	4	7	30.2	4/2	54	
5	ပဲခူး	ခတ်	26	3	6	19.9	4/3	55	
6	ပဲခူး	ခတ်	24	4	2	26.0	29/3	56	
7	ပဲခူး	ခတ်	16	5	9	33.1	20/1	57	
8	ပဲခူး	ခတ်	14	4	9	19.7	27/3	58	
9	ပဲခူး	ခတ်	15	6	2	35.7	23/1	59	
10	ပဲခူး	ခတ်	19	4	5	23.2	24/2	60	
11	ပဲခူး	ခတ်	17	5	1	27.5	29/1	61	
12	ပဲခူး	ခတ်	16	5	9	33.1	27/1	62	
13	ပဲခူး	ခတ်	17	4	10	24.8	27/2	63	
14	ပဲခူး	ခတ်	15	4	9	21.2	29/2	64	
15	ပဲခူး	ခတ်	15	5	2	25.0	26/2	65	
16	ပဲခူး	ခတ်	23	5	5	42.2	25/2	66	
17	ပဲခူး	ခတ်	13	4	6	16.5	25/3	67	
18	ပဲခူး	ခတ်	19	6	1	43.9	25/1	68	
19	ပဲခူး	ခတ်	21	4	4	24.6	23/3	69	
20	ပဲခူး	ခတ်	18	5	4	32.0	23/2	70	
1	ပဲခူး	ခတ်	17	6	2	40.4	56/1	71	
2	ပဲခူး	ခတ်	19	5	3	32.7	56/2	72	
3	ပဲခူး	ခတ်	22	4	9	31.0	56/3	73	
4	ပဲခူး	ခတ်	18	4	5	21.9	22/2	74	
75	ပဲခူး	ခတ်	19	5	2	31.7	22/1	75	

Total Cubic Feet	737.3
Total Ton	14.746
Total Logs	25


 Myo Thira Kyaw
 Timber Ranger(Extraction)
 Seal by MTE in-charge


 (Thin Lwin)
 Range Officer
 Seal by FD in-charge
 Forest Department

8. form D Cover _ List(LH-5)(51-75)

Myanma Timber Enterprise

Extraction Department

၆၀၇ (၆၁၁) Extraction Agency

Original
217209

Trucking Note (Department/Hireling)

From Laung Htaung(5) To Lema Depot
 Truck No 6B/9287 Driver Name Ang Myint
 Trucking Series _____ Date 16.1.2021

Sr. No	Species	Revenue Number	Standing Tree/log No	Measurement		
				Length	Girth	Cu. ft
1	ကွန်ပိုသစ်	66	25/2	23	5.5	42.2
2	"	68	25/1	19	6.1	43.9
Total Cu ft						86.1
Total Logs/Ton				2		1.722

Sign of Transfer [Signature]
 Name Mya Thih Kyaw
 Position Timber Ranger(Extraction)

Received of logs(2)Nos
 Sign of Received [Signature]
 Name Nyein Zaw
 Position Timber Ranger(Extraction)

9. Laung Htaung 5 to Lema Depot_Part58



8.2.21

Myanma Timber Enterprise
Extraction Department
Gangaw... Extraction Agency
Original
217632

Trucking Note (Department/Hireling)

From Lema Depot To Sin Min Depot
Truck No 3L/4319 Driver Name Saw Lin
Trucking Series (19) Date 7.2.2021

Sr. No	Species	Revenue Number	Standing Tree/log No	Measurement		
				Length	Girth	Cu. ft
1	ကျွန်း သစ်	100	26 53/1	16	6.3	39.1
2	n	99	2 29/1	15	5.8	30.1
3	n	110	3 31/1	17	5.1	27.5
4	n	107	4 053/2	14	4.0	14.0 (ဒုတိယ)
5	n	68	5 25/1	19	6.1	43.9
6	n	96	6 55/1	22	5.3	37.9
7	n	60	7 24/2	19	4.5	23.2
8	n	90	8 29/3	18	4.1	18.8
9	n	95	9 53/3	15	4.8	20.4
10	n	109	20 31/2	18	4.8	24.5
11	n	108	1 31/3	16	3.9	14.1
12	n	102	2 60/1	17	6.4	42.6
13	n	106	3 053/1	20	4.7	26.3 (ဒုတိယ)
14	n	147	4 51/2	17	4.6	21.5
15	n	97	5 55/2	17	4.9	24.0
Total Cu ft						
Total Logs/Ton						

Received of logs()Nos

Sign of Transfer (Signature) Name သက်စုတ် (သက်ထုတ်စုတ်) Position လယ်ယာစီမံခန့်ခွဲရေးဦးစီးဌာန

Sign of Received (Signature) Name သက်စုတ် (သက်စုတ်) Position လယ်ယာစီမံခန့်ခွဲရေးဦးစီးဌာန

10. Lema Depot to Sin Min Depot_Part33

မြန်မာ့သစ်လုပ်ငန်း (သစ်ထုတ်ရေးဌာန)

မျှောစာ

Lot-4/SM

"၂၀၂၀-၂၀၂၁ ဘဏ္ဍာနှစ် ပြည်ပရောင်းဌာနအတွက်ပေးပို့ခြင်း"

ဂန့်ဂေါသစ်ထုတ်ရေးဒေသ၊ ၂၀၂၀-၂၀၂၁ ထုတ်သစ်

ချင်းတွင်းဖောင်ဖွဲ့ရေးဒေသ

ညောင်ဦးဖောင်ဖွဲ့ရေးနယ်၊ဆင်မင်းသစ်ဆိပ်

(သစ်ဖောင်များအတွက် မျှောစာတစ်စောင် သစ်တောအရာရှိကဖြစ်စေ၊အကောက်အရာရှိကဖြစ်စေ၊ရဲအရာရှိကဖြစ်စေ မေးလျှင်ပြရမည်)

၁။ မျှောစာနံပါတ် ၂၀၂၀-၂၁ ထုတ်ပေးသည့်နေ့စွဲ ၂၀၂၀-၀၅-၂၁ ထုတ်ပေးသူ လ/ထမန်နေဂျာ.....
ကန်ထရိုက်တာ ဦးစော်လွင်ဦး၊ ၈/ခမန(နိုင်)၁၂၃၄၅..... အေးချမ်းရွှေပြည်..... ဖောင်ခေါင်း
ကျွန်း..... သစ်လုံးရေ ၁၄၂၂လုံး..... ပူးတွဲပါအတိုင်းစာရင်းအရ တန်ပေါင်း ၇၇၀.၁၂၈ တန်.....
ဒူးခရီးတွင်ဆင်တောကဏ္ဍရှိ (၁) ခုအစီရင်ခံစာ
ဒူးခရီးတွင်ဆင်တောကဏ္ဍရှိ (၁) ခုအစီရင်ခံစာ

၂။ လမ်းခရီးတွင် စစ်ဆေးခံရန် ရပ်ဆိုင်းရမည့် သစ်ဆိပ်များ-
(၁).....ပခုတ္တူ..... (၂).....ချောက်..... (၃).....မကွေး..... (၄).....မိချောင်းရဲ..... (၅).....ပြည်..... သစ်ဆိပ်များ

စစ်ဆေးခြင်းများ အစီရင်ခံစာ အမှတ် ၈၇ ရက်စွဲ ၂၀၂၀.၀၅.၂၁	စစ်ဆေးသည့်အကြောင်းအရာ				
	နေ့စွဲ	စစ်ဆေးသောအရာရှိ	ပျောက်ဆုံးသောသစ်လုံးများ		
			နံပါတ်စဉ်များ	ပေါင်း	ကုဗပေ

သစ်မျိုး	လုံး	ထန်	စဉ်	တွဲအမှတ်	တင်ဆောင်နိုင်သည့်တန်	တင်ဆောင်သည့်တန်	မှတ်ချက်
ကျွန်းသစ်	၁၄၁၄	၇၆၅၁၃၆	၁	ထွန်းသင်္ဘော	သတ်မှတ် Load Line	၁၆,၉၄၈	
ကျွန်းသစ်(နတ်သတ်)	၈	၄၉၉၂	၂	OB - 544	ထက်မကျော်လွန်ရန်	၇၅၃.၁၈၀	
စုစုပေါင်း	၁၄၂၂	၇၇၀.၁၂၈			စုစုပေါင်း	၇၇၀.၁၂၈	

၃။ သင်္ဘောသည်.....သစ်ဆိပ်သို့သွားရမည်။ ရောက်သည့်နေ့.....

၄။ ဖောင်တွင်ပါသော သစ်အားလုံးပေါ်၌ ရိုက်ထားသည့် တံဆိပ်အမှတ်သားများ

၅။ ဖောင်ဖွဲ့သောတံဆိပ်နောက်မှ ရိုက်ထားသည့် သစ်လုံးနံပါတ်စဉ်မှ.....သို့ မူလမျှောစာပါ အတိုင်းစာရင်းအရ မျှောစာထုတ်ပေးပါသည်။

ရည်ညွှန်းချက်။ ။(၁) အထွေထွေမန်နေဂျာ သစ်ထုတ်ရေး၏ (၃.၁၂.၂၀၂၀) ရက်စွဲပါစာအမှတ် ၁၃၉၇/သထရ/သထ(ဂ)၁။



..... (မျိုးမင်းကို) မျှောစာထုတ်ပေးသည့် အရာရှိလက်မှတ်
..... လက်ထောက်မန်နေဂျာ(ဖောင်ဖွဲ့ရေး)

မိတ္တူ ၁ နှင့် ပုံစံ က-ပ သည် ဖောင်ခေါင်းလက်တွင်ရှိရမည်။ ၎င်းတို့နောက်ဆုံးသစ်ဆိပ်တွင်ထားရန်။
မိတ္တူ ၂ နှင့် ပုံစံ က-ပ ကို၊ စာတိုက်က ရန်ကုန်မြို့၊ မြန်မာ့သစ်လုပ်ငန်းသို့ နောက်ဆုံးသစ်ဆိပ်သို့ တာဆင့်ပို့ရန်။
ပို့ရမည့် နောက်ဆုံးသစ်ဆိပ်က ဖောင်များကို စစ်ဆေးပြီးလျှင်ပြီးခြင်း ကျောဘက်တွင်ရေးသွင်း၍
မျှောစာထုတ်ပေးသည့် ဆိုင်ရာ..... မန်နေဂျာထံသို့ တိုက်ရိုက်ပို့ရမည်။
မိတ္တူ ၃ ကို မိမိနယ်သစ်တောဝန်ထံသို့ ပို့ရမည်။
မိတ္တူ ၄ နှင့် ပုံစံ က-ပ ရုံးလက်ခံထား။

ကားတင်၊ ကားတိုက်၊ ကားချ၊ ကမ်းယာဉ်နှင့် ကရိန်းတင်လုပ်ငန်းများအား တင်ခါအောင်မြင်သူ၏ အစီအစဉ်ဖြင့် ဆောင်ရွက်ပါသည်။

ရရှိကြောင်းထိုးသည့် ရေယာဉ်အုပ်လက်မှတ်
ဦးစော်လွင်ဦး
ရေယာဉ်အုပ်

မြန်မာ့သစ်လုပ်ငန်း (သစ်ထုတ်ရေးဌာန)

မျှောစာ

Lot-4/SM

"၂၀၂၀-၂၀၂၁ ဘဏ္ဍာနှစ် ပြည်ပရောင်းဌာနအတွက်ပေးပို့ခြင်း"

ဂန့်ဂေါသစ်ထုတ်ရေးဒေသ၊ ၂၀၂၀-၂၀၂၁ ထုတ်သစ်

ချင်းတွင်းဖောင်ဖွဲ့ရေးဒေသ

ညောင်ဦးဖောင်ဖွဲ့ရေးနယ်ဆင်မင်းသစ်ဆိပ်

(သစ်ဖောင်များအတွက် မျှောစာတစ်စောင် သစ်တောအရာရှိကဖြစ်စေ၊အကောက်အရာရှိကဖြစ်စေ၊ရဲအရာရှိကဖြစ်စေ မေးလျှင်ပြရမည်)

၁။ မျှောစာနံပါတ် ၂၀၂၀-၂၁ ထုတ်ပေးသည့်နေ့စွဲ ၂၂-၅-၂၀၂၁ ထုတ်ပေးသူ လ/ထမန်နေဂျာ.....

ကန်ထရိုက်တာ ဦးစော်လွင်ဦး၊ ရ/ခမန(နိုင်)၁၂၃၈၄၀..... အေးချမ်းရွှေပြည် ဖောင်ခေါင်း

ကျွန်း..... သစ်လုံးရေ ၁၄၂၂ လုံး..... ပူးတွဲပါအတိုင်းစာရင်းအရ တန်ပေါင်း ၇၇၀.၁၂၈ တန်

ဖွဲ့စည်းထုတ်သစ်တောဌာန (လှိုင်) ရန်ကင်း

ဒီစော့ထွင်သစ်စော့ထွင်

၂။ လမ်းခရီးတွင် စစ်ဆေးခံရန် ရပ်ဆိုင်းရမည့် သစ်ဆိပ်များ-

(၁) ပခုက္ကူ..... (၂) ချောက်..... (၃) မကွေး..... (၄) မိချောင်းရဲ..... (၅) ပြည်..... သစ်ဆိပ်များ

စစ်ဆေးသည့်အကြောင်းအရာ	စစ်ဆေးသောအရာရှိ			
	နေ့စွဲ	စစ်ဆေးသောအရာရှိ	ပျောက်ဆုံးသောသစ်လုံးများ	
			နံပါတ်စဉ်များ	ပေါင်း

သစ်မျိုး	လုံး	ထန်	စဉ်	တွဲအမှတ်	တင်ဆောင်နိုင်သည့်တန်	တင်ဆောင်သည့်တန်	မှတ်ချက်
ကျွန်းသစ်	၁၄၁၄	၇၆၅၁၃၆	၁	တွန်းသင်္ဘော	သတ်မှတ် Load Line	၁၆,၉၄၈	
ကျွန်းသစ်(နတ်သတ်)	၈	၄၉၉၂	၂	OB - 544	ထက်မကျော်လွန်ရန်	၇၅၃၁၈၀	
စုစုပေါင်း	၁၄၂၂	၇၇၀၁၂၈			စုစုပေါင်း	၇၇၀.၁၂၈	

၃။ သင်္ဘောသည်..... သစ်ဆိပ်သို့သွားရမည်။ ရောက်သည့်နေ့.....

၄။ ဖောင်တွင်ပါသော သစ်အားလုံးပေါ်၌ ရိုက်ထားသည့် တံဆိပ်အမှတ်သားများ

၅။ ဖောင်ဖွဲ့သောတံဆိပ်နောက်မှ ရိုက်ထားသည့် သစ်လုံးနံပါတ်စဉ် မှ..... သို့ မူလမျှောစာပါ အတိုင်းစာရင်းအရ မျှောစာထုတ်ပေးပါသည်။

ရည်ညွှန်းချက်။

။(၁) အထွေထွေထမန်နေဂျာ သစ်ထုတ်ရေး၏ (၃.၁၂.၂၀၂၀) ရက်စွဲပါစာအမှတ်

၁၃၉၂၇/သထရ/သထ(ဂ)၁။



မျှောစာထုတ်ပေးသည့် အရာရှိလက်မှတ်..... (မျိုးမင်းကို) လက်ထောက်မန်နေဂျာ(ဖောင်ဖွဲ့ရေး)

မိတ္တူ ၁ နှင့် ပုံစံ က-ပ သည် ဖောင်ခေါင်းလက်တွင်ရှိရမည်။ ၎င်းတို့နောက်ဆုံးသစ်ဆိပ်တွင်ထားရန်။
မိတ္တူ ၂ နှင့် ပုံစံ က-ပ ကို၊ စာတိုက်က ရန်ကုန်မြို့၊ မြန်မာ့သစ်လုပ်ငန်းသို့ နောက်ဆုံးသစ်ဆိပ်သို့ တဆင့်ပို့ရန်။
ပို့ရမည့် နောက်ဆုံးသစ်ဆိပ်က ဖောင်များကို စစ်ဆေးပြီးလျှင်ပြီးခြင်း ကျောဘက်တွင်ရေးသွင်း၍
မျှောစာထုတ်ပေးသည့် ဆိုင်ရာ..... မန်နေဂျာထံသို့ တိုက်ရိုက်ပို့ရမည်။
မိတ္တူ ၃ ကို မိမိနယ်သစ်တောဝန်ထံသို့ ပို့ရမည်။
မိတ္တူ ၄ နှင့် ပုံစံ က-ပ ရုံးလက်ခံထား။

ကားတင်၊ ကားတိုက်၊ ကားချ၊ ကမ်းယှဉ်နှင့် ကရိန်းတင်လုပ်ငန်းများအား တင်ဒါအောင်မြင်သူ၏ အစီအစဉ်ဖြင့် ဆောင်ရွက်ပါသည်။

ရရှိကြောင်းထိုးသည့် ရေယာဉ်အုပ်လက်မှတ်..... ဦးစော်လွင်ဦး ရေယာဉ်အုပ်

Myanma Timber Enterprise, Extraction Department
Logs Specification Described in Removal Pass

Removal Pass 1120-21 Date 29-5-21 Range - Nyaung Oo Depot - Sin Min

Sl.No	Species	Measurement				Standing Tree No/Log No	Agency Hammer Mark	Extraction Year	Revenue No.	Revenue Mark
		Length(Feet)	Girth		Culbit Feet					
			FT	INCH						
1	2	3	4	5	6	7	8	9	10	11
1	Teak	21	3	9	18.5	23/4	*J၁	2020-2021	89	ME/A1/20
2	Teak	24	4	2	26.0	26/3	*J၁	2020-2021	56	ME/A1/20
3	Teak	22	5	0	34.4	19/1	*J၁	2020-2021	77	ME/A1/20
4	Teak	21	4	1	21.9	32/3	*J၁	2020-2021	85	ME/A1/20
5	Teak	15	3	9	13.2	19/3	*J၁	2020-2021	76	ME/A1/20
6	Teak	16	6	3	39.1	53/1	*J၁	2020-2021	100	ME/A1/20
7	Teak	15	5	8	30.1	29/1	*J၁	2020-2021	99	ME/A1/20
8	Teak	17	5	1	27.5	31/1	*J၁	2020-2021	110	ME/A1/20
9	Teak	19	6	1	43.9	25/1	*J၁	2020-2021	68	ME/A1/20
10	Teak	22	5	3	37.9	55/1	*J၁	2020-2021	96	ME/A1/20
11	Teak	19	4	5	23.2	24/2	*J၁	2020-2021	60	ME/A1/20
12	Teak	18	4	1	18.8	29/3	*J၁	2020-2021	90	ME/A1/20
13	Teak	15	4	8	20.4	53/3	*J၁	2020-2021	95	ME/A1/20
14	Teak	18	4	8	24.5	31/2	*J၁	2020-2021	109	ME/A1/20
15	Teak	16	3	9	14.1	31/3	*J၁	2020-2021	108	ME/A1/20
16	Teak	17	6	4	42.6	60/1	*J၁	2020-2021	102	ME/A1/20
17	Teak	17	4	6	21.5	51/2	*J၁	2020-2021	147	ME/A1/20
18	Teak	17	4	9	24.0	55/2	*J၁	2020-2021	97	ME/A1/20
19	Teak	17	3	10	15.6	30/3	*J၁	2020-2021	105	ME/A1/20
20	Teak	22	4	11	33.2	54/2	*J၁	2020-2021	112	ME/A1/20
21	Teak	14	5	4	24.9	105/1	*J၁	2020-2021	656	ME/A1/20
22	Teak	17	4	7	22.3	136/2	*J၁	2020-2021	482	ME/A1/20
23	Teak	16	5	3	27.6	129/2	*J၁	2020-2021	481	ME/A1/20
24	Teak	16	5	8	32.1	92/1	*J၁	2020-2021	533	ME/A1/20
25	Teak	18	6	3	43.9	127/1	*J၁	2020-2021	551	ME/A1/20
Total Cubic Feet					681.2					
Total Tons					13.624					
Total Logs					25					

နယ်တာဝန်ခံ

(မျိုးမင်းရှိ)

လက်ထောက်မန်နေဂျာ(ပောင်ပွဲရေး)
ညောင်ဦးပောင်ပွဲရေးနယ်

ရေယာဉ်အုပ်အမည်

စက်ခန်းအုပ်အမည်

ရေယာဉ်ကိုယ်စားလှယ်

ဘိနယ်တာဝန်ခံ

သစ်ဆိပ်တာဝန်ခံ

(ခေင်လွင်ဦး)
အခ - ၀၈၀/၁၇

(မြင့်အောင်)
စမပ - ၁၃၈/၁၄

(မြင့်အောင်)
စမပ - ၁၃၈/၁၄

(နယ်တာဝန်ခံ)
ညောင်ဦးပောင်ပွဲရေးနယ်
အမှုဆောင်အဖွဲ့
WAM

သန်းမင်း(စိစစ်အုပ်)
ညောင်ဦးပောင်ပွဲရေးနယ်
ဆင်မင်းသစ်ဆိပ်တာဝန်ခံ