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Wood Processing Sector in Lao PDR and the Legality Compliance

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This Training Manual is designed in the framework of the Woodwork Project. The Woodwork Project is supported technically and financially by GIZ-ProFEB, ACIAR and the UN-REDD Lower Mekong Initiative and coordinated by FLEGT Standing Office of Lao PDR.

The Project aims to prepare the wood processing sector in Lao PDR towards compliance with the national timber legality requirements and ensure economic viability within wood processing sector by strengthening internal management systems and production efficiency of wood processing enterprises.

This will be achieved through the development of a comprehensive training package in support of the FLEGT VPA process in Lao PDR as well as the Lao wood processing sector export roadmap, and the forest strategy of Lao PDR.

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MODULE 1: PRINCIPLES AND REGULATIONS ON LEGAL TIMBER CONTROL

1.1 Overview of Training Concept and Objective

1.1.1 General Introduction

The Lao government has been negotiating the Voluntary Partnership Agreement (VPA) with the European Union (EU) and implementing the Forest Law Enforcement, Governance and Trade (FLEGT) in the passing years with huge efforts to reduce illegal logging for reaching the goal of sustainable forest management.

In line with the objectives of the FLEGT process, Lao PDR has issued many regulations restricting the export of wood and wood products to promote domestic wood processing. Among these measures, the most remarkable is the Prime Minister Order No. 15.

PMO 15 has had a structural impact on the wood processing sector. After the issuance of PMO 15, the availability of raw material for the primary and secondary processing and exporting industry has declined. The number of wood processing factories has dropped, including sawmills, wood processors and furniture manufacturers. Wood furniture manufacturing output has also declined.

Regardless of how hard the Lao government and many international partners/projects trying to introduce the FLEGT/VPA concept in the country, the majority of Lao wood processing sector is still lacking this knowledge and the application of good internal management system in companies. This leads to the low capacity and competences of the Lao wood processing sector to meet the government's legal requirements stipulated in the Lao Timber Legality Assurance System (Lao TLAS) and the demand of the international markets, especially the European markets where the VPA aims to bring timber products from Laos to enter after the VPA has been signed and Lao wood processing companies have had the FLEGT license to export.

1.1.2 Objective

This training programme is designed to support the wood processing companies in Lao PDR to comply with the national timber legality requirements and strengthen their internal management system and production efficiency through the application of input/output monitoring in their production. This will help companies increase their production capacity and be able to export of legal timber products following the requirements of the current Voluntary Partnership Agreement (VPA) that the Lao government is negotiating with the EU. The focus of this capacity training program is to equip companies with knowledge about the FLEGT/VPA, legal requirements for the supply chain and improve the skills of production supervisors through expanding their qualification.

The skills of supervisors can be improved through:

- awareness of FLEGT/VPA and compliance with legal requirements for wood processing supply chain control
- more knowledge about internal management system where input/output of each section is monitored to ensure traceability in the timber supply chain and to support production efficiency
- more knowledge about structure, organization, function, and process of a production company

- improvement of the ability to manage and motivate workers according to the objectives of the enterprise
- being aware of and understanding better about the costs and measures to reduce costs

1.1.3 Training Packages

Training of Trainers (ToT): Participants are provided knowledge on FLEGT/VPA and legal requirements for the wood processing supply chain and knowledge on an internal management system focusing on input/output monitoring and production efficiency. In order to transfer this knowledge to other people, these ToT participants will be provided extra knowledge and skills on pedagogical methods to later conduct training courses to wood processing companies. A separate pedagogical training course with separate training manual will be provided to TOT participants. The pedagogical training manual is part of this training manual for the TOT training package.

Ordinary Training (Training for Wood Processing Operators): Participants are production managers/supervisors coming from wood processing companies. These participants will receive training conducted by trainers who have received training from the TOT package. The content for this ordinary training will be the same as for the TOT package above but without the part for the pedagogical training.

The contents for the ToT Training and Ordinary Training will be similar, except that within the Training of Trainers, participants will be provided more knowledge with a deeper and wider range of contents, including the pedagogical methods so that after the training these participants can provide training to companies through the ordinary training program for production managers/supervisors from wood processing companies.

This training manual will be used for both the TOT Training and Ordinary Training. At the Ordinary Training, trainers can decide the order of topics and number of days for their training, provided that the maximum days for one training course is not more than five (5) days, including one (1) day to visit a company that has a good system of chain of custody (CoC) or internal management system in place. With this visit, participants have a chance to observe and learn how the internal management system or input/output monitoring is implemented in a company and reflect what participants have learned in the training course.

It is suggested that for the Ordinary Training, there should be two Blocks. Block 1 includes Module 1 and Module 3. Block 2 includes Module 2 and Module 4. Between Block 1 and Block 2, there should be a break time of three to four weeks for participants to implement their improvement projects at their companies. When participants come back to participate in Block 2, they can present their improvement projects with what and how they have applied the knowledge they learn from the training to improve their areas of work that need improvement in their company.

This training manual is designed in four (4) Modules and supported by PowerPoint presentations with hand-outs, guidelines, and instructions for different topics in the manual. Trainers from the TOT Training can use this training manual together with the pedagogical training manual for designing their training. Trainees/production managers can also use this training manual as guidelines for any areas of work in their companies that need improvement with topics related to this training programme.

Part of the content in this training manual uses the information (including figures, graphs, tables) provided by GIZ/ProFEB.

1.1.4 Methodology

During the training course, the following methods will be applied:

- Theoretical lessons to provide basic knowledge
- Study and analysis of practical lessons, in which the trainees participate in
- Role plays among trainees, under the instructions of trainers
- Observation and presentation of specific processes within the companies of the participants, with an analysis of strengths and weaknesses.

The knowledge about other areas within a company is very important to create and ensure a feedback culture, which will result into continuous improvements. The participants will analyze the following:

- Description of processes
- Case studies
- Description of areas which require more attention
- Description of the problems relating:
  - ✓ Raw material
  - ✓ Production aspects
  - ✓ Auxiliary materials
  - ✓ Products
  - ✓ …

Different methods such as theoretical and practical, analysis and synthesis, active and passive participation will be used in this training. Apart from these activities during the course, the trainees will also implement their learning in their company with an improvement project they select by themselves.

In order to create a convenient environment for the introduction of participants, 2 participants are put together for a conservation. They will introduce and interview themselves among each other. The information will be recorded on cards and is put on the board.

(PowerPoint presentation with content extracted from this training manual will be explained in the class. Handouts will be printed out for participants to follow)

Exercise (60 minutes)

Participants work in pairs (two participants form a group) to introduce themselves and discuss to each other for 15 minutes about the information listed below. A participant should select a partner he/she does not know. 45 minutes is for all the pairs to present their discussion. Participants do not introduce themselves but in pair one must introduce his/her partner. This will help create an initial relationship between the two participants in each pair and that they can remember their partners.

- Participant's name
- Company

- Position
- Expectations from the training course
- What are the 3 main problems in your work, and which one has the priority to be solved? (This will connect later to the participant's selection for improvement project)
- What is functioning well at your workplace and what is less problematic?

1.2 Introduction to FLEGT/VPA and TLAS (including Timber Flow in Lao PDR)

1.2.1 Legal timber regulations in the world

In recent decades, there have been changes in environmental protection, sustainable forest management, awareness and decision-making regarding the purchase of wooden furniture by consumers and importers, as well as changes in government policy focusing on the legal origin requirements for timber and timber products. These changes are realised by legal regulations aimed at preventing illegal timber and timber products from entering the markets. Meanwhile, there is an increase of trade remedies and technical barriers, some countries have issued regulations on legal timber, specifically as follows:

• **United States:** The Lacey Act was enacted in 2008, which came into effect in April 2010 on timber products. Accordingly, it is prohibited to import illegal timber into the United States, timber importing enterprises must declare the origin of timber and perform due diligence. At the same time, Lacey Act also presents very strict regulations on the form of sanctioning violations from confiscation of imported shipments to monetary fines or imprisonment.

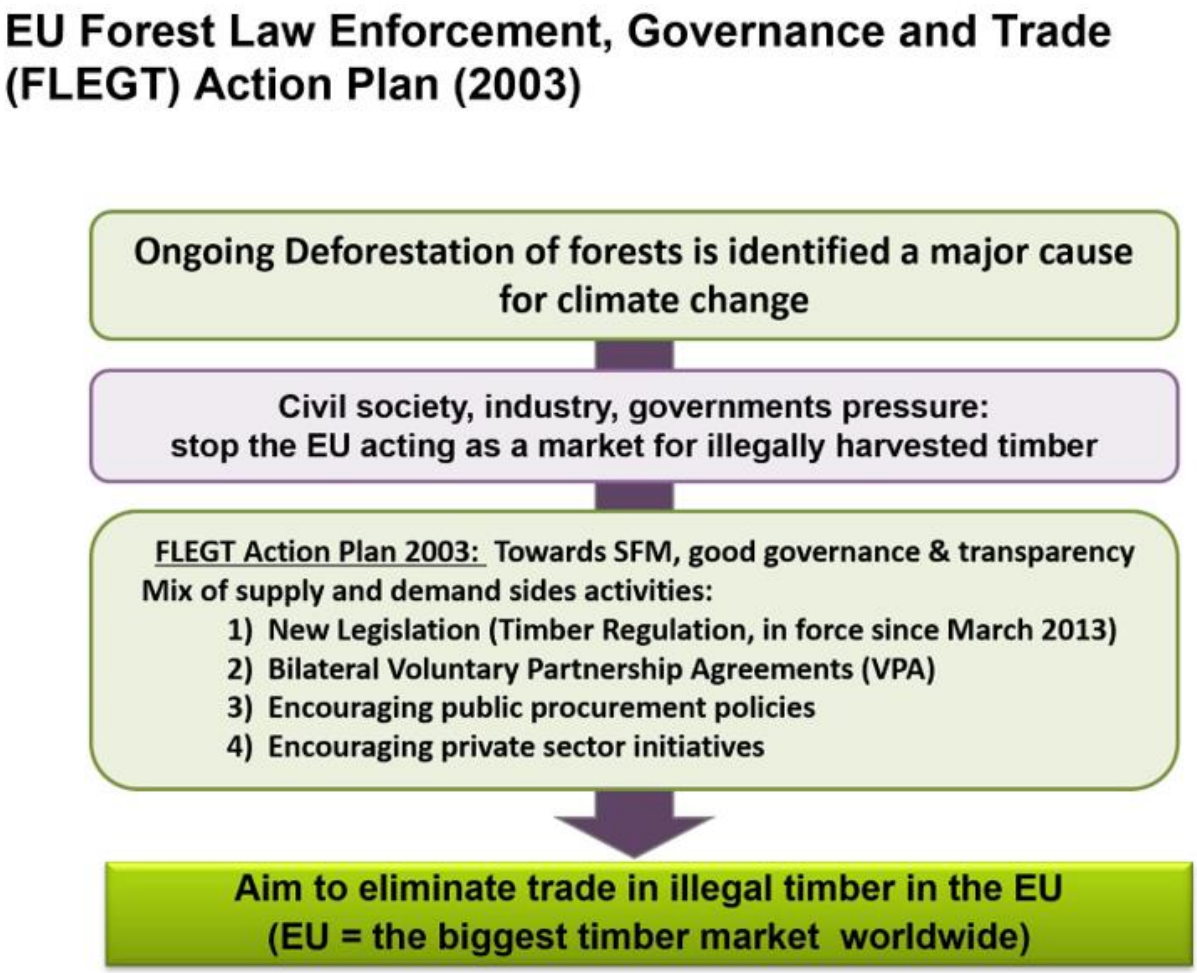
• **European Union (EU):** The EU Timber Regulation was enacted in 2008 and came into effect on 1 March 2010 (EUTR 995/2010) as one of the measures to implement the Action Plan on implementing Forest Law Enforcement, Governance and Trade (FLEGT) to prevent illegal logging and ensure timber that the enterprises trading is legally sourced. The regulation prohibits illegal imports into the EU market, and EU timber importers must perform due diligence to prove the legal origin of timber to the competent EU authorities before the shipment is allowed to enter the first port of the EU. EU importers are responsible for traceability of timber throughout the entire supply chain. There are only two exemptions: CITES-permitted timber under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and FLEGT-licensed timber from countries that have negotiated and signed the VPA/FLEGT Agreement with the EU.

• **Australia:** Illegal Logging Prohibition Act was enacted in 2012, amended in 2014, and came into effect on November 30, 2014. Australia's Illegal Logging Prohibition Act is similar to the US Lacey Act, which prohibits the import of illegal timber into Australia, and timber importing enterprises must perform due diligence and enterprises exporting timber to Australia will be accountable for their goods.

• **Japan:** The "Act on Promotion of Use and Distribution of Legally-Harvested Wood and Wood Products" or "Clean Wood Act" was issued in 2016 and took effect on May 20, 2017. Unlike Lacey Act of the United States and Illegal Logging Prohibition Act of Australia, this Japanese law is not mandatory. Japanese timber enterprises or foreign exporters are encouraged to aim to provide legal timber materials to the Japanese market and apply group certification to confirm the legality of enterprises registered on the system of this Law.

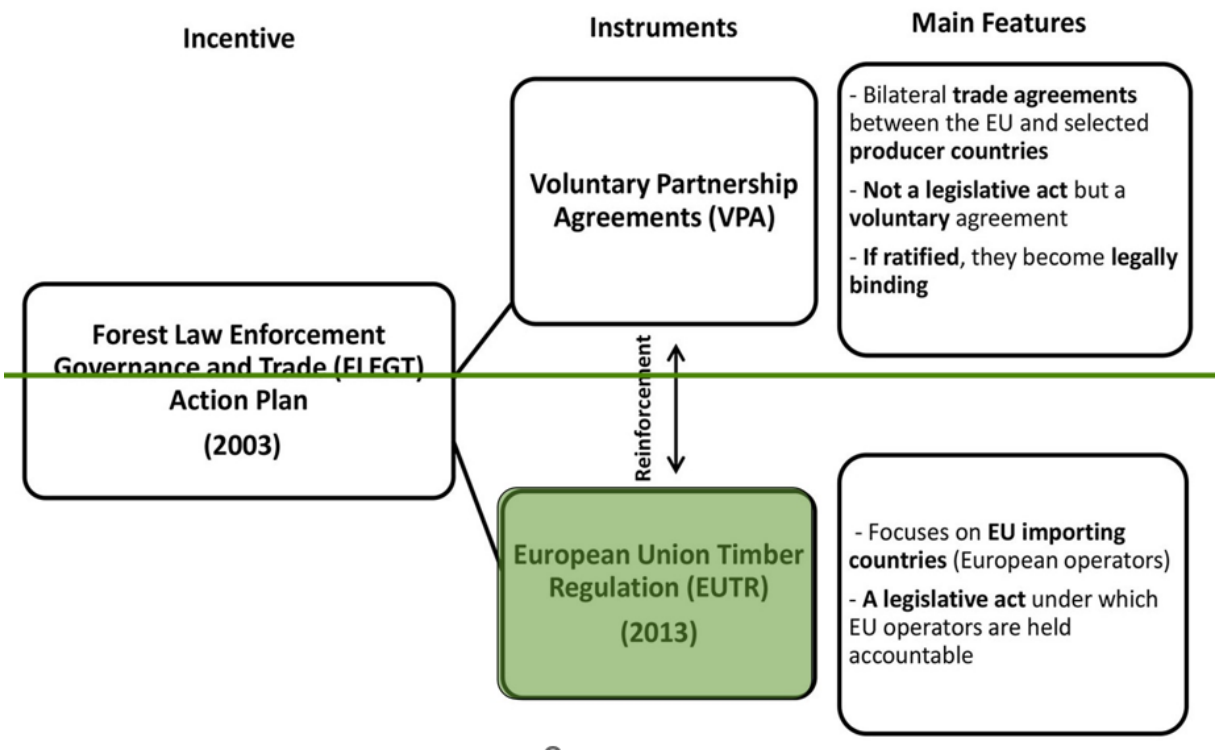
• **Korea**: The Law on sustainable use of timber was issued and came into effective on October 1, 2018. This law, in addition to regulating the due diligence responsibility of enterprises importing timber into South Korea, which is similar to the Lacey Act of the United States, requires these enterprises to submit legal timber evidence certified by the harvesting and exporting countries to the Korean Administration of Forestry for verification before customs clearance.

1.2.2 The Forest Law Enforcement, Governance and Trade (FLEGT)



Source: GIZ/ProFEB

The European Union's FLEGT action plan was established in 2003 with the objective of reducing illegal logging by improving governance and sustainable forest management while promoting trade in legally produced timber products. Since 2013, the EU Timber Regulation has banned illegally harvested timber from EU markets, requiring importers to check the origins of products by applying due diligence with a risk management system. Additionally, under the action plan, bilateral voluntary partnership agreements (VPAs) are negotiated between the EU and selected producer countries to ensure the legality of trade in timber and timber products. Once a VPA is signed and successfully implemented timber and timber products can enter the European market with a FLEGT License. Indonesia is the first country exporting since 2017 timber product with a FLEGT License to Europe.



Source: GIZ/ProFEB

FLEGT/VPA is a trade agreement between Lao PDR and the EU to create a legal framework to ensure that Laos' timber and timber products exported to the EU are legally produced, promoting timber and timber product trade between the two countries. This objective will be achieved through the establishment of the Lao Timber Legality Assurance System (TLAS), together with the FLEGT licensing scheme, to guarantee that only legal timber products with a FLEGT-license enter the EU market.

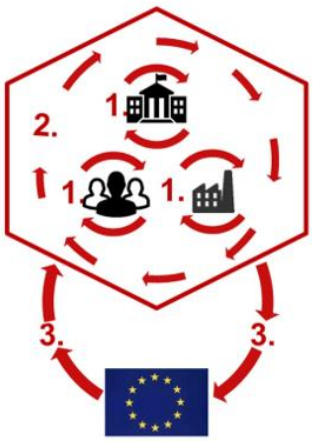
1.2.3 LEGT VPA process in Laos

In 2012, the government of Laos sent a letter of intention to the EU to be involved in the FLEGT VPA process negotiation. In 2015, the government of Laos got approval to start the negotiation process with the EU. Laos set up a national FLEGT /VPA steering structure with the involvement of government, private sector and civil society as multi-stakeholder process.

1. FLEGT-VPA

VPA = Voluntary Partnership Agreement

- VPA negotiation through multi-stakeholder process:
  1. Government
  2. Private sector
  3. Civil society
- Negotiation within countries' stakeholders (1)
- Negotiation among stakeholders (2)
- Bilateral negotiation between Laos and EU (3)



However, EU–Lao PDR negotiations on the VPA officially started in April 2017 and are ongoing. By 2020, Lao PDR has made progress on defining legality and developing supply chain controls, including: Defining timber legality by identifying the national laws and regulations that will be used to indicate the legality of timber; Revising the Forest Law, Land Law, and a new decree on environmental impact assessments to further clarify legality under the VPA; Working on natural production forests and labour obligations in forestry, wood processing and trading operations; and Developing community initiatives and clarifying the institutional arrangements to implement the VPA and the timber legality assurance system.

FLEGT-VPA process in Laos

- In 2012: letter of intention to EU to involve in FLEGT VPA process negotiation
- In 2015: Official approval the involvement in FLEGT VPA process negotiation with EU
- Up to date, four negotiation rounds held on elements of the TLAS, all TLDs are set aside.
- Current roadmap proposes VPA initialing with EU until end of 2022 and followed by signing and ratification
- VPA implementation started to certain extent already with revision of legal framework for legal timber supply

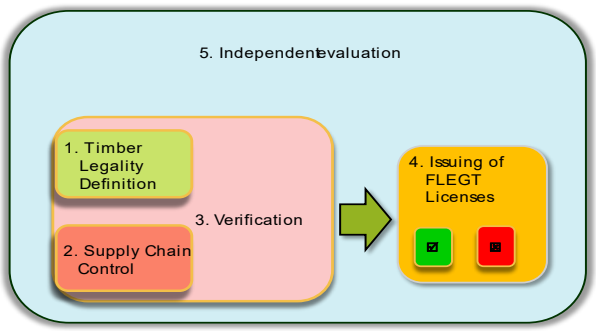
Source: GIZ/ProFEB

Up to date, four negotiation rounds have been held on elements of TLAS and all TLDs are set aside. The current roadmap proposes VPA initialling with the EU until the end of 2022 and followed by signing and ratification. The VPA implementation has started to a certain extent already with the revision of legal framework for legal timber supply.

1.2.4 Timber Legality Assurance System (TLAS)

TLAS is a core annex of FLEGT VPA, consisting of five elements as: 1) Timber legality definition (TLDs); 2) Timber supply chain control; 3) Verification of compliance; 4) FLEGT licencing; and 5) Independent monitoring. These five elements of Legality Assurance System (TLAS) are shown in the figure below:

Elements of Timber Legality Assurance System (TLAS)



1. Timber Legality Definition: legal requirements for timber and timber products and operators (selected by national stakeholders)
2. Supply Chain Control of timber and timber products from all sources (critical control points, traceability)
3. Verification of 1. & 2. by a designated national Verification Body
4. FLEGT Licensing Scheme
5. Independent evaluation (third party, TBD jointly by Laos and EU)

1 Timber Legality Definition (TLD): These are the legal requirements for timber and timber products and operators

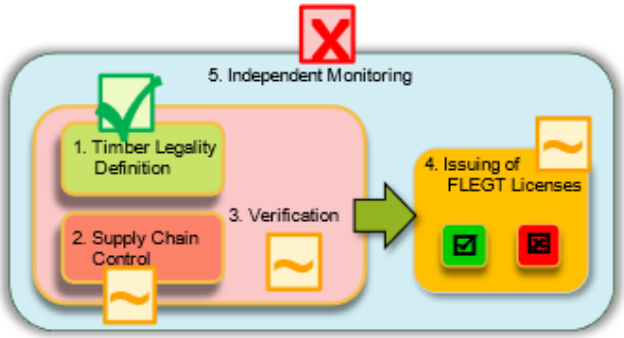
2 Supply Chain Control (SSC) of timber and timber products from all sources such as conversion areas, production forests, plantation, village use forest, or even sources from confiscated timber and imported timber. These sources are shown in the table 1.2.5 below "Timber Sources and Timber Flow in Lao PDR" explaining TLDs based on timber sources

3 Verification of Timber legality assurance and Supply chain control by a designated national verification body

4 FLEGT Licensing Scheme is the issuance of FLEGT licence for operators who meet all the legal requirements to export their products into the EU markets

5 Independent evaluation by a third party

Current Status TLAS Development



- **TLDs** set aside
- **Supply Chain Control**:
  - Existing draft descriptions need further development
- **Verification**
  - First concepts presented during different stakeholder meetings since 2018
  - General agreement: Department of Forest Inspection (Counterpart) = Verification Body
- **Licensing:** consultation just started
- **Independent monitoring** not yet started

Source: GIZ/ProFEB

1.2.5 Scope of Lao TLAS

1.2.5.1 Timber sources

The Lao TLAS recognizes six legal sources of timber. The domestic forest sources include (1) Production Forest Areas (PFA), (2) forest conversion areas (3) timber plantations and (4) Village Use Forests and natural trees on land of individual, entity or organization. In addition, (5) confiscated timber can enter the legal supply chain for the domestic market through auctions organized by the government and (6) legal timber can be imported into Lao PDR.

Production Forest Areas (Ref. TLD 1) are managed in accordance with forest management plans aiming at sustainable timber production and reduced adverse environmental impacts. The forest management plan defines forest compartments, harvesting schedules and annual harvesting areas. The annual harvesting areas are subject to detailed pre-harvest inventory based on which trees are selected for cutting. Timber harvesting and other forest activities are described in annual operations plans, and their implementation is monitored through post-harvest inspections.

PFAs are almost entirely natural forest formations but may also include timber plantations established on degraded or barren forest lands. Laos has a total of 51 PFAs covering approximately 3.1 million ha.

Conversion Areas: The national legislation allows temporal or permanent conversion of forests (Ref. TLD 2) for infrastructure development i.e. hydropower plants, including dams and water reservoirs, electricity transmission lines, road construction, and for agriculture and mining. These development projects must comply with the *Investment Promotion Law* (2016) and be consistent with the relevant land use and socio-economic plans and policies[1].

[1] National Master Plan on Land Allocation and National Socio-Economic Development Plan

Development projects are initiated by a project proposal and a Memorandum of Understanding between the project owner and the authority for land use planning and investments (i.e. MPI / Provincial Office of Planning and Investment, ref chapter 3). Prior to any field operations, the project owner is required to prepare a technical and financial Feasibility Study for the new land use, engage with the forest authority for forest resource review and inventory, assess the environmental and social impacts of the project, incl. those of forest conversion, and prepare mitigation plans for the significant adverse environmental and social impacts. People affected by the project are entitled to receive compensation and be resettled.

The authorities to approve the technical, environmental and social studies, mitigation plans and to decide on the forest conversion are set out in TLD 2. Once the project owner has an effective Concession Agreement for the new land use, field operations for forest conversion can commence.

Timber plantations (ref. TLD 3) can be established in specific demarcated areas of the PFAs or outside the forest land area. Each plantation plot shall be registered with and the harvesting volumes (or weight) reported to the relevant government body. No harvesting permit is required for planted trees. TLD 3 applies to all private and state-owned timber plantations.

Village Use Forests are forests located within the management areas of villages and designated according to land use planning and forest allocation plans to villages having the necessary capacity and leadership to manage, preserve and develop forest resources (Forest Development Village). Village Forests are managed in accordance with a forest management plan that is prepared for all forest land categories (i.e. production forests, protection forests and conservation forests) and other forested areas (e.g. plantations or trees in non-forest lands) under the control of a Forest Development Village. The production forests of Village Forests are called Village Use Forests (Ref. TLD 4). The Village Use Forests are managed predominantly for the supply of timber and Non-Timber Forest Products (NTFP). Harvesting operations are allowed only if they are included in the annual harvesting plan approved by the government and the provincial forest authority has issued a harvesting permit. Timber originating from Village Use Forest can either enter the commercial supply chain [the sales process has yet to be defined] or be used for public benefit such as for construction of a village office, meeting hall or schools.

Lands of individuals, legal entities and organizations (Ref. TLD 4) are legal sources of timber of native tree species provided that the land is formally registered, and a harvesting permit has been issued to the trees selected for cutting.

Confiscated Timber: If illegalities are suspected in the harvesting, transportation, processing or trade of timber, the relevant authorities can either hold or seize such timber for investigation of the case. Timber can be confiscated and included in the state assets only based on a court decision. Confiscated timber (Re. TLD 5) can re-enter the legal supply chain for domestic market, if it has been sold at auctions organized by the government. Confiscated timber is not allowed for exportation [*legal basis yet to be established*].

Timber imported (Ref. TLD 6) into Lao PDR must have been harvested, processed and traded in compliance with the relevant legislation in the country or countries of harvest and origin. If not accompanied with a valid FLEGT license or CITES export permit, the importer is responsible for ensuring the legality of imported timber through a due diligence process [*Legal basis yet to be established*]. The

importer is required to exercise due diligence prior to making the decision on the purchase of timber from abroad. The due diligence process that will be detailed in a procedure including guidelines specific to exporting countries, consists of the following three steps:

- Collection of information on timber legality
- Assessment of legality risks and
- Mitigation of legality risk, if the risk of illegal harvesting, processing and trade has been considered non-negligible

The importers are required to familiarize themselves with the relevant legal requirements of the country or countries of harvesting and origin, and check that the exporter has the necessary evidence on the legal compliance for the timber intended for importation into Lao PDR.

Based on the information provided by the exporter and collected from other sources, the importers are required to assess whether there are legality risks associated with the timber intended for importation into Lao PDR. If the risk of illegality has been assessed non-negligible, the importer is either required refusing to import such timber into Lao PDR or take additional measures based on which the risk of purchasing illegal timber can be decreased and assessed non-negligible. These measures may include requesting the exporter to provide additional evidence on legality or collecting otherwise supplementary proof of legal compliance (e.g. through communication with government, private sector and/or civil society stakeholders or conduct of supplier audits).

Separate guidance documents by the most common countries from where timber is exported for the Lao market will be made available for importers. The guidance documents will capture the following areas of due diligence:

- Legal requirements and associated legality risks in export countries
- Conduct of risk assessment
- Conduct of risk mitigation

The authority for controlling the international trade in timber (i.e. DIMEX, Ref. chapter 3) evaluates that the importer has exercised due diligence in accordance with the procedure and issues a Timber Import License provided that the due diligence requirements have been met. The import license is valid for one year for timber[2] supplied by the same exporter and originating from the same forest source. If an exporter for which there is a valid Timber Import License has changed tree species, product type or source of timber, the due diligence process must be reiterated [*Legal basis yet to be established*].

1.2.5.2 Timber processing and trade

The Lao TLAS includes control and verification measures for all primary and further processing of logs and timber products by industrial and household enterprises. The system also controls and verifies trading of logs and processed timber products within Lao PDR, and exports of timber products.

[2] Same HS code

1.2.5.3 Market destinations

The Lao TLAS is applied to sales of logs and processed timber products on the domestic market, and exportation of timber products that are covered by Annex 1 A of the VPA. Logs and timber products that are included in the product scope of Annex 1 B are not allowed for export.

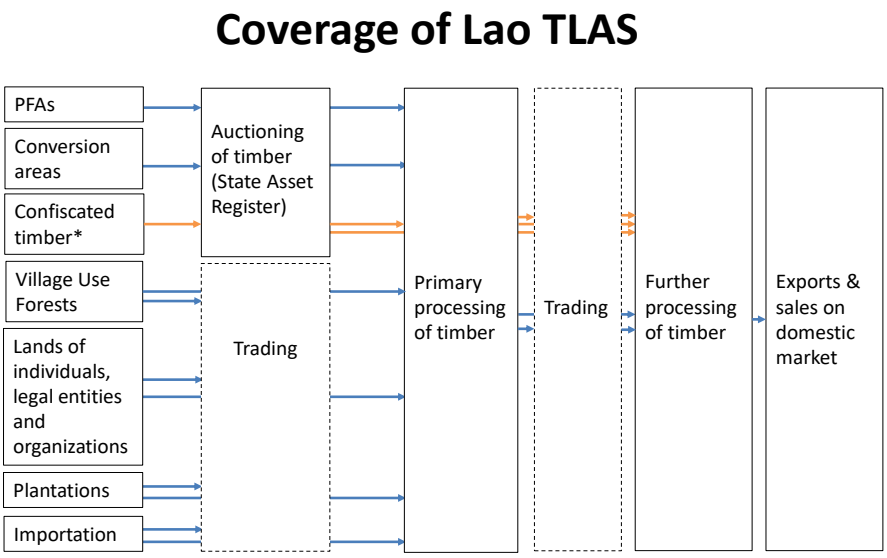
Exportation of timber products is subject to FLEGT / export licensing. Each export consignment of timber products for the EU market is issued with a FLEGT licenses and for the other international markets with an export license.

1.2.5.4 Re-exportation of timber

Timber that has formally been imported into Lao PDR and re-exported without processing in the country, is integrated in the TLAS. Its movement within Lao PDR is registered in the information management system for timber supply chain controls (ref. Section 6).

1.2.5.5 Timber in transit

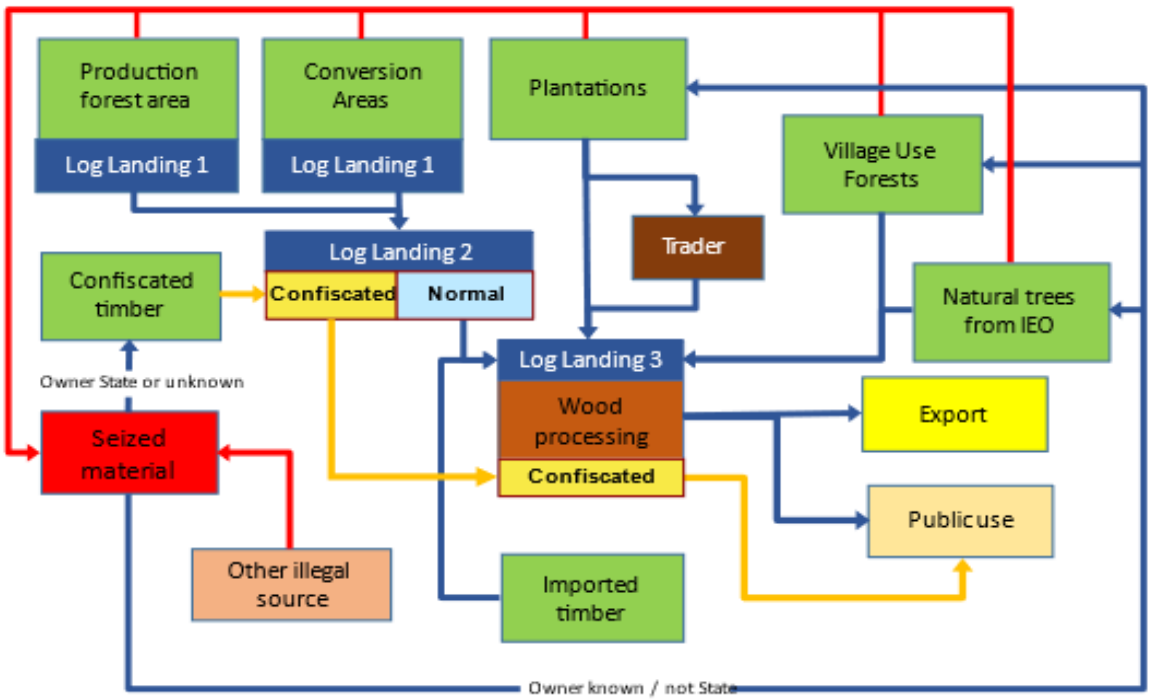
Timber in transit, for which a License for the Transit of Controlled Goods issued by DIMEX is required, is not integrated in the Lao TLAS. When entering and exiting Lao PDR, customs officers control the consignments at international checkpoints. It is required that the transporter is able to demonstrate that the timber products are the same at the times of their entry into and exit from Lao PDR.



*Confiscated timber only for domestic sales

It is important for wood processing companies to understand the timber sources and timber flow in Lao PDR in order to be aware of the critical control points to ensure the legal sources for the raw materials companies buy and process in their factories.

Timber sources and timber flow in Lao PDR



Source: GIZ/ProFEB

Along the timber flow, companies need to pay attention to critical control points (LL1, LL2, LL3). At LL1 the Lao government is responsible for the legal documents. Wood processing companies need to check legal documents from LL2 where they buy logs. When logs are transferred from LL2 to LL3 (companies' premises), companies need checks, control and record all data through the processing to make sure the legality of the raw materials in the whole production. This helps also to avoid the mixture of legal timber and illegal timber along processing steps.

In Lao PDR, in reality timber comes from four primary sources: Natural Production Forests, Conversion Areas, Plantations and Village Forests.

Logs from production forests and conversion areas are collected within the forest or close to the harvesting area (Log Landing 1) before being transported to a central place close to the production forest or conversion area (Log Landing 2) for measuring and grading.

Logs from non-native timber species from plantations can be transported directly to the processing companies or to the point of export via traders.

Village forest timber is limited to customary use only and can not be used for commercial purposes. Any timber from the four primary sources that was not harvested in a legal manner and can't be traced back to its origin will be confiscated by the authorities.

According to Prime Minister Order No. 15 on Strengthening Strictness of Timber Harvest Management and Inspection, Timber Transport and Business, all timber from production forests and conversion areas as well as confiscated timber has to be formally auctioned off at Log Landing 2, before it can continue in the supply chain to wood processing factories (Log Landing 3).

(PowerPoint presentation with content extracted from this training manual will be explained in the class. Handouts will be printed out for participants to follow)

Exercise (60 minutes)

Participants are divided into 2 groups to discuss what they have learned about the FLEGT/VPA and TLAS by answering the following guiding questions:

Group 1:

What is the difference between the EUTR and the FLEGT/VPA? What is the role of the private sector in the FLEGT/VPA? What are the 6 sources of timber in Laos?

Group 2:

Why it is important for wood processing enterprises to know the critical control points in the timber flow? What is the function of a FLEGT License and what are the preconditions for issuing?

Two persons from each group present the results of the group discussions while the rest of the participants will listen and contribute additional input/information if necessary.

The time for group discussion is 30 minutes and time for each group's presentation and feedback is 15 minutes.

1.3 Timber Legality Definition (TLD)

1.3.1 Definition of Legal Timber

The legality definition in each Voluntary Partnership Agreement (VPA) clearly states the aspects of a country's law for which the timber legality assurance system will systematically seek evidence of compliance. The intent of a VPA is not to repeat all of a country's legislation but to target and emphasise the subset of legal requirements that national stakeholders decide are most important.

A legality definition brings clarity, and so makes identifying legal timber clearer. The legality definition is particularly useful in cases where a country has many laws relating to the forest sector, when laws are challenging to enforce or when there are inconsistencies among laws.

A legality definition should include laws relating to the whole supply chain – from the allocation of logging rights through processing and transport to export and benefit sharing.

In addition, a legality definition should reflect the concerns of national stakeholders and the elements of the country's legal framework stakeholders wish to include.

The scope of a legality definition will therefore go beyond forest law and may include aspects of laws on tax, trade, employment, social security, biodiversity conservation, freedom of information and customary law.

Legal timber can be defined as timber, timber products that are harvested, traded, processed in accordance with the provisions of the law of a country.

Within the framework of a FLEGT/VPA, legal timber can be defined as timber and timber products exploited, imported, handled confiscated, transported, traded, processed and exported in accordance with the Lao law and relevant provisions of international treaties to which Lao PDR is a member of.

1.3.2 Structure and Content of Timber Legality Definitions in Lao PDR

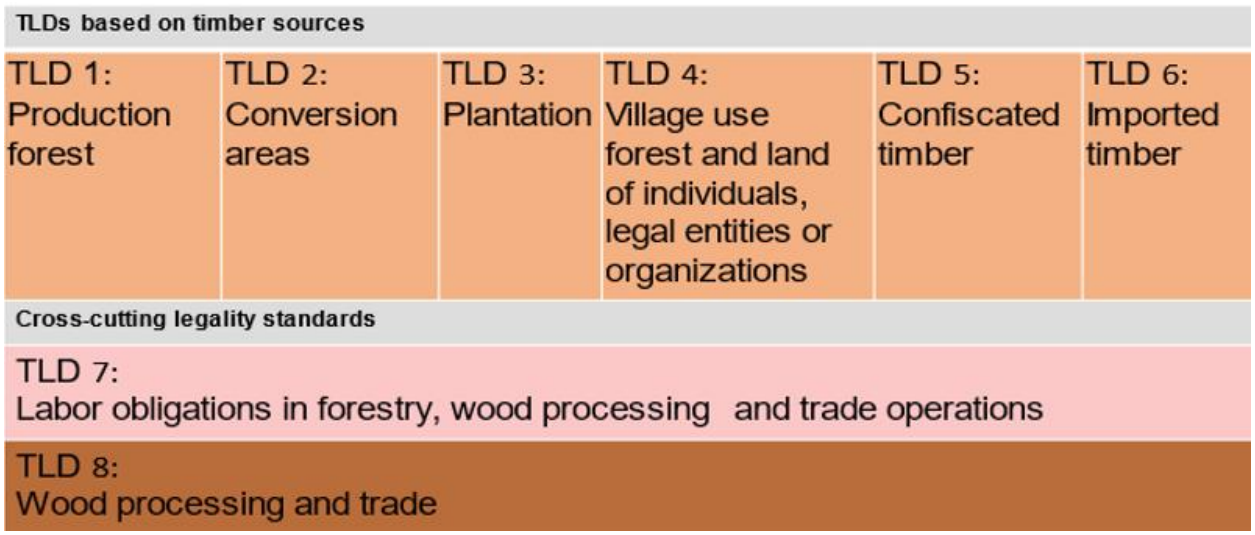
Timber Legality Definitions give requirements for government and/or private sector **management bodies** (operators) and/or **internal inspection** and their **operations/activities**.

The Lao TLAS contains eight Timber Legality Definitions (TLD), each of them having an identical structure: *Principle*, *Criterion*, *Indicator*, *Verifier* and *Legal Reference*. The *principles* and *criteria* express a broader scope of legal requirements covered by the Lao TLAS, whereas the *indicators* specify the legal requirements that must be complied with. Each indicator is equipped with a *verifier* or several *verifiers* that provide(s) documented sources for evidence of compliance with an *Indicator*; the verification body, however, may also use other sources of information for determining the compliance with the *indicator*. The *legal reference* identifies the law, regulation or equivalent where the indicator and related verifiers are laid down.

The TLDs articulate legal requirements for operations related to timber sources, transportation of logs, selling of logs, wood processing and trading of processed timber products as well as labour obligations in forestry and wood processing and trade. The requirements are presented in the following TLDs on:

1. Production forest
2. Conversion areas
3. Plantations
4. Natural timber [*Timber of native tree species?*] from village use forest and land of individuals, legal entities, or organizations
5. Confiscated timber
6. Imported timber
7. Labour obligations in forestry, wood processing and trading operations
8. Wood processing and trade

These 8 TLDs are based on timber sources as shown in the table below.



Source: GIZ/ProFEB

TLD7 on Labour obligations and TLD8 on Wood processing and trading are particularly relevant for the wood processing sector due to their impact on SME operations given the specific regulations with which SMEs will have to comply, e.g. traceability.

TLD 8 defines timber legality definition and compliance verification for wood processing and trading. Therefore, all wood processing companies will have comply with the principles regulated in this TLD. There are specific criteria for principles in this TLD with indicators, verifiers, and legal references for Lao wood processing industry to follow and for government to verify.

Appendix A8: Timber legality definition and compliance verification – WOOD PROCESSING AND TRADING

Example

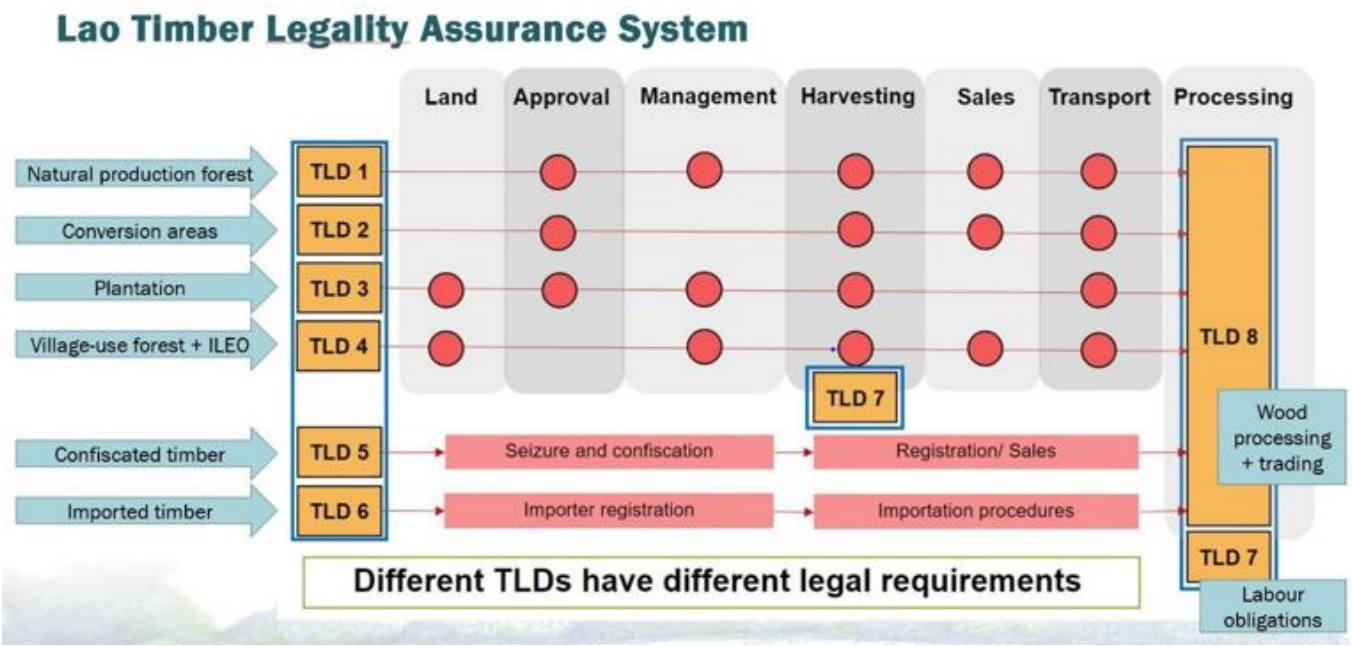
PRINCIPLE 8.1 REQUIREMENTS AND PROCEDURES FOR WOOD PROCESSING AND TRADING

Criteria 8.1.2 Compliance with supply chain control procedures for wood processing and trade		
Indicator	Verifiers	Legal references
8.1.2.1 The operator of a timber processing factory applies a management system for input and output monitoring of timber processing and calculates the timber recovery and waste rate for each processing stage.	8.1.2.1.1 Records of all timber entering the operator's premises	Decision 0777/MOIC (2020), article 6.1
	8.1.2.1.2 Records of all timber stored for further processing	Decision 0777/MOIC (2020), article 6.2
	8.1.2.1.3 Timber balance record	Decision 0777/MOIC (2020), article 6.3

8.1.2.1 The operator of a timber processing factory applies a management system for input and output monitoring of timber processing and calculates the timber recovery and waste rate for each processing stage. Regulatory Inspection . Inspected and endorsed by: DOIC and POIC	8.1.2.1.4 Records of all timber that leaving the operator's premise for selling	Decision 0777/MOIC (2020), article 6.4
	8.1.2.1.5 Recovery and waste rate calculation records	Decision 0777/MOIC (2020), article 6.5
	Verification	
	Verified by: POFI	
Regulatory Inspection	Verification means: document review and consultation with wood processor site observations/measurements (sampling), including checking of input output management system and records (for verification of supply chain control, see Appendix B8)	
Information stored by DOIC	Verification frequency, timing and intensity: TBD in coordination with inspection 0777 during site visit comprehensive (all wood processors and traders)	

Source: GIZ/ProFEB

In the example above, under the criteria "Compliance with supply chain control procedures for wood processing and trade", one of indicators is that the operator of a timber processing factory applies a management system for input and output monitoring of timber processing and calculates the timber recovery and waste rate for each processing stage. Based on the government's regulations, relevant government authorities will verify the compliance of companies through the records of all timber entering the company's premises, timber stored for further processing, timber balance record, all timber that the company sells and also the recovery and waste rate calculation records.



Source: GIZ/ProFEB

- Depending on the timber source, legality requirements vary.
- For plantation timber, legality requirements for smallholder plantations are simpler than for commercial plantations.
- With Prime Minister Order 15 (PMO 15), a logging ban for natural timber in Production Forest Areas has been established and remains in place to date. It restricts the export of natural timber and only allows for the export of finished products.
- In line with PMO 15, the Lao government is promoting the production of plantation timber and simplified export procedures. Plantation timber can be exported both as raw materials and finished products. The Department of Import and Export has recently finalized instructions for plantation timber export that clarify the procedures and needed documentation.
- Independent from the timber source, all operators have to comply with the cross-cutting TLDs 7 and 8, because all timber will end up in wood processing.

For this reason, this training course on internal management system for wood processing companies is very important and all companies in Lao will have to understand these legal requirements in order to comply with.

(PowerPoint presentation with content extracted from this training manual will be explained in the class. Handouts will be printed out for participants to follow)

Exercise (30 minutes)

Guided discussion to share knowledge learned.

One participant will volunteer to mention the 8 TLDs.

Which TLDs are most relevant for wood processing and trading?

Which criteria in Appendix A8 are relevant for this training course?

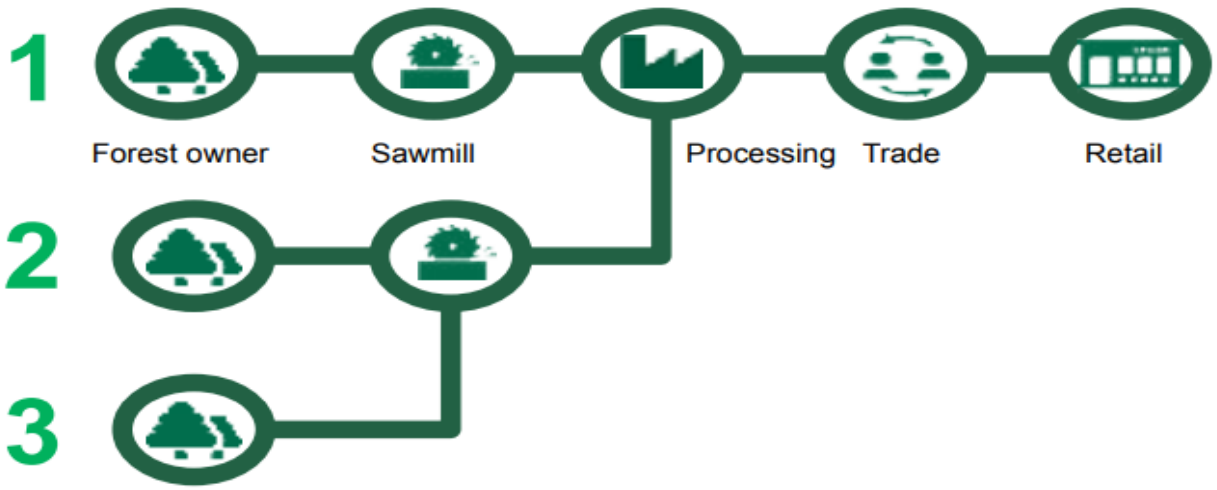
All participants are asked to contribute to make it understandable and as much as remembering for the whole class.

1.4 Timber Supply Chain Control

1.4.1 What is Timber Supply Chain?

The timber supply chain is a system of organisations, people, technologies, activities, information and resources that move and/or change the shape and size of timber from the point of harvest or importation to the end selling point. The timber supply chain includes all stages that are directly or indirectly related to meeting the demands of timber and timber products of customers. The enterprise's timber supply chain and timber products include the stages of harvest, import, sale, transportation, processing, and export. Lao PDR is one of the countries with a complex timber supply chain since there are many timber sources entering the supply chain of Lao TLAS system with a large number of forest owners, intermediaries and enterprises participate in processing, trading and export. There are many organizations participating in the timber supply chain from the point of harvest to the end selling point.

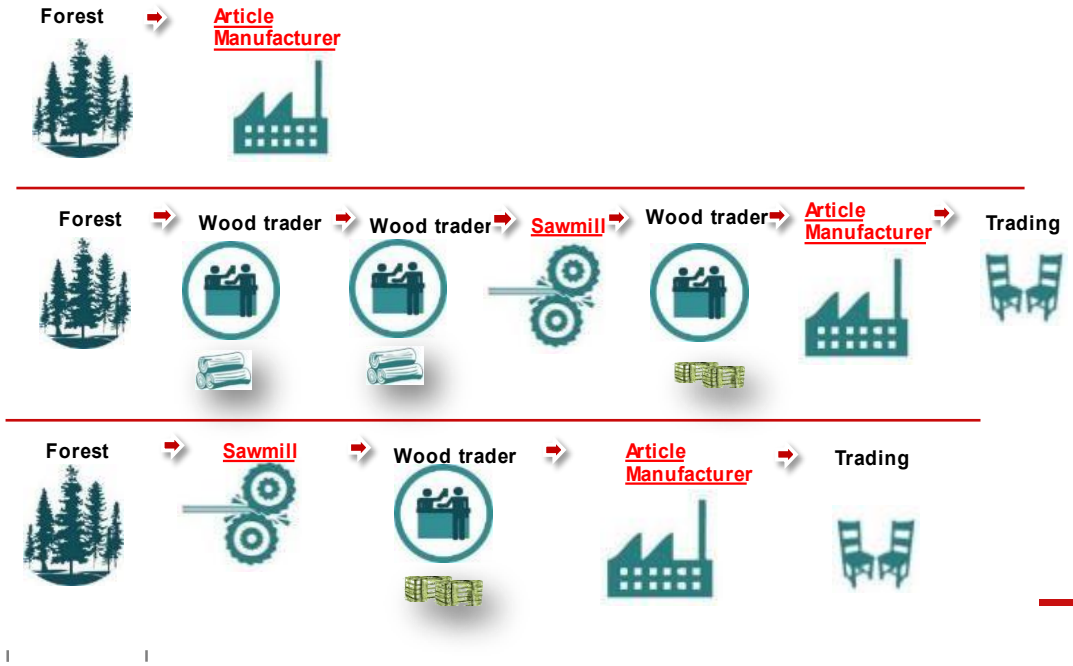
Example of a supply chain:



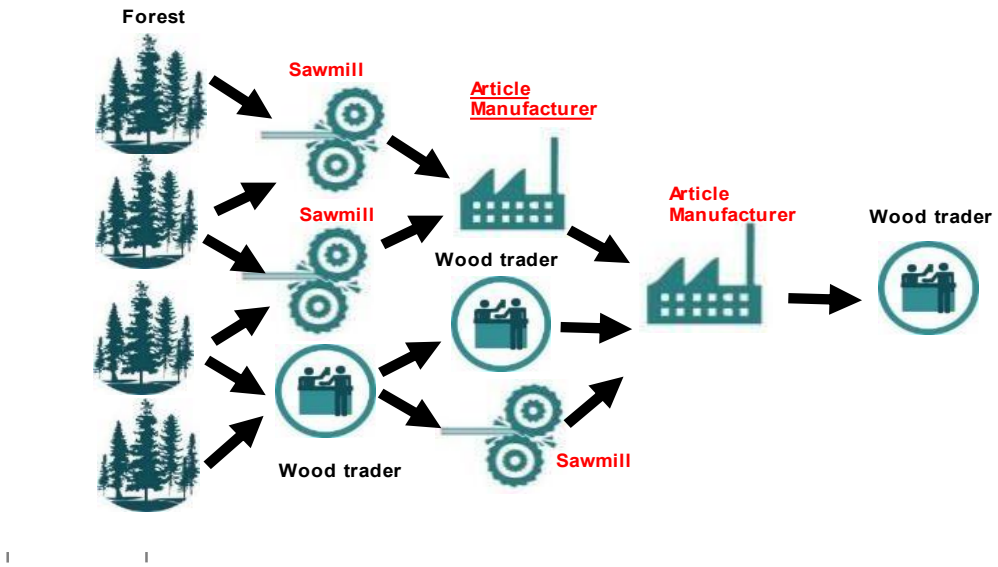
Source: GIZ/ProFEB

Examples of simple and complex supply chain control

Supply chain control from forest to mill- **Simple supply chain**



Supply chain control from forest to mill - **Complex supply chain**



Source: GIZ/ProFEB

1.4.2 What is Supply Chain Control (SCC)?

The purpose of supply chain control is to ensure that unverified products and products that are possibly illegal do not enter the supply chain. Supply chain control enables countries and companies to

track timber and timber products from a forest or point of import to a point of export. Tracking means that businesses are better able to manage supply chains and that authorities can trace a product to check it is legal.

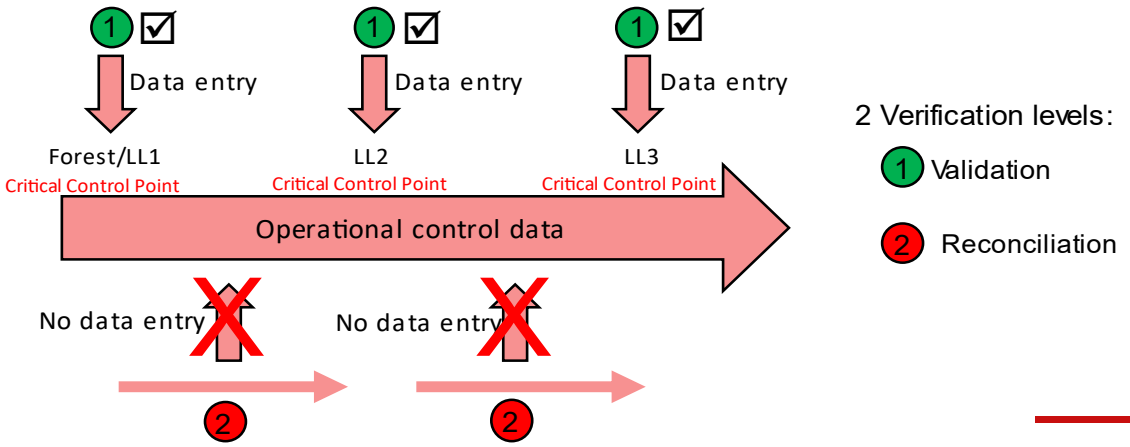
Supply chain control entails a series of mechanisms and procedures that confirms the origin of wood and wood products at each link in the chain. Logs and processed wood travel accompanied by documentation that identifies and confirms their origin.

Documents record data in a way that enables authorities to check that the quantities and types of products at any point in the supply chain are consistent with the prior and subsequent links in the chain. Supply chain control also requires procedures to prevent mixing of legally verified timber with material from unknown or unauthorised sources.

Controls also include monitoring and reporting requirements for organisations, companies, and households; monitoring timber volumes within and between stages of the supply chain; and systematic, random and ad-hoc physical checks performed by verification entities.

Principles of Supply Chain Control / Example Production Forest Area

Systematic check of data and movements of logs and timber products in supply chain



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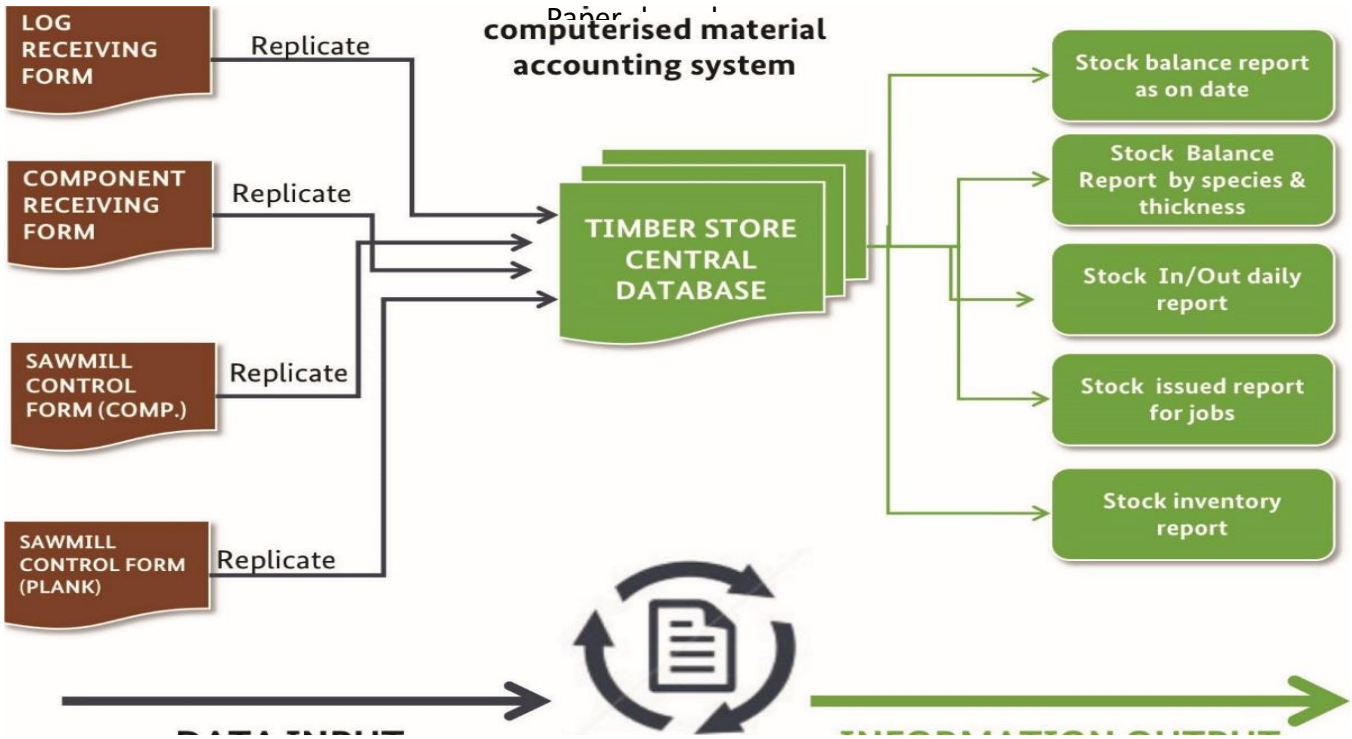
Source: GIZ/ProFEB

Controlling and documenting incoming and outgoing material is key to a legal supply chain. As a consequence, operators at Log Landing 3, the log yard of wood processing companies or traders, are required to check whether arriving timber has legal origin and comes with all necessary invoices and transport documentation. Timber of unknown origin or lacking relevant documentation must be rejected. Operators are also compelled to set up an internal management system for timber input and output.

All timber has to be processed by the national wood processing industry, allowing only specific finished products for export. Since all timber will go through Log Landing 3, it is subject to supply chain control and verification procedures.



Source: GIZ/ProFEB

1.4.3 Critical Control Points

Companies are requested to record and report data to show that raw material for companies' production are not from illegal or unverified sources. The critical control points and data that need to be collected vary by the source of timber; the controls tend to be stricter for timber from natural forests than for timber from tree plantations. From the point where the primary processing industries receive timber, the critical control points are identical irrespective of the source of timber.

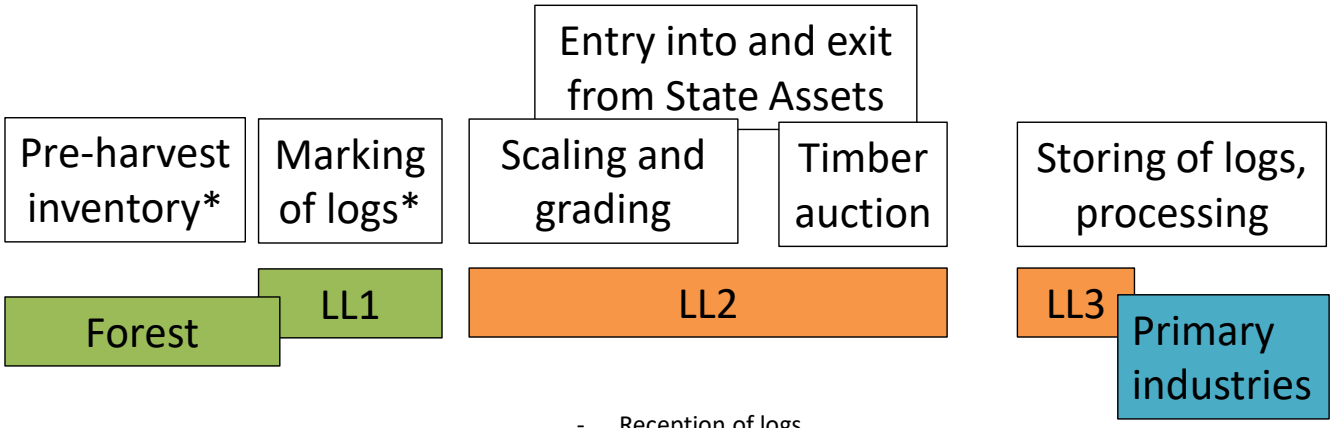
Logs from PFAs / Timber from forest conversion areas

A pre-harvest inventory is required for determination of timber extraction from PFAs and forest conversion areas. In PFAs, all large trees are measured, numbered and marked, and a tree list for selective cutting is prepared, whereas in the forest conversion areas, sample-based inventory is applied for estimating harvestable tree volumes. From pre-harvest inventory onwards, the critical control points are identical for logs from PFAs and conversion areas.

A harvesting permit is issued only to trees (PFA) or estimated volume (conversion areas) that are included in the annual harvesting plan. The harvested logs are recorded at Log Landing 1 (LL1) and transported to Log Landing 2 (LL2), where they are scaled and graded, and included in the State Assets Register. The logs are sold to timber processing industries at auctions, removed from the state assets and based on a transport permit moved from LL2 to log landing of timber processing industries (LL3).

A waybill identifying the logs in transportation and their source is required to accompany each transport batch from LL2 to LL3.

Critical control points – Logs from PFAs & forest conversion areas



- Tree List
- Log list
- Transport slip

- Reception of logs Scaling & grading of logs
- State Assets Register
- Sales contract
- Payment of logs
- Transport permit
- Transport slip (tracking sheet)

- Bookkeeping on logs received, stored and used

* Differences between PFAs and conversion areas

Confiscated logs and timber products

Logs and processed timber products can be confiscated only based on a court decision. Confiscated timber products are included in the State Assets Register and re-enter the legal supply chain for domestic market through auctioning. A waybill identifying the products in transportation and their source is required to accompany each transport batch from LL2 to LL3 or consumers [*Legal basis for the waybill that can be issued either by an operator or a government body has yet to be defined*].

Products made of confiscated timber are not allowed for exports. Physical segregation measures are required to prevent confiscated timber from being mixed with timber for export markets. These measures may include identification marks on confiscated products and/or storing and handling products in demarcated areas.

Logs from plantation forests

Only logs that originate from tree plantations registered with the government can enter the legal timber supply chain. Prior to any extraction operation, the plantation owner is required to inform DAFO (DFU) about the location, species and number of trees for harvesting.

No harvesting permit is required for felling of planted trees but the actual harvesting volumes must be reported to DAFO (DFU).

The government control for transportation of plantation logs varies depending on their destination:

- Logs for domestic processing need no transport permit from the government
- Logs of non-native tree species for exportation need a transport permit from POIC/DOIC (Logs of native tree species are not allowed for exportation)

A waybill identifying the logs in transportation and their source is required to accompany each transport batch from the plantation to LL3, storage of a trader or for exports [*Legal basis for the waybill that can be issued either by an operator or a government body has yet to be defined*].

Logs of native tree species from Village Use Forests

Trees of native species for extraction are determined based on a pre-harvest inventory and specified in a tree list for selective cutting. A harvesting permit for the trees that are included in the annual harvesting plan is needed for commencing the felling operations. The volumes by each log harvested are reported to DAFO (DFU).

Logs from Village Use Forest are either sold directly to buyers or auctions are organized for their selling [*Legal basis for selling of logs has yet to be defined*]. Once the buyer has paid for the logs, a transport permit is issued to the buyer.

A waybill identifying the logs in transportation and their source is required to accompany each transport batch from the point of sales to LL3 or storage of a trader [*Legal basis for the waybill that can be issued either by an operator or a government body has yet to be defined*].

Logs of native tree species from lands of individuals, legal entities or organizations

For establishment of legal sources of timber, lands of individuals, legal entities or organizations must be registered with a Village Economic and Financial Unit and be acknowledged by DAFO. The trees of native species for cutting are specified in tree lists:

- Tree lists containing Timber List I species are approved by MAF (DOF)
- Tree lists containing Timber List II and III [*?*] species are approved by PAFO (PFS)

A harvesting permit [*for the trees that are included in the annual harvesting plan; is this required?*] is needed for commencing the felling operations. The volumes by each log harvested are reported to DAFO (DFU).

Logs can be sold directly to buyers (no auctioning required) [*Legal basis for selling of logs has yet to be defined*]. Once the buyer has completed the payment for the logs, a transport permit is issued to the buyer.

A waybill identifying the logs in transportation and their source is required to accompany each transport batch from the point of sales to LL3 or storage of a trader [*Legal basis for the waybill that can be issued either by an operator or a government body has yet to be defined*].

Imported timber

Timber covered by a valid import license demonstrating that the timber source has been assessed legal through a due diligence process is allowed to enter into Lao PDR. Volumes, species, dimensions and source information of timber that have been customs cleared establish the necessary baseline data for supply chain control.

A waybill identifying the logs and other timber products in transportation and their source is required to accompany each transport batch from the border to LL3 or storage of a trader [*Legal basis for the waybill that can be issued either by an operator or a government body has yet to be defined*].

Trading of timber

Traders may be involved in the log supply from plantations, Village Use Forests and lands from lands of individuals, legal entities or organizations. They may also be involved in the trading of processed timber products.

The traders are required to keep records on all timber purchases (incl. tree species, dimensions, volumes and source) and all timber sales (incl. tree species, dimensions, volumes and destination), and regularly report them to DOIC.

A waybill identifying the logs and other timber products in transportation and their source is required to accompany each transport batch from the storage of a trader to LL3 or consumers [*Legal basis for the waybill that can be issued either by an operator or a government body has yet to be defined*].

Industrial processing of timber

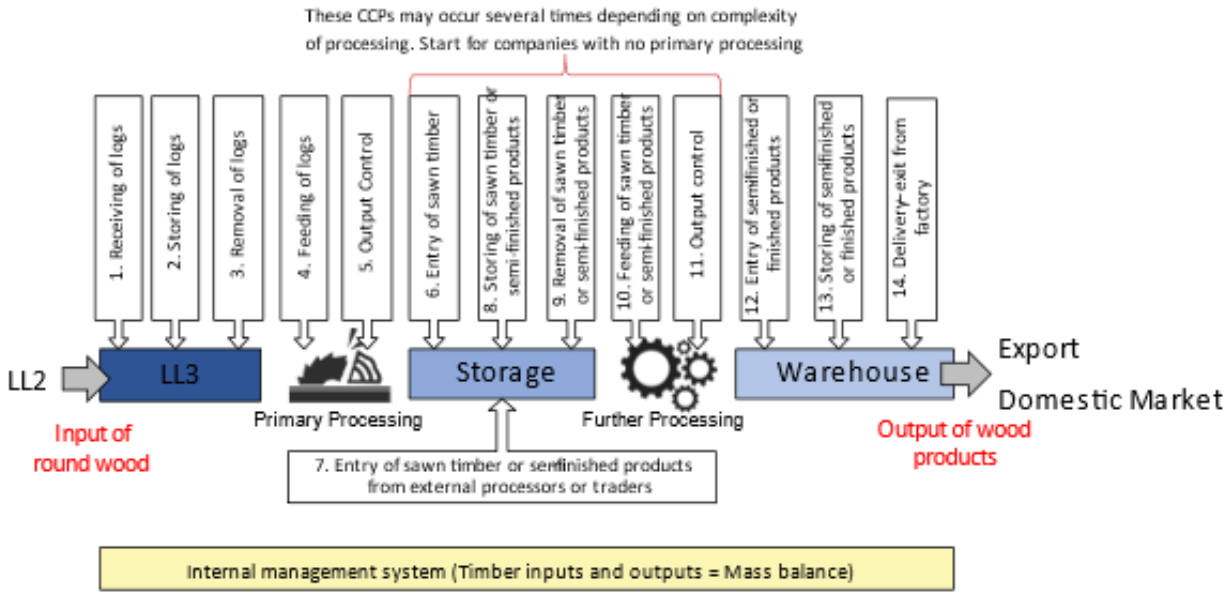
Control of timber flows at a wood processing site consists of three main operations: (i) receiving and storing of round logs and processed raw materials, (ii) processing of timber and (iii) storing of processed products. The management (operational control) of timber flows is the responsibility of the timber processing company. PAFO/DAFO and POIC/DOIC are tasked to systematically inspect these operations. All the logs entered into the wood processing site are stored at LL3 (log yard), and records are kept on logs received at, stored at and departed from the landing. Logs are either used for primary processing at the site or they can be sold to traders or directly to other timber processors. PAFO/DAFO and POIC/DOIC systematically inspect all receiving of logs and processed timber products.

At the primary and secondary processing stages, inputs of logs or processed raw materials and outputs of processing are recorded. The recovery rate is calculated based on the input and output volumes. For the inputs of secondary processing, timber industry companies may purchase processed products (such as components) from other companies. DOIC carries out *ad hoc* inspections of timber processing.

Processed products, including processed raw materials purchased from other companies, are stored in specific areas (such as warehouses) and records are kept on products entered, stored in and departed from these areas.

The table below shows the critical control points of timber processing and reporting requirements for wood processing companies.

Critical Control Points of Timber Processing and reporting requirements



Source: GIZ/ProFEB

When companies buy timber from government (through auctions) or from timber traders, it is requested that companies check legal papers for the timber/logs before transferring timber to their storage area (Log Landing 3-LL3). It is requested to have a checklist and compliance of TLDs and timber sources when receiving logs, storing logs and removal of logs.

During primary processing and storage of logs, companies need to record job order feeding to primary processing when feeding of logs. When sawing logs, companies need to record sawn timber output including calculation of recovery rate then store sawn timber following requirements. If companies buy sawn timber or semi-finished products from external processors or traders, companies need to record these sawn timber or semi-finished products before storing them in their warehouse. When removing timber, companies also need to record sawn timber and/or semi-finished products.

If companies have further processing, similar steps need to be recorded as above. Please see in the table below for critical control point at companies' premises.

Critical control points	Companies' duties	
I. LL3		
1. Receiving of logs	Checklist and compliance of TLDs and SCC (Timber sources)	
2. Storing of logs	Log storage and document keeping requirements	
3. Removal of logs	Records of removal of logs to sawmill	
II. Primary processing and Storage		
4. Feeding of logs	Records of job order feeding to primary processing	
5. Output control	Records of sawn timber output including calculation of recovery rate	
6. Entry of sawn timber	Storing of sawn timber requirements	
7. Entry of sawn timber or semi -finished products from external processors or traders	Records of entry of sawn timber or semi -finished products	
8. Storing of sawn timber or semi -finished products	Records of entry of sawn timber or semi -finished products	

Critical control points (continued)	Companies' duties	
II. Primary processing and Storage– Continued		
9. Removal of sawn timber	Records of removal of sawn timber or semi-finished products	
III. Further processing, Storage and Warehouse		
10. Feeding of sawn timber or semi -finished products	Records of sawn timber feeding to further processing	
11. Output control	Records of processed products output and calculation of recovery rates	
12. Entry of Semi-finished or finished products	Records of entry of Semi-finished or finished products	
13 Storing of Semi- finished or finished products	Records of Semi- finished or finished products	
14. Delivery – Exist from factory	Records of timber sales leaving factory	
IV. Reporting to Government authority		
15. Quarterly report on Timber inputs to submit DOIC	Report structure and contents	
16. Quarterly report on Timber outputs to submit to DOIC	Report structure and contents	

Source: GIZ/ProFEB

(PowerPoint presentation with content extracted from this training manual will be explained in the class. Handouts will be printed out for participants to follow)

Exercise (30 minutes)

Participants share their understanding through answering the following 2 questions:

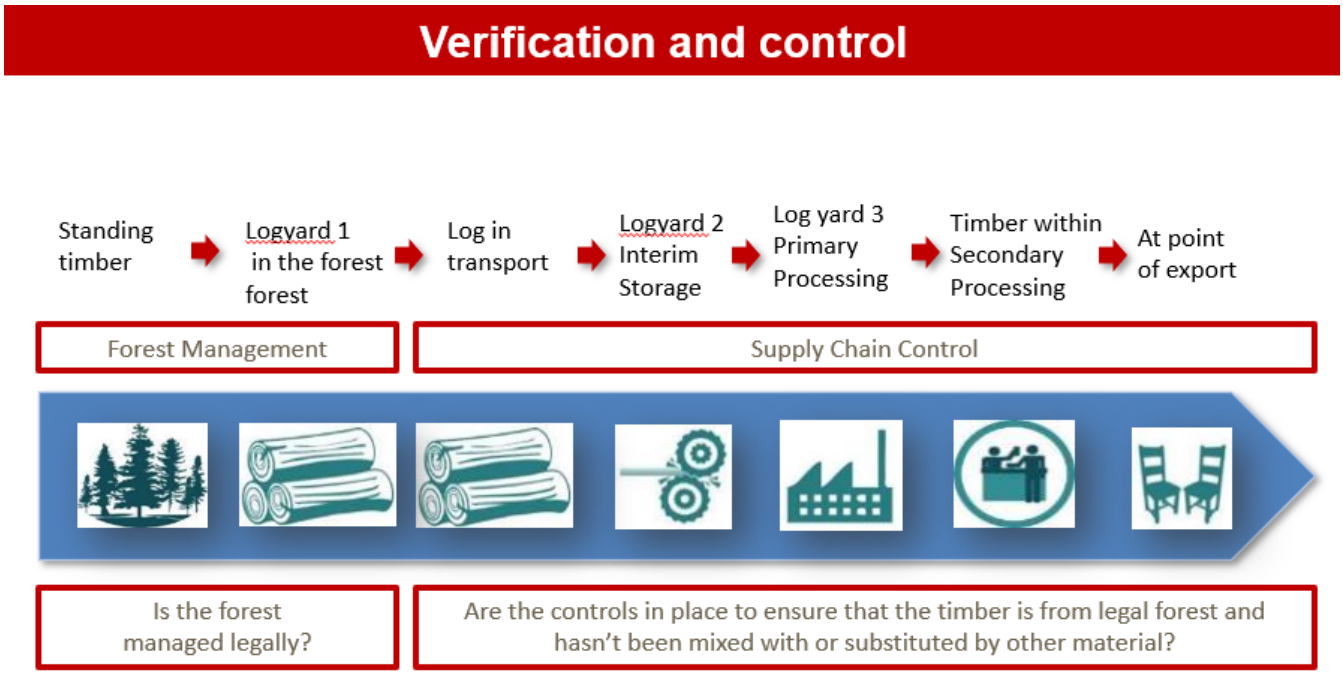
1. Along the supply chain, which are the critical control points that companies need to pay attention to?
2. Why do companies need to check legal documents for the raw material and record data?

1.5 Verification of Timber Legality including Volunteer Certification Schemes

1.5.1 Verification for Wood Processing and Trade

Wood processing companies/Operators are responsible for the so-called supply chain control, which includes controlling all critical control points and reporting to the government. Authorities on the other hand handle the control of compliance, which entails conducting regular inspections, reconciling and verifying the information provided.

Supply chain control and verification are an essential part of the TLAS. To be effective, all critical control points need to be checked and traceable with documentation, especially in wood processing companies where many sources of timber are mixed.



Source: GIZ/ProFEB

By setting up an internal management system and complying with the requirements of TLAS, wood processing companies are taking an important step towards the eligibility for FLEGT licensing and towards preparedness and competitiveness in the future markets of legal timber supply.

Overview of current practice of monitoring and inspection

Regulatory inspection

- Line ministries (MAF, MOIC, MONRE, MOF, MLSW, ...) usually issue their legislation and proceed regulatory inspection to ensure the compliance by the operators

Investigation/Interrogation

- DOFI/POFI conduct investigation-interrogation based on reported cases and submit case report to prosecutor and court for punishment.

New mandate of DOFI

- Moving to regular/systematic inspection or called verification

Procedures of legal compliance, verification and FLEGT licensing

No	Procedures	Remarks
1	Operators to carry out **operational control** to comply with TLDs (Indicators/verifiers) and SCC (product information: timber address, volumes)	Operators
2	Regulatory authority: Proceeds **regulatory inspection** to ensure that operators have complied with TLDs and SCCs	Line ministries
3	Verification body: Uses information from regulatory authority or may proceed sampling checking to issue **no objection statement** to POIC as licensing authority	MAF
4	POIC as licensing authority to issue FLEGT **license** to operators for export	MOIC

1.5.2 Verification body for Lao TLAS

DOFI and 18 POFIs act as the body to verify the results of regulatory inspections for TLDs and control of the timber supply chains. It operates under a documented management system setting out its organizational and operational requirements:

- Organizational structure, incl. division of responsibilities between DOFI and POFI
- Impartiality and independence from entities subject to verification
- Transparency of verification process and results
- Confidentiality
- Receiving and handling of complaints
- Mechanisms to control conflict of interest
- Competence and adequacy of verification personnel
- Equipment necessary for verification activities
- Funding of verification activities
- Preparation of periodic verification plans
- Verification procedures
- Recording of verification findings

- Follow-up and consequences of non-compliant verification findings

Since DOFI and POFIs are involved in (external) inspection and investigation-interrogation, necessary organizational arrangements will be taken to separate the verification function from its other functions.

1.5.3 Volunteer Certification Schemes

The forest certification schemes are multi-stakeholder non-government initiative to promote sustainable forestry and prevent illegal timber production, respectively. It is a market-based instrument that certifies timber including non-wood forest products from sustainably managed forests. This certification system ensures balanced consideration of the environmental, social, and economic aspects in forest management.

The main difference to the TLAS system that it is a volunteer scheme unlike TLAS which is mandatory for all operators.

Forestry certification schemes include in general a product label certifying that management, harvesting, processing, and manufacture of the product met specific certification standards. While the certification programmes in international or national level create the standard, accredited third-party organizations do the actual certification assessments.

Certified wood can cost more - estimated prices are generally 10%-20% more - due to auditing costs and additional work involved in tracking the chain of custody. As stated before, having a certificate for certified wood (volunteer certification scheme) is not compulsory like FLEGT license. Therefore, depending on customers' requirements for companies to decide whether they want to have certified wood for their products or not. With the volunteer certification schemes, all wood processing companies are required to conduct a chain of custody (CoC) system where products can be traced back to its legal origin. This is a big advantage for companies who have a CoC system in place to comply with FLEGT license requirements.

Not all wood certification programs are alike, and not all hold the same level of accountability. There are upwards of 50 forest certification programs, and only ten percent of all forested areas are certified.

The two most relevant certification programs in South-East-Asia are:

- **Forest Stewardship Council (FSC) Certification**: As one of the most well-known certification programs, the Forest Stewardship Council (FSC) covers 380 million acres of certified land. FSC is a non-profit organization with a mission to "promote environmentally sound, socially beneficial and economically prosperous management of the world's forests." The certification program has some of the stricter guidelines than other forest certifications that include principles that address legal issues, indigenous rights, labour rights, and an environmental impact assessment about land management. FSC's chain-of-custody certification follows all the steps a product takes through the supply chain. FSC is the original (and initially, the only) recognized certification program for ensuring wood meets sustainability criteria accepted by the US Green Building Council's LEED rating systems. The Forest Stewardship Council website helps

buyers to source sustainable paper, lumber, flooring, deck, fence boards, doors, windows, indoor and outdoor furniture to name a few.

- **Programme for the Endorsement of Forest Certification (PEFC):** With the certification of about 800 million acres of land, the Programme for the Endorsement of Forest Certification (PEFC) is the world's largest forest certification system. Based in Switzerland, PEFC is a non-profit umbrella organization incorporating different national certification schemes.

The corresponding element in the volunteer certification schemes to "Supply Chain Control" under TLAS is named "Chain of Custody (CoC)". CoC for companies in the supply chain is a verified mechanism for tracking certified materials from the sustainably managed forest to the final product. It requires the establishment of an effective CoC management system at the level of the respective organization with the following elements:

- Internal Quality Management System
- Material sourcing
- Material handling
- Certified material and products records
- Sales
- Compliance with timber legality legislations
- Core labour requirements

Each step of the supply chain is closely monitored through annual independent auditing to ensure that certified, sustainable material reaches the consumer while unstainable sources are excluded.

In **MODULE 2** of the training programme the required internal management system for the Input/output monitoring under the Lao TLAS will be explained with more details. Most of the listed elements are similar so that companies with a certified CoC System in place will have the advantage not to set up a new system.

In some FLEGT/VPA countries its foreseen to recognize both voluntary forest certification schemes and national certification schemes. In Viet Nam for example it is planned to assess voluntary certification and national certification schemes in accordance with requirements of the VNTLAS, in order to provide a basis for recognition of such schemes. Recognised voluntary certification and national certification schemes will be taken into account as a supplementary verifier for the risk-based verification of timber imports. Operators that hold voluntary certification will be subject to the same requirements as non-certified operators. Once Viet Nam begins issuing FLEGT licences, all export shipments to the EU will also need to have a FLEGT licence.

Without doubts volunteer certification system in general offering additional aspects on "Sustainability" as for example the High Conservation Value (HCV) approach.

There are some voices that sustainability is not sufficiently covered by the FLEGT/VPA and accuse the TLAS of focusing too much on legality aspects only, but in reality, in most VPA countries sufficient elements of sustainable forest management are anchored in the national legislation and are reflected in the TLDs. The TLD 1 in Laos on Production Forest Area (PFA) is based mainly on the results of the

Sustainable Forestry for Rural Development (SUFORD) project which used the FSC certification framework for its development.

Exercise (15 minutes)

Guided discussion among participants to share in class with the following questions:

- Is verification of timber legality under companies' responsibility?
- Why do companies need to establish a chain of custody or an internal management system for input/output monitoring?
- What is the main difference between certification and TLAS with supply chain control?
- Do you know any forestry/wood processing companies in Laos having an FSC certificate?

Written test for participants before closing MODULE 1

Within 30 minutes, please answer the following questions:

1. Name the timber sources in Lao PDR
2. When buying raw material, how do companies know that the timber comes from legal sources?
3. Name the critical control points along the supply chain where wood processing companies need to check to ensure the legality of timber from conversation areas.
4. Which document is relevant for all timber sources when they arrive at log landing 3?
5. Why do companies have to set up an internal management system for input/output monitoring?
6. What are the benefits for a company to have the PEFC or FSC label for their products?
7. Why is it easier for FSC/PEFC certified wood processing companies to comply with Lao TLAS?

MODULE 2: INPUT/OUTPUT MONITORING AND CONTROL

2.1 Monitoring instruments for Wood Processing Companies

2.1.1 Inputs and Outputs of a Section in a Wood Processing Company

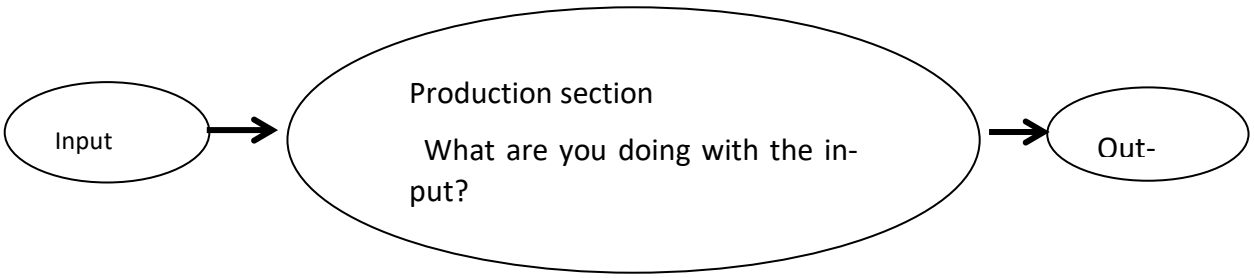
Objective: Understand inputs, remains/waste and outputs of a production section, establish a basis for discussion of common responsibilities in a production section, analysis of the processes within the company.

Analysing the inputs, remains and outputs of a production section will help to:

- Identify and determine functions of a section
- Understand deficits information flows, materials and instructions
- Obtain data in order to improve on those deficits
- Record data in order to report to relevant government authorities

Exercise: All participants in one group shall develop the inputs and outputs of a sawmill section in a moulding factory with a clear focus on the issues below, and describe which steps are missing and which can be neglected.

1. Materials
2. Information
3. Data and instructions
4. Means
5. Reports

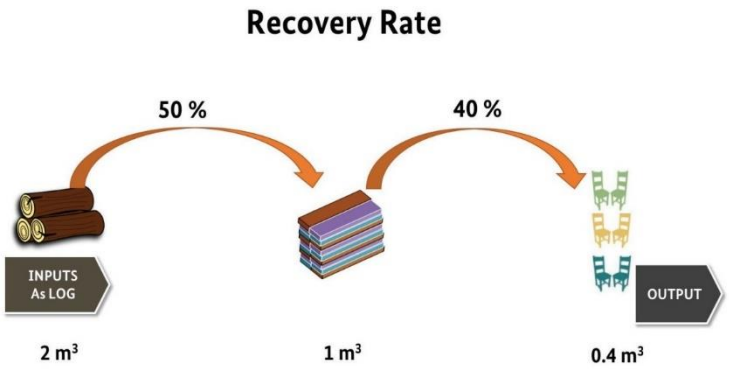


Answers for the example sawmill section:

- Materials:
- Input: Logs
- Output: Sawn timber; Waste material
- Information:
- Log Species, Log number, Dimension (Diameter, length) Log Grade (A,B,C), Total number
- Batch Number, Sawn Timber Dimensions (Width, Thickness, Length), Sawn Timber Grade (A,B,C), Quantity of Boards in Batch No., Total Number of Batches

- Data and instructions:

- Production hours, Machine running time, Break-down time and reasons, Manpower (Start/End), Maintenance time, Machine operational instructions, Grading rules, Safety instructions
- Means:
- Sawmill, Saw blades; Waste and Dust extract System, Electricity, Pallets for storage, Sawmill production area
- Personal protective equipment
- Reports:
- Daily Log List, Daily Production of sawn timber with reference to new Batch No, Machine operation report, Maintenance report; Recovery Rate (Yield), Productivity



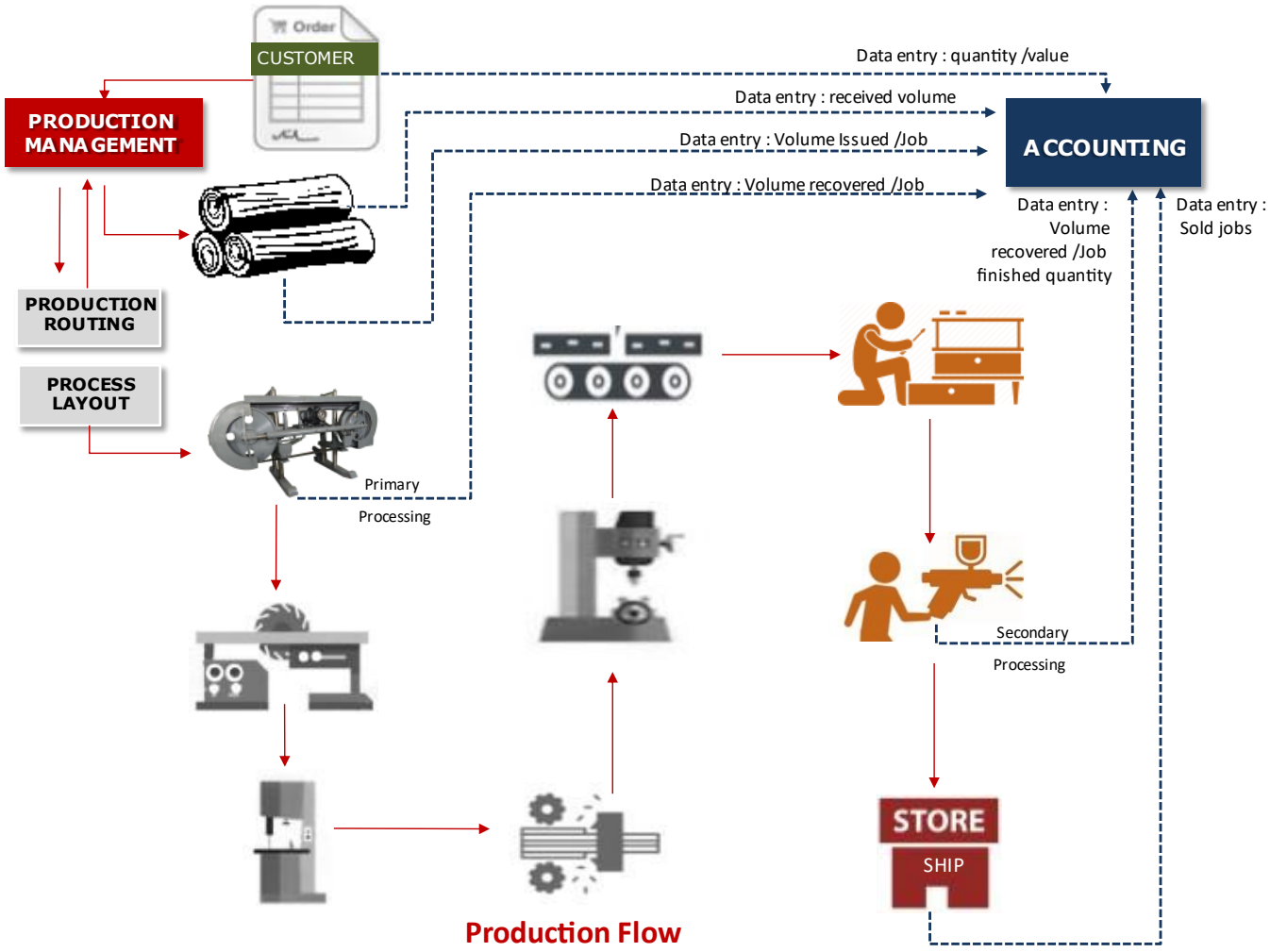
This system must include information on the so-called recovery rate, which describes the volume of timber recovered as a percentage of the volume of logs consumed during all steps of the operation. Every operator needs to have a paper-based or computerised material accounting system to keep all records of timber input, transformation and output collected at critical control points.

After acquiring the above information in the group work, there are several questions to be answered:

- For whom and for what is it needed for?
  - Maybe the information is no longer necessary!
  - Maybe the information is needed in another form!
- With the above, what do you want to obtain?
  - Maybe there is a simpler way to obtain it!
  - Maybe the result is sufficient.
- Is it necessary?
  - Maybe this was made in another production step!
  - Maybe it was introduced for another purpose!

Exercise: Each participant shall develop the input/output information of his section or a relevant production step. The most complete data collection will be presented in front of the class and will be followed by a discussion on the importance of data storage and backup.

2.1.2 Internal Management System



Production Planing/Work Preparation

PRODUCTION ROUTING CARD

PRODUCT CARD/JOB CARD

MATERIAL(COMP.) REQUEST AND ISSUING FORM (Batch -No.)

Can be prepared during product design and development phase
Often ready and available before production running
Often prepared as a standardize norm for ONE product
Figures / information are defined based on trial production , zero series production , trial test
Ready in place as production profile

Important explanation

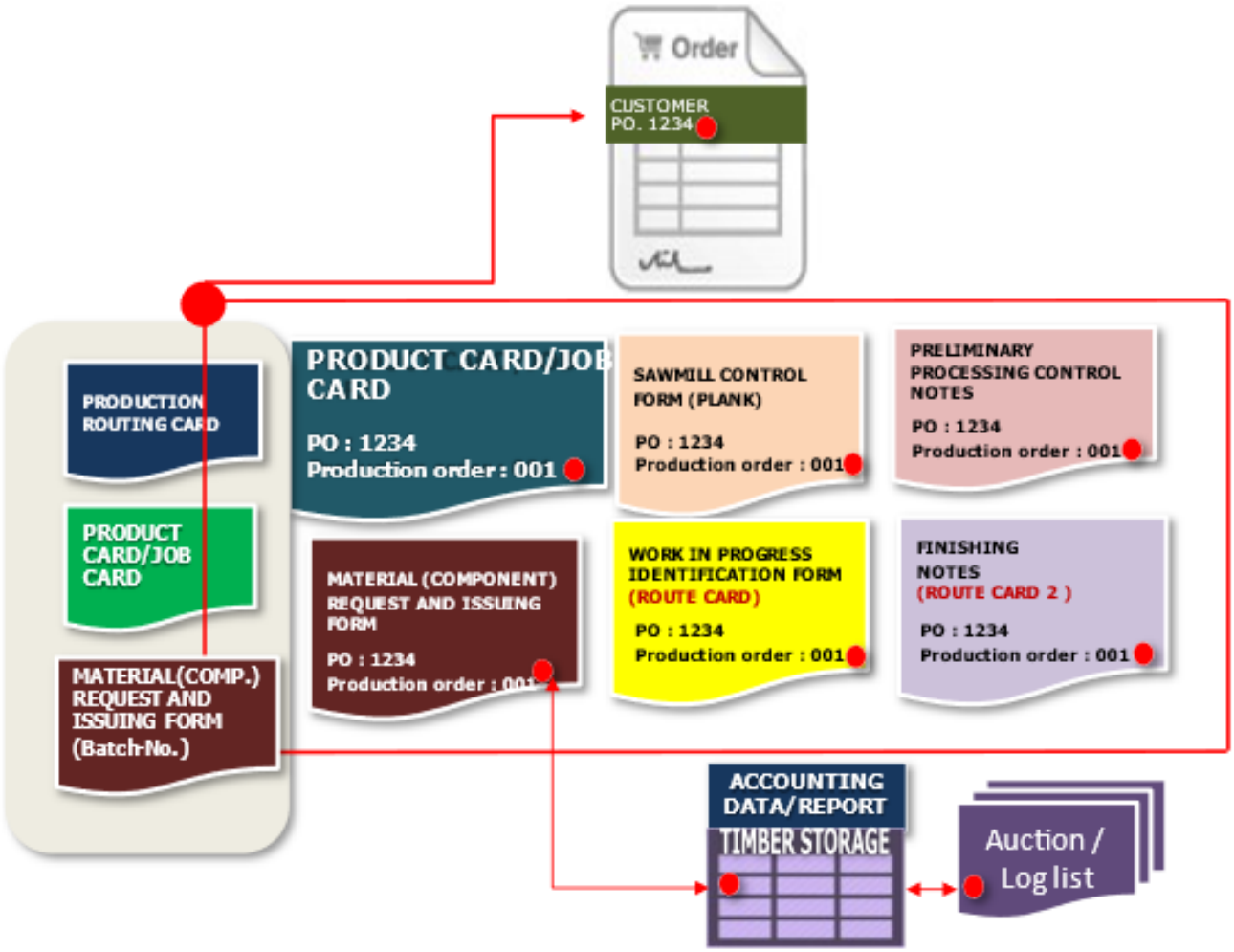
MATCHED/ CONFIRMED

PRODUCT CARD/JOB CARD

When customer place an order
- Product name
- Quantity

Operator to create an production order / work order. To monitor and track of this production of this order

PRODUCT CARD/JOB CARD
Link : PO
Create Identifiers : Production Order No.


Order
CUSTOMER
PO. 1234
PRODUCTION ROUTING CARD
PRODUCT CARD/JOB CARD
MATERIAL(COMP.) REQUEST AND ISSUING FORM (Batch-No.)
PRODUCT CARD/JOB CARD
PO : 1234
Production order : 001
SAWMILL CONTROL FORM (PLANK)
PO : 1234
Production order : 001
PRELIMINARY PROCESSING CONTROL NOTES
PO : 1234
Production order : 001
MATERIAL (COMPONENT) REQUEST AND ISSUING FORM
PO : 1234
WORK IN PROGRESS IDENTIFICATION FORM (ROUTE CARD)
PO : 1234
Production order : 001
FINISHING NOTES (ROUTE CARD 2)
PO : 1234
Production order : 001
ACCOUNTING DATA/REPORT
TIMBER STORAGE
Auction / Log list

LOG RECEIVING FORM

[illegible] (Log Receiving Note)	[illegible] Sheet No.	
	Date	

[illegible] **Environmental status**	[illegible] Known Wood Source Legal Origin		[illegible] Non Auction ([illegible]/Collected wood)		[illegible] Unknown/:
	[illegible] From Auction		[illegible] Non Auction ([illegible]/Confiscated wood)		

[illegible] Invoice No.		Invoice date	
[illegible] Invoice volume/Total log list volume		[illegible] Log list number/reference (legal timber reference)	

[illegible] **Actual Received date**	[illegible] **No.**	[illegible] **Log No.**	[illegible] **Species**	[illegible] **Diameter/D1 (cm)**	[illegible] **Diameter/D2 (cm)**	[illegible] **Length (m)**	[illegible] **Volumes (m3)**	[illegible] **Weight (If applicable)**	[illegible] **Evidence and documentation Transport permit or removal pass number, Auction reference**

COMPONENT RECEIVING FORM

COMPONENT RECEIVING FORM

Applicable : semi/finished component and sawn timber (plank)

ການບັນທຶກຊິ້ນສ່ວນສົ້ນເຮົ້າ Receiving Note for Component or Plank	[illegible] Sheet No.	
	Date	

[illegible] /Invoice No.		Invoice date	
Name of seller		address of seller	
[illegible] Invoice volume/Total log list volume		[illegible] / Internal Batch No. (If company use this system)	

ວັນທີ ຮັບໄມ້ເຂົ້າ Received date	ລຳດັບ No.	Description of Component or plank	ຊະນິດພັນໄມ້ Species	Dimensions WxLxT (cm)	Quantity	ນ້ຳໜັກ (ກິໂລ) Weight (Kg) (If applicable)	ປະລິມານ Total Volume (m3)	Semi or finished or plank	Evidence and documentation on legal source of components

COMPONENT RECEIVING FORM

SAWMILL CONTROL LOG-COMPONENT DAILY RECORD

SAWMILL / OVERSIZED COMPONENT PRODUCTION REPORT

Date :

Reported by:

DAILY RECORD OF LOG PUT INTO SAWMILL

No	Log No.	D1	D2	L	Volume	Species	Remark
		Total:					

DAILY LOG COVERTED TO PLANK (BEFORE OVERSIZE COMPONENT)

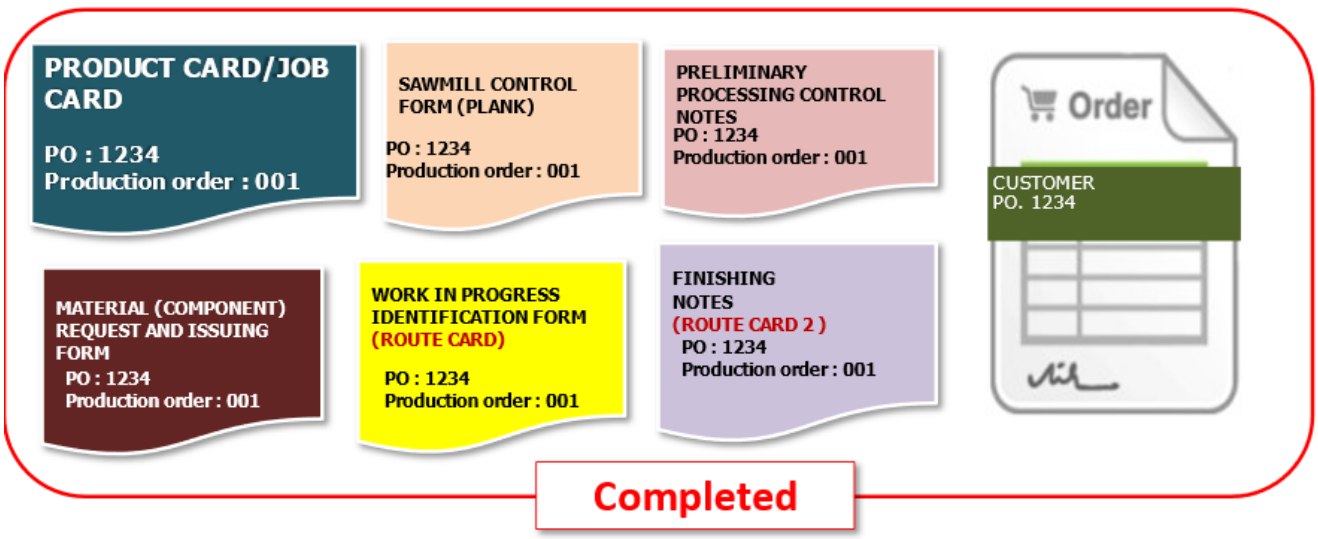
No	Plank to cut into component	T	W	L	Quantity	Volume	Species	Remark
		Total:						

DAILY LOG COVERTED TO OVERSIZE COMPONENTS

No	Oversize component name	T	W	L	Quantity	Volume	Species	Remark

To continue convert it into oversize plank above to finish report

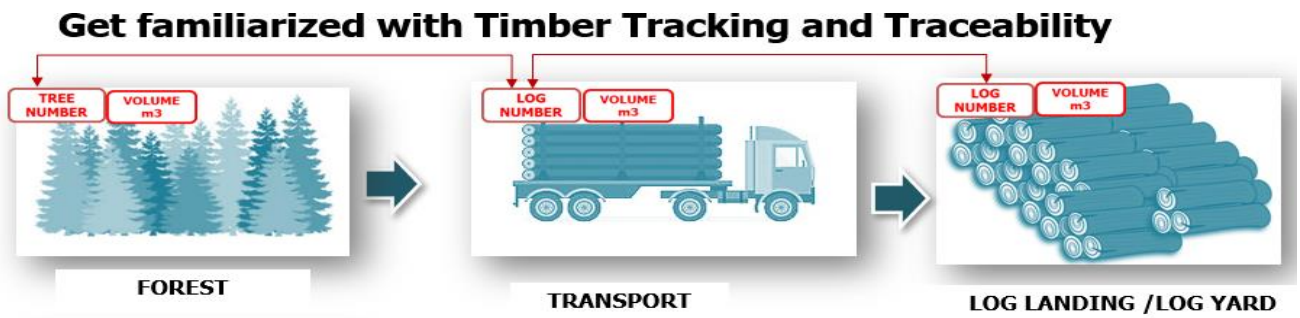
Internal Production Management System



- Consolidate data for producing production reports
- Submit production report
- Updating status and entry into accounting

2.1.3 Basic of Timber Tracking and Traceability

- Identifier & Unique Identifier
- Parent-Child Identifier system – Linkage between identifier
- Why it must be a identifier/unique identifier?

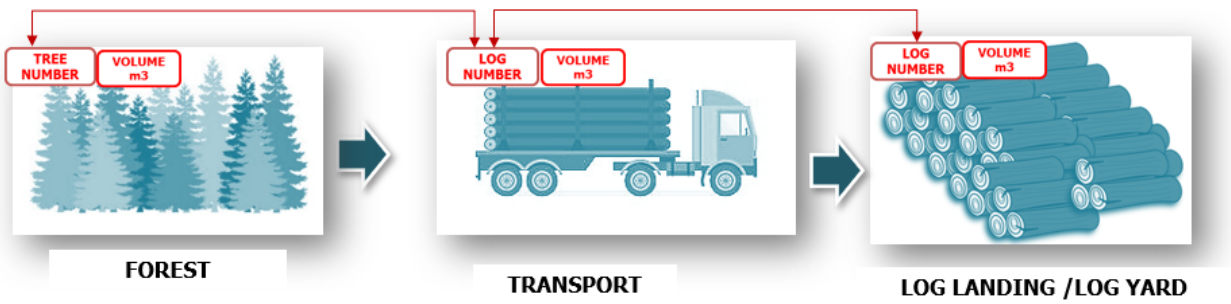


- Identifier & Unique Identifier
- Parent-Child Identifier system – Linkage between identifier

TREE MARKING / LOG MARKING WITH NUMBER ARE REGULATED BY LAW AND ASSIGNED BY CONTROL ENTITY

UNIQUE IDENTIFIERS USED AT NATURAL FORESTS IN LAO PDR

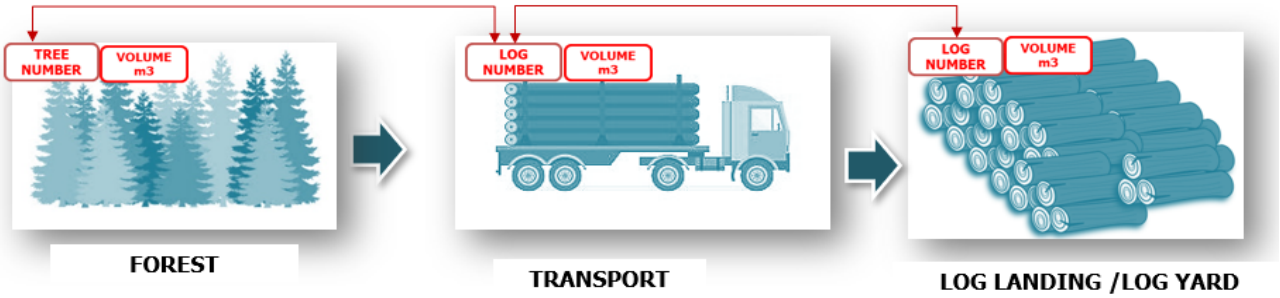
Get familiarized with Timber Tracking and Traceability



LEVEL 1 : FROM FOREST – LOG LANDING 1 AND 2

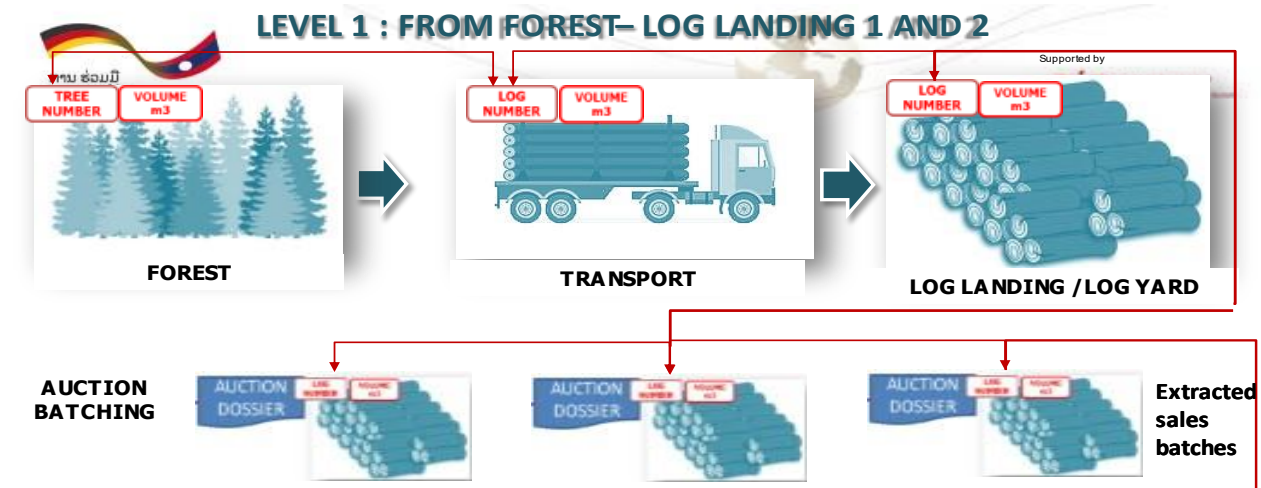
- **Tracking through unique identifiers : TREE NUMBER -LOG NUMBER (PHYSICAL IDENTIFICATION MARK)**
- **Information of LOG NUMBER & TREE NUMBER are available , can be referred to : HARVEST DOSSIERS, AUCTION DOSSIERS (MASTER LOG LIST OR LOG LIST, (EXTRACTED) LOADING LOG LIST FOR TRANSPORTATION**

Get familiarized with Timber Tracking and Traceability

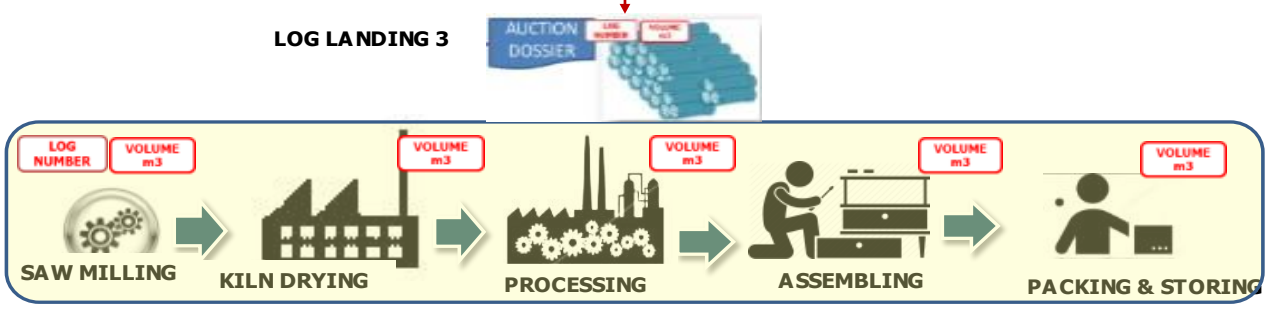


LEVEL 1 : FROM FOREST – LOG LANDING 1 AND 2

- Unique identifier is regulated by law (designed by MARD)
- Government/Control entity establishes unique identifier for matter of control the movement legal timber
- Operator prove legality of purchased timber by using evidence proof of identifier reference (log number- log list- invoice/payment receipt..)



LEVEL 2 : LOG LANDING 2 LANDING 3 (TRADE/PROCESSING/EXPORT)



PARENT
UNIQUE IDENTIFIER

03-320

R1= 0.2m; R2= 0.38m
L= 3m
V= 1.163m3

Log Number

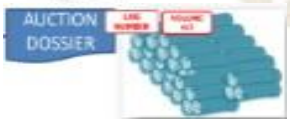
Batch NO. Card

LEVEL 2 : LOG LANDING 2 LANDING 3
(TRADE/PROCESSING/EXPORT)

LEVEL1 IDENTIFIER

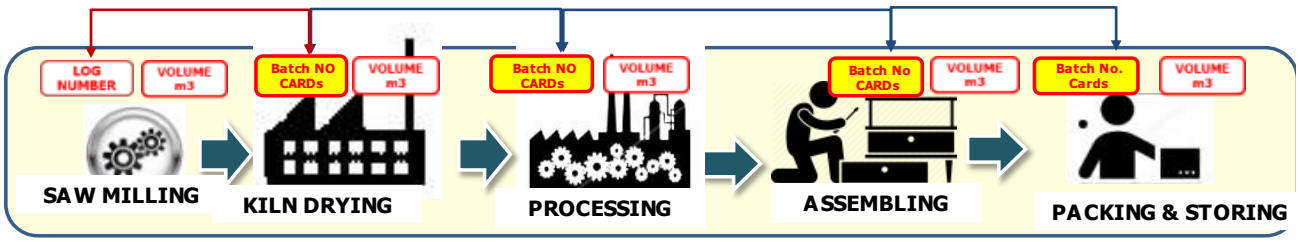
LOG NUMBER

LOG LANDING 3



LEVEL 2 IDENTIFIER

Batch No. CARDs



LOG NUMBER

LOG NUMBER

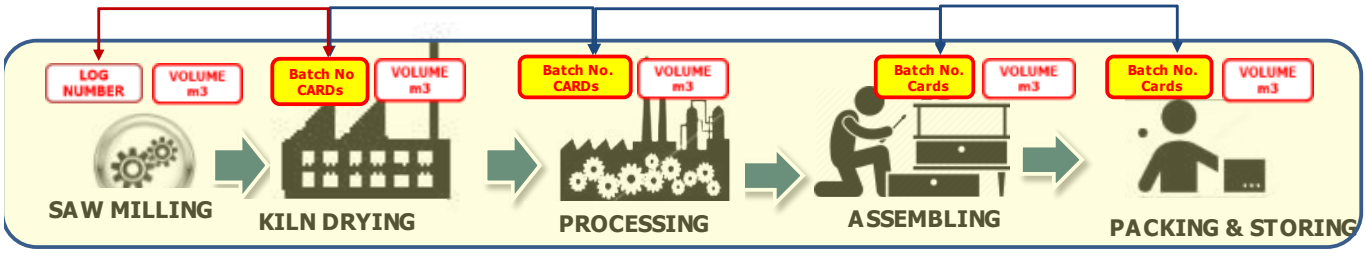
Batch NO. Cards

Traceable thanks to
PARENT-CHILD
Unique Identifier System

LEVEL 2 : LOG LANDING 2 LANDING 3
(TRADE/PROCESSING/EXPORT)

Supported by

LOG LANDING 3

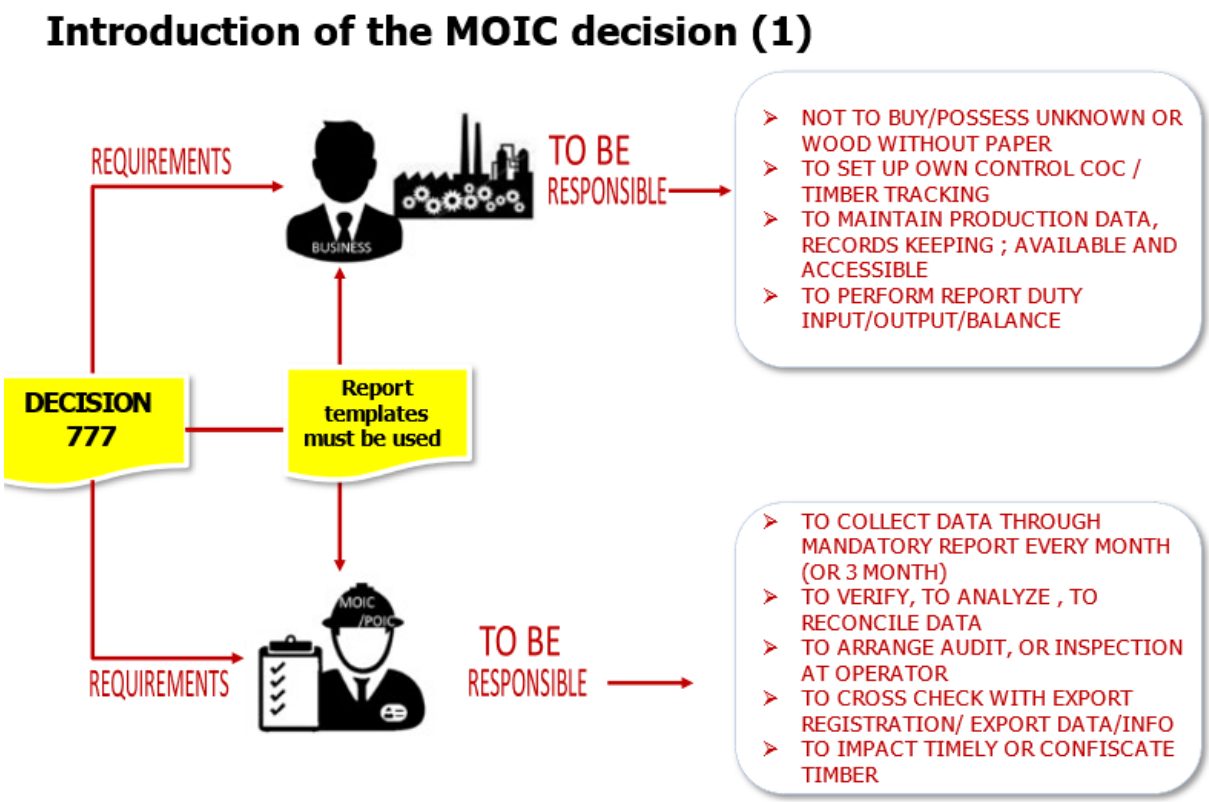


LEVEL 2 : LOG LANDING 2-LOG LANDING 3

- **Tracking through unique identifiers :**
  LOG NUMBER – IDENTIFICATION Batch No CARDs SYSTEMS (i.e. pallet notes with id card system/ process notes)
- **Information of VOLUMES USES RESPECTIVE TO THE LOG NUMBER R AUCTION DOSSIER are available , can be referred to : internal work order notes, production data, summary production report /delivery/sales/export dossier/other trade dossiers/export permit/ input-outputs report/recovery rates**

2.2 Process and Procedures of Monitoring and Control

2.2.1 Introduction of the MOIC Decision No. 0777



On 25 August 2020, the Ministry of Industry and Commerce issued the Decision No.0777/MOIC.DIH on Management and Monitoring of Timber Input and Output for the wood industry in Lao PDR. Following up this decision, on 25 July 2021 the Guideline No.1120/DIH.PSD was issued on Management and monitoring of timber input and output for wood processing enterprises. According to the above-mentioned decision and guideline, all wood processing enterprises in Laos have to set up an internal management system where they can monitor input, output and balance of timber in all stages of processing to ensure the legal sources of raw materials for production and report to the relevant government authorities.

The management and inspection of input/output monitoring is under the process of transferring from MOIC/DIH to MAF/DOF. Whether the management of the system is under any government authority, the principles of monitoring inputs and outputs in wood processing companies remains the same.

The participants will receive as reference material the decision No.0777/MOIC.DIH and the Guideline No.1120/DIH.PSD with annexes. Once DOF has issued their revised version the training manual has to be updated accordingly.

The content of the decision 0777/MOIC.DIH will be explained by transferring the guideline into a power point presentation explaining the main content and the relevant mandatory forms.

The **identification of the correct timber species** of logs and sawn timber is very important task of the company when receiving the raw material. The legal framework is given by the the Lao Forestry Law 2019 which separates between three tree species lists (Tree List I, II, III).

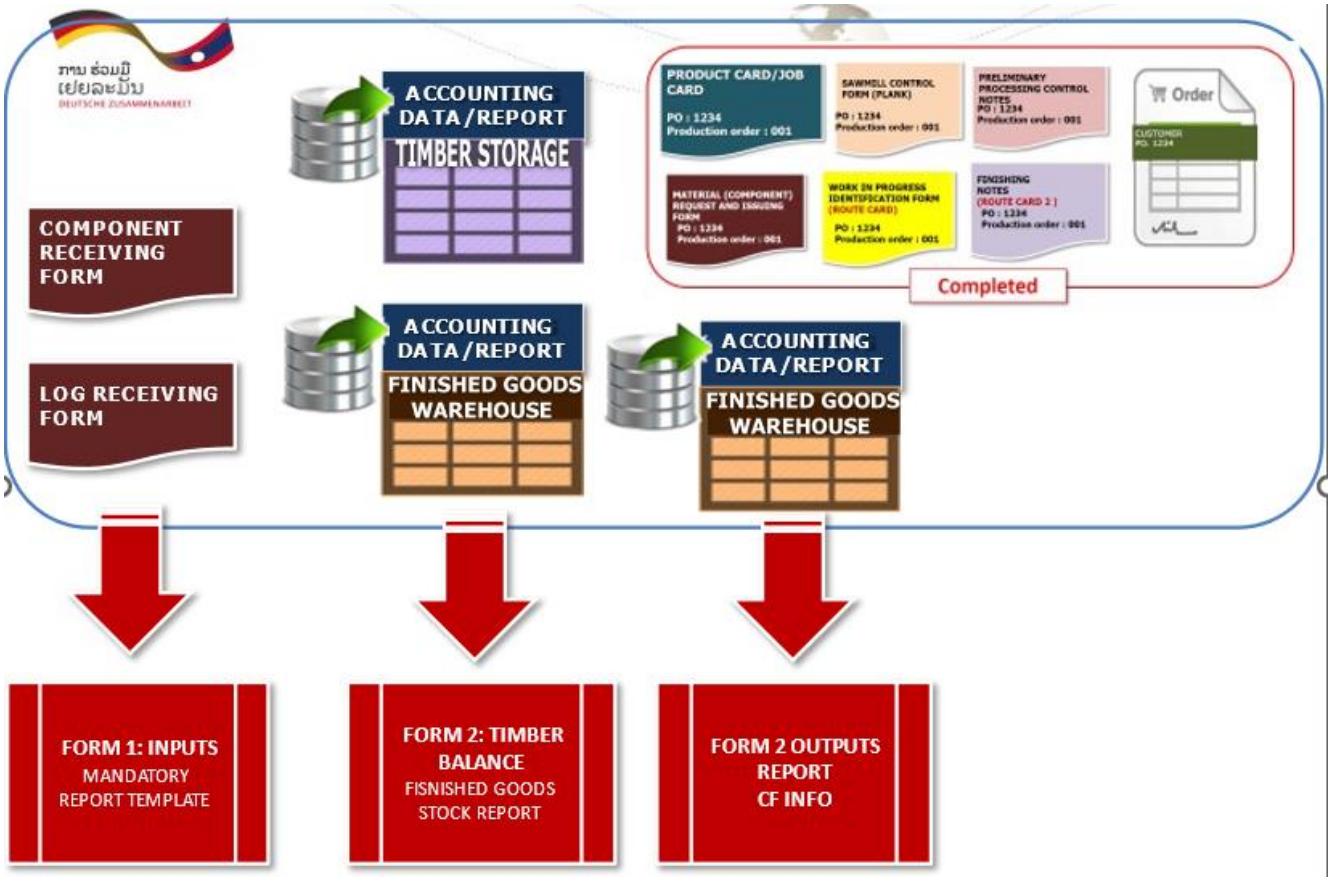
- Tree List I
    - contains hardwood species that are currently rare, extinct and have a limited growth region, including the Dalbergia species
    - this list includes all species listed in the CITES Appendices
    - Tree List I is referred to in the Forest Law Article 134 and 135 and prohibits business operators and the general public the harvest, sales and transport of this list without prior approval by the government
- Tree List II
    - Contains other hardwood species
- Tree List III
    - Contains all softwood species

Currently, no specific procedures are known of handling Tree Species II and III, rather than a differentiation by growth characteristics. The tree species list is separately issued by MAF with the current version of Decision 0448 (2021) and it contains the approved species.

Additionally, the MAF research institute NAFRI has worked on a master tree species list under a DA from FAO. This list has been partly published online, however there is currently no link to the official decision of MAF (Tree Master lists – Tree species Master List for Lao PDR (nafri.org.la)).

The process to use this master list with unique tree species code and revise specific regulations and forms from inventory, harvest, transport and sales to reflect the coding is still ongoing and will probably take some more time. Further refence will be given to the participants of the training by a detailed training manual on timber Identification from Vietnam.

At the end of this module the link between the Data from the “Internal Management System” of the company and the “mandatory reporting data” to the responsible government agency will be clarified:



Exercise:

The example for exercising the requirements of Decision 777 is as follow:

The Sawmill Mekong River View in Vientiane buys the following logs timber from a trader in Attapeu province:

- 200 logs of Teak with an average diameter of 45 cm and a length of 12 m from plantation forest.
- 1000 logs of Acacia with an average diameter of 20 cm and length of 4 m from a smallholder plantation
- 24 logs of *Dalbergia cochinchinensis* with an average diameter of 70 cm and length of 2,5 from a timber auction of confiscated timber

The sawmill processed the timber as following:

- The sawmill processed 100 Logs of Teak with an average recovery rate of 90% to sawn timber. Half of the sawn timber they could sell to a furniture company. The remaining logs were exported to Thailand.
- The 50 logs of Dalbergia cochinchinensis were sawn into blocks 40 x 40 cm with an recovery rate of 70 % and sold back to the trader. The trader exported those blocks to Vietnam.

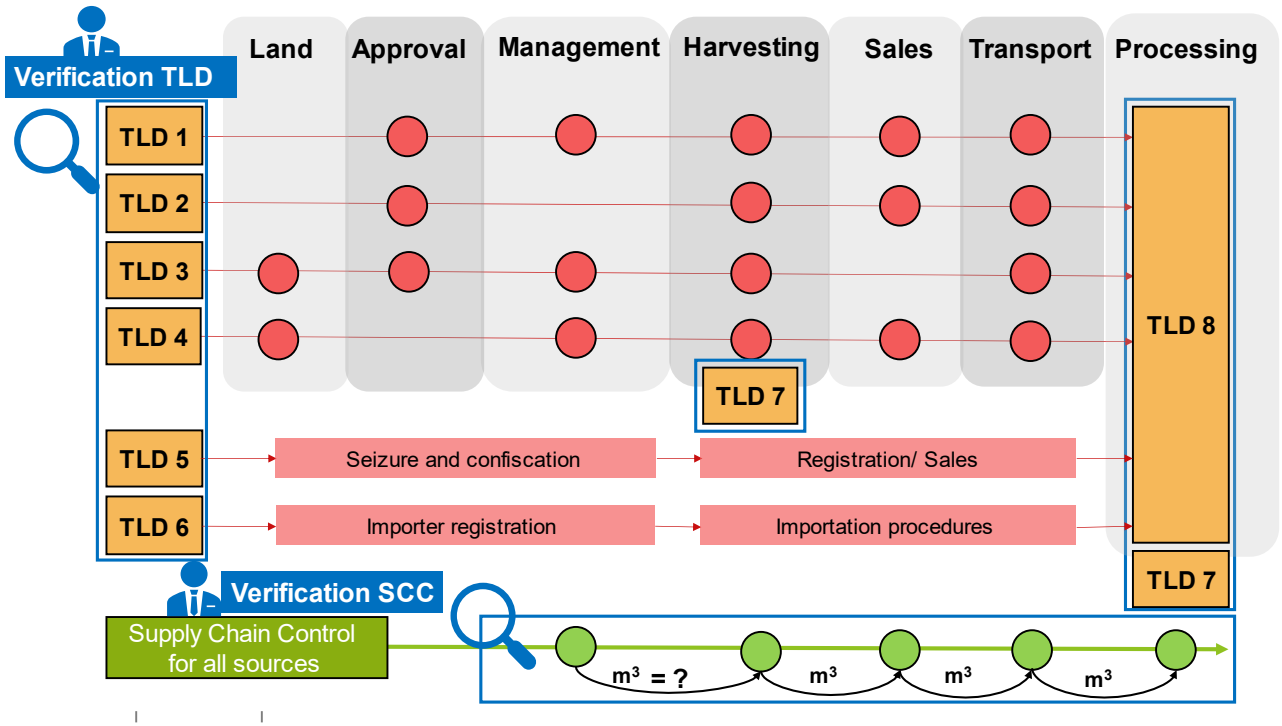
- 100 logs of the Accacia are sawn to boards with a volume of 15,7 m3 and sold to construction company in Vientiane.
- 900 remaining logs of Acacia are still in the log yard.

Which questions regarding the legality of the timber may appear during an inspection of the authorities?

What kind of documents apart from the reporting mandatory forms have to be provided?

Please fill the mandatory forms from Decision accordingly.

2.2.2 Compliance Verification of Operational Control Data



Verification of operational control data on **quantity, quality and identity of timber products** are checked and analysed at different stages of the supply chain from the source of timber to the point of exports or sales on domestic market.

Compliance verification aims at ensuring that operational control data on logs and processed timber products:

- is consistent throughout the supply chain by reconciling datasets between and/or within stages of the supply chain. Operational control data that is entered into an information management system (ref. Section 8) is reconciled electronically within the system. The system generates reports on data reconciliation.

- matches the physical products by validating data through re-measurements or other type of inspections. The data of re-measurements is entered into the information management system that includes functionalities for its comparison with operational control data. The information management system generates reports on the data validation activities.

Data reconciliation and validation are systematic verification activities carried out by the verification body. DOFI with support from POFI in the provincial level is assigned for this task. The frequency and intensity of compliance verification will be determined in the VPA implementation stage based on a risk assessment approach.

In the event of non-complying verification findings, the follow-up actions by the verification body include informing in writing the violator and giving the violator a deadline for executing remedial actions. The adequacy of remedial actions taken by the violator will be checked by the verification body.

Logs from PFAs / Logs from forest conversion areas

Systematic reconciliation is carried out between (i) number/volumes of harvestable trees that are determined based on pre-harvest inventory and number/volumes of logs scaled and graded at LL2, (ii) number of logs departed LL1 and number of logs arrived at LL2 and (iii) number/volumes of logs departed LL2 and number/volumes of logs arrived at LL3.

Operational control data is systematically validated at the following stages: Pre-harvest inventory and scaling and grading of logs at LL2. Pre-harvest inventory is validated for reassuring accurate harvesting potential at the FMU level and for preparation of a reliable provincial annual harvesting plan, which sets the ceiling for the harvesting volumes. The validation of scaled and graded logs is important to ensure that the log volumes by quality grades are correct at the auctions.

Confiscated timber

The scaling and grading of confiscated logs and processed timber are subject to similar validation at LL2 as logs from PFAs and conversion areas.

Logs from plantation forests

Systematic reconciliation between the volumes of harvested logs in the plantation area and volumes of logs arrived at LL3.

The need for systematic data validation in the tree plantations will be determined during the VPA implementation phase.

Logs from Village Use Forest

Systematic reconciliation is carried out between (i) number/volumes of harvestable trees that are determined based on pre-harvest inventory and number/volumes of logs actually harvested, and (ii) number/volumes of logs departed the Village Use Forest and number/volumes of logs arrived at LL3 or storage of traders.

The need for systematic data validation in the Village Use Forests will be determined during the VPA implementation phase.

Logs from lands of individuals, legal entities and organizations

Systematic reconciliation is carried out between (i) number/volumes of trees approved for harvesting and number/volumes of logs actually harvested, and (ii) number/volumes of logs departed from lands of individuals, legal entities and organizations and number/volumes of logs arrived at LL3 or storage of traders.

The need for systematic data validation in lands of individuals, legal entities and organizations will be determined during the VPA implementation phase.

Imported logs and processed timber products

Systematic reconciliation of logs and processed timber between border (entry point) and LL3 or storage of traders.

The need for systematic data validation of imported logs and processed timber products will be determined during the VPA implementation phase.

Trading of timber

Systematic reconciliation between logs and processed timber that were (i) purchased, (ii) stored and (iii) sold.

The need for systematic data validation of traded logs and processed timber products will be determined during the VPA implementation phase.

Industrial processing of timber

Data reconciliation at the wood processing site focuses on (i) comparison of information on logs received at LL3 and logs sent from LL2 or other sources, (ii) the acceptability of recovery rates that are calculated based on input and output volumes of processing lines and (iii) products that are ready for deliveries i.e. their comparison with product quantities stored in warehouse and processing outputs. The recovery rate can be approved, if it is within an acceptable range. The acceptable range for recovery rates is dependent on the quality of raw materials, processing technology, product and its quality. The acceptable ranges by companies and products will be determined during the VPA implementation phase.

Written test for Module 2

1. What is the meaning of timber balance and how is it calculated?

2. Timber recovery rate

- What does timber recovery rate mean?
- Can you give an example how to calculate the recovery rate from logs to sawn timber?
- Why is important to have an internal system to calculate the recovery rate in all production processes?

3. In which law are prohibited timber species for harvesting and processing defined?

4. What are the main responsibilities of the wood processing company under MOIC Decision No. 0777/MOIC.DIH. List at least three items.

5. Which agency is assigned for verification under the Lao TLAS system?

MODULE 3: MANAGEMENT IN WOOD PROCESSING

3.1 Characteristics of Wood Processing Enterprises

A small or medium production enterprise shows the following characteristics:

- The internal sections are being producer and client at the same time (between the sections sawing, drying and remanufacturing)
- Development, production and sale of products
- Objectives (size, employees, sale, markets) at medium and long terms
- Adequate profit
- Internal Policies (structure, strategy)
- Visions (products, markets, investment, employees).

The characteristics of a production enterprise shall determine its missions. The objectives shall define the requirements for every section of the enterprise. Markets for example determine the products, the required capacity and equipment, the investment and human capital.

It is essential to show that a production enterprise is a complete system and requires clear objectives and policies. All employees should observe and support the policies and objectives of the company, not only in the company's interest but also in their own (in terms of long-term job guarantee).

3.2 Organizational Structure of a Wood Processing Factory

The idea is here to select a pilot company and use the details of the organisational set-up of this company as an example during the course. Once the trainees understood the principles, they have to apply this on their own company. As an exercise they will use the organisational structure of their own company for further development.

3.2.1 Organizational Structure with personnel of a Wood Processing Company

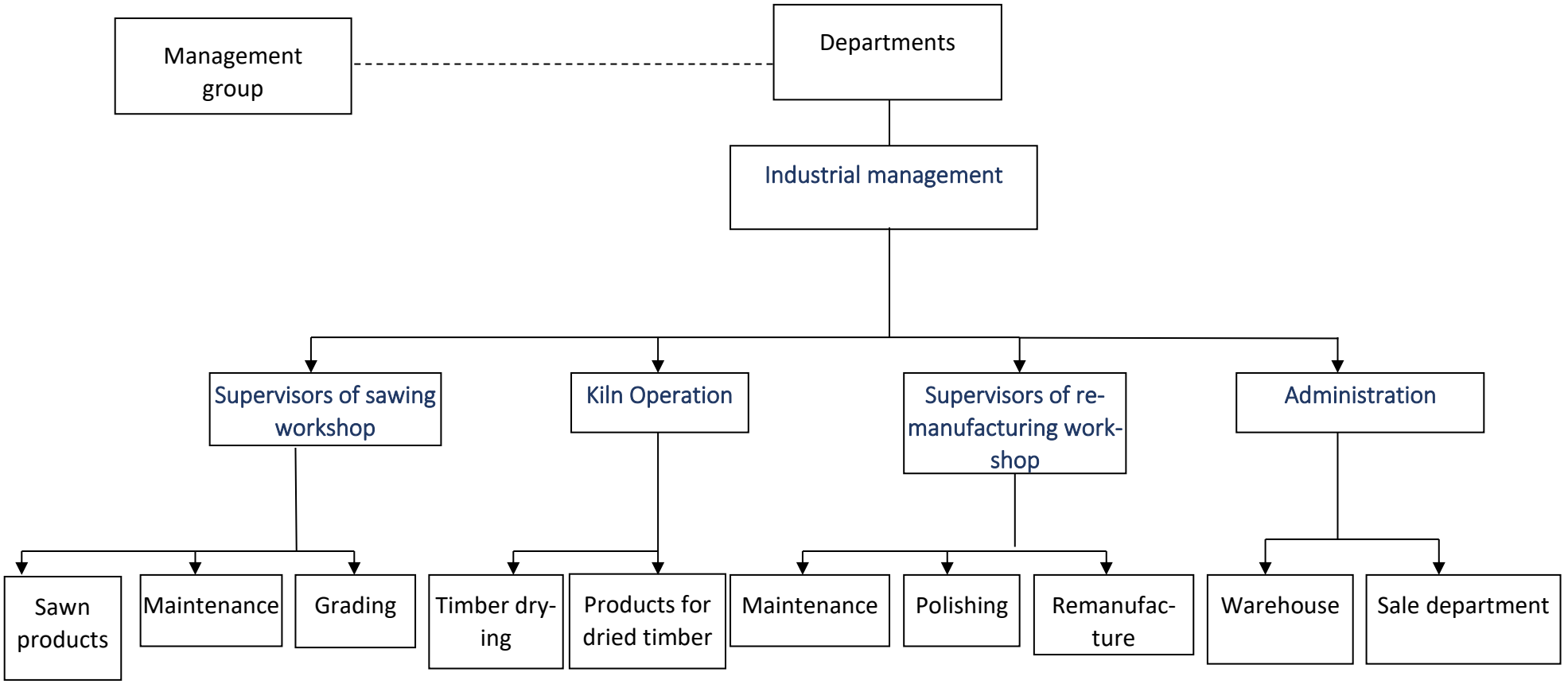
As the participants of the course are from different companies and institutions, and as the company will be repeatedly referred to during the training course, the most important information and structure of the company is given below:

No. of employees: 76

Total turnover: US$350.000/year

Directors: 2 persons, administration: 2 persons; sawing workshop: 25 persons; drying workshop: 2 persons; remanufacturing workshop: 46 persons; storage and classification: 3 persons

Total: 76 persons, and the production area is 7600 m^2


Management group
Departments
Industrial management
Supervisors of sawing workshop
Kiln Operation
Supervisors of re-manufacturing work-shop
Administration
Sawn products
Maintenance
Grading
Timber dry-ing
Products for dried timber
Maintenance
Polishing
Remanufac-ture
Warehouse
Sale department

3.2.2 Personnel assignment in pilot factory

The issue of direct and indirect personnel, or personnel which is directly involved in production, and which has auxiliary and administrative functions, is an important characteristic of the company. Especially when receiving orders and fluctuating occupations, it is necessary to observe those operations in order to have a control over the company's general costs. The analysis of different groups within the company has shown the following results:

Management : 2
Administration : 1 } 3 positions = 4% administrative

Maintenance : 3 } 3 positions = 4 % auxiliary services

Sawing workshop manager: 1
Production manager (+remanufacturing): 1 } 4 positions = 5,4 % Plant management
Remanufacturing supervisor: 2

Driver - Frontal Klia: 1
Driver - Frontal Durham: 1
Driver - Forklift Clark: 1
Driver - Ford Chips: 1
} 4 positions = 5,4 % transportation of materials

Sawing workshop: 20
Classification: 4
Drying: 2
4 surface cleaning: 4
Sanitary: 11
Finger Joint: 6
Carving: 6
Sandpaper: 8
Completion: 8
Packaging: 2
} 62 positions = 85 % production

Total: 76 = 100%

The balance between direct and indirect work is discussed. For an enterprise which mainly focuses on production and requires less personnel on marketing issues, then a balance of 62 direct workers and 14 indirect personnel is still acceptable.

3.2.3 Main questions in the supplier-customer relation

Objective

Participants have to be aware of the important role that customers (who buy products/services of the company) play especially because the existence of the company depends on the fulfillment of requirements of clients. Especially when the products represent "commodities", which are sold in massive volume, and are relatively easy to be manufactured, as it is very easy to lose the market if delivery deadlines are not met.

Supervisors and workers do not work for the superiors or the management of the company, but for the clients of the company.

Therefore, requirements of customers are the first priorities. Questions, such as "What do customers need, and how can I meet their requirements?" have to be cleared.

Next, participants must realize that they have "internal" customers in their own company too, for example those who receive sawn timber for drying in the kiln. Therefore, they must pay considerable attention to their requirements that the timber is sawn according to the allowed tolerances of thickness and stapled correctly

Main questions:

- Who are my customers? (external and internal)
- What do my customers need? (products, maintenance services for production)
- What are the requirements of my customers?
- What do I actually provide them with?
- In what point I do not meet my customers' requirements?
- What can I do to meet their requirements? (what do I need to change in order to do so?)
- What activities do I carry out? (What, when, where, how)
- How can we make a win-win deal?

For example a location for products and raw materials which is convenient for both parties, identification of defective lots of products, orders with clear indications or special dimension or size.

Role play: Meeting between Head of Sawing section and Head of Drying section (Internal customer and internal supplier)

The situation of the "Internal Customer" (Drying section):

The production manager of the company complained to you about the high defect rate in the drying process. Apart from that, the volume of dried timber provided for further processing is not in line with the production planning and orders often got delayed because there is not sufficient dried timber available. You often receive the sawn timber which is not stacked correctly by the sawing section. So you have to rearrange the timber, and this often delays the

production process. You also get a lot of different timber species and different thicknesses which you cannot mix in one load for the drying kiln. For this you ask for a meeting with the head of the sawing section.

The situation of the "Internal Supplier":

You are the head of the sawing section. The sawing process takes place according to the availability of logs in the log yard. The sharping process for sawblades is outsourced and often the sawing process has to be stopped as the delivery time of sharped sawblades is often delayed. There are not enough stacking poles of 2cm thickness available, and you often have to mix them with 3 cm thickness.

3.2.4 Rules for the discussion between client and supplier

- Always have a positive attitude: 'We all can win'
- Be well prepared, with real data
- Be clear, using a common and basic language
- Start with positive feedback: this can prevent that things go wrong before they have even started
- Know how to listen and to keep calm
- Express your expectations
- Express your anxieties
- Appraise the reasons for the opinion of your opposite. The communication is more effective if you show that the problems of the communication partner can be solved compared to yours
- Search for common solutions

Always remember: The client gives the orders!

Shortcomings for not having enough goods items for customers to choose and a good selling environment:

Organizational structure

- Who can have access to the safe?
- Who does the purchasing?
- Who is responsible for which item?
- Who replaces the other and when?
- Where is the warehouse?
- Who can enter the warehouse?
- Who can give orders?

Job description

- What to do when some items are not available?
- How to receive and sort orders?
- How to implement orders?
- How to handle customers' complaints?
- Who is responsible for goods change?
- What are the payment methods?
- Which payment method is accepted?

Exercise:

Participants describe the company, its history, structure, number of staff and main products. One participant will hold a presentation in front the class

Role play: "Mrs. Patricia's shop"

The aim of the game:

Each company needs to have an organizational structure (organigram) which describes all working positions. All employees need to be familiar with the organigram and their own job descriptions.

Situation:

Mrs. Patricia received a considerable amount of money from her husband. With this money, she thought about opening her own business.

Mrs. Patricia opened a shop with many stalls selling women's clothes at a selected place with shelves. She started her business activities, made the first order and hired two female employees to support her business.

Two weeks after the opening day, following things occur:

- Female employee A could not satisfy customers because there were no clothes of the sizes at their request (36 and 34)
- When Mrs. Patricia was absent, employee A called the jean supplier and ordered 30 jeans of the unavailable sizes.
- Mrs. Patricia was very surprised and angry because when she was looking on her table she could not find the receipt of the mentioned items.
- When looking at another table, she found the receipt, which showed certainly those types of clothes which were requested by customers.
- Employee B begins arguing with employee A because the latter thinks that she is the only one who should have access to the safe.
- Employee B complains that employee A interferes in her work because she thinks that she has the responsibility to sell high value items.
- During lunch time, employee B is alone in the shop with a customer, who is complaining about a sewing defect. The customer asks for a reduction of the price of the defect shirt. As the employee does not know what to do, the customer gets angry and leaves the shop.

The Organizational Structure shows:

- ✓ Distribution of tasks and assignment and division of functions within a company.
- ✓ Structure of different areas, groups and positions
- ✓ Hierarchy, order levels and decision levels
- ✓ Links between authority and responsibility
- ✓ Official communication channels
- ✓ The essence of relations among employees in the company
- ✓ Human resource management = the head of each group of employees, workers, etc.
- ✓ Existing relations between different positions in the company and in each department

3.2.5 Job description

The purpose of a job description:

Job description explains in a written form:

- ✓ Tasks and aims of a position
- ✓ Ranking of the position holder within the company's hierarchy
- ✓ Competencies and responsibilities

Job description is the basis for:

- ✓ Definition of requirements for certain position holders
- ✓ Hiring and training new employees
- ✓ Assessment of the employee holding the position. Assessment will continue until job requirements are met

Advantages:

- ✓ Employees know exactly their objectives, tasks and competencies
- ✓ Employees must be responsible for what they do and what the avoid doing
- ✓ Reduce arguments with colleagues.
- ✓ Job description should at least contain the following information:
- ✓ Position name
- ✓ Area/sector
- ✓ Rankings (high, low)
- ✓ Replacement (replace whom and in case of absence who can replace)
- ✓ Position's targets
- ✓ Tasks
- ✓ Responsibility
- ✓ Capacity

Job description may contain some details as follow (according to the company's requirements):

- Requirements for position holder (⇒characteristics of the requirements)
- Knowledge, ability, experience
- Working moods:

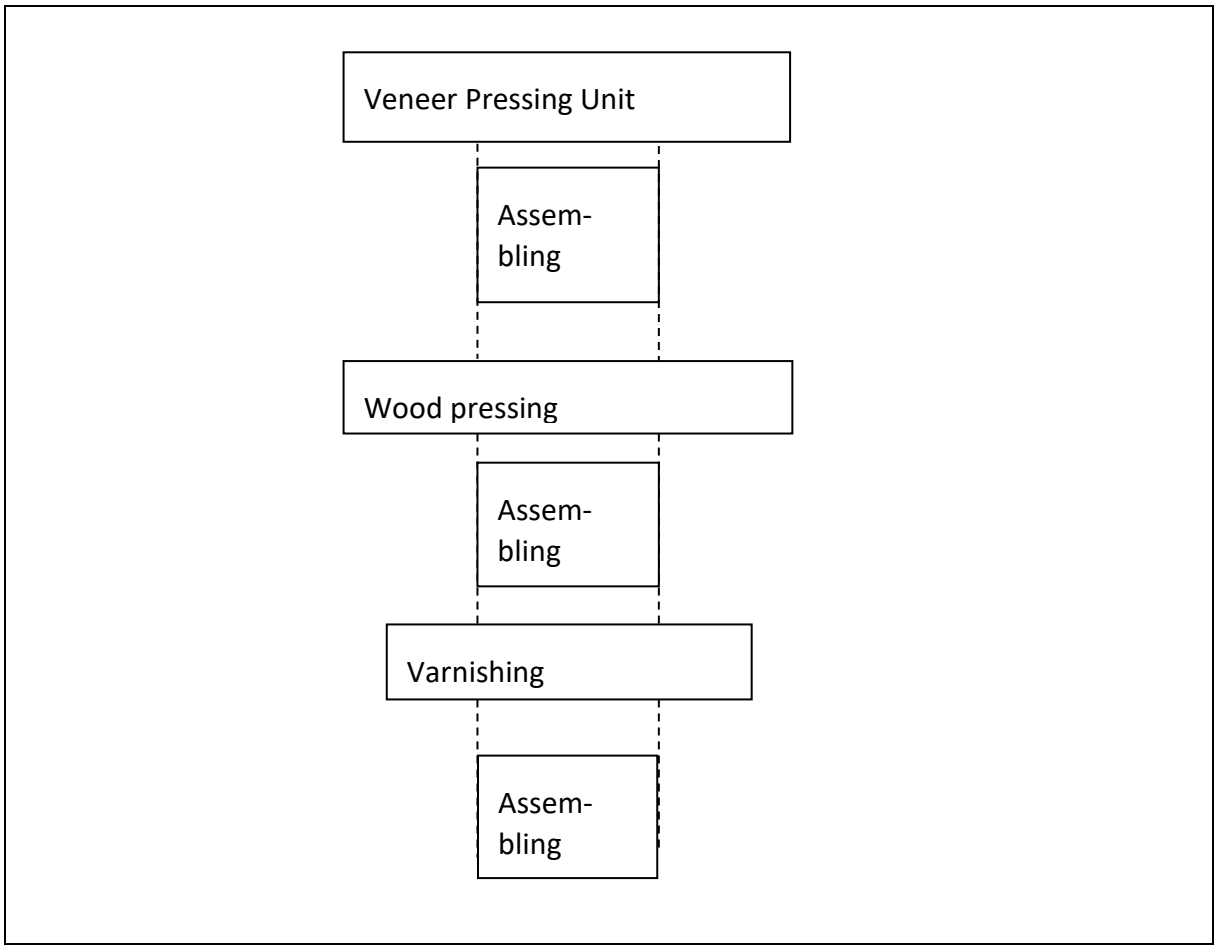
Example:

- decisive
- able to make decisions
- able to achieve acceptance
- social skills

Exercise:

Participants need to describe a job position: e.g. the position of a supervisor in the veneer pressing unit in Burapha. Veneer pressing is not part of any specific production line but forms a service for all production lines.

First, they analyse the position of this unit by comparing it with other units and production lines. The following chart shows the position of the wood pressing unit within the production line:



Job description

Name: Phouthone

Position: Supervisor of Veneer Pressing Unit

Workplace: Veneer Pressing Unit

Salary group: SP II

Directly higher level: Head of the Veneer Pressing Unit

Lower level:

3 machine operators at Classification of Veneer

Veneer arrangement

Veneer pressing

Assistant: Veneer warehouse

Aim:

Ensure production program

Minimize waste and repair

Resource management

Reduce production costs

Management of Personnel and working hours

Specific tasks:

- Take care of working facilities and its maintenance
- Organize quality contests
- Personnel training
- Quality control
- Collect and inform about the amount of manufactured goods
- Perform appropriate acts

Additional tasks:

- Be aware of expiring dates, reuse and the quantity of available materials (adhesives).

Knowledge and experience:

- Experience in using adhesives, veneer and plywood products
- Graduated from high school
- Creative in solving problems
- Personnel Management

Valid from:

Director	Supervisor

Signature:

Furthermore the characteristics that a supervisor of veneer pressing must bring along are being analysed :

Working moods

- ✓ Certain
- ✓ Patient
- ✓ Dynamic
- ✓ Able to work under pressure
- ✓ Able to make decisions
- ✓ Objective
- ✓ Teamwork
- ✓ Organized
- ✓ Accepted by employees

Behaviours:

- ✓ How to manage staff
- ✓ Sensitive to occupational safety
- ✓ Assume responsibility

3.2.6 The importance of job descriptions

Exercise:

The signing of Souliphoune's contract

Souliphoune went to see K, the head of the personnel department. He is is having a interview for the post of a purchase assistant. During the meeting, they discuss a number of issues, below you will find some details:

Know how to calculate, sometimes take the initiative to call and negotiate with suppliers, always have a panoramic view, good colleagues are ready to help, a good working environment and employees with development potentials.

Souliphoune could sign the contract.

4 weeks later following situation appears:

Souliphoune tried to find price quotations of adhesives and offered a large number of orders. When the purchase director knew about this, he was very angry with Márquez and told him that he could only order with the current supplier.

Contacting new suppliers is the task of the purchase director only!

Souliphoune was sad. The purchase director contacted the head of the personnel department and told him that he needed to tell new employees about their functions and responsibilities. The head of the personnel department replied that he could not listen to all the long stories of directors of different areas about each position.

Analyse:

Souliphoune was not satisfied because:

- The promise of the head of the personnel department did not match the real position
- He began arguing with the purchase director although he did not want to
- He was limited to develop his initiatives
- He felt shy before the secretaries.

The purchase director was not satisfied because:

- The personnel department sent him the wrong person
- The new employee interfered in his work
- The head of the personnel department opposed him
- Other assistants could have done the same

The head of the personnel department was not satisfied because:

- The purchase director complained about a personnel contract
- He admitted that his imprudence caused many troubles to the working section
- Another similar situation may happen

Conclusion: Everyone should describe their jobs!!!

Exercise: Each participant describes his/her job position. He/she then presents in front of all participants; comparisons and discussions will then take place.

3.2.7 Roles of Supervisor

General responsibilities of a supervisor in a production company

- Ensure, monitor and compare objectives relating to:
- Quantity, quality, deadline, expenses
- (e.g. material such as paint oil, paper etc ...)
- Exchange information between working group, between departments
- Assist in handling issues and objection
- Encourage safety, quality and sensitive to expenses
- Encourage knowledge enhancement for staff or training to new staff
- Keep contact with staff
- Monitor equipment, work places relating to :

- Usage

- Technical condition

- Safety

In order to accomplish the department's objective, line manager should ensure that his team members do the right work.

Therefore, line manager should have enough authority to give proper order to his subordinate.

Line manager's authority is defined based on following factors:

Formal authority:

Line manager's formal authority is based on his function and responsibility. With his authority, line manager has right to give orders to his subordinate, be responsible for production equipment, can make decision to ensure the operation of his department.

However, line manager cannot reach his success if he relies purely on his authority, as his subordinate will obey the order (they are forced to) reluctantly.

Personal authority:

Besides formal authority, line manager also possesses his personal authority. This authority will ensure respect, trust from subordinate and workers will be willing to do better job and willing to accept more responsibility.

Personal authority is based on:

- Technical knowledge and the application of these knowledge into practice
- Effectiveness
- Presentation skills
- Behaviours with subordinate
- Personal characteristics: objective, unbiased, reliable, sensitive to subordinate's issues

3.2.8 Characteristics of a good Supervisor

Expectations from subordinates:

- Objective, unbiased
- Open to personal questions
- Willingness to hear suggestion
- Clear, frank, tell the truth
- Willingness to accept and create reliability

Reasons for complaint from subordinates:

- Rude voice
- Not keep promise
- Not tell the truth
- Irregular character
- Biased
- Lack of communication skill
- Unfair treatment (salary, work, leave ...)
- Shortage not fixed

3.3 Internal Quality Management System in Wood Processing

3.3.1 Gap assessment of existing management system for input /output monitoring

Participants are recommenced to check the availability of the following documents in their companies:

- Organisational Chart
- Production Flow Chart
- Job descriptions
- Work procedures in **different sections** in the company (Description of the production processes; who are responsible for what? who approve or authorize?
- Wood procurement
    - Log yard management
    - Sawmilling
    - Grading
    - Timber drying
    - Timber Storage
    - Secondary Wood Processing (Moulding, Formatting, Veneering, Assembling, Surface Treatment etc.)
    - Finished Products Warehouse

  - Sales
- What are procedures for production planning?
- What are the procedures for production monitoring/control in the different sections of the company?
- Reporting system production manager to company owner
- Reporting System Supervisor of section to production Manager
- How is data management (Data collection/Record Keeping) in the company organized?
- Description of material and cost calculation system
- How and when is inventory data collected?
- What is the system for yield/recovery rate calculation?
- What is the mechanism for reconciliation of data?
- Is there a manual for the internal management system available where all the information is documented?

The table "Gap assessment…" with the traffic light system in section 3.3.4 can be used by the participants as a checklist to make a snapshot of the actual situation in their companies regarding the above questions in the company. In a later stage it can be used to monitor the progress of the internal management system.

The trainer can use the table to summarize the actual situation at the beginning of the training in the participating companies. The "Improvement projects" should address those items of the checklist. After the successful implementation of the improvement projects the trainer can document with an updated version of "Summary table" the overall progress towards a functioning internal management system of the participating companies.

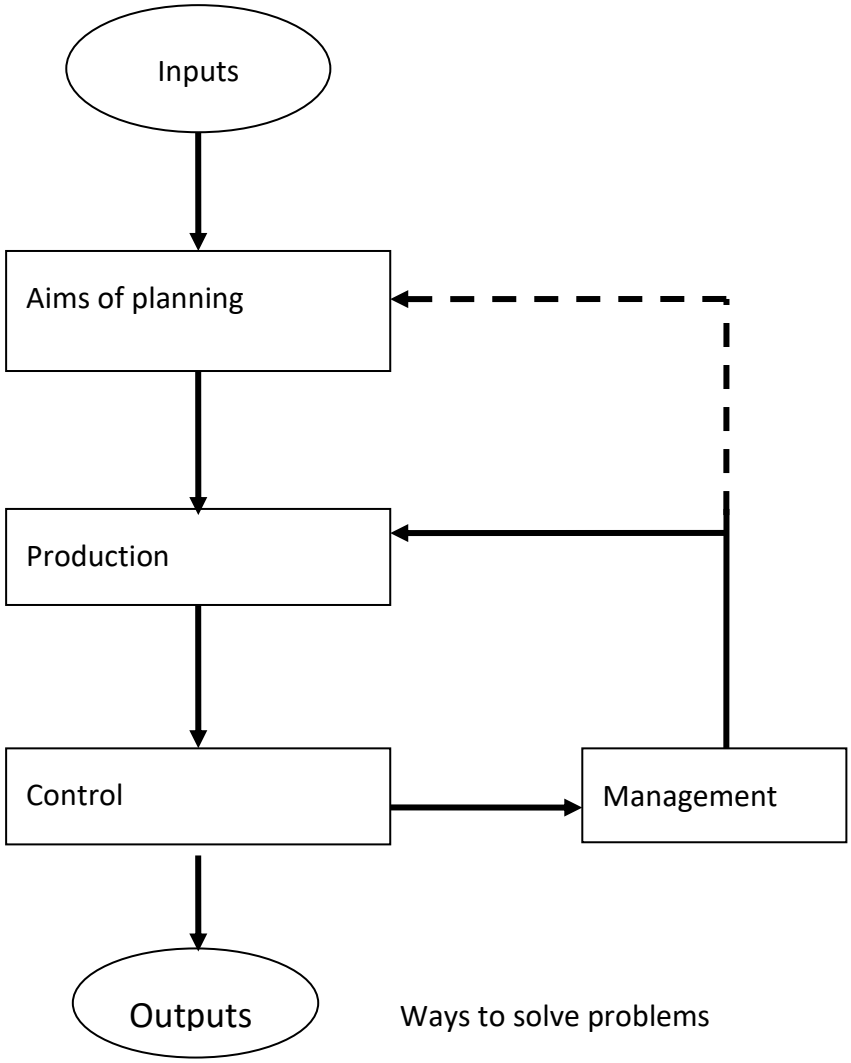
3.3.2 Production management

3.3.2.1 Company's decision-making steps

Independent from sections and areas in a company, the company's decisions can be made following the following steps:

- Planning
- Production
- Control and management

With control people can supervise production (quality for example) and will resolve shortcomings through management.



Arising questions

What can happen if there are no targets?

How can I myself set a target?

Do we begin with big or small targets?

3.3.2.2 Functions of Work Preparation

Work preparation includes all measures for an optimal manufacturing of the final products. This includes the manufacturing of non-customized products as well as customized products specifically manufactured according to customer specifications.
The work preparation must ensure that all products are produced at minimum cost and according to the required specifications (e.g. dimensions) and quality.
Work preparation comprises the following main areas:

- Work planning
- Work control

Work planning determines:

- what (products / parts)
- how (processes)
- by means of what (machines, tools)
- under which conditions (wood moisture content, climate)

the products are to be produced.

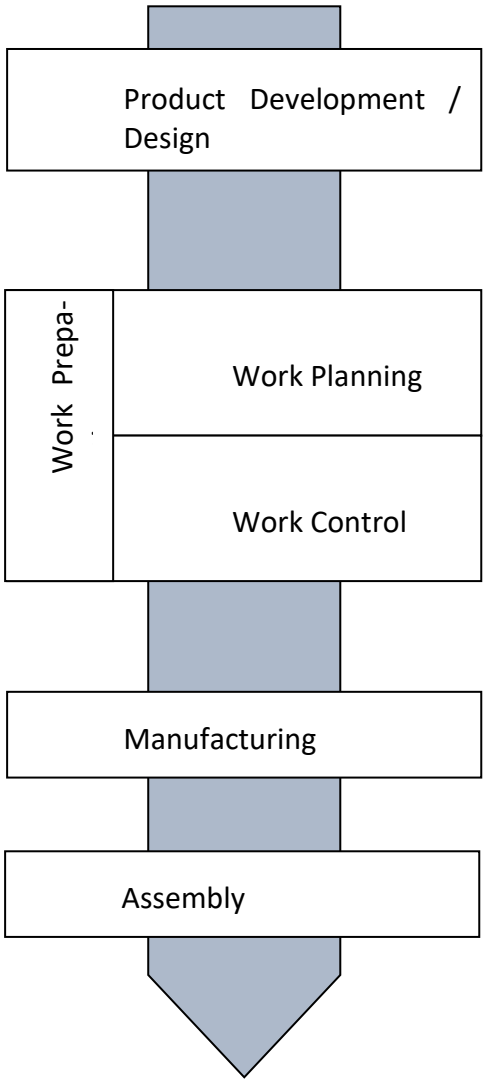
Work control determines and monitors:

- how much
- when
- by whom

the products are to be produced.

Quality planning and control as well as quality monitoring are functions of the Quality Management. However, these functions can also be delegated to Work Preparation.

Consequently, work preparation comprises all measures for executing a job order.



- Part lists
- Material slips
- Work plans / route sheets
- Machines / workplaces / storage
- Generation of job orders
- Material planning
- Order scheduling
- Machine scheduling
- Inventory control
- Capture and evaluation of production data

3.3.2.3 Productivity, quality, and measures for improvement

Objective

Know the requirements, possibilities and methods to increase productivity in the enterprise and apply these know ledges into the enterprise.

Some methods to increase productivity

The two following factors are of special significance in production:

- Produced quality (with the corresponding values for re-work, defects, complaints)
- Productivity P determined as follows:

$$P = \frac{output}{input} = \frac{produced\ number\ of\ defect{-}free\ units}{number\ of\ required\ work\ hours}$$

or

$$P = \frac{produced\ no.\ of\ defect{-}free\ units\ in\ the\ milling\ department}{number\ of\ required\ machining\ hours\ in\ the\ milling\ department}$$

The afore mentioned parameters “number of units, work hours, machining hours”, etc. which are supplied or required by the different company departments are a direct result of the supervisor’s performance.

The higher the number of produced units in relation to a specific number of required work hours the better the productivity = performance of a department and therefore of the supervisor.

Therefore, the supervisor must pay special attention to the parameters “required work hours” / required machine hours”, etc. He must constantly ask: “In my department or area of responsibility, how can we contribute to attaining the targets for these parameters and how can we further improve?”.

For doing this he must know the factors which influence these parameters. E.g. “Which factors influence the number of machine hours required for processing the target number of units / quantity. Or “which factors cause defects or repair work?”.

These considerations must be made daily by the supervisor, and he cannot assume that the target performance in his department will remain on the same level without his continuous input and monitoring.

Measures for Improving Productivity

(Assumption: without new machine or tool investments)

Factors which influence productivity

- For monitoring and improving productivity it is necessary to have targets and standards (just like in a quality management system), e.g. target time for executing a specific process per part or per batch.

– The supervisor must determine in cooperation with work preparation which factors affect the productivity in his area. These factors must be known to all department staff, including operators and monitored by the supervisor.

Examples

- Reduce idle times of “expensive” machines / plants” by a “loss-free” supply of material, information, tools, etc. at the workplace/ machine during the transfer from job order X to job order Y
- Continuously monitor and instruct operators during work execution (especially important in case of new personnel)
- Exchange tools in time
- Maintain workplaces and material storage clean
- Ergonomic design of workplaces (correct and healthy position of the workers during work execution)
- Keep transport aisles in the department’s obstacle-free for reducing the transport time
- Observe the target process times, e.g. lacquer drying times before further processing
- Minimize the consumption of auxiliary materials (e.g. veneer thread, sanding paper, etc.)

How to convince operators of necessary measure for productivity increases

– Make all operators aware of why a high productivity is important
– Make all operators aware of the productivity and quality factors which can be influenced
– Determine together with operators at their workplace which measures / methods are suitable for increasing productivity
– In cooperation with work preparation introduce targets and standards for the operators
  - Target processing times for different work steps, processes
  - Material consumption
– Monitor targets and standards
– Discuss the causes for deviations and measures for improvement together with the operators
– Explain the reasons and methods for time recording at the workplace to the operators.
– Explain to the operators the advantages of a efficiency pay and bonus systems for the operators themselves and for the company
  productivity ⇑ ⇒ wage ⇑
– Do not rely on a one-time activity but try to motivate operators on a permanent basis. This requires
  ⇒ permanent monitoring
  ⇒ corrections where necessary
  ⇒ criticism or praise when necessary
– Support continuous improvement measures for the productivity
  - Develop own ideas how to improve performance
  - Discuss these ideas with superiors and colleagues

- Also ask the opinion of operators on your ideas
- Explain any change of targets / standards in case of technical or organizational changes at the workplace or in work processes.

3.3.2.4 Methods to calculate and control costs

Objective: When can an enterprise be able to exist?

An enterprise can only be able to exist when the income is higher than cost. This means that the production of products (service) should be cost less than the income drawn from selling these products.

However, the enterprise cannot simply increase price whenever their cost is high: normally customers are not willing to pay higher for a product. Sometimes, an enterprise has to reduce the price and reduce the cost, especially when competitors have launched new product/service with lower price. If the cost for material is increased, the enterprise should reduce other cost to remain the selling price.

Every employee of the enterprise should be aware of the cost and should do anything possible to complete the work within budget and reduce cost. This criterion is also valuable for line manager as it is also a standard to assess his contribution to the completion of objective as compared with forecasted budget.

Therefore, line manager should understand all types of cost and the calculation of cost and the factors relating to cost.

Cost of a production enterprise

In order to control cost, the most important thing is to understand which type of cost incurred.

- Labour cost:
- ✓ Salary for direct workers (e.g. workers operating production line to make the products) and for indirect employers (e.g. for logistics workers like transportation, cleaning, electrician ...)
- ✓ Salary for technicians and administrators (e.g. for planner, managers, finance...)
- ✓ Social allowance (insurance, paid leave...)
- ✓ Other labour costs (job posting, compensation...)
- Material cost
- ✓ Material for production (e.g. in NOVEM: wood, glue...)
- ✓ Accessories ⇒ to complete the products (e.g. in NOVEM: oil, screw, glue etc...)
- ✓ Utility ⇒ materials do not contribute directly to the final products but needed in the production (e.g. water, cleaning chemical, gasoline...)
- Depreciation cost
- ✓ Equipment will lose its value overtime, called depreciation.
- ✓ How can depreciation cost be calculated?

Example of calculating depreciation cost of a machine:

Cost of machine 300,000.00 US$.

Estimated lifetime of the machine is 10 years which means that the machine can run for 10 years.

300.000 US$ / 10 year ⇒ depreciation cost is 30,000.00 US$ per year

Interest cost

An enterprise should have capital to buy land, equipment, machine ...

If the enterprise borrowed from the bank to buy the equipment, the bank will charge X percent of interest.

If the enterprise has enough capital to buy the equipment, they don't have to pay bank interest. However, it can be considered that the enterprise has paid for the equipment with an amount of money equivalent to interest loss. Therefore this interest should also be calculated.

In both cases, the enterprise has incurred interest rate for the bank or for the capital owner (might be the enterprise themselves)

Service outside of the factory

- ✓ Transportation
- ✓ Security
- ✓ Dinking
- ✓ Maintenance
- ✓ Waste dump
- ✓ Hire
- ✓ E.g....

Other costs

- ✓ Insurance
- ✓ Tax
- ✓ Customs fee
- ✓ E.g...

3.3.2.5 Direct cost and indirect cost

In order to calculate cost of a product or a service, all cost should be considered. However, sometimes it is impossible to list all direct expenses of the completed product.

Therefore, cost should be divided into direct and indirect cost.

Direct cost:

Cost that can be defined directly for the production of the product including:

- Material used in manufacturing (e.g. you can calculate exactly volume of wood needed to make a cabinet)
- Direct worker (number of workers directly making the cabinet)

Indirect cost:

Indirect cost can be defined by personal standard for a product/service. This should be applied simultaneously for some product/department, for example:

- Administrative cost ⇒ it is impossible to tell exactly the time that a secretary spent to create a product. Therefore, it is hard to correctly define the administrative cost of a product.
- Benefit cost ⇒ it is hard to define the benefit cost in manufacturing a product.

In calculating cost of a product/service, the direct cost should also add some percentage of indirect cost. Each enterprise has their own method to divide indirect cost.

3.3.2.6 Example: Cost of a cabinet

Calculation for a cabinet

Order:	100 pcs
Size:	700 x 400 x 280 (mm)

Material cost	
Wood panel:	89.00 m^2
Offcuts 25%:	22.25 m^2
Wood panel total:	111.25 m^2
Cost (18$ / m^2) ⇒ 111.25 x 18$ = 2,002.50 $):	2,002.50 $

Lining:	26.00 m^2
Offcuts 15%:	3.90 m^2
Lining front total:	29.90 m^2
Cost (21$/ m^2) ⇒ 29.90 x 21$ = 627.90$	627.90 $

Edge lining:	15.00 m
Offcuts 30%:	4.50 m
Edge lining total:	19.50 m
Cost (7$/ m length) ⇒ 19.50 x 7$ = 136.50$	136.50 $

Hinches:	950.00 $
Glue (8kg * 6$/kg):	48.00 $
Paint (250 m^2 * 0.3kg/ m^2 * 6$/kg)	450.00 $
Material cost (42.15 $/pcs)	**4,214.90 $**

+ Total material cost (15%) *	632.24 $

Grand total material cost (for 100 pcs):		**4,847.14 $**
Total material cost for each cabinet (pcs)		48.47 $
Labour cost for each pcs :		
Department 1:	0,33h x 15 $/h =	4.95 $
Department 2:	0,15h x 12 $/h =	1.80 $
Department 3:	0,18h x 14 $/h =	2.52 $
Total cost of direct labor:		9.27 $
Indirect cost of the department 1 (250%) =		12.38 $
Indirect cost of the department 2 (220%) =		3.96 $
Indirect cost of the department 3 (140%) =		3.53 $
Total indirect cost of labour :	=	19.87 $
Total cost of labour		(9,27 + 19,87)**29.14 $**
Total production cost (material + labour):		77.61 $
Administrative and sale cost (12% of total cost)		9.31 $
Less (15% of total production cost)		11.64 $
Total individual cost (=95%)		98.56 $
Revenue (5% of selling price)		5.19 $
Selling price (=100%)		103.75 $

* General cost of material including transportation fee to the storage, storage, lost, broken ...)

3.3.2.7 Equipment cost (e.g. CNC)

How much does it cost for an hour of operation?

Basic data:

Cost of equipment:	300,000.00 $
Effective use period (life time) :	8 year
Workplace for equipment	
And other work area related including spare parts	100 m^2
Cost of equipment per year	35,000 $
Operating hour per year:	3,750 hour/year
Cost calculation	
Depreciation: 300,000 / (8 x 3,750) =	10.00 $/hour
Interest (12%) * =	4.80 $/hour
Machine cost (35,000$ / 3,750 hour)	9,33 $/hour
Cost per area (cost of 1 m^2 per year = 120 $) (including light, ventilation, exploration etc) $\Rightarrow$ 100 m^2 x 120$ / 3,750 hour	3.20 $/hour
Power (50kW x 0,6 x 0,10$/kWh)	3.00 $/hour
Maintenance (4% of 300,000)	3.20 $/hour
Cost of machine per hour:	33.53 $/h

* Interest per year: $\frac{\text{Machine cost}}{2}$ x 12 %

$\frac{300,000}{2}$ x 12 % = 180,000 $ per year

Discussion with participants

What will happen if the operation hour increases or decrease?

3.3.2.8 What type of cost that a line manager can influence?

Line manager can influence directly to following cost:

- ✓ Labour cost
- ✓ Material cost (including accessories such as sandpaper)
- ✓ Machine cost (ratio of operation per hour)
- ✓ Transpiration cost
- ✓ Depreciation and maintenance cost

Labour cost

- ✓ What can line manager do to decrease labour cost?
- ✓ Decrease idle time of operating workers
- ✓ Decrease overtime
- ✓ Avoid delay, long break or idle time
- ✓ Provide clear, correct, on time guideline. The worker must understand clearly what they need to do and their objectives in order to work more effectively and make less mistakes.
- ✓ Before a worker finishes his work, the line manager should ensure that the next job is prepared ready so as not to waste time.
- ✓ Only assign necessary number of workers for a task. Otherwise, there will be some workers only look for other working.
- ✓ Assign task properly. In general for difficult task, line manager should assign for trained and experienced workers; new worker or lower level should be assigned with more easier tasks (this will not only save labor cost but also save wastage). Therefore, line manager should pay attention to knowledge, skill, experience of workers before assigning tasks.
- ✓ Control the way that workers work and the effectiveness to avoid mistakes, injury and wastage. The line manager should pay special attention to the new and inexperienced workers.
- ✓ Make sure that workers understand the bonus scheme and how to increase the bonus.

Material cost

In general, material cost accounts for a large ratio in a manufacturing enterprise (accounts for 40-60%). Therefore, workers should be very careful in using and coordinating materials.

What can line manager do to decrease material cost?

- ✓ Avoid damage to material during operation and transportation, especially when transport from container, inventory and during manufacturing.
- ✓ Avoid damage to packages, container ... during import and export from the company.
- ✓ Avoid damage to products or materials due to careless storage (both in the storage and in the working place)
- ✓ Avoid spilling of liquid
- ✓ Make use of and be careful with accessories such as sandpaper, oil, varnish...
- ✓ Keep the working place clean (example in NOVEM: in any cases avoid dirty in the newly painted products) .
- ✓ Only take out from storage the necessary amount of material
- ✓ Try to leave less wastage (example in NOVEM: save material means save wastage).

Machine cost:

Importance:

- Of all the methods applied in the enterprises, line manager should pay attention to the special cost of machine because the machine is costly, high cost of operating which need effective use and good management.
- Each line manager should understand which machine plays an important role in the workplace because this machine determine the effectiveness of the work. Therefore, the machine should be taken care of with regular maintenance.

What can line manager do to decrease machine cost?

✓ Ensure effective use of the machine by :

⇒ ensure that there is always enough material for the machine to operate

⇒ the machine is always in "ready" condition to avoid free run

⇒ avoid stopping the machine due to shortage of material, lack of attention from the worker ...

⇒ avoid stopping the machine because worker have to check measurements...

✓ Ensure that the machine is maintained during rest period.
✓ Report immediately about any problem relating to the machine and do not wait until the machine stop due to errors.

3.3.3 Improvement Project

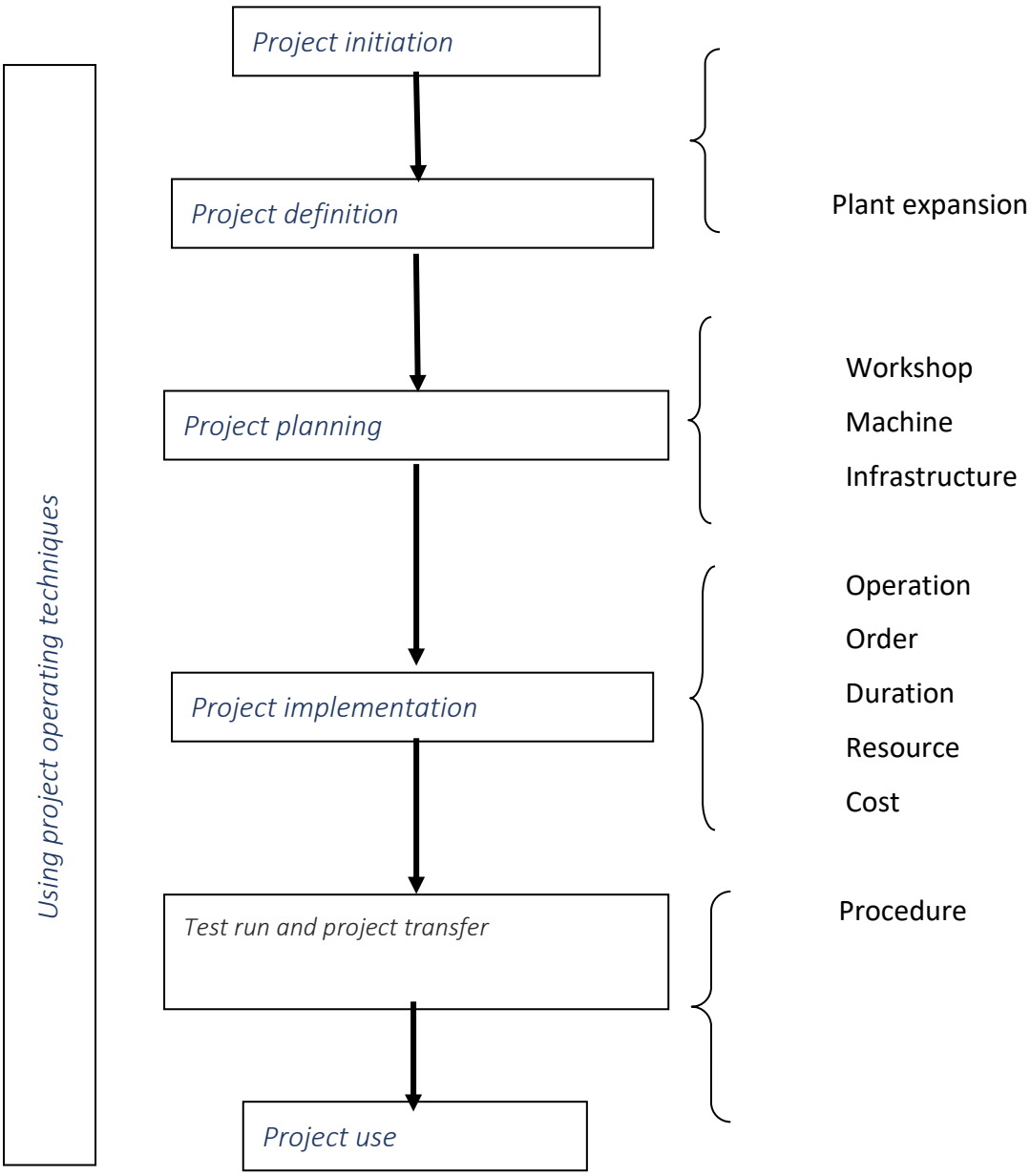
3.3.3.1 Characteristics of projects

- Projects with uniqueness
- Complicated projects
- Projects with defined beginning and conclusion
- To implement a project, a group is formed (this group exists during project implementation)
- Each project has a different estimate

3.3.3.2 Examples about projects:

- Invest, purchase and introduce new machines /equipment.
- Introduce a new organizational system/computer.
- Reorganize a company (personnel)
- Introduce a new product during the production process
- Implement and build a new product
- Set-up a part of the input/output monitoring system in a specific section, for example:
  - Logyard
  - Timber drying
  - Warehouse

Supervisors sometimes take part in project groups and are responsible for introducing new technologies/organization of models. Therefore they need to manage well project management techniques and methods or can use a part of this project. Each project group needs a project director; a group leader.Phases of project development



The project group is responsible for:

- using / completing planned targets (workshops, machines, infrastructure)
- using necessary resources for project implementation (such as in construction materials, working time, construction machines ...)
- human resource for project implementation
- smooth operation after the project finishes.

To plan and use projects, we need to define and control the following 5 parameters:

1. Necessary operations and results (example: machine installation)
2. Operations need to be performed under the below order.

Example:

1. Prepare plinths
2. Machine installation
3. Electric connectors

Planning the starting date and concluding date for all operations. To ensure progress, all necessary resources are needed together with equipment and funding. After knowing the operations and order, we can set the date and time for the plan.

Example:	Plinth	Starting date:	15.04.
		Duration:	10 days
		Concluding date:	26.04
	Installation	Starting date:	26.05
		Duration:	10 days
		Concluding date:	06.06

Necessary means and resources for implementation include:

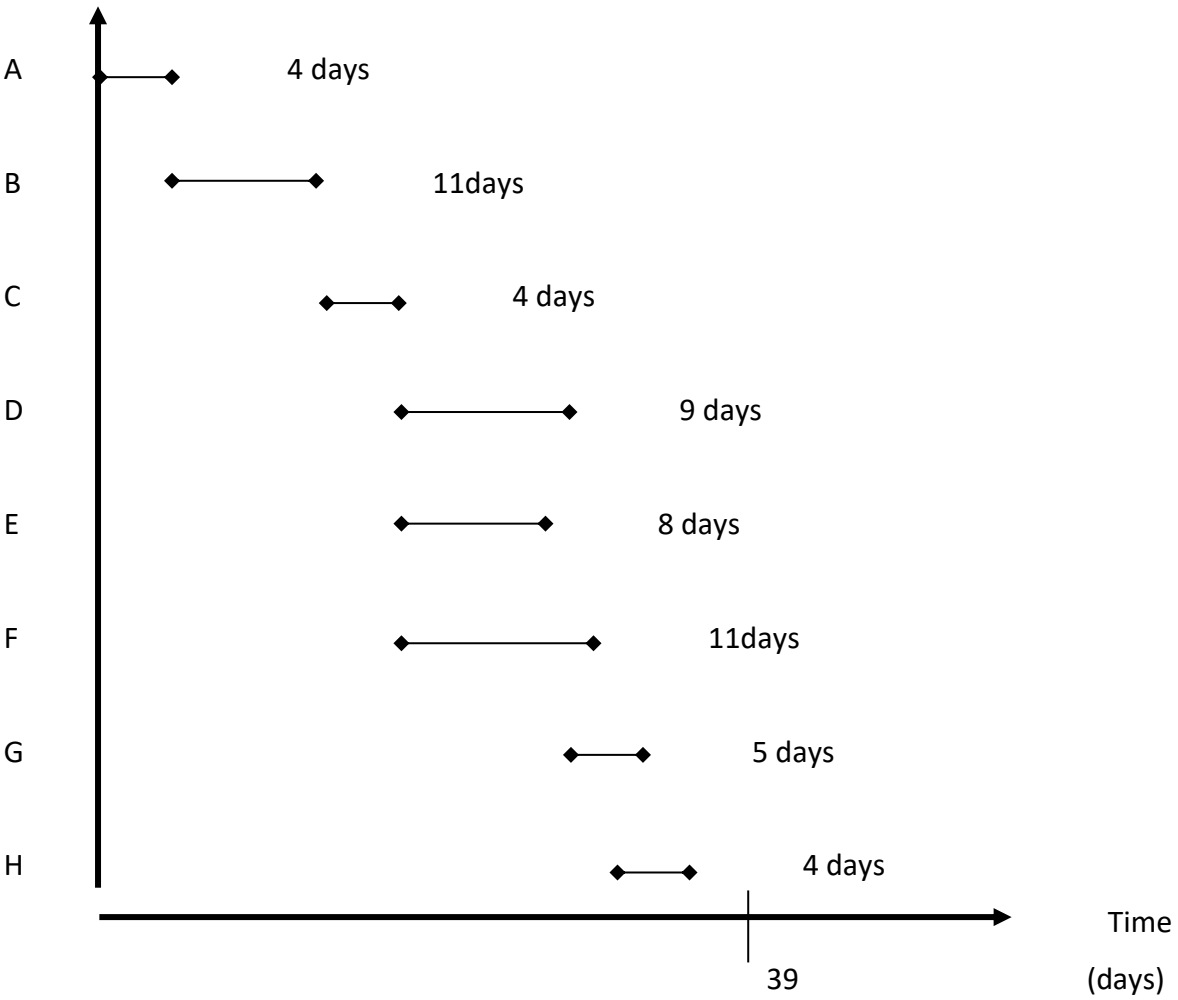
- Labour force for construction, installation, training ...
- Equipment for construction and installation such as cranes, welding equipment....
- Materials for the construction of machine plinths, air pipes and cables....
- Cost for purchasing necessary equipment and labour force, for personnel and machines for the project.

Aims to reach the mentioned descriptions:

- Results of performed activities need to meet quality requirements
- Dates and time
- Technical, organizational and human resources
- Cost

To implement this, we need to supervise all parameters during the implementation process and adjust deviations like on a continuous production. An important parameter is timeframe. If it is done in line with the planned timeframe, a lot of funding can be saved. In many cases, supervisors assume the responsibility of implementing and supervising technical parameters (such as completing the planned timeframe) as well as using its tools.

An effective tool for time check is the progress chart (also known as Gantt-Chart). The following is an example about the chart representing the progress of machinery installation and operation



Total time 39 days (Gantt-Chart)

A: Site preparation

B: Make plinths

C: Place machines on plinths

D: Assemble mechanical components or auxiliary components

E: Install tube systems and control

F: Install electricity systems and check

G: Painting, lubrication ....

H: Start, test run and check

3.3.3.3 Definition of Objective

In the following part the basic definition of an objective is explained and how the progress towards the achievement can be monitored. Those aspects should be applied when planning the objective of the improvement project. During the implementation the progress it is also relevant that the planned activities contribute to the achievement of the objective. The monitoring helps to correct the plan in case during the implementation arise difficulties to achieve the expected results.

- Objective should be clear, feasible and attainable
- What, when, who?
- By what mean (mean, method) and especially with whom can get the objective done?
- Objective should have motivation and attainable
- If you have many objectives at the same time, there should be a priority
- Objection should be expected, e.g. :
  - Quantity vs. quality
  - Low expense vs. quality

In this case there should be priority and keep good inter relation between objectives.

The best objective should be quantitative

E.g. : Objectives should be quantitative

- 100 pcs/hour
- 5% wastage/order
- 1000$ per order
- 10kg paint for 100 pcs

However, there should be also qualitative objective

E.g. : Objectives should be qualitative

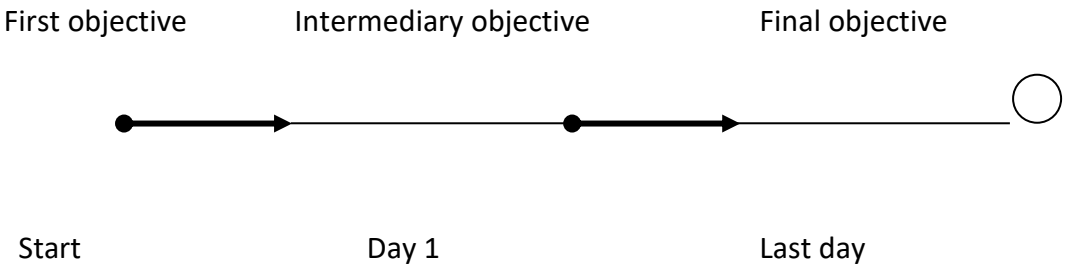
- Good order, clear in every department
- knowledge level during production

Quantitative objectives should be included and should be clear so that related people know "what are they talking about?"

Intermediary objective

Objectives should be <u>controlled.</u>

Objective is meaningless without control and check result. When there is big gap during setting and finishing objectives, there should be intermediary objectives. There should be enough time to adjust before the deadline and ensure the success of the final objective.



The control of objective is most important in every level of the enterprise:

⇒ For higher level of management: higher level can only reach their objective depending on the completion of lower level's objectives.

⇒ For line manager: The department's achievement depends on objective completion of that department. Line manager should always be aware of their performance stage in relation to the objective so that they can adjust accordingly.

⇒ Worker should also understand that whether they can reach objective or not

Monitoring objective

The monitoring includes:

- Clarify and monitor real values
- Compare real values with objective value
- Clarify mistakes and reasons
- Provide means to prevent mistake and overcome them
- Review the objective whether it was set properly or not

Frequency of monitoring:

- Depend on the reliability and capacity of the worker or the department. The less reliability and capacity, the more monitoring actions should be performed.

3.3.3.2 Example of the improvement project

Project name: "Improvement of the timber drying operation"

Reasons for implementing this project: At that moment, in Duc Nhan company, the monitoring of the drying environment of the company is adjusted based on the temperature of the dry bulb without monitoring the relative humidity (RH) of the drying environment during the drying process. In addition, the moisture content of timber during the drying process is also not monitored (Just check the moisture content of timber in the final days only). As a result of not monitoring the temperature and relative humidity of the drying environment as well as not monitoring the change of timber moisture content during drying processes. Therefore, the quality of sawn timber after drying is degraded (cracking, warping, etc) with high rate, and the unevenness of moisture content on the board as well as between the boards is quite high (more than 10% between the boards).

Project objectives:

- Monitoring the temperature and relative humidity of the drying environment during the drying process.
- Monitoring the moisture content of boards during the drying process
- Improvement of dried timber quality (reducing the rate of degraded timber after drying)
- Ensuring equal/similar of moisture content on a board as well as on different boards.

Specific objectives:

- ✓ Reduce at least 5% degraded timber compared to the present drying procedure applied in the company.
- ✓ Ensuring the differences within a board and between boards are ± 3%.
- ✓ Rewrite appropriate drying procedures for eucalyptus species. Based on that, rewrite drying procedures for all kinds of timber species that are used in the company.

Steps :

- Select a specific timber species for the improvement project (this project Eucalyptus with a thickness of 51 mm was selected)
- Select timber drying kiln No 3A (improvement project not applied) and timber drying kiln No 6A (improvement project will be implemented) for monitoring.
- Guide workers to record data according to selected monitoring forms, and how to operate kiln 6A with new procedures.
- Identify data of input, output (grade of boards, moisture levels) as well as costs for operating kiln 3A and kiln 6A.
- Compare monitoring data between kiln 3A (no improvement projects) and kiln 6A (improvement projects).
- Readjust drying procedures if neccessary
- Rewrite timber drying procedures, publish and widely apply in the company

Necessary equipment for inprovement project.

- Drying kiln 6A
- Equipment to identify moisture level before drying (technical scale and drying oven)

- Moisture measurement
- Dry bulb and wet bulb
- Drying procedures for eucalytus with thickness of 51 mm
- Table on the equilibrium moisture content of wood as a function of dry bulb temperature and wet bulb depression and relative humidity
- Guidelines on the wood classification of the company

Drying procedures for eucalyptus, thickness of 51 mm

Stages	Dry bulb (^{o}c)	Wet bulb (^{o}c)	Difference of dry and wet bulb	RH (%)	Timber sample moisture content (%)		Duration (h)
A	60	60	0	100			6
B	60	56	4	81	> 45	45	
	60	56	4	81	45	40	
	60	54,5	5,5	75	40	35	
	60	53	7	69	35	30	
C	65	54	11	57	30	25	
	65	51,5	14	49	25	20	
	65	49	16	42	20	15	
	65	45	20	33	15	10	
D	50	50	0				10

A: Heating and humidification stage

- Turn on the fans, close the humidity release door, and open the heat release valve for heating up to desired temperature (60 ^{o}C) and maintain this temperature for 6 hours.

B: Stage of drying timber from initial moisture content to reach the moisture content of 28%-30%.

- Maintain the temperature according to the temperature as mentioned in the drying procedures and adjust the humidity release door to obtain the difference between dry and wet bulbs as given in the drying procedures.
- During this stage, every 2-3hours the direction of fans need to be changed.

C: Stage of drying timber from 28% -30% to the desired moisture content

- Heating up to the temperature as mentioned in the drying procedures (dry bulb) and maintain this temperature. Adjust the humidity release door to obtain the difference between dry and wet bulbs as given in the drying procedures.
- During this stage, every 2-3hours the direction of fans needs to be changed

D: Stage of balance moisture content

- Adjust the heat release valve to reduce temperature to the temperature mentioned in the drying procedures and gradually close the humidity release door.
- The fans are still the turn on mode
- Maintain this mode for a duration of 10 hours

After this module participants have 1 hour to formulate a first draft of their improvement project in the company. The trainer will collect the proposal and will orientate on the next day with 2-3 examples how to optimize them.

3.3.4 Roadmap to set up an internal Management System for Input/Output monitoring

1. Collection of existing information by participants (see guiding questions in section3.3.1)

2. Gap Assessment of the information (Traffic Light System)

Organisational Chart			
Production Flow Chart			
Job descriptions			
Work procedures			
Procurement			
Processing			
Warehouse			
Sales			
Identification of critical control points			
Production Planning			
Production Monitoring & Control			
Data Collection			
Data Assessment			
Data and Report Keeping			
Manual "Internal Management System"			

Red: Not available at all

Orange: Partly available but doesn't fulfill requirements yet

Green: Fully available

3. Development plan for internal management system

Selection of priorities areas to improve in the company towards a functioning internal management system. A list of activities with timeline, expected results and responsibilities has to be developed and agreed with the management of the companies.

4. Introduction to mandatory reporting system

Content of module 2 of this training course should be delivered to the involved personnel of the company

5. Trial application of mandatory forms

The forms of decision 777 should be used to report

6. Routine reporting

Mandatory forms should be delivered according to decision 777 to the relevant authorities on district/provincial level.

MODULE 4: IMPROVEMENT PROJECTS WITH FURTHER REFERANCE TO WOOD PROCESSING TECHNOLOGY

4.1 Presentation of Results from Improvement Projects

After Module 3, participants had 3-4 weeks to implement their own improvement projects at their companies. Coming back to the training with Module 4, they will present the results of their improvement projects, explaining what they have applied into their daily work from what they had learned in the training.

The presentation of participants' improvement project is the opportunity for all participants to learn from each other with real experience how to improve their daily work issues.

At this time, participants will have 5-10 minutes time to present by a PowerPoint, word document or excel sheet their results of the improvement project to the group. The other participants will have the chance to ask questions and to give feedback. The following guiding questions can facilitate the discussion:

1. Is the data at the end of the improvement project available so that it can be compared with the data before the project started?
2. Was the planning of the improvement project realistic?
3. Are the quantitative results clearly described and understandable?
4. Are the qualitative results attainable or feasible to achieve?
5. Did the activities implemented have a direct impact to achieve the planned objective?
6. Which factors helped the improvement project to be successful?
7. What have been the reasons for deficits or failures?
8. Have you presented those results to your management and what was the feedback?
9. What will you do differently in your next improvement project?

The documentation of each improvement project should be collected by the trainer and shared with all participants at the end of the training programme.

The toolbox for supervisors under 4.4. of this Module offers a wide range of topics to further improve supervisors' work issues when they need further information, knowledge and skills to improve their capacity and competences at their work.

4.2 Storage of Raw Materials and Related Production Planning

4.2.1 Inventory Control in the Raw Material Warehouse

Tasks and Functions

4.2.1.1 Storage

- Stocking and supplying the necessary materials of the required type, quantity and quality – without losses, quality deterioration, etc. at the required dates
- Providing an excellent overview on the stored materials (timber)
- Avoiding the storage of excessive quantities and excessive storage time (For example in the case of stored veneer: Cracks and shows discolorations when stored too long)

– As part of the internal management system the flow of semi-finished products is monitored

Pre-conditions:

1) Before storage, i.e. after delivery from the supplier, the timber must be appraised, **graded** according to quality classes and **labelled**.

Example: This example and the following examples are for veneer. Examples for timber will be added and explained in the PowerPoint presentation.
Oak
0.6mm
Supplier x
Supply quantity: 1000m^2
After grading: Quality A1: 150m^2
Quality A2: 220m^2
Quality B1: 220m^2
…
Total: 920m^2
Unusable:
- Due to thickness deviation: 25m^2
- Due to discoloration, knots / pin holes 35m^2
- Due to cracks / tears. 20m^2

Total stored quantity graded into quality classes: 920 m^2

2) Storage with batch-numbers according to wood species, thickness/dimension and qualities in designated storage locations
3) Entry into stock lists
4) Report of the current warehouse inventory to accounting and procurement departments, to work planning and work control, to purchasing department

Example:

Veneer Input Spread Sheet according to wood species, quality class and veneer thickness

Veneer warehouse entries

Wood species:			Quality class:			Thickness:		
Date	Delivery no.	Package no.	Length (m)	Width (m)	No. of leaves	Package total m^2	Total entry m^2	Name
					Total Entries per Period			

4.2.1.2. Withdrawals from warehouse / keeping stock lists

- In the context of work planning, timber is reserved for a specific job order by making an entry into the stock list. The reservation of timber for a job order can also refer to timber which has not yet arrived in the warehouse
- The entry of timber into the warehouse (inward stock movement) is documented in the stock list, if necessary, with special information regarding to this delivery.
- Timber leaving the warehouse (outward stock movement) is documented in the stock list with the following information
  - Name of supervisor
  - Date
  - Corresponding job order number/batch-number
  - Quantity / quality
- Material required for the next period (is entered into the stock list including the following information:
  - Name of person requesting the purchase
  - Date of the request for material

This is to ensure that the same timber is not ordered twice

- The stock list must be kept in such a way that timber from older supplies is used first (first in – first out)
- Additional withdrawals for a job order (e.g. due to rejects) must be documented in the same way.

Note: Defects must be recorded using the forms at the end of the training manual

See Annex 1: “Defect Documentation Sheet” and Annex 2 “Action Plan for Correcting/Eliminating Defects”

Example:

Veneer warehouse withdrawals

Wood species:				Quality class:			Thickness:		
Date	Order no.	Delivery no.	Package no.	Length (m)	Width (m)	No. of leaves	Total m^2	Total output m^2	Name
						Total Output per Period			

Note:

The physical timber stock must be controlled regularly by inventory. During this inventory, timber which is no longer usable must be evaluated, registered and sorted out if necessary. The management must set an example. Never say that you will enter the withdrawal later … this requires great discipline. However, negligence in the keeping of stock list will make the entire useless.

4.2.1.3 Input / Output Balancing per period – Calculation of Actual Timber Stock

The actual timber stock of a specific wood species, quality and diameter/thickness is calculated at fixed intervals, e.g. weekly. The basis for calculating the timber stock are the values from the Input / Output Spreadsheets as well as the values from the last physical warehouse inventory (as already mentioned a physical warehouse inventory, e.g. every 6 or 12 months is necessary to determine the real stock quantity).

Example:

Veneer stock (Acacia)

Veneer Stock				
Wood species: Acacia		Quality class: B1		Thickn.: 0.6mm
Week	Quantity prev. period m^2	Input veneer m^2	Output veneer m^2	Actual stock m^2
08/13	1000	222	138	1084
09/13	1122	138	0	1260
10/13				

1) Entry quantity differentiated according to wood species, quality class, delivery lot
2) Withdrawal quantity differentiated according to wood species, quality class, job order
3) Actual stock according to wood species, quality class, delivery lot (as a result of calculated input and output balancing)
4) Real stock volume according to wood species, quality class, delivery lot (as a result of a physical inventory)
5) Quantity of unusable, defective timber which must be eliminated or newly graded according to wood species, quality class, delivery lot

4.2.2 Timber processing

1) Material input (= consumption) per job order according to:
– wood species
– thickness/dimension
– quality class
– batch-no
2) Finished quantity per job order according to:
– wood species
– thickness/dimension
– quality class
3) Reject quantity, defects and causes
4) Processing and personnel times per job order (= total of processing and personnel times per job order)
5) Start and completion of a job order (determination of throughput time)

4.3 Production Models

Aims of chapter: Supervisors need to be aware of the characteristics of different production models and their impacts on production, techniques, and organization

4.3.1 Production Types

Production types have a decisive impact on the organizational and technical structure of production and the qualification of workers

The basic characteristics of production types include:

- Quality and variety of products in production programs
- The quantity of simultaneously manufactured products
- The number of repeated processes/sequences.

4.3.1.1 Single or single order production

In principle single or single order production is implemented only once. However, the production of some products can be repeated during the production process (in this case it is called "repeated single production").

- Normally production at customers' request means when a goods batch is released, means of production need to be changed. This result is the ratio between production time and non-productive time or in other words the level of the use of means of production is low.
- The main characteristics of single or single order production include:

– High cost for building and preparing for work ⇒ each product needs to be prepared separately.
– Multifunctional machines are very complicated because they can produce diverse products.
– Require highly qualified workers ⇒ be aware of the production of different products and know how to operate different machines
– Energy use is not high and not frequent.
– The ratio between production time and non-productive time is not effective
– The process requires lots of time
– Require great labour to adapt and repair

Typical example about single or single order production:

The manufacturing of complicated machines, shipbuilding or plane manufacturing

Possibilities to reduce the disadvantages of single or single order production:

- Specialize in particular products
- Standardize and normalize a number of specific elements

- Repeat single production after a short period (for example, a plane can be replicated several times)

4.3.1.2 Mass production

Mass production means that during a production process several similar products are manufactured. These products form a goods batch. A batch contains a specific number of similar components continuously produced during a period. Depending on the scale of the batch (or depending on the production branch of the company) we can divide mass production into small, medium and large production. Small mass production is like single production and large production is like large-scale production.

In mass production, targets for the production process can be set and planned. Like single production, mass production needs a large spending to change and prepare machines when shifting from producing a batch of products to another.

In comparison with single or single order production, mass production has the following advantages:

- Lower cost for work implementation and preparation
- Use specialized machines instead of multifunctional machines
- Use employees according to their level of qualification
- Does not have to change machines on a regular basis
- The time of this process is short

Examples of mass production:

The manufacturing of cars, radios, TVs and wooden products...

4.3.1.3 Large-scale production

The main characteristic of large-scale production is “infinite” in the production cycle. This means that a product in a production process is infinitely manufactured.

Examples of large-scale production

The production of cement, cigarettes, wooden bars, screws, matches, noodles....

Characteristics of large-scale production:

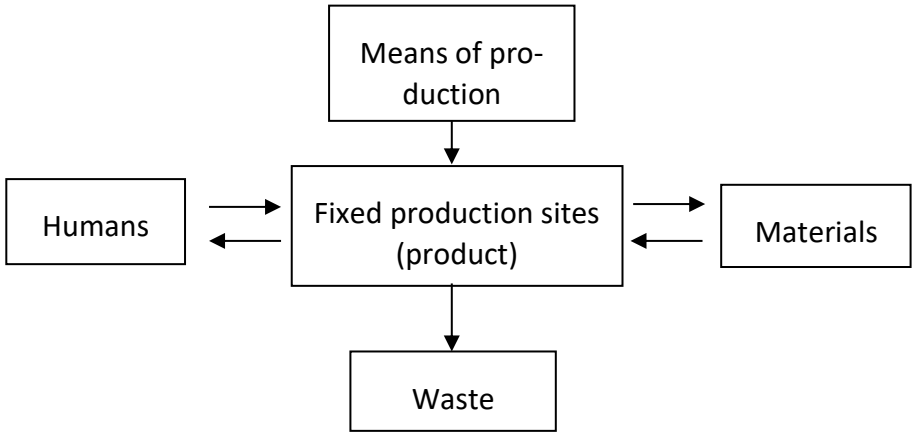
- Machines specialize in a particular area
- High level of mechanization and automation
- Low requirements for the qualification of workers (except for employees responsible for operating and maintaining machines)
- Lack of flexibility in changing products or quantity

In close relation with the above principles and through layout and the grouping of working positions and machines, production types can be divided into the following:

- Production at a fixed site / principles of work benches
- Traditional production ("workshop" form)
- Chain production

Production at a fixed site

The main characteristics of this principle are the frequent appearance of products at a fixed place until work is completed and distributed (meaning that many people are involved and each is assigned a specific task, they work together to create a final product). Accordingly all materials, machines and workers need to be available at the production site.



This production principle can be found only in single or single order production like the assembly of large machines, shipbuilding, and construction.

Material flow is between production site and warehouse. Prioritized means of transportation are vans or cranes and conveyer belt.

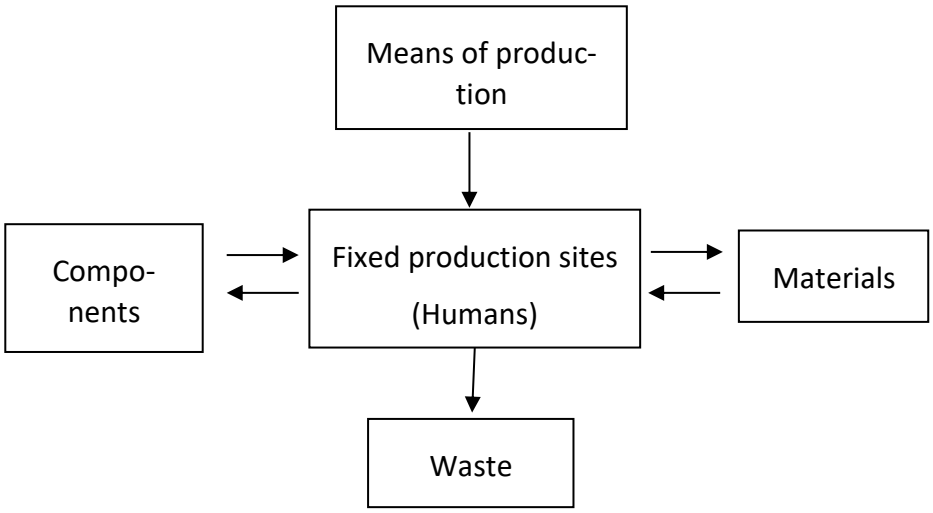
Advantages of production at fixed sites

- No need to transport product components
- Multifunctional machines $\Rightarrow$ flexible work
- Easily change work order
- Low possibility of production shortcomings and problems
- Simple material supply
- Flexible space use

Disadvantages:

- Need easily movable means of production
- Long transportation route (in many cases)
- Production at a fixed site is used only for single or single order production

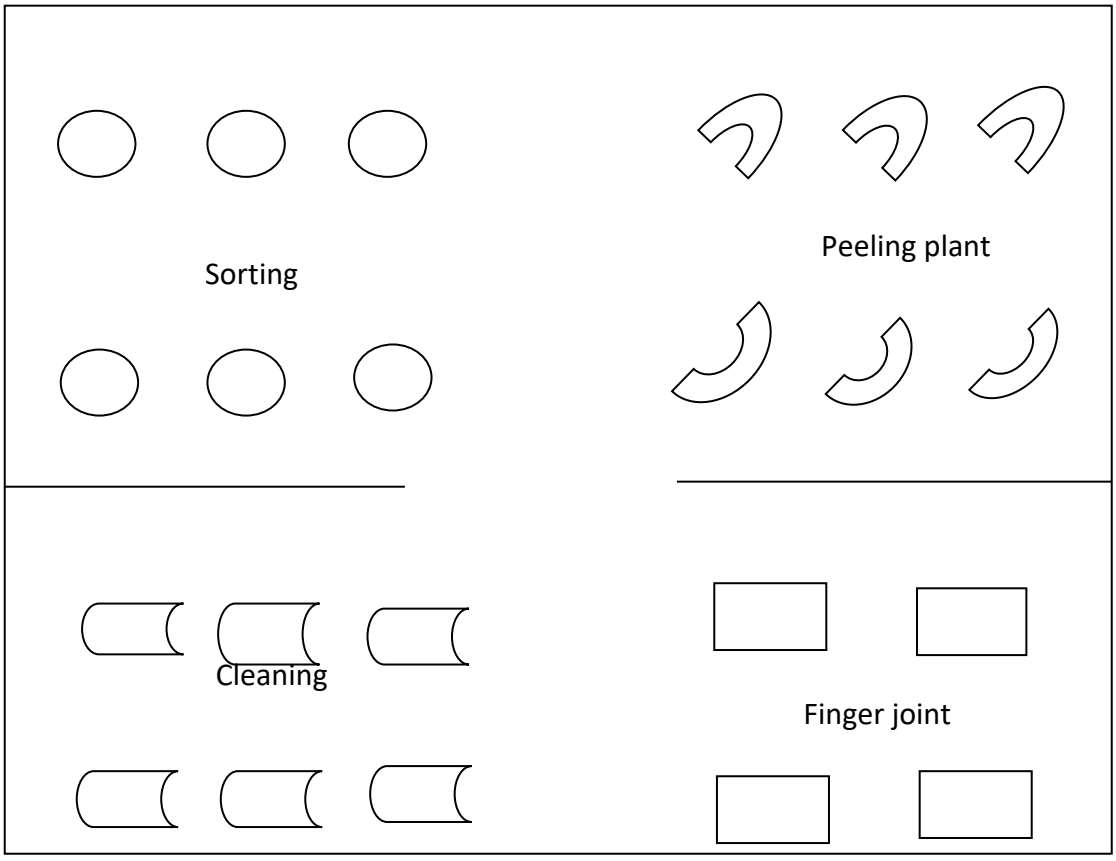
A special form of production at fixed sites is the “principle of work benches”. That main difference does not contain work division. Employees work at a fixed site and perform their activities. Therefore, materials and means or production need to be transported to working positions.



Traditional production (“workshop” model):

Traditional production (“workshop” type) is the oldest organizational form in industrial production. Its main characteristic is that machines of the same type are gathered at a place in line with operating principles. This forms what is called workshop such as varnishing workshop, wood cleaning workshop, sandpapering workshop

Example:



The production in “workshops” is selected when a large quantity of products cause changes to the work. In this case, labour tools are arranged in line with the general order of operation.

In general, means of production are multifunctional machines; specialized machines only used in special cases. Machines are placed at fixed sites. Workers’ movements are limited due to their qualifications and specialties (wood dryers, wood classifiers), this means each person works at a specific “workshop” (area).

In contrast, products need to be moved because they need to be transported to different working places or to different “workshops”. In many cases, a product needs to return to a workshop several times, depending on the requirements of the production process.

Production under the “form of workshop” is used firstly for single pieces or small serial products. In fact, this principal is also used in medium serial production, however these companies often have troubles in trying to reach their full capacities. Especially when there is no preparation for the next orders, operation is stagnated. This results in an increase in the time needed and support (note the funding!) and the unusual use of the company’s capacity (means and personnel).

To ensure smooth traditional production, there should be a perfect “Production operation”. In this case, flexibility is needed (main advantage) in the production under the “form of workshop”.

An additional characteristic of production under the form of workshop is the additional space in working positions and intermediate warehouses. As an order is divided into different parts, a space before and after machines is needed because products are only transported when the batch is completed. Because of organizational reasons, even when the batch is completed, products can’t be immediately transported to another “workshop”, therefore an intermediate warehouse is needed.

The transportation of materials is not continuous (most of the cases done by autohoists)

Advantages:

- Great flexibility to production program changes (product and quantity changes)
- Possible for single or mass production
- Capable to adapt to changed production processes and work order
- Multifunctional machines
- High level of exploitation of means of production
- Abundant solutions to possible problems
- The company can receive small and irregular orders.
-

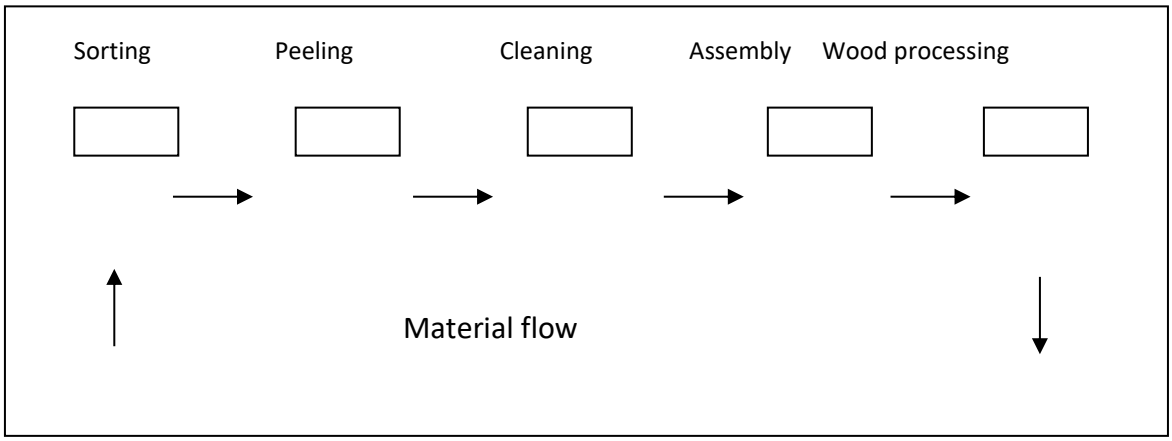
Disadvantages:

- Inappropriate “Production operation” may result in:
- ✓ Loss of time
- ✓ Require more warehouse space
- ✓ Require high funding
- ✓ Unmet delivery deadline
- Lack transparency in production
- Require medium and large area for production
- Long transportation route
- Require a large work force
- Complicated production operation and transportation
- In most of the cases require highly qualified workers

Chain production

In chain production, means of production need to be arranged in order. Material flow through machines is done in one-way direction. Normally the arrangement of means of production is represented by a straight line, but can also by the letter “U”, the letter “L” or a circle, it’s up to the factory

Example:



To economically apply the chain production principal, mass production is needed. In this case, we can use specialized machines and special constructions. Means of production and personnel are at a fixed site while products are moved from one place to another.

Advantages:

- Clear material flow
- Short production process
- Short transportation route

- Can be used for mass and large-scale production
- Small, fixed capital due to small warehouses
- Unchanged production conditions
- Easy production operation
- Require workers of medium to small statures
- Workers of small stature need to be highly qualified

Disadvantages:

- High level of specialization, low possibility to adapt to new production processes or products.
- Easy to have troubles, high maintenance cost
- High conversion cost
- High investment cost
- Require complicated transportation techniques at one level

4.4. Toolbox for Supervisor

For this part, there are no PowerPoint presentation, but the trainers can select the appropriate tool from here according to the thematic areas of interest from the participants.

4.4.1. Which specify supervisor's authority

In order to accomplish the department's objective, supervisor should ensure that his team members do the right work.

Therefore, supervisor should have enough authority to give proper order to his subordinates.

Supervisor's authority is defined based on following factors:

Formal authority:

Supervisor's formal authority is based on his function and responsibility. With his authority, supervisor has right to give orders to his subordinate, be responsible for production equipment, can make decision to ensure the operation of his department.

However, supervisor cannot reach his success if he relies purely on his authority, as his subordinate will obey the order (they are forced to) reluctantly.

Personal authority:

Besides formal authority, supervisor also possesses his personal authority. This authority will ensure respect, trust from subordinate and workers will be willing to do better job and willing to accept more responsibility.

Personal authority is based on:

- Technical knowledge and the application of these knowledge into practice
- Effectiveness
- Presentation skills

- Behaviours with subordinates
- Personal characteristics: objective, unbiased, reliable, sensitive to subordinate's issues

4.4.2. Some recommendation to improve good relationships

Good relationship with lower level and higher level

- Be on time for meetings, meet deadline
- Have far vision in making plan for own work, know how to settle issues immediately, know in advance worker's reaction
- Keep promise and be careful before promising
- Consistent, frank, reliable
- Not delay in dealing with important issues
- Speak the truth
- Support workers
- Good communication skills:

- Smile when meeting subordinates

- Thankful for someone's support

- Explain changes before applying changes

- Maintain good contact with subordinates

4.4.3. Codes of conduct

- Do not set unreachable objectives
- Do not criticize personality, citizen result and effectiveness only
- Mention positive factors during criticize
- Do not making puzzle in accusation
- Do not change order, your subordinate understand that you are the authority
- Do not create unnecessary quarrels
- Do not magnify when explaining procedure and orders

4.4.4. Additional advice for self-organized

- Create list of unfinished work daily. Create to-do-list for every task daily. Create another list of tasks wanted to do. Check every item in the evening and create list of unfinished work for tomorrow's list
- Create monthly record and note down work, result and commitment to finish objective during the month, including machine maintenance.
- Bring along a small notebook and take note of every important issue in the work place (meeting minutes, requirements, issues, new ideas)
- Begin a new day by reviewing monthly plan and start working with the daily to-do-list.
- Avoid messy of documents in the work place. There should be folder to all types of papers.

- Do not take a lot of note in the notebook to prevent stressful
- Develop a habit of thinking about daily work, be considerate in making plan, such as checking data, quantity, weather ...

4.4.5. Some advice to accomplish enterprise's regulation

- Inform worker about enterprise's regulation as soon as possible
- Do not delay checking for violation when it occurs
- Be more serious in checking work safety violation than mistakes in production or quality
- Handle violations with discipline immediately without any delay
- Check to ensure that everyone understand the regulation
- Be easy to the first violation of regulation

4.4.6. Some advice to cooperate better with other supervisors

It's necessary to cooperate well with other supervisors, especially when the work result of one supervisor depends on the consensus of other supervisors

- Take brief meeting minutes of every meeting or agreement
- When you need support from another supervisor, let him choose the schedule. Only discuss when you cannot meet the schedule
- Send one copy of meeting minutes to colleagues
- Check work progress one day before deadline. It's necessary to show that you are serious with deadline. Please investigate reason if another supervisor cannot meet the deadline
- If possible, give him another deadline. Inform higher level if he doesn't meet the deadline again and send one copy of the report to himself.

4.4.7. Some rules in giving orders

The effectiveness and success of a supervisor depend directly on his ability to give orders to his subordinates.

- Assign every task possible
- Be sure that you have enough authority to give the order and responsible for the decision.
- Inform to other colleagues about the assignment
- Assigning task does not mean that your responsibility is reduced
- Be aware that assigning task means risk, mistakes which are unavoidable
- Before assigning tasks, provide enough information, all possibilities to accomplish the task
- Create clear objective which specify your expectation
- Ensure that your subordinate take on all information
- After assigning a task, reserve time for him to complete task without any disturb
- Support subordinate when their authority is suspected.

- Never let your subordinate feel alone in completing tasks, and support them until they have reached the target.

4.4.8 Steps to have proper decision

- Find out the real issue and analyse
- Discuss with workers about solutions
- Compare solutions with their effectiveness
- Choose the best solution possible

If you do not have much experience in making decision, your employer will be the one who understand that you will make mistake. Therefore, if you made mistake, communicate with him calmly and state the reason and also promise not to do the same mistake again. Try not to make the same mistake twice. Think of the consequence and the negative result. Do this check first before talking with higher position.

4.4.9 Steps to becoming a participating leader

For subordinates' participation in the decision making, it's important to consider following notes:

- Make sure that the case related to the work and situation of subordinate
- Make sure that subordinate has ability and knowledge to contribute effectively
- Make sure that subordinate's participation is not under personal reason or under any defraud
- Make sure that subordinate's participation need more time than you do it yourself
- Check if subordinate's participation can bring any benefit to themselves in their work
- Consider every recommendation regardless it comes from anyone
- Raise your own idea and ask for comment
- Inform the final decision and explain reason of the decision

4.4.10 Working with team effectively

Teamwork is cooperation which can bring positive result to productivity and quality to the whole enterprise

How can supervisor contribute to an effective teamwork?

- Be an open and effective communicator
- Recheck if your presentation is understandable
- Only criticize to support general objective and keep friendly environment
- Maintain openness and communication
- Choose to be frank rather than tricky
- Try not to be aggressive and not to impose your idea during discussions
- Try not to chat, create rumor
- Try not to criticize someone in front of someone else
- Try not to lose someone's prestige

- Be serious in discussion not to make it a quarrel
- Always be positive, show your belief in the team and belief in having the objective done

4.4.11 Some advice to avoid arrogance

Being arrogant is a danger if daily work is not a challenge to the supervisor.

- Try to forecast negative trends
- Look into the future and be ready to face with unwanted events. Even if everything is going well does not mean that you will not make the same mistake
- Always try to achieve the best result and improve your department, especially during idle time
- Always ask yourself which area can be improved, how can your department be improved, which assignment can be assigned to whom.

4.4.12 Loyalty is important

- Show your loyalty to your higher level and your subordinate
- Help colleagues in technical and personal issues. Be against anyone who is attacking the enterprise and you will have loyal colleagues
- Never complaint about the enterprise or the enterprise's decision to colleagues
- Loyalty is also seen through your support and good cooperation with colleagues
- If you know someone that is not loyal, tell him first what you know. In a certain time after that, give decision whether you will allow him to work in the enterprise or not.
- If someone is not paying attention to his work, you have to decide whether he can work in the enterprise anymore. The enterprise can not be effective with indifferent worker.

4.4.13 Some advantages of assessing performance

Most workers want to know how their work is assessed, which part they need to improve. Therefore, supervisor should:

- Tell them clearly what you are expecting from them
- Tell them which part they have achieved and which they should improve
- Always begin by talking about positive part first and comment on their good work
- Give advice on how to improve and accomplish the objective
- Support them in their effort to improve themselves.

What is supervisor's benefit from the assessment?

- Increase effectiveness of workers
- Create a chance to reconfirm everyone's responsibility
- Have thorough knowledge about staff's progress through years
- Have conclusion about weakness and training needs

4.4.14 Some advice for an effective meeting

- Avoid unnecessary meetings
- Hold meeting whenever necessary (to inform about decision, important information)
- Inform about the topic and schedule of the meeting and require participant to think about their ideas to support in the meeting
- Start the meeting on time
- Focus on the meeting objective and avoid any off topic
- Do not explain, criticize, be dominant in the meeting
- Do not be influenced when people try to change the topic of the meeting
- When there is an issue that cannot be stopped, please stop argument and summaries any points agreed.

4.4.15 How to deal with complaint?

- Seriously listen to the complaint
- Always be ready to listen to subordinate
- Give attention to subordinate's ideas
- Take note of complaint and discussion
- Check carefully to understand the point
- Make immediate decision after checking and considering aspects
- Do not hide your opinion behind policy reasons
- Avoid to delay solving the complaint
- Inform the person who complaint about the situation
- If you have a solution, check if the change has been applied

4.4.16 Orientation plan for the probation period

- Create an introduction about orientation period
- Pay proper attention to the new worker during the first days
- Make plan a directly supervise the training (Besides customers, competent staff are greatest asset of the enterprise)
- Find out incompetent staff and inform higher level or to the Human Resources Department
- Ensure that the new staff was informed on time that he will be long term staff of the enterprise
- Check with enterprise if they need your help to be fully integrate with the environment

4.4.17 How to take discipline action

Many supervisors feel that the most difficult task in their role is to maintain discipline in their department.

Therefore, from the beginning you should inform the code of conduct expected.

Many workers respect discipline because they want to know how they should behave and where is the limit.

You should understand if there is no discipline to violation, there might be disturb ant in the whole department. If one worker perceive that his colleague is not punished for his violation, he will try to do the same.

Discipline is easier if applied in low level and therefore can prevent big confrontation.

In general, discipline will help supervisor and worker as it makes them feel safer with clear condition.

Traditional discipline methods:

- Warning
- Temporary suspension
- Probation

Sometime, discipline actions are used (multiple action in a quite long period) after the violation might lead to hatred, grudge to higher level and the enterprise.

Therefore, some enterprises have developed a “Positive procedure of discipline” instead of discipline themselves.

The most important thing is:

- Remind verbally or by written about the regulation immediately instead of late warning

This is the last positive method which can be used.

- "Take a day leave before giving decision” (Before the enterprise gives decision)

This is a day of paid so that the worker must give decision to obey the company regulation or leave. If he wants to stay, he need give detailed explanation and how he can do to change his behaviour to obey the regulation.

How can we continue?

Advantages of the method:

- Supervisors exchange information more often about their subordinates.
- Respect workers as matured people
- Treat them equally and do not show that you are superior to them.
- Workers will feel they are not under discipline
- The relation between worker-manager is not affected

4.4.18 Social relation in the enterprise

What type of social relations with subordinate that the line manger should have after the working time?

Working life and social life should be separate. In most cases, social life should not be involved only with people from same department.

It is advised to minimum social relations with colleagues outside the enterprise, so that the supervisor's authority is not affected because they will be difficult to apply discipline actions. Most workers cannot differentiate between personal issues and work requirements.

For the enterprise's party, birthday celebrations which require your participation, you should be friendly, open, drink a glass of beer and say goodbye. Do not be indifferent or walk away.

Do not take part in chatting, show your limit clearly.

The supervisor can take part in the weekend's party and be the manager on Monday; however his workers do not expect the same or they cannot control the fact, therefore supervisor should be careful not to create misunderstanding.

However, this doesn't mean that supervisor should not pay attention to personal life of his subordinates: family, children, hobby, interest. But remember that do not take part in party and gambling.

Do not have relationship with others in the enterprise. Do not flirt, sexual imply ... Supervisor should be a good mirror about this.

Neat fit will create part of a good person's appearance!

ANNEXES (attached as separate files)

Annex 1 : Training Evaluation Questionnaire

Annex 2: Appendix A8: Timber legality definition and compliance verification – WOOD PROCESSING AND TRADING

Annex 3: Decision No.: 0777/MOIC.DIH dated 25 AUG 2020 on the Management and Monitoring of Timber Input and Output

Annex 4: Guideline No. 1120 DIH.PSD dated 25 July 2021 on Management and Monitoring of Timber Input and Output of Wood Processing Enterprises

Annex 5: Mandatory Reporting Form for Timber Input

Annex 6: Mandatory Reporting Form for Timber Output and Balance