LAO PEOPLE'S DEMOCRATIC REPUBLIC

WOOD PROCESSING

SECTOR EXPORT ROADMAP

(2021-2025)

International Trade Centre

Funded by the European Union

The Wood Processing Sector Export Roadmap was developed as part of the ARISE Plus – Lao PDR project funded by European Union, on the basis of the process, methodology and technical assistance of International Trade Centre (ITC) within the framework of its Trade Development Strategy programme.

ITC is the joint agency of the World Trade Organization and the United Nations. As part of ITC's mandate of fostering sustainable development through increased trade opportunities, the Research and Strategies for Exports section offers a suite of trade-related strategy solutions to maximize the development pay-offs from trade. ITC-facilitated trade development strategies and roadmaps are oriented to the trade objectives of a country or region and can be tailored to high-level economic goals, specific development targets or particular sectors, allowing policymakers to choose their preferred level of engagement.

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Photo: @MoIC

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ACKNOWLEDGMENTS

The Wood Processing Sector Export Roadmap was developed under the leadership of the Ministry of Industry and Commerce (MoIC), in particular the Department of Industry and Handicraft with the support of the National Implementation Unit (NIU) and in close collaboration with the Ministry of Agriculture and Forestry (MAF).

The roadmap benefited from the contributions of sector stakeholders and associations, who played an important role in the consultative process. This roadmap was expanded thanks to the technical assistance of the International Trade Centre (ITC) and falls under the framework of the European Union (EU)-funded ARISE Plus – Lao PDR project.

This document reflects the ambitions of the public and private stakeholders who defined the enhancements and future orientations for the sector in view of increasing export performance and social dividends.

In addition, valuable suggestions and other contributions were received at various stages of the project from development partners, such as GIZ, European Forest Institute, the World Bank, among others. Prominent support was provided by the Lao PDR Arise plus project.

Technical facilitation, guidance and support for the process were provided by the project team of the International Trade Centre (ITC).

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FOREWORD

H.E. KHEMMANI PHOLSENA
MINISTER OF INDUSTRY AND COMMERCE OF THE LAO PEOPLE'S DEMOCRATIC REPUBLIC

I am pleased to launch the "Lao-PDR Wood Processing Sector Export Roadmap", which provides a comprehensive blueprint for the next 5 years to leverage the sector's potential for sustainable export growth. This initiative comes at an opportune time to revamp production and trade, particularly in face of the pandemic crisis and associated challenges in the global economy. Sustainable development of the wood processing sector can bring about numerous advantages to actors across the domestic value chain, especially in rural areas, while connecting them to global markets.

The Government has adopted policies and measures in recent years with the aim of promoting production and exports of added value products derived from timber. The "Wood Processing Sector Export Roadmap" will perfectly complement these efforts by setting the way forward to support our domestic producers to export to international markets around the globe.

Sector-specific strategic guidance and practical recommendations in areas of input supply, production, increasing value addition, marketing and quality improvement in a sustainable manner are included in the Plan of Action of the Roadmap to increase the sector's competitiveness on the international market and contribute to the national economy at large. The Roadmap also outlines actions to increase coordination across public and private sector stakeholders and strengthen institutional support for development. The launch of this Roadmap is therefore a first step in bringing together the stakeholders contributing to its implementation.

The Roadmap is based on findings from production and factory assessments, surveys, several rounds of discussions and extensive consultations among all related stakeholders – government, private sector, civil society, development partners and training and research institutions. Therefore, I extend my appreciation to all who contributed to the formulation of the Roadmap and thank the International Trade Center for their expertise and assistance, as well as the European Union for their support.

I would like to urge development partners to ensure the cohesion and alignment of their interventions with national priorities for the sector, as set out in the Roadmap. I am certain that the same spirit of collaboration in developing the Roadmap will continue through the implementation period. I am looking forward to working together towards our shared goals.

FOREWORD

AMBASSADOR INA MARCIULIONYTE
HEAD OF THE EU DELEGATION TO LAO PDR

First and foremost, I would like to express my appreciation for the strong collaboration established with the Ministry of Industry and Commerce (MOIC) under the stewardship of H.E. Khemmani PHolsena, Minister of MOIC.

The Lao PDR and the European Union (EU) are pleased to celebrate this year the 45th anniversary of the establishment of diplomatic relations. Over the past decades, we have strengthened our political, economic and development partnership based on mutual trust, respect, common interests and values. We are both committed to a rules-based multilateral system to address global issues like climate change, digitalization and regional integration.

The ASEAN Regional Integration Support from the EU (ARISE+) is a project funded by the EU and implemented by the International Trade Centre (ITC) to promote inclusive economic growth, increased climate change resilience, mitigation of vulnerability and job creation in the region. In Laos, the project is oriented towards the improvement of the overall business environment, and the increased participation in global value chains for two selected sectors, which boast the biggest potential for trade between Lao PDR and the EU: wood processing and coffee.

Since 2013, the EU Timber Regulation has banned illegally harvested timber from EU markets, requiring importers to check the origins of products. Within the framework of the EU's Forest Law Enforcement, Governance and Trade (FLEGT), bilateral voluntary partnership agreements (VPAs) are negotiated to ensure the legality of trade in wood and wood products, and guarantee that they meet EU Timber Regulation requirements. The EU and Lao PDR officially started the negotiations on the FLEGT VPA in April 2017. European companies have a high interest to start or expand business in the wood sector in Lao PDR, and to take advantage of the FLEGT VPA once in place. The country's FLEGT engagement contains potential for facilitating the sustainable development of the forest and timber sector. The EU and its member states are committed to support Lao small and medium enterprises and European companies in the wood value chain, to ensure that their operations respect high social and environmental standards.

Against this backdrop, the Wood Processing Export Roadmap is a vital component to chart the best way possible to unleash EU-Lao PDR untapped trade potential .. The implementation of this Roadmap will help tackling the challenges identified and open new important markets, building on the opportunities and development potential for this sector. This will turn into more job creation, higher growth, increased exports, and additional revenues for the Government to finance the socio-economic development of Lao PDR. The EU and its member states are proud to take an active role to contribute to this objective, side-by-side with the Lao PDR's authorities, in view of the foreseen graduation from the Least Developed Country status in the near future.

I would like to thank the ITC team who coordinate with the key Government agencies, private sector representatives and Development Partners to work towards the common vision for making Lao PDR a more prosperous country.

I am confident that this Roadmap will be a useful reference for the Lao PDR government as well as development partners, financing institutions and business, to help them take concrete actions for promoting the industrial development of the country.

FOREWORD

MS. PAMELA COKE-HAMILTON,
EXECUTIVE DIRECTOR,
ITC

Lao PDR is in a determined march towards achieving greener growth by making strides to improve the country's legal, regulatory and institutional framework ruling its forestry and wood sector. Moreover, Lao PDR has advanced the strengthening of economic ties to global and regional partners in recent years. With global demand for legally verified wood-based products increasing rapidly in markets around the world and in virtue of the country's abundant resources, the Lao PDR wood processing sector holds considerable promise to bolster the scale and value of exporting.

Existing opportunities from economic integration have not been fully seized and compliance with international market requirements remains inadequate. In addition to difficulties in sourcing legal raw material, transitioning to higher value added activities has proved challenging. Thus, there is need for an integrated effort to support the development of the wood processing sector.

The Wood Processing Sector Export Roadmap embodies the commitment of the Lao PDR public and private sector to build a framework where trade can strengthen national efforts to diversify and upscale sector activities in a sustainable manner to ensure resilient sector growth. This roadmap is intended to serve as a compass for sector export development by outlining strategic options and activities aligned to the country's needs and priorities for sustainable development. The roadmap provides a comprehensive five-year blueprint for upgrading processing capacities, stimulating product development and increasing access to legal timber for sustained production. The roadmap aims to enable the diversification of export destinations by outlining options for positioning the Lao PDR wood processing sector in regional and global markets, as well as concrete steps to enhance the capacity of SMEs to meet international buyer requirements.

The ownership of this Roadmap lies with Lao PDR. This strategic document is the result of a comprehensive consultative process engaging participants from public and private sector entities and development agencies, under the coordinated effort of the Ministry of Industry and Commerce and the engagement of the Ministry of Agriculture and Forestry.

ITC is privileged to support Lao PDR in the formulation of this Wood Processing Sector Export Roadmap. Further, ITC wishes to thank the European Union for its support to the elaboration of this roadmap, as part of its Lao PDR Arise + initiative. We highly appreciate the active engagement of the European Union's delegation to Lao PDR and the guidance they have provided throughout the design process of the roadmap.

FOREWORD

DR. BUAVANH VILAVONG
DIRECTOR GENERAL
DEPARTMENT OF INDUSTRY AND HANDICRAFT

The wood processing sector is one of important industries that contributes to economic growth and social development of the Lao People's Democratic Republic. Its value chain connects tree growers with processors, furniture producers, and exporters. However, Lao PDR still has not been able to extend wood processing up the value chain into value-added production while the global market is increasingly sensitive to timber sourced illegally and unsustainably. A large number of firms in the wood processing sector around the world are facing a high level of competition. Thus, new approaches are needed to facilitate their operations such as ensuring timber sourcing, strengthening technical skills, upgrading product quality, promoting product diversification, and facilitating market access.

The Department of Industry and Handicraft (DIH), Ministry of Industry and Commerce has the mandates to promote, develop and regulate the wood processing industry, especially in accordance with the Prime Minister's Order No. 15/PM on Strengthening the Strictness of Timber Harvest Management and Inspection, Timber Transport and Business. The DIH is also one among key government partners involving in the negotiations of the Lao PDR-EU Voluntary Partnership Agreement on Forest Law Enforcement, Government and Trade (FLEGT). The aims are to improve law enforcement, build capacity and enhance overall governance regime in the forest sector while making progress towards improving people's livelihoods through sustainable forest management.

The 'LAO PDR Wood Processing Sector Export Roadmap 2021-2025' highlights a way forward for the wood processing industry in areas of improving the sustainability of this sector through better coordination and increased access to legal timber, stimulating product diversification and the upgrade of processing capacity by enhancing skills, fostering technology adoption and spurring investment, and enhancing the ability of the sector to create market linkages. Hence, the Roadmap proposes proper actions for the short, intermediate and long-term implementation. It also presents a fresh approach to promote effective investment towards the achievement of inclusive and sustainable industrial development in the wood processing sector.

I extend my great appreciation to all who contributed to the formulation of this Roadmap, including the International Trade Centre for their technical expertise, the European Union for their financial support as well as various government agencies, associations and businesses within the wood processing sector for their views and other inputs.

FOREWORD

MR. SOUSATH SAYAKOUMMANE
DIRECTOR GENERAL, DEPARTMENT OF FORESTRY, MINISTRY OF AGRICULTURE AND FORESTRY OF THE LAO PEOPLE'S DEMOCRATIC REPUBLIC

In building upon to our natural resources and timber production capacities, Lao PDR's wood processing sector has tremendous potential to drive economic growth, generate employment, and support diversification. I am therefore pleased to share the Wood Processing Sector Export Roadmap, which provides a framework for coordinated action in leveraging the strengths present in this sector in order to realize these opportunities.

The Department of Forestry has been active in collaborating closely with the Ministry of Industry and Commerce and the International Trade Centre, towards the elaboration of the Roadmap, in a process that has involved dozens of public and private sector participants from all stages of the value chain and international partners. The resulting plan for the sector thus represents the shared goals of input suppliers and logging, exporters, and all of those in between.

Future growth in the sector will depend on sustainable development that is inclusive and builds resilience. The Roadmap supports this through a comprehensive set of actions on input supply, production, increasing value addition, marketing, and quality improvement.

However, the success of the Roadmap depends on how the projects and reforms outlined in the plan of action are ultimately put into practice. DOF is to play a significant role in managing and leading implementation, in collaboration with MOIC and other sector stakeholders. We look forward to continuing our coordinated approach in realizing the full potential of the sector through domestic growth and trade, and call on domestic and international partners to commit to this project as well.

I would like to thank the International Trade Centre for the technical assistance offered in the design of this Roadmap, as well as the European Union for their support to this important project.

STATEMENT FROM THE PRIVATE SECTOR

OUDET SOUVANNAVONG
PRESIDENT, LAO NATIONAL CHAMBER OF COMMERCE AND INDUSTRY

With significant natural resources and a strong skill base, the Lao wood processing sector has the potential to grow by supplying international markets. The Lao National Chamber of Commerce and Industry welcomes the Lao PDR wood processing Export Roadmap, which provides a common vision and framework for cooperating on improving input supply, production, value addition, marketing, and quality. This roadmap will only be of use to the sector's development insofar as it is implemented to benefit those involved in production, processing, exporting, and related activities. LNCCI will therefor support the process of putting the roadmap's plan into practice. We look forward to cooperating with other domestic and international partners in this, in order to work towards a brighter future for the sector.

NOTE TO READER

The Lao People's Democratic Republic's Wood Processing Sector Export Roadmap was developed on the basis of a participatory approach, during which industry leaders, small business owners and public sector representatives held consultations to reach consensus on key sector competitiveness issues and priority activities.

Besides in-depth research and value chain analysis, these consultations were complemented by:

- Production and processing site visits where supply chain assessments were carried out to gain further knowledge on key issues such as quality procedures, technical skills, lean management, quality of raw materials and access to markets, etc.
- ITC SME Competitiveness Survey (SMECS) to assess the strengths and weaknesses of enterprises and their business ecosystem. Approximately 30 wood manufacturers were surveyed, through which the roadmap gathered insights on employment, sales, wood production, certification, institutions and competitiveness for manufacturing companies based in the country.
- Meetings with development partners to identify synergies with ongoing and planned initiatives so that collaboration can occur during implementation.

In spirit and in action: The roadmap is aligned with existing national and sector-specific plans and policies and builds on ongoing initiatives in areas related to private sector development, investment and sustainable forest management.

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ACRONYMS AND ABBREVIATIONS

ACIAR	Australian Centre for International Agricultural Research
CoC	Chain of custody
EU	European Union
FLEGT	Forest Law Enforcement, Governance and Trade
FSC	Forest Stewardship Council
GIZ	German Development Cooperation
ITC	International Trade Centre
ITTO	International Tropical Timber Organization
LWPIA	Lao wood processing industry association
LFA	Lao furniture association
LNCCI	Lao National Chamber of Commerce and Industry
MAF	Ministry of Agriculture and Forestry
MoES	Ministry of Education and Sport
MoIC	Ministry of Industry and Commerce
MoLSW	Ministry of Labour and Social Welfare
MPI	Manufacturing Production Index
MoF	Ministry of Finance
MSME	Micro, small and medium-sized enterprise
NSEDP	National-Socio Economic Development Plan
NUoL	National University of Laos
PEFC	Programme for the Endorsement of Forest Certification
PFAs	Production forest areas
PMO	Prime Minister Order
SME	Small and medium-sized enterprises
SMECS	SME Competitiveness Survey
TISI	Trade and investment support institution
TLD	Timber Legality Definitions
TVET	Technical and vocational education and training
VPA	Voluntary Partnership Agreement
VSDC	Vetsaphong Skill Development & Testing Center

EXECUTIVE SUMMARY

The Lao People's Democratic Republic is well endowed with natural and planted forest assets, which provide ample opportunities to develop its wood processing sector. Further, timber species such as teak and rosewood that are produced in the country are considered highly valuable in international markets. The country's proximity to major markets is an additional advantage for exports of wood processing goods.

Lao People's Democratic Republic has a small, but vibrant wood processing industry, with the potential to generate revenue in rural locations and to help diversify local economies. The wood processing sector is relatively job-intensive compared to other industrial sectors, providing employment opportunities in wood plantation production, processing and trade, along with entrepreneurship and job opportunities in ancillary services, such as design centres, transport and logistics.

Lao exports of wood processing products are concentrated in a few regional markets, namely the People's Republic of China and the Socialist Republic of Viet Nam. Further, the majority of wood processing exports from Lao PDR have remained limited to low-value-added products. The national industry has experienced challenges competing against established manufacturing centres in the region. This leaves the sector with exciting opportunities to expand its export reach to new markets, while extending wood processing up the value chain.

In recognition of the sector's potential to contribute to national socioeconomic development, the Lao Government has made strides towards improving the country's legal, regulatory and institutional framework. Regulatory measures (e.g. Prime Minister Order No. 15) have been put in place to promote higher value added in the industry. In parallel, Lao PDR has embarked on the negotiation of a Voluntary Partnership Agreement (VPA) with the European Union.

Photo: *Links, Image by DEZALB from Pixabay.jpg.*

The sector is now at a crossroads. There is a pressing need for sector companies to upgrade their processing capacities. At the same time, ongoing regulatory and institutional developments will provide a favourable environment to attract new investments and expand market opportunities, as Lao PDR shows commitment, and enforces national and international obligations.

Recognizing these opportunities and challenges, public and private sector stakeholders have joined forces to develop this Wood Processing Sector Export Roadmap. This roadmap is driven by the following overall vision:

> **"Building the future of Laos exports with value-added wood products"**

The sector vision is supported by three strategic objectives:

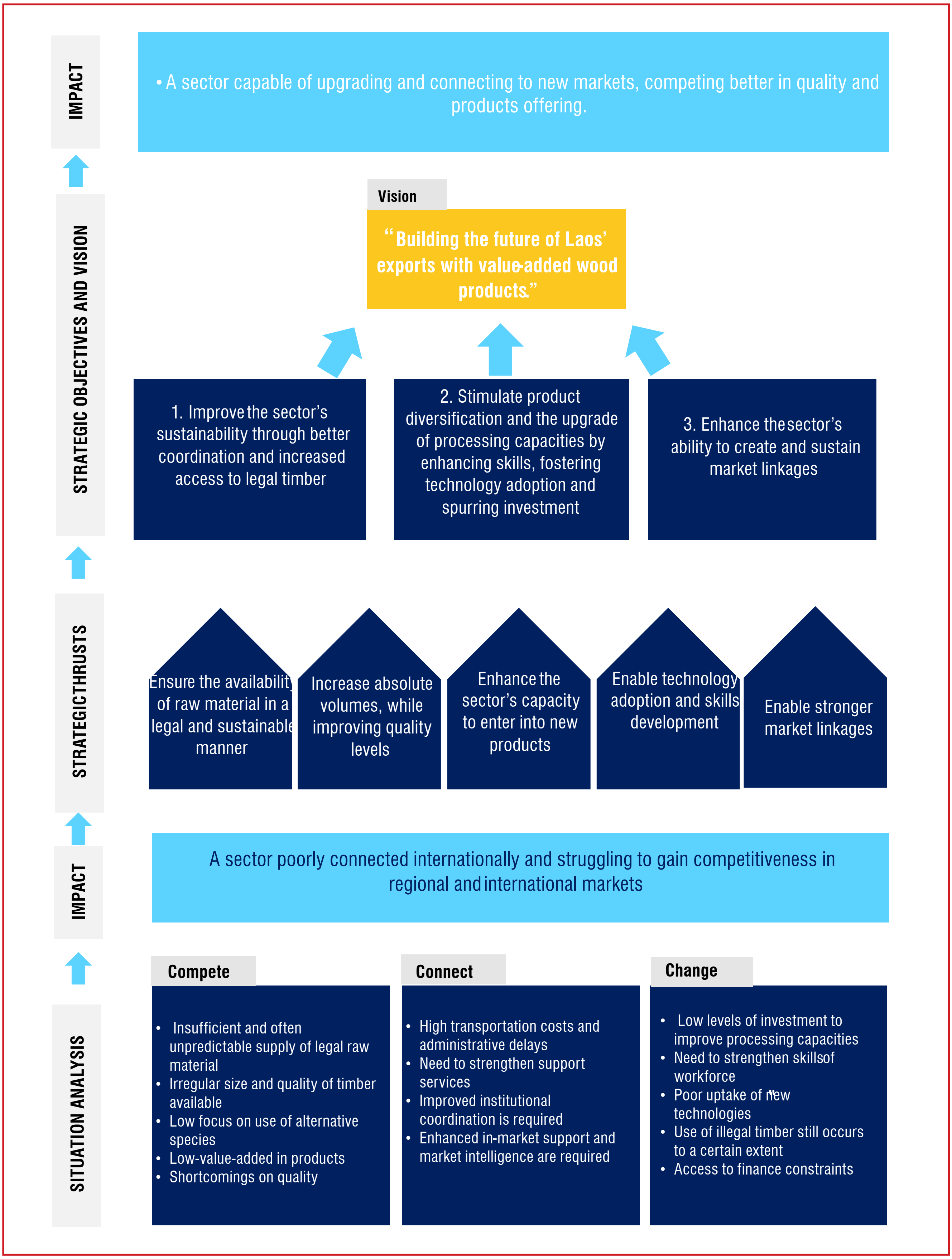
STRATEGIC OBJECTIVE 1: Improve the sector's sustainability through better coordination and increased access to legal timber	This strategic objective works towards increasing consistency and volume of production and processing to improve export performance and competitiveness by improving the availability of timber for the industry. The Roadmap includes actions to improve access to plantation timber, enhance the quality of raw material, and foster the use of lesser-known species and waste recovery. Actions under the Roadmap support the finalization of the VPA's negotiations and facilitate implementation of related regulations and procedures. Capacity building of relevant institutions and enhanced coordination among them are enabled through the Roadmap.
STRATEGIC OBJECTIVE 2: Stimulate product diversification and the upgrade of processing capacities by enhancing skills, fostering technology adoption and spurring investment	This strategic objective aims to spur product diversification and upgrade the processing capacities in the sector, by increasing awareness for modernization requirements in the sector and building the skills of the workforce and the capacities of sector associations. Actions under the Roadmap also facilitate access to higher technology and research and development to stimulate innovation in the sector. The Roadmap improves access to credit and fosters investment in the sector.
STRATEGIC OBJECTIVE 3: Enhance the sector's ability to create and sustain market linkages	This strategic objective works towards enabling the diversification of export destinations for sector firms. Enhancing the capacities of sector firms to meet international market requirements and standards are key components under this strategic objective. Actions under the Roadmap also enhance the quality and dissemination of market intelligence and strengthen in-market support and marketing promotion of existing and new product lines.

Coordinating the activities between public and private, mobilizing resources and provide an enabling business environment will be crucial for the roadmap implementation. Having a functional and efficient public–private coordination mechanism (sector advisory/development committee) is the key.

Figure 1 outlines the Wood Processing Sector Export Roadmap Strategic Framework.

Photo: @MoIC

Figure 1: Lao PDR’s Wood Processing Sector Export Roadmap: theory of change

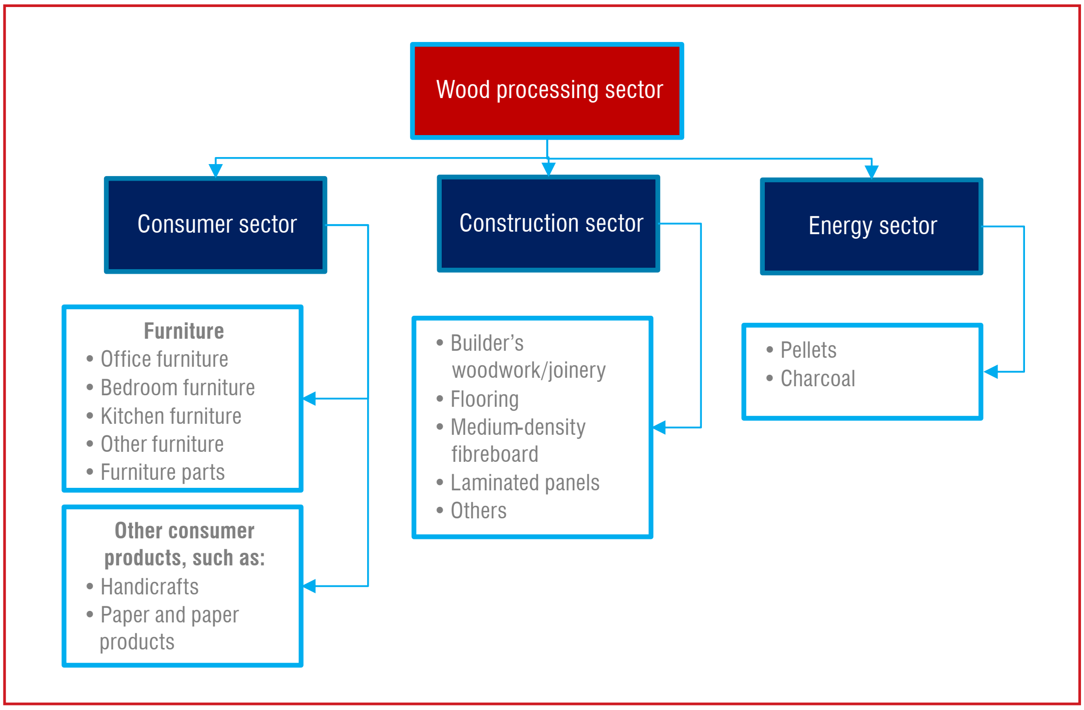


1. TRAJECTORY OF THE GLOBAL VALUE CHAIN AND ENTRY POINTS FOR LAO PDR'S EXPORTERS

1.1. PRODUCT MAP

The wood processing sector comprises a wide array of products, which allows for a wide array of spectrum of applications. Figure 2 shows a product map for the wood processing sector.

Figure 2: Wood processing sector product map



Wood products are sold semi-processed and processed to the consumption, construction and energy sectors.

- Consumer sector: Furniture plays a major role among processed wood products destined for consumption. Furniture includes a wide away of movable items, such as beds, shelves, cupboards and chairs, among many others. Classified by end user, wood furniture is sold for both residential (e.g. dining, bedroom, kitchens) and commercial applications (e.g. offices, healthcare and hospitality, among others). Out of all materials used in furniture manufacturing, wood is the most popular.
- Other consumer products include handicrafts, and paper and paper products. Wooden handicrafts refer to products that are handmade using simple tools instead of machinery. Usually, they represent and reflect traditions and cultures of a certain location through their design. Handicraft products are highly linked to the tourism sector. Wood also serves as a raw material for the paper industry. The latter is among the largest industries worldwide. Four main segments are identified within the industry, namely pulp, recovered paper, graphic paper and packaging.
- Construction sector: The construction industry is a key sector for the material use of wood products. Although globally the construction sector's preferred material of choice is steel, wood has emerged as a viable-mass scale and green complement to other traditional materials in the industry. Wood has numerous applications in construction, including:
  - Wood-based panels: either structural or non-structural, e.g. plywood, particle board and fibreboard.
  - Mass timber: built through the use of large wood beams and thick panels for walls and roofs, e.g. cross-laminated timber and glued-laminated timber.

- » Engineered wood products: combination of wood or wood products with various adhesives tmanufacture different products, such as laminate flooring and cross-laminated timber, among others.
- » Structural composite lumber: products engineered through layering wood veneers, strands or flakes and adhesives, subsequently cut intspecific sizes, such as laminated veneer lumber and laminated strand lumber, among others.

- Energy sector: Wood and wood products are also used to generate energy. Solid wood fuel includes firewood (e.g. stems, branches and wood residues), charcoal and wood pellets. The latter are predominately derived from sawmill wood residues. Wood is used worldwide, particularly in developing countries, for power generation and household heating.

1.2. STATUS AND PROSPECTS OF THE GLOBAL WOOD PROCESSING INDUSTRY

Predictions pre-COVID-19 indicated an overall positive outlook for the wood processing industry. The outlook of wood and wood products is highly interconnected to that of the construction sector. In view of a projected slight global economic slowdown at 2.4% in 2020, after 3.2% in 2018 and 2.5% in 2019, the construction sector was expected to dwindle in certain countries, hence reducing the demand for wood. However, a projected slack of wood demand would be relatively offset by increasing environmental concerns in markets and major infrastructure construction projects in developing countries. Both factors would enable wood demand to remain strong.

On the other hand, the global furniture market was expected to continue growing, primarily driven by rapidly flourishing consumer markets in Asian countries such as China and the Republic of India. Main enabling factors for industry growth include rising disposable incomes and technological innovations in the industry.

In early 2020, the outbreak of novel coronavirus (COVID-19) caused an unprecedented human crisis with a growing impact on the global economy. There is great uncertainty about the severity and length of the crisis and, hence, the full effects of the pandemic on the wood market are still largely unknown. The COVID-19 crisis will impact the global wood market through the following main factors: weaker economic growth results in a depressed demand, lower consumption due to high uncertainty, supply shocks due to factory shutdowns, logistical challenges and bottlenecks, and quarantine labourers. Additionally, major trade shows related to the wood industry are being postponed.

Despite the level of uncertainty, it is clear that the duration and severity of the market effects will vary across regions. For instance, producing regions, which are significantly dependent on cross-border trade to deliver low-value-added wood products, are more likely to be vulnerable in the short term.

China, the main importer of timber products in the world, imposed restricting measures on travel and movement of people. Although these measures are lifted as of May 2020, they have resulted in major disruptions in both the manufacturing and construction sectors, as well as logistic systems. Given China's leading role in the industry, fears have emerged regarding the potential multiple issues that a disruption of wood trade in the country could cause in the global wood supply chain. During the lockdown, companies were forced to cease imports, as access to their warehouses was prohibited. As a result, a significant slowdown in economic activities and obstacles of trade flows are experienced in the country.

In European countries, the lockdowns put in place to contain the spread of the pandemic will reduce the demand for non-essential goods, among them wooden products, in the coming months. Further, the temporary close of the Italian market, particularly important for sideboards, has already impacted operations of many regional mills. Other countries, such as the Kingdom of the Netherlands – a major trade hub in the region – have continued with economic activities without a lockdown being declared. In this context, stocks would appear to be sufficient in the short term.

Regional suppliers to markets in Europe and the United States of America, such as Viet Nam, have been requested to stop new orders of wood products and even stop exports under signed contracts. This has brought losses to regional wood firms, which are even reconsidering their business strategies.

The length and the intensity of the crisis will shape the pattern for recovery in industry:

- » Optimistic scenario: The lockdowns and other measures are successful in controlling the spread of the virus. The industry recovers ta close t"business as usual" scenario.
- » Pessimistic scenario: The contraction is prolonged, causing the economy and construction sector tcontinue contraction, likely causing structural changes, which are currently largely unpredictable.

Before the pandemic, the industry expansion was particularly driven by growth in Asian and the Pacific. The impact on the wood industry is foreseen to be relatively smaller compared to other industries such as tourism and hospitality. Affected by the pandemic crisis, the Chinese market has rallied to resume production after some extended holidays in March 2020. As of May 2020, in other countries, such as Malaysia, the wood industry has been allowed to continue production, although it is not "business as usual" yet, as firms are allowed to open under strict rules related to social distancing, use of protective gear and limited intraregional movement. Production is gradually picking up in other regions, such as in Europe and North America.

Some key pre-pandemic trends are presented below, focusing on production and trade and key players in the market, which can provide indications as to what could be expected in the industry in a post-pandemic setting.

Before the pandemic, growth in global production of wood products has been prompted by positive economic growth and new manufacturing capacities, boosting in particular the production of particleboard and oriented strand boards, used for furniture. Technological innovations allowing increased rates of recovery, the use of small-dimension timber and the emergence of new uses for wood have also positively impacted the production of processed wood products.

In 2018, global sawn wood production totalled 493 million m^3, which represents a rise of 2.2% during 2017. Sawn wood production has grown consistently in 2014–18, due to increasing production in Asia and the Pacific, Europe and North America. Following a similar trend, global production of wood-based panels reached 408 million m^3 in 2018, which represents a 1% increase in production over the previous year. This sub-product experienced the fastest growth among all product categories until 2016, after which growth stabilized.[1] For both sawn wood and wood-based panels, leading producing countries were China, the United States, Canada, the Russian Federation and the Federal Republic of Germany. Production in these five countries represent 58% and 69% of the world's sawn wood production and wood-based panels respectively.[2] Regional differences exist in the composition of wood-based panel products. For instance, in North America and Europe, reconstituted panels (i.e. particleboard and fibreboard) dominate wood-based panel products. In Asia Pacific, mostly China, plywood is the main wood-based panel product. Plywood has become the main wood-based panel product driven by production in China.

Global production of furniture was estimated at $470 billion in 2018.[3] Furniture production has experienced more than 20% of cumulative growth in 2017–18. The geography of furniture production has changed considerably over the past 10 years, as it was previously dominated by European countries (42% share of production in 2007). This change has been driven, among others, by the rapid industry development and sustained growth in emerging countries in Asian Pacific. Accordingly, in 2017, main producing regions were Asia Pacific (54%), followed by Europe (26%) and North America (15%).[4] In Asia Pacific, China leads production as the largest furniture manufacturer, but other countries, such as India and Viet Nam, are growing fast.

Cross-laminated timber production continues growth in European countries such as the Republic of Austria, Germany and the Kingdom of Sweden, as well as in Australia and Japan. Comprehensive data on other value-added products, such as engineered wood products, is unavailable, although information exists for certain countries.

Global trade of all major wood-based products hit a new all-time high in 2018. Consumption and trade of wood products are driven by several factors, among them housing and construction outlook and urbanization trends. The rate and extent of urbanization impacts demand for wood products through the demand for wood used in construction. Similarly, changes in population age structures, such as increasing working population, are associated with higher demand for housing and, in turn, for wood products used in housing and furniture. Another determinant of demand is the availability of alternatives to wood, such as brick for construction and plastics or other materials for other products. The use of alternative materials depends on the local culture and public policies and regulations.

According to the International Tropical Timber Organization (ITTO), exported value of wood products was $190 billion in 2018. The most salient traded wood products were wooden furniture with an estimated exported value of $71 billion, followed by sawn wood exports with an estimated value of $42 billion. Other main traded products were industrial round wood, other secondary processed wood products and plywood with estimated exported values of $17.55 billion, $17.5 billion and $16.87 billion respectively.

Product	Exported value in thousand USD (2018)
Industrial round wood	17 553 218
Sawn wood	42 232 599
Veneer	3 618 586
Plywood	16 874 647
Wooden furniture	70 833 059
Builder woodwork	16 282 973
Mouldings	5 730 549
Other secondary processed wood products	17 496 141
Total	190 621 772

Source: ITTO.

Most of the growth in trade of sawn wood products occurred in North America, Asia and the Pacific and Europe. Main exporters of this product are Canada, Russia and Germany – also among the top five producers – followed by Sweden and the Republic of Finland. On the other hand, China and

1.– Food and Agriculture Organization (FAO) (2018). *Global forest production: facts and figures*.

2.– Idem.

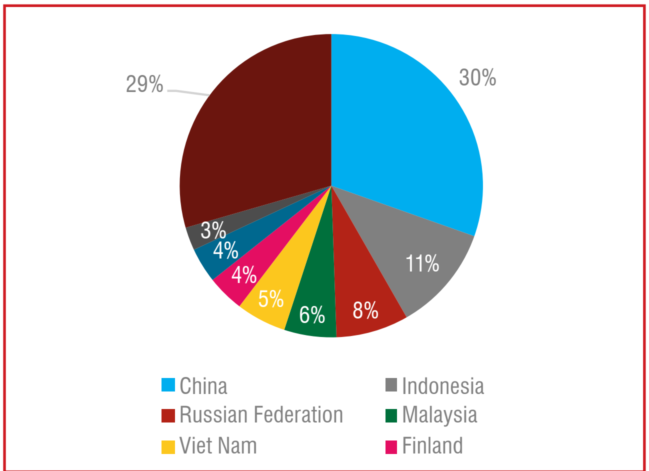
3.– United Nations Economic Commission for Europe (UNECE)/FAO Forest Products Market Review, 2018–2019.

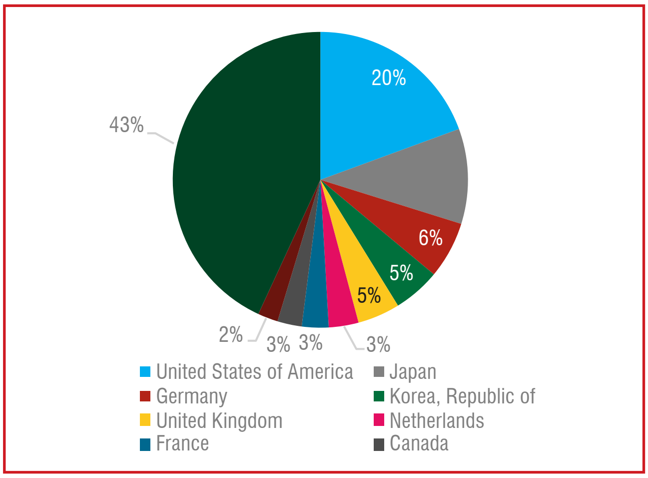
4.– Weichenberg (2018).

the United States are among the main consuming countries of this product, having experienced a steady growth in consumption of 34% and 11% respectively in 2014–18. China and the United States are also the main world importers of sawn wood, followed by the United Kingdom of Great Britain and Northern Ireland, Japan and Germany. Imports from these countries accounted for 55% of all imports, approximately 84 million m³.

The leading wood processed products (not accounting sawn wood and wood in the rough) being exported are plywood, veneered panel and similar laminated wood. The leading exporters of these products are regional suppliers, namely China, the Republic of Indonesia, Russia, Malaysia and Viet Nam. The global exported value of this product was $14 billion in 2019. China is the largest plywood-producing country, accounting for 71% of total world production. Main importers are the United States (20% of market share), followed by Japan, Germany, the Republic of Korea and the United Kingdom. It is worth mentioning that the global plywood industry is significantly affected by the United States–China trade disputes and the slowdown of the Chinese economy.

Figure 3: Top exporters (left) and importers (right) of plywood, veneered panel and similar laminated wood in 2019

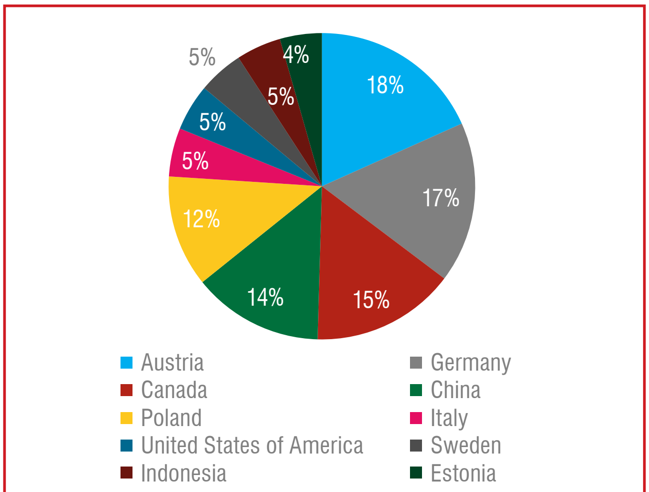


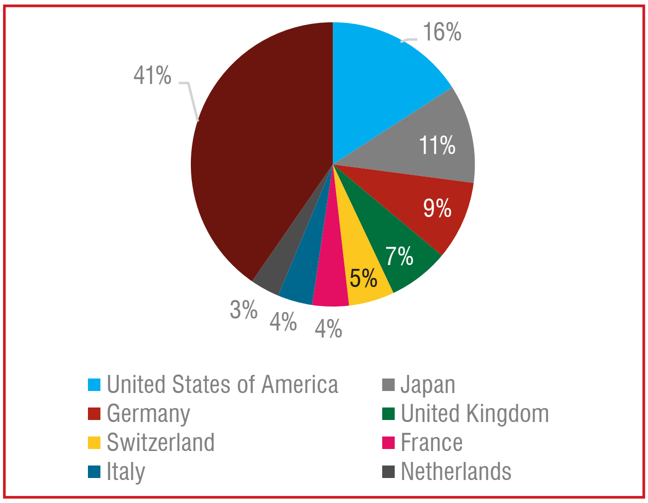


Source: ITC Trade Map.

Other main traded products are builders' joinery and carpentry of wood (HS code 4418). The top five largest exporters are Austria (11% of market share), followed by Germany, Canada, China and the Republic of Poland. The five largest importers of this product category are United States, Japan, Germany, the United Kingdom and the Swiss Confederation. Each of these countries has shown an increase in annual growth in value in 2015–19, where Japan and Germany present the highest growth (7% each).

Figure 4: Leading world exporters (left) and importers (right) of builders' joinery and carpentry, of wood, incl. cellular wood panels, assembled flooring panels (HS 4418) in 2019





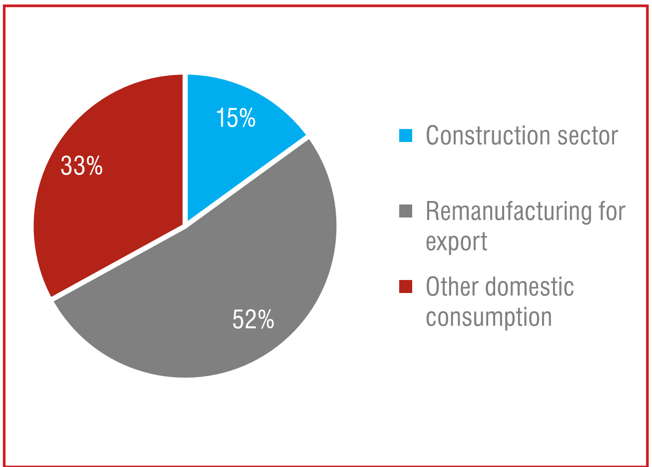
Source: ITC Trade Map.

Wood furniture is increasingly internationally traded. Estimates indicate that roughly 30% of global furniture production is traded internationally. A main driver behind sector trade growth is the presence of international supply chains, while obstacles emerge from the trade policy side, along with the use of tariffs and technical barriers. Over the past 10 years, there has been a geographical shift in world furniture consumption. The European share in global consumption has decreased from 42% in 2008 to 26% in 2017. On the other hand, the consumption share in the Asian and Pacific region has almost doubled, going from 26% in 2008 to 44% in 2017. The leading exporting countries of furniture are China, Germany, Poland, the Republic of Italy, Viet Nam and Malaysia. The leading importing countries of wood furniture are the United States, Germany, the United Kingdom, the French Republic, the Netherlands and Japan. Regarding trade in other secondary wood products, exports have steadily increased from $15.94 billion in 2014 to $17.5 billion in 2018. A growing market is that of engineered products, such as cross-laminated timber. The market for this product was valued at $603 million in 2017 and is projected to reach more than $1.6 billion in 2024. Europe's share of the global market for this product was 60% in 2017, led by Germany, Austria and Switzerland. In other countries, such as the United States and Japan, the industry is growing quickly.

A closer look to the regional market

Regional demand for wood and wood products is largely driven by three main factors, namely the construction sector (15%), importing to remanufacture with export purposes (52%) and other domestic consumption (33%).

Figure 5: Regional demand for wood products



Source: Ratnasingam et al. (2017).

The Asian market for wood processing products is heavily influenced by China's role as the main global processor of wood products. China has experienced fast and sustained growth of its wood processing industries, which transform timber into finished and semi-finished products for exports, mainly to Japan, the Middle East, Europe and the United States, but also for domestic consumption. Other key markets in the region are Japan, Korea and India.

Japan is a lead importing market for wood pellets and low-processed timber products. However, it also represents an important market for builders' joinery, plywood and fibreboard. Japan's demand for these products is mainly fulfilled by Malaysia and Indonesia. Japan relies heavily on foreign supply to meet its domestic demand, in spite of considerable forest resources. Within the region, Japan is the leading importer of wooden furniture, followed by Korea. Japan mainly imports wooden furniture from China, Viet Nam and Malaysia. It is noteworthy that Japanese companies have established joint ventures with local manufacturers in the region, e.g. Viet Nam.

Korea is another key market for plywood products in the region, standing as the 4th largest importer worldwide. The Korean Government has made significant strides towards self-sufficiency of timber stocks through successive forest plans. However, trees will only reach maturity in another two decades. Notably, Korea has issued an Act to regulate the import of legal timber, called Act on the Sustainable Use of Timber (2018). Korean importers must provide proof to show that their wood and wood products are legal. Notably, their legality standard recognized Forest Law Enforcement, Governance and Trade (FLEGT)-licensed timber as legally harvested.

India's imports of wood products are concentrated in low-value-added processed wood; i.e. wood in the rough and sawn wood. Nonetheless, India's imports of secondary wood processed products, specifically sheets for veneering, plywood and fibreboard, have continuously increased in the past five years. India's main suppliers for these products include Malaysia, Viet Nam and the Kingdom of Thailand, but also countries outside the region, such as the Gabonese Republic.

Structural and cyclical factors impact the global trade of processed wood. As with other natural resources, the wood industry is characterized by a significant volatility in prices. The unusual increment of lumber prices will increase the cost inventory and limit margins on fixed-price timber products. Additionally, the market is shaped by trade-related and non-trade-related policies and actions. Recent trade disputes between China and the United States, leading to the implementation of import tariffs, along with Brexit, which may signify the imposition of tariffs and the absence of a common customs union with the European Union (EU), are examples of trade-related developments with implications in the global wood sector. Initiatives with a major impact on the sector are related to sustainability and legal wood supply compliance, such as the US Lacey Act or the EU Forest Law Enforcement, Governance and Trade action plan, which has mobilized and provided assistance to countries all over the world in the quest to address illegal logging.

Environmental consciousness among consumers is rising. The growing search for sustainable, environmentally friendly, climate-neutral modes of living is allowing wood to enjoy a new popularity. Consumer awareness regarding the environment, deforestation and climate change is rising, particularly in high-end markets. Wood is considered a sustainable resource, as it comes from a renewable source and consumes low energy, and using wood in construction generates fewer gas emissions than building with other materials. Further, wood is the only renewable construction material. The advantages of using wood in furniture and construction are insofar evident in sustainability terms. A boost in the use of wood in construction is expected as a response to people's growing desire to enjoy a sustainable lifestyle. Moreover, consumers increasingly value private sector engagement towards sustainability translated into increased brand recognition and loyalty.

Sustainability in the wood industry is also high on the agenda of governmental agencies, timber trade associations and large retailers. Certain governments, particularly in developed countries, have introduced regulations on the need to demonstrate that wood products are from legal or sustainable sources. These measures have the objective of tackling illegal logging and, hence, ensuring the sustainability and traceability of the wood supply chain. They have an impact on market access for wood processing products.

Timber trade associations also acknowledge the value in promoting legal timber supply, as illegality taints not only individual companies, but also the entire industry. Similarly, large importers, particularly in European countries, also seek certifications, such as the Forest Stewardship Council (FSC) and Programme for the Endorsement of Forest Certification (PEFC) to respond to an increased demand for sustainability in wood products supply. Although certain buyers are willing to pay premiums for certified products, it is worth noting that some European importers are considering only legal timber, i.e. FLEGT compliant, to be good enough. If the European market is a market to be pursued, then finalizing the Voluntary Partnership Agreement with the EU is a must, while certifications provide a strong advantage.

Box 1: Main sector-relevant certifications

Program for the Endorsement of Forest Certification (PEFC)

The PEFC is a leading global alliance of national forest certification systems since 1999. As an international non-profit, non-governmental organization, it is dedicated to promoting sustainable forest management and chain of custody (CoC) through independent third-party certification.

Forest Stewardship Council (FSC)

The FSC is an international non-profit multi-stakeholder organization since 1993 to promote responsible management of the world's forests. The FSC does this by setting standards on forest products, along with certifying and labelling them as eco-friendly.

Investment and commercial interest in mass timber and engineered wood productswill continue to expand. New technologies and systems are transforming the industry's manufacturing processes with innovative machinery and assembly methods. A success story is the emergence of engineered products and mass timber, e.g. cross-laminated timber, and their use in construction and furniture manufacturing. They allow the production of more, e.g. furniture with less wood and less weight, making transportation more efficient. Accordingly, new production facilities are spreading worldwide. These processed wood products have an established market in Europe. Further, large investments are being made in North America and Australia, and potentially Japan, in virtue of a promising cross-laminated market. Other emerging developments include wood composites and wood-based nanotechnology.

Growing interest for teak wood in both emerging and developed markets and overall rising demand for tropical timber products in emerging economies. There is added interest in luxury and outdoor furniture, which well positions teak wood to satisfy growing demand. Fast development of emerging economies such as Russia, China and India is fuelling the demand for processed wood products, including those manufactured with tropical timber. Teak is an excellent example of a high-valued tropical timber, with an established role in the manufacturing of many high-end products. Notably, the main market for teak is India. South–South trade is gaining greater prominence, which offers opportunities for suppliers beyond developed countries. As increasing demand will put more pressure on tropical forests, buyers will prefer doing business with suppliers with their own plantations, as they are provided with supply guarantees.

Photo: @MoIC

Lesser-known species are becoming more widely used. A key element of sustainable forest management is the promotion of lesser-known species, especially in view of the fact that certain species, such as teak, are becoming scarcer. Lesser-known species have similar characteristics to traditional varieties. However, they are less known in developed markets, such as Europe. More awareness needs to be created on the characteristics of lesser-known species, to further stimulate their demand. If technical information is not available, then testing is required. Government, sector associations and development partners' support is needed to undertake these procedures, since their cost are forbiddingly expensive for small-scale producers.

E-commerce presents valuable opportunities for certain processed wood products. Online marketing channels offer an opportunity to find new markets and customers, particularly during and after the COVID-19 epidemic. E-commerce will become increasingly important, mainly for finished value-added products such as wood handicrafts and wooden furniture. Opportunities through e-commerce platforms exist not only for online sales to consumers, but also for business-to-business. Platforms such as Pimcore are becoming more popular, by enabling market growth and fostering new partnerships.

Wood furniture preferences in key markets[1]

- European market: Wood remains an appealing material for furniture products, especially in the middle and upper range. Interest in tropical wood, such as teak, takes place mostly in Northern European countries. Increasingly popular wood species include oak, beech and light-coloured wood. Combination of wood with other materials, such as glass, metal or stone, is perceived as modern. Matt and super matt are in trend as the preferred finishing option in this market. Further, smoother wood finishing with a natural effect is becoming trendier in the European market.
- Chinese market: Preference for wood is increasing among consumers driven by improved living standards, and families requesting solid wood furniture, as it is perceived thave better quality. Preferred wood species are oak for contemporary furniture, walnut among high-end markets, and tulipwood.
- United States: Preferred wood species include ash, pine, gum and poplar. Deep wood finishes with rich shades of brown, such as cherry, expressand merlot, are in demand. In contrast the European market, glossy finishes are sought after.

1.– Weichenberg, Sylvia (2018).

1.3. REGIONAL WOOD PROCESSING SUPPLIERS AND STRATEGIES

Viet Nam

Viet Nam and Lao PDR have a strong trade relationship, which includes exports and imports of timber products. Lao PDR has been, until recent years, a key supplier of unprocessed timber to Viet Nam. Comparably, Viet Nam has experienced a progressive upgrade regarding their position in the wood processing global value chain, reaching further processed products than Lao PDR and also being able to reach more high-end markets.

Viet Nam is one of the world's largest exporters of wood products. In 2019, Viet Nam's leading exports of wood products were wood in chips and wood pellets valued at $1,750 million and $370 million respectively. The main importing markets for wood in chips were China and Japan, with a share of 59.6% and 34.9% in Viet Nam's exports. Meanwhile, Korea is the main importing market for wood pellets from Viet Nam, with a share of 59.7%, followed by Japan, with a share of 39.9% of Vietnamese exports.[5] Although those products are low-value-added, Vietnamese exports of further processed products such as plywood and builders' joinery have increased steadily over the past few years. Exports of plywood, veneered panel and similar laminated wood rose from $212 million in 2015 to $787 million in 2019, which accounts for a 38% growth rate per year. Viet Nam is the 5th largest exporter of these products, representing 5.3% of the world's exports. Viet Nam's main importing markets are the United States (46.6%), Korea (27.4%), Malaysia (8.2%), Japan (6.9%) and Thailand (4.3%). Similarly, Viet Nam's exports of builders' joinery and carpentry made of wood were valued at $137.6 million in 2019. Viet Nam's main markets for these products are the United States and Japan, with a 33.7% and 23.1% share of the country's exports respectively, followed by the United Kingdom and the Kingdom of Belgium.[6] Furthermore, Viet Nam is one of the world's leading exporters of wooden furniture. Wood furniture exports from the country have grown consistently during the past five years. Within these products, wooden furniture (excluding for offices, kitchens and bedrooms, and seats) present the highest value of exports, approximately $3.1 billion in 2019, Viet Nam being the 2nd largest world exporter of this product. Wooden furniture for bedrooms and upholstered seats with wooden frames are also major wood furniture products exported by the country, with a value of $2.6 and $2.2 billion in 2019. Viet Nam ranked 2nd and 3rd largest world exporter for these products respectively in 2019. Main markets for Vietnamese wooden furniture are the United States, Japan, the United Kingdom and Korea.

The Vietnamese wood product industry is highly competitive worldwide. The sector developed gradually in the 1990s, enhancing its growth since the 2000s. Viet Nam is increasingly renowned as a supplier of high-quality finished wood products, particularly wooden furniture. Some key factors that can be attributed to Viet Nam's success include a predictable regulatory framework, favourable environment for foreign investment, low labour costs, skilled manual labour and geographical location. Moreover, sector firms have strong and direct linkages with world-leading companies. Further, the government has long supported the sector by issuing regulations and measures to boost the value chain's development, from raw material supply such as plantations to investment and trade encouragement.

In addition to the above, Viet Nam has negotiated free trade agreements with key markets, such as the United States. Moreover, Viet Nam and the EU signed the Voluntary Partnership Agreement (VPA) in 2018, creating improved market opportunities for the industry. Notably, Vietnamese wood exports are mainly consumed in countries with strict regulations regarding the legality of wood products imports. Accordingly, a large number of Vietnamese companies count with certifications, such as chain of custody and Forest Stewardship certification.

Viet Nam's wood processing sector is seeking ways to respond and adapt to the COVID-19 crisis. It is expected that their production and export turnover will drop sharply in the short term. In this regard, sector stakeholders are trying to identify alternative strategic lines of products and markets to support the industry during and after the crisis. Among the main threats to the industry is the potential shortage of raw material. Viet Nam is a net importer of timber and is thus heavily reliant on imports of raw materials from various suppliers.

Enabling factors	Deterring factors
• Cost advantage in international markets; • Predictable regulatory framework; • Favourable investment environment; • VPA with the EU finalized; • Direct contracts with leading furniture companies; • Large number of companies count with chain of custody and Forest Stewardship certification.	• Growth of exports of wood chips may threaten raw material availability for the domestic wood processing industry; • Heavy reliance on imported wood material.

5.– ITC Trade Map, mirror data.

6.– Idem.

Malaysia

Like Lao PDR, Malaysia also counts with abundant wood resources, including teak species. Although Malaysia continues to export low-value-added wood products such as sawn wood and wood in the rough (banned for exports in Lao PDR), the country has been able to progressively upgrade its processing capacities and is now a prominent furniture exporter.

Malaysia is among the top 10 largest exporters of furniture in the world and is highly export-oriented. It is estimated that Malaysian furniture exports account for 85% of its production.[7] The main markets for Malaysian wood furniture exports are the United States, Japan, the United Kingdom, Australia and the Republic of Singapore. The main type of wood furniture exported is wooden furniture for bedrooms (excluding seats) for a value of $785 million, followed by wooden furniture (excluding for offices, kitchens and bedrooms) for a value of $681 million and wooden furniture for kitchens (excluding seats) for a value of $276 million. Most furniture production is manufactured with rubberwood. The Malaysian Government markets it under the name "Malaysian Oak".

The country's competitive advantages lie in the availability of raw materials, capital outlay, low entry barriers, policy measures and government incentives.[8] Malaysia's wood furniture sector has received continuous support from the government through various initiatives and policies, including the Industrial Master Plans and the National Timber Industry Policy (NATIP). Government assistance has focused on improving productivity and enabling a shift from primary processed products to value-added wood products. Further, it includes incentives to boost export growth. An additional key development has been the development of the design and aesthetics aspects of furniture, which has propelled Malaysian products onto international markets.

Some key constraints include the increasing competition by neighbouring countries with low costs of production and significant dependency on foreign workers. Additionally, promotion of Malaysian furniture as environmentally friendly poses challenges due to the relatively low adoption of CoC among Malaysian exporters.

Enabling factors	Deterring factors
• Favourable policy framework; • Availability of wood resources (natural and plantation forests); • Foreign direct investment facilitated by government incentives and strong domestic investment; • Low entry barriers.	• Increasing regional competition by low-cost furniture producers, e.g. China and Viet Nam; • Greater value addition and innovation required; • Relatively low adoption of CoC; • Dependency on foreign workforce.

Indonesia

Indonesia is certainly at a higher stage in the global value chain of wood processing, compared to Lao PDR, and has successfully completed the VPA negotiations with the EU. Both countries have implemented similar support policies for sector development and share certain characteristics, e.g. they are both producers of acacia and teak-based wood products. Thus, Indonesia's path to develop its wood industry and exports is a great example to Lao PDR.

Indonesia's wood processing industry is amongst the largest of the world. The country is the 2nd largest exporter of plywood, after China. In 2019, the exported value of plywood from Indonesia stood at $1.7 billion.[9] Main markets were Japan (33.7%), the United States (17%), Korea (14.2%) and Malaysia (7.6%). In 2019, other key wood products exported by Indonesia were wood for parquet flooring, not assembled ($593 million) and builders' joinery and carpentry ($384 million). Indonesia is also among the top 10 exporters of wooden furniture (non-specified) in 2019, for a value of $795 million, followed by seats with wooden frames for a value of $326 million. The most prominent market for Indonesian wooden furniture is the United States, followed by Japan and the Netherlands. Notably, the furniture industry has begun tapping into non-traditional markets in Africa, the Middle East and Eastern Europe.

Similar to the Laotian Government, Indonesia introduced a decree in the early 1980s to progressively ban the export of logs with the objective of increasing in-country value addition. In recent years, Indonesia's furniture industry was designated a priority sector by the government in virtue of being a labour-intensive industry. Government support has also been geared to boost promotion and marketing of local furniture products, for example through an online market platform.[10] In addition, in 2013, Indonesia became the first country to implement the FLEGT licensing, which gave the country a competitive advantage.

Among the Indonesian wood industry's core strengths is the availability of raw materials, particularly teak. Nevertheless, furniture manufacturers are increasingly facing issues to provide proof that raw material comes from legal sources, based on the Timber Legality Verification System (SVLK). Furniture companies consider this scheme time-consuming, complex and costly.

7.– Ratnasingam et al. (2018). Malaysian furniture, BioResources 13(3), 5254–5270.

8.– Ratnasingam (2018). The Malaysian furniture industry: charting its growth potential.

9.– ITC Trade Map, mirror data.

10.– Global Business Guide (2018). Indonesia's Furniture Industry: Competitive Advantages Hampered by Bureaucracy.

Photo: *Links, Image by Erdmann-Crew from Pixabay.jpg.*

Enabling factors	Deterring factors
• Prioritization within national policy agenda;	• Lower value of furniture exports than regional competitors;
• Favourable policy framework tenable value addition and marketing;	• Permit constraints and burdensome regulations;
• VPA with the EU finalized;	• Issues regarding the legality of raw material supply;
• Extensive timber resources;	• Weak availability of skilled labour.
• Market diversification.	

1.4. IMPLICATIONS FOR LAO PDR'S WOOD PROCESSING SECTOR

- Immediate and long-term measures and strategies will have to be implemented to support the sector's firms and particularly small and medium-sized enterprises (SMEs) respond, adapt and thrive in face of Covid-19-related challenges.
- Timber legality and certification of both forest management and chain of custody are key instruments that Lao PDR can employ meet demand for sustainable, legal wood processing products. The finalization of FLEGT negotiations will be crucial increase market access European countries, but also their markets with common sustainability standards, such as Korea.
- Joint ventures are business opportunities to be explored, particularly tenter high-end markets, such as Japan.
- Wood is being increasingly combined with other materials. Depending on the market, manufacturers should take into account this preference.
- Sound market intelligence is required to successfully enter into new markets, particularly for wooden furniture products.

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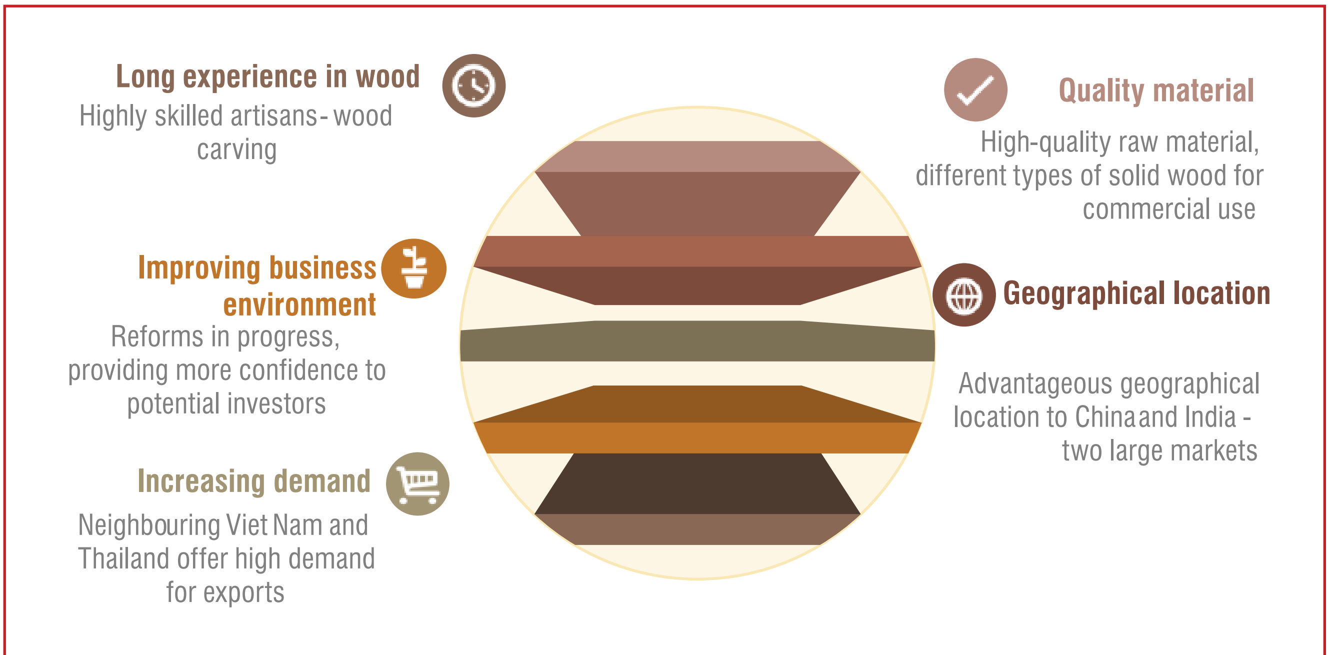
2. WHERE ARE WE NOW?

2.1. LAO PDR'S FUNDAMENTALS FOR A SOLID WOOD PROCESSING EXPORT INDUSTRY

Lao PDR has a long experience in the wood processing industry. Wood is used extensively, as evidenced by the fine and intricate carved doors and windows frames in templates and everyday items such as furniture, bowls and kitchen utensils. Among the ethnic minorities, wood carving is among the most common areas of work, after textiles.

The sector benefits from strengths such as a rich natural resource endowment, favourable climate and low labour costs. Certain timber species from Lao PDR, such as teak and rosewood, are highly valuable in international markets. Moreover, compared to competitors, the Lao wood processing industry presents relatively lower fixed costs. Lao PDR's proximity to major markets is an additional advantage for trade of wood processing goods.



The Lao Government has made strides towards improving the country's legal, regulatory and institutional framework. For instance, the plantation sector is supported by the government with the aim of creating green jobs and livelihoods and supporting local industry. Other regulatory measures have been put in place to promote higher value added in the industry. Additionally, another major development is the ongoing VPA negotiation with the EU, which will bring about more clarity and transparency in the regulatory system. Finalization of the VPA negotiation will improve the sector's international reputation. Availability of international cooperation to assist sector development is a considerable strength.

2.2. POLICIES AND REGULATORY FRAMEWORK GOVERNING THE SECTOR

Lao PDR's National-Socio Economic Development Plan (NSEDP) 2016–2020, the National Green Growth Strategy, the Development Strategy 2025 and Vision 2030 guide the nation's major action plans. The Lao PDR Government intends to pursue green and sustainable economic growth, focusing on rural development, poverty alleviation and graduating from its least developed country status. Promotion of green growth has been a main pillar of the national policy framework. As such, the importance of sustainable forest management is enshrined across high-level policies.

The NSEDP reflects the goals and orientations of the Development Strategy 2025 and Vision 2030. The NSEDP provides Lao PDR with directions for continued economic growth, sustainable development, strengthening human resource capacity, maintaining political stability and widening international cooperation. The NSEDP's objectives for the manufacturing sector are fostering diversification of commercial goods, using agriculture and forestry raw materials and products and production inputs, and modernizing the sector. Regarding the wood processing sector, the NSEDP has specific actions across outputs. They include:

i. Develop handicraft products with potential in domestic and foreign markets, e.g. woodcarving products;
ii. Restore production forest of 500,000ha;
iii. Processing industries for processed wood products: Meuang Xay, Meuang Luang Prabang, Meuang Samneua and, Meuang Sayabouly; each province shall have 1–2 wood processing factories fabricating standard processed wood products and capable of high-level competition;
iv. Develop areas for the cultivation of high-value-added trees, such as teakwood and rosewood, patterned hardwood (Mai Longleng) and Maijan in Luang Prabang, Luang Namtha, Bokeo, Sayabouly, Vientiane and Xiengkhouang;
   Establish demonstration areas for resources trees such as Maijan wood that match the local environments;
v. Create production chains between the large enterprises and SMEs to improve productivity qualitatively and quantitatively while generating employment, creating relationships within and between sectors at the local level, such as enterprises that are delivering comprehensive tourism, agro-processing and so on.

Through these actions, the NSEDP aims to promote sustainable management of timber resources, in line with world trends, through the promotion of high-value species such as teakwood and rosewood.

Photo: *Links, rural village, Lao PDR.jpg*

No specific national policy exists for the wood processing sector. Additional policies influencing the industry are intrinsically linked to forest plans, programmes and policies. In the past, the forestry policy was focused on subsistence use and local trade of forestry products. Poverty alleviation and industrial development are increasingly being considered in programmes and policies for the forest sector in Lao PDR. Relevant national policies include:

- The Forest Strategy 2020 (to be revised) is the main guiding strategy for the forestry sector. It has a target to achieve 70% of forest cover of the country's land area by 2020. This will be done through three main measures, namely rehabilitation of degraded forest, planting of industrial trees and protecting existing forest from further logging.
- The Five-Year Agriculture and Forestry Development Plan (2016–2020) focuses on supporting certification of production from native forests, village forest development, and development and dissemination of improved regulations, rules and strategies for forests.
- The overarching legislative framework for forest and plantations in Lao PDR is set by the Land Law No. 04/NA (2003, revised in 2019) and Law on Forests No. 06/NA (2007, revised in 2019). They established rights and obligations and guide the allocation of land to plantations, while promoting investment. Among incentives for tree plantations, the Decree N96/PM (2003) establishes inter alia: exemptions from land tax for land used in plantations (after three years if planted in accordance with the Law on Forestry); exemptions on reforestation fees and forestry resource fees, if planted timber is for domestic use and for export, although income taxes must be paid; among others. Both have been in review for an extended period, which has caused legal ambiguity and uncertainty regarding implementation.

The Forest Law Enforcement, Governance and Trade (FLEGT)

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 lumber.

Since 2013, the EU Timber Regulation has banned illegally harvested timber from EU markets, requiring importers to check the origins of products. Under the action plan, bilateral voluntary partnership agreements (VPAs) are negotiated to ensure the legality of trade in wood and wood products. A FLEGT licence is a guarantee of the legality of the products in the country of harvest and their meeting EU Timber Regulation requirements.

EU–Lao PDR negotiations on the VPA officially started in April 2017 and are ongoing. By 2020, Lao PDR has made progress on several fronts in defining legality and developing supply chain controls, including on:

- Defining timber legality by identifying the national laws and regulations that will be used tindicate the legality of timber;
- Revising the Forest Law, Land Law, and a new decree on environmental impact assessments tfurther 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 timplement the VPA and the timber legality assurance system.

Further, within the FLEGT regulatory framework, eight Timber Legality Definitions (TLD), as part of the Lao timber legality assurance systems (TLAS), are in development stage and will be used to indicate legality of timber. Namely: TLD1: Production forest; TLD2: Forest conversion; TLD3: Plantation; TLD4: Forest Village; TLD5: Confiscated timber; TLD6: Imported timber; TLD7: Labour obligation; TLD8: Wood processing and trade. 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.

Through the VPA, Lao PDR would not only benefit from improved exporting to EU countries, but also other countries working and trading with the EU in this sector and that are looking to certify the legality of imports that may be re-exported. Thailand is negotiating a VPA, Viet Nam has concluded VPA negotiations, and China is working with the European Union on forest management issues.

In line with the objectives of the FLEGT process, Lao PDR has issued many regulations restricting the export of wood and wood products to reduce illegal logging, promote domestic wood processing and facilitate industrial tree planting in the country. Among these measures, the most remarkable has been the Prime Minister Order No. 15 (PMO 15). The ultimate goal of PMO 15 is to strengthen the implementation of forest management, along with timber extraction, processing and trade, and to ensure strict compliance to the laws and regulations halting illegal logging and illegal timber exports. Accordingly, PMO 15 stipulates, among others:

- Strengthening the enforcement of forest law against illegal logging and strict harvesting monitoring of all timber, especially from conversion areas;
- All timber must be processed by the national wood processing industry and banning of exports of unprocessed timber;
- Banning illegal timber and forestry products from transiting through Lao PDR territory to a third country;
- Auctioning of all timber at log landing site 2 (see more information in Value Chain subsection).

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. However, an improvement in exports of value-added wood products has also been attributed to the policy. Further, since the introduction of PMO 15 in 2016, illegal logging has significantly declined in the country, by 75% in one year.[11] Subsequently, the MoIC issued regulation No. 0939/MoIC (replacing No. 0002/MOIC decision), providing the list of wooden products eligible for exports. The regulation seeks to promote further processing in the sector and stimulate exports of high-value-added wooden products. The list stipulates specific uses and sizes of wood products allowed for exports. Regulations under this decision continue being revised by the government. It is expected that future revisions will broaden the scope, to reflect the reality of market demand.

Important elements of the legal and regulatory framework relevant to the processing sector are noted in Table 1.

11.– MAF (2019). Lao PDR: Additional Financing for Scaling-up Participatory Sustainable Forest Management – Environmental and Social Impact Assessment (updated draft). Available at http://dof.maf.gov.la/wp-content/uploads/2019/10/ESIA-AF-SUPSFM-191007-updated-draft.pdf.

Table 1: Main legality references relevant to the wood processing sector

Legality reference	Purpose
Decision on Wood Processing Factory No.0222/MOIC.DIH, Dated March 23, 2021	Defines all applicable manufacturing standards for timber processing (under revision)
Law No. 46/NA on Enterprise 2013	Regulates all business activities
Law No. 48/NA on Industrial Processing 2013	Regulates all processing and manufacturing activities, including wood processing
Order No. 15/PMO on Strengthening Strictness of Timber Harvest Management and Inspection, Timber Transport and Business 2016	Suspends the export of logs and unfinished wood products
Regulation of the list of wooden products eligible to export, No. 0851/MoIC, DoIH 14/09/2021	To establish the list of wooden products eligible to export
Investment Promotion Law No.14/NA, Dated November 17, 2016	Promotes investment activities by domestic and foreign entities
Forestry Law No.64, Dated June 13, 2019	Regulates the management and use of forest land (as defined under the Law on Land)
Directive on the Registration and the Certification of plantation forest No.2492/MAF, Dated December 12, 2020	Establishes the requirement for plantation to be registered
Decree on Tree Plantation Promotion for Commerce No.247/PM, Dated August 20, 2019	To promote tree planting for commercial timber production and environmental protection
Decision on Management, Monitoring of Timber Input and Output No.0777/MOIC, Dated August 25, 2020	To define the rules for operational control and compliance monitoring the timber supply chain
The Prime Minister Order No.09/PM, dated 02/07/2018 regarding intensification Land Use Management for industrial Tree Plantation and Other Crops Nationwide, and the guideline No.1758, dated 30/7/2018 on the implementation of the Prime Minister Order No.09/PM	

2.3. SOCIOECONOMIC CONTRIBUTIONS OF THE SECTOR

The wood industry has the potential to generate revenue in rural locations and can help diversify local economies. Over the past few years, there has been a steep decline in production of wood and wood products, which is attributed to issuance of Prime Minister Order No. 15.

The current capacity of the wood industry is difficult to estimate due to weak availability of accurate data. Domestic production of floor lumber was estimated at 121 million m² and production of wood furniture was approximately 338,878 million kip in 2018. Production of both items show a decrease following the issuance of PMO 15. Production of books was estimated at 3.88 million units according to the Lao PDR Bureau of Statistics.

Table 2: Wood production in Lao PDR by major product (2014–18)

Wood products	2014	2015 (**)	2016	2017	2018
Lumber (Th. m³)	233	241	–	–	–
Plywood (Th. sheets)	1,480	1,532	–	–	–
Floor lumber (Th. m²)	1,977	133,369	134,304	130,811	121,654
Wood furniture (Mill. kips)	29,370	41 255.23	42 777.20	38 301.72	N/A
Books (Mill. units)	9.00	3.35	3.37	3.58	3.88

Note: Th = thousand; mill = million.
Source: Lao PDR Bureau of Statistics.

Further, according to the Manufacturing Production Index (MPI), the manufacture of wood furniture decreased sharply in the four quarters of 2019, by −21.52%, −28.32%, −20.14% and −21.98% respectively.

Table 3: Wood furniture production in Lao PDR (2019)

ISIC	Commodity	2019			
		Q1 growth rate %	Q2 growth rate %	Q3 growth rate %	Q4 growth rate %
3100	Wood furniture	-21.52	-28.32	-20.14	-21.98

Source: Department of Industry and Handicraft, MPI 2019.

The wood processing industry has been dominated by small and medium-sized enterprises. In 2016, out of the 1,325 wood processing establishments operating in Lao PDR, most of them were small-sized (589) or medium-sized (391) operations, as illustrated in Table 4. Notably, the majority of wood processing establishments were active in either furniture production (678) or wood processing (579). By 2020, the number of wood processing factories had dropped to 969 manufacturing plants (6 sawmills, 364 wood processing factories, and 599 furniture manufacturers) and 121 micro units. It is worth noting that, often, processing facilities are a combination of the aforementioned, e.g. establishments involved in both sawmilling and furniture production.

Table 4: Number of wood processing establishments, by industry and size (2016)

Industry	Small	Medium	Large	Total
Saw milling	–	111	28	139
Wood processing	114	201	264	579
Veneer production	1	9	19	29
Furniture production	490	170	18	678

Source Department of Industry and Handicraft.

The wood processing sector is relatively job-intensive compared to other industrial sectors, providing employment opportunities in wood production, processing and manufacturing, along with entrepreneurship and job opportunities in ancillary services, such as transport and logistics and retail, among others. Estimates indicate that more than 25,000 people were employed in the wood manufacturing sector in 2016, with no breakdown available by gender. Notably, it is likely that this figure has decreased in the subsequent years as a result of slowdown of the sector operations. The World Bank (2019) estimates that an additional 100,000 jobs could be supported throughout the value chain, including the forest sector.

Table 5: Jobs in downstream wood processing industries (2016)

Region	Sawmills	Wood processing	Veneer	Furniture	Total
Northern	454	3 104	269	1 059	4 886
Central	207	10 860	1 062	4 243	16 372
Southern	136	2 574	416	885	4 011
Total	797	16 538	1 747	6 187	25 269

Source: World Bank (2019), based on FSIS 2018 and data provided by the Department of Industry and Handicrafts, MoIC as of June 2016.

2.4. LAO PDR'S WOOD PROCESSING VALUE CHAIN

CURRENT VALUE CHAIN OPERATIONS

Input sourcing

Four timber sources are available in Lao PDR. Each of them is subject to different applicable legislation. They are as follows:

- From natural forest: Valuable timber species in Lao PDR's natural forests include sandalwood, teak, acacia, rosewood and lesser-known species.
  - Production forest areas (PFAs): Timber from this source can be harvested via selective logging under "special logging quotas", based on a pre-logging survey. Requirements: 15–20 year forest management plan, harvesting plan and logging permit.[12] However, PM15 stated that PM31 (2013) remains in place; i.e. logging from PFAs is closed until the necessary measures are taken tensure that harvesting through sustainable forest management is achievable.
  - Conversion timber: Raw material sourced from conservation forests, national protected areas, protection forest or production forest, which are under the national annual logging quota for conversion timber; i.e. clearance of forest for government-approved development projects. There are nspecific areas for conversion timber; it occurs when one of the following projects is carried out:
    - Hydropower plants;
    - Electrical lines;
    - Road construction;
    - Agriculture plantations.

    Within the last few years, conversion accumulated to several tens of thousands of hectares per year, with volumes up to 600.00 cubic metres of timber per year harvested. Requirements: Harvesting plan and logging permit.[13]
- From plantation forests: Valuable teak species produced in plantation forests include rubberwood, eucalyptus, acacia, teak and agarwood.
  - Plantation timber (concessions):[14] Timber from plantation concessions located on either degraded forest or barren forestland. Plantations areas (large-scale plantations) are mainly located in the central and southern parts of the country, namely Vientiane, Khammouane, Savannakhet and Bolokamxai provinces. In the northern parts of the country, indigenous species (particularly teak) have been preferred in plantations. By 2018, there were an estimated 490,000ha of plantations in the country (Department of Finance, 2018). Requirements: Registration for areas of 1,600m² or more. If the area is larger than 5ha (5,000m²), then a management plan is additionally required.
  - Plantation timber (smallholders):[15] This timber is sourced from village agriculture land allocated within the state forest. Land is managed by smallholders, where 3ha is the threshold per household. Requirements: Certificate for three-year temporary land use for tree planting and a logging permission from the provincial or federal Agriculture and Forestry Office.
- Other sources of raw material for the sector include confiscated timber, recycled wood and imports.

After the enactment of PMO 15, timber from forests converted to other land uses is the main current source of legal timber in Lao PDR, followed by plantation timber.

According to the SME Competitiveness Survey (SMECS) carried out among Lao wood manufacturers, approximately 80% of the surveyed firms reported using teak in their production process. This material is used twice as often as any other type of wood. Between 20% and 40% of companies said that they use acacia, Dipterocarpus tuberculatus, Vatica cinerea or rosewood. No other wood species were mentioned.

Other main inputs of the wood processing value chain are labour, tools and machinery, and chemical equipment (e.g. wood preservatives). Labour is mainly national, although in some cases workers are employed from outside.

Logging

The first stage of the wood processing value chain is logging from the above-mentioned timber sources. After harvest, logs are transported to landing site 1 in logging trucks. Landing site 1 is usually close to the forest area being logged.

Subsequently, logs are transported with trucks from log landing site 1 to site 2. Officials from relevant departments, e.g. MAF, measure the logs, classify them by species and record the data. Then logs are assigned a price. Logs harvested from natural forests are considered property of the state, and as such they are auctioned through a bidding process or the price is negotiated with interested buyers. Confiscated timber is also auctioned and registered at log landing site 2. After being auctioned, logs are delivered to the storage ground of processing factories, often called log landing site 3.

12.– NEPCon (2017). Lao-PDR: Timber legality assessment.

13.– Idem.

14.– Idem.

15.– Idem.

Processing

The processing sector can be divided in two, according to the Law on Industrial Processing: factories Type 1 (primary processing) and factories Type 2 (secondary processing). Under the first level, the following types of wood manufacturers are found:

- Sawmills: Produce sawn wood, re-sawn wood and cut wood, among others, and by-products such as sawdust and wood chips. The equipment used in sawmill companies varies depending on the size of the company. Common equipment include circular saws, vertical and horizontal band saws and table saws. Standard practice is that timber is dried straight from the sawmill treduce its moisture content before its use. Drying prevents potential damage tthe wood, such as shrinking. According tSMECS, most of the firms said that they used the kiln-drying process of drying timber – 72% of firms have their own drying facility and 17% of firms rent it. Only 7% of the respondents reported using the air-drying process and only 4% of firms buying already dry timber.
- Semi-finished and engineered wood product factories: Produce laminated panels, rotary veneers, plywood and other processed wood products.
- Pulp mills: Produce pulp for subsequent paper production.

Type 1 factories produce material that can be supplied for Type 2 factories for further processing, value addition and/or to transform them into final products.

Type 2 factories include manufacturers of:

- Wood furniture (including at the household level): tables, chairs, shelves and beds, among others;
- Wood products for construction: frames, window frames, stairs and other products used for buildings;
- Other finished products: floorings, parquet, laminated boards, and containers made from timber, among others;
- Wood-based handicrafts: decorative wood, carving products, wooden jewelleries and other woodcrafts;
- Paper and paper products.

Steps followed by Type 2 factories differ depending on the final product. These may include, inter alia, spindle/moulding, carving, assembling and polishing.

Distribution to markets

Accurate information on the volume of wood consumed domestically and exported is not available. Until recent years, a main issue has been underreporting of exports of wood and wood products. Without exports of sawn wood to foreign markets, some sawmills are operating below capacity or have closed altogether. The domestic market (i.e. Type 2 factories) is relatively small to compensate the loss.

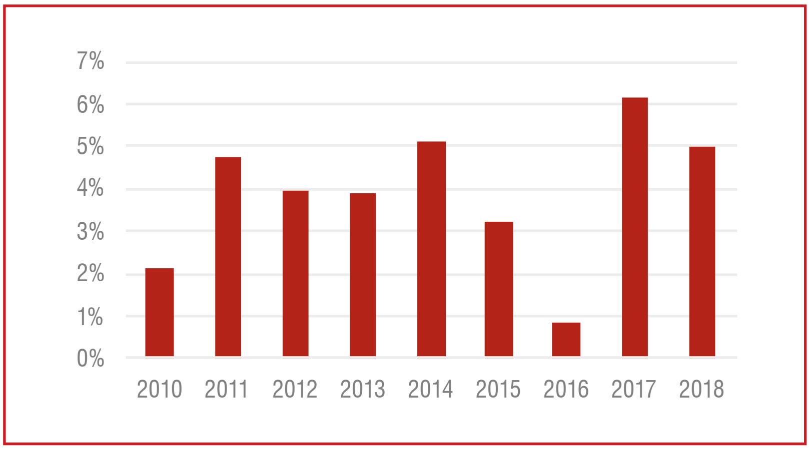
Final products, such as wooden furniture, are mainly sold in the domestic market.

At the province level, the main exporting regions in 2019 were Attapeu, followed by Saravan and Champachack, with a respective exported value of $3.3 million, $673 thousand and $595 thousand in finished wood products (MoIC, March 2019).

EXPORT TRENDS

Wood products exports from Lao PDR have been characterized by their low value added, being mostly unprocessed and semi-processed products. Nonetheless, wood products make a considerable contribution to trade. In 2018, the $300.4 million exported by Lao PDR represented 5% of total exports. As such, wood products are the 6th largest exported product by Lao PDR, surpassed only by exports of minerals and electrical machinery and equipment.

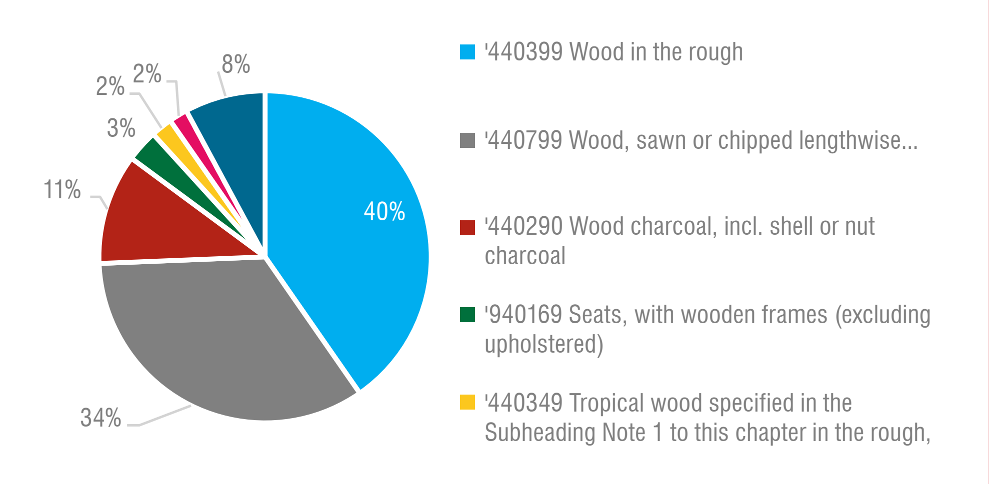
Figure 6: Wood product exports, 2010–18 (percent)



Note: Figures are based on exports of wood products and articles of wood; wood charcoal (HS 44). Source: ITC Trade Map.

In 2018, most wood exports were comprised of wood in the rough ($128.6 million) and sawn wood ($108.4 million), though wood charcoal was also a considerable source of exports ($34.3 million).

Figure 7: Wood product exports, 2018



Note: Figures are based on exports of wood products and articles of wood; wood charcoal (HS 44) and wood furniture products (HS 94).
Source: ITC Trade Map.

Among the top exports of wood furniture from Lao PDR, seats with wooden frames are the most important product. Exported value of this product has evolved favourably over the past few years. The main market for seats with wood frames exports was China, with roughly 99.7% market share in 2018. Wooden furniture (excluding offices, kitchens, bedrooms and seats) and wooden furniture for bedrooms are among the main exported wood furniture products from Lao PDR. The main market for these products was also China, with approximately 94.4% and 98% of market share respectively in 2018.

Figure 8: Lao PDR top exports of wood furniture (HS 94), 2014–18 (USD thousand)

Source: ITC Trade Map.

Photo: @MoIC

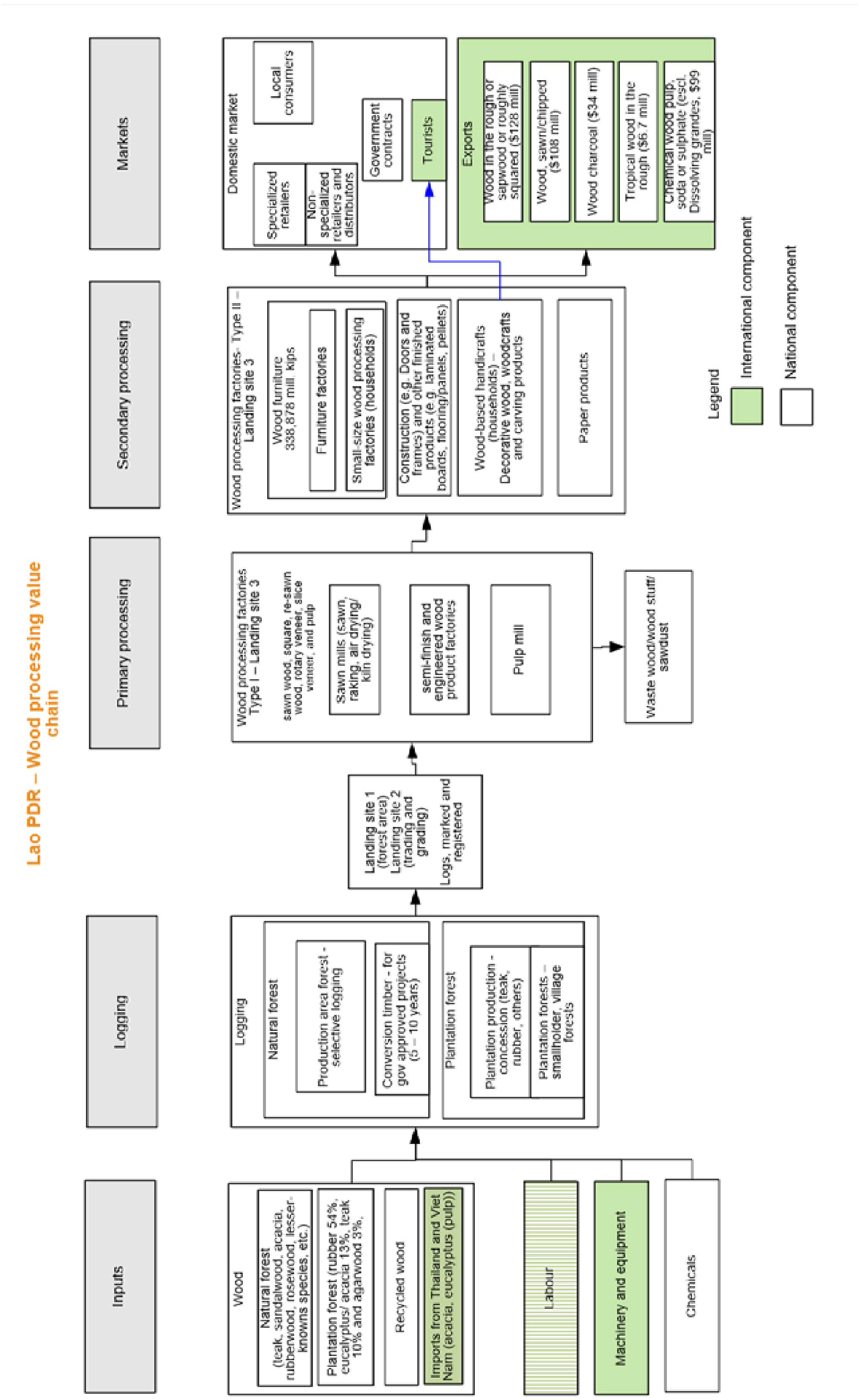
Major export destinations include China and other regional markets. China is the most important market for rough wood and sawn wood, and is also among the most important of Lao PDR's markets for wood tableware and kitchenware exports. Other important markets include Japan, Viet Nam and Thailand. Japan is an important destination for wood ornaments, wood charcoal and laminated wood, Viet Nam is an important destination for sawn wood and tropical sawn wood, and Thailand is an important market for wood doors and their frames, wood for parquet flooring and tropical sawn wood. While not a major destination for many products, India is a key market for Lao PDR exports of laminated wood. Among furniture products, the main destination for seats with wooden frames is, almost exclusively, China, while for wooden furniture (excluding for offices, kitchens and bedrooms, and seats) the chief destination is China, followed by Viet Nam.

Table 6: Main destinations for wood product exports, HS Code 6 digits (2018, mirror data)

	Export product	Export markets and shares
1	Rough wood (HS 440399)	China (99%)
2	Sawn wood (HS 440799)	China (69.5%), Viet Nam (28%), Thailand (2.4%)
3	Wood charcoal (HS 440290)	Japan (51.1%), Korea (37.4%), China (6%)
4	Tropical wood in the rough (HS 440349)	China (99.1%), India (0.7%)
5	Tropical wood, sawn (HS440729)	China (60%), Thailand (21.5%), Viet Nam (16%)
6	Wood for parquet flooring (HS 440929)	Viet Nam (64%), Thailand (23%), China (11.5%)
7	Wood tableware and kitchenware (HS 441990)	China (86.9%), Korea (11.6%), United States (1.3%)
8	Laminated wood without blockboard, laminboard or battenboard (HS 441299)	India (97.6%), Japan (2.1%)
9	Wood doors and their frames and thresholds (HS 441820)	Thailand (93.6%), China (4.6%), Viet Nam (1.8%)
10	Wood statuettes and other ornaments (HS 442010)	Japan (84.9%), China (12.4%), Thailand (1.2%)
11	Seat with wooden frames (excluding upholstered)	China (99.7%), United States (0.02%)
12	Wooden furniture (excl. for offices, kitchens and bedrooms, and seats)	China (68.2%), Viet Nam (30.9%)

Source: ITC Trade Map.

Figure 9: Current value chain



2.5. TRADE AND INVESTMENT SUPPORT INSTITUTIONS NETWORK

Trade and investment support institutions (TISIs) play an important role in supporting the realization of international trade and investment potential of the wood processing sector. Lao PDR's TISIs have many strengths and provide a range of valuable services to clients in the private and public sectors. Furthermore, TISIs play a central role in implementing the Wood Processing Sector Roadmap. Priorities for sector institutions include strengthening of capacities, in particular with regards to providing support to exporters in reaching international markets. A stronger and more clearly defined TISI network will improve cooperation and the division of responsibilities among supporting institutions. Main wood processing public and private sector institutions are listed in Table 7.

Table 7: Sector TISIs, roles and mandates

Name of institution	Description of institution in line with sector
Ministry of Industry and Commerce (MoIC)	• Regulation of all industries in Lao PDR.
Department of Industry and Handicraft (DoIH)	• Responsible for wood processing industries; • Responsible for regulation of the timber industry sector, which includes industry standards (e.g. environmental impacts, product standards and CoC), and developing policy and incentives for investment in processing.
Department of Import and Export	• Issuance of import and export licences and certificates of origin; • Collection and maintenance of national statistics on imports and exports.
Provincial Office of Industry and Commerce Division	• Oversight of sales, transport, processing, and export of wood products according to the regulation of the list of wooden products eligible to export; • Responsible for calculating the log price for logs at Landing Site 2, facilitation of sales to processing companies/factories or exporters, and subsequently issuing of transport permits; • Monitoring of transportation from Landing Site 2 to factory.
Ministry of Agriculture and Forestry (MAF)	• Management of forest land through creating regulations that promote the conservation and development of forests (cultivation);
Department of Forestry (DOF)	• Responsible for compiling logging quotas from the Provincial Agriculture and Forestry Office to submit to MAF and supervises technical operations relating to forestry at each province.
Department of Forestry Inspection (DOFI)	• Responsible for addressing illegal logging and other forestry crime; • Outlines the process for the official timber inspections at Landing Sites 1 and 2.
Provincial Agriculture and Forestry Office (PAFO)	• Development of the logging quota within each province; • Issuance of logging licences and develops logging contracts.
Provincial Forestry Section (PFS)	• Compilation of logging quotas from districts within the provinces to submit to the Provincial Agriculture and Forestry Office. Supervises scaling, grading and listing of logs at Landing Site 2.
District Agricultural and Forestry Offices (DAFO)	• Responsible for duties at Landing Site 2, including measuring, marking and issuing of final log lists. Implementation of other forest management plans.
Ministry of Finance	• Research and create annual budget plans of the state for the middle and long term as a plan, protocol and project by sectors from central to local according to their roles.
State Assets Management Department (SAMD)	• Responsible for registering natural logs from PFAs and conversion areas, as logs are a state asset. Confiscated logs and processed wood products are also entered in the state assets register.
Tax Department	• Implement government guidelines, policies, strategies, laws and regulations on taxation.
Department of Customs	• Collection of taxes and royalties; • Collection of duties on exported goods from Lao PDR, including wood processing products, into and out of the country.
Export forwarders and contractors	• Act as shipping agents.
Lao National Chamber of Commerce and Industry	• Represents the business community in Lao PDR; • Serves as a nexus between the state and private enterprises; • Works to strengthen business associations and groups by upgrading their services and management.
Lao Wood Processing Industry Association	• Represent and advocate the interests of member companies; • Build capacities of wood processing companies (e.g. technologies and CoC); • Management of training centre with the support of the German Development Cooperation (GIZ) and JICA.
Lao Furniture Association	• Represent and promote the interests of member companies (approximately 80 companies, most of them SMEs); • Organization of training programmes (with international cooperation); • Organization of trade fairs and exhibition events.

2.6. IMPLICATIONS FOR LAO PDR'S WOOD PROCESSING SECTOR

- The country's FLEGT engagement contains potential for facilitating sustainable development of the forest and timber sector. This is can be attributed to multi-stakeholder processes and government focus on timber processing development.
- Despite the actual low level of added value in timber products in addition to strong competition from neighbouring countries, value adding should be prioritized by all stakeholders to address issues such as livelihood improvement, growing employment and contribution to gender parity.
- A reliable supply of legal timber is crucial for further sustainable development. Thus, the continuing expansion of industry and smallholder plantation in-country is essential. Actually, the country lacks on plantation timber (low-risk timber and easy to verify); the main timber source is still forest conversion.

Photo: *Links, bga_2738119209_o.jpg*

3. KEY CHALLENGES INHIBITING SECTOR DEVELOPMENT

This section analyses sector challenges across three levels – firm capabilities, institutional and trade support, and national environment, policy and regulations. Three dimensions of competitiveness of Lao PDR's wood processing export sector were analysed.

- Compete: Issues limiting the sector's capacity to compete in national and foreign markets. This includes challenges related to access to inputs, productivity, national infrastructure, quality management and complying with standards.
- Connect: Issues restraining connectivity to suppliers, markets and clients. This dimension includes challenges related to market information, marketing and trade promotion, branding and trade agreements, among others.
- Change: Issues limiting the sector's capacity to change, innovate and tap into emerging trends. This dimension relates to challenges accessing trained/skilled labour, intellectual property protection, institutional support to innovate, investment promotion and protection, corporate social responsibility, environment, and youth and women's employment, among other issues.

3.1. COMPETE

Insufficient and often unpredictable supply of legal raw material for processing, especially of higher quality at competitive prices

In 2013, under Prime Minister Order No. 31, the government temporarily banned the harvesting of timber from PFAs – an act that was extended and is still in effect. As a result, no timber has been legally harvested from PFAs, although some timber harvested prior to the ban remains in stockpiles to be auctioned. In combination with limited capacity of available plantation timber, these two issues are the main cause of the severe shortage of raw material for the primary and secondary processing and exporting industry. Access to sufficient timber at competitive prices is the main prerequisite for a company to manufacture and create value added. Therefore, this is a high-priority issue to be addressed by any sector development initiative.

The main sources of timber for sawmills and factories are predominantly conversion timber and wood from plantations. The volumes of timber originating from conversion areas as legal sources are hardly predictable. Timber from this source has different sizes, which makes the production of certain products difficult, e.g. furniture.

On the other hand, although the contribution of wood from plantations has been limited, it is expected to increase when they reach maturity. Nevertheless, the side of plantation areas from both industry and smallholders is considered insufficient. Planting of trees by smallholders so far has been relatively limited, with possibly 40,000ha across the country, although in some areas policies to promote tree planting by farmers have been more successful. In Northern Laos, for example, the promotion of teak has resulted in the establishment of an estimated 26,000ha of teak in small parcels of less than 1ha.

Value chain segment	Inputs/production
Severity	● ● ● ● ●
Plan of action reference	Activities 1.2.1 to 1.2.5

A limited number of species is accepted and used by markets

The shortage of timber supply is aggravated by the fact that only a limited number of timber species are being used and accepted by the markets. At the same time, Lao PDR has abundant other species suitable to replace the common and scarce species traditionally in use for decades. However, introduction and promotion of new species is cost intensive, and requires additional scientific research in characteristics and applications.

Within the scope of sustainable forest management plans for PFAs, significant volumes of valuable alternative timber species could become available by means of introducing promotion programmes in national and international markets.

Value chain segment	Marketing and distribution
Severity	● ● ● ● ○
Plan of action reference	Activities 1.5.1, 1.5.2 and 3.3.1

Lao PDR's wood sector has been predominantly focused on primary processing

Ahead of the policy endorsement of PMO 15 (2016), the Lao wood processing industry was largely restricted to primary processing and focused on the exports of logs and sawn timber to its neighbours countries, namely Viet Nam, China and Thailand, three significant timber processing hubs in the region. Exporting low-value-added products left relatively high margins and a quick turnover due to strong international demand; hence, there were not many incentives among local companies to invest in upgrading their business models. Main root causes behind low value added in the sector are, among others, the decreasing supply of raw materials, weak access to finance, limited downstream processing, weak availability of skilled workforce, poor technology and product innovation, and an unconducive business environment. The required manufacturing capacity (i.e. efficient log processing and sawmills) are scarcely available in the country. Moreover, unreliable availability of timber discourages further investment in processing in the sector.

Value chain segment	Processing
Severity	● ● ● ● ○
Plan of action reference	Activities 2.2.1 to 2.2.6, 2.4.1 to 2.4.3, and 2.5.1 to 2.5.3

Obsolete or poorly maintained machinery resulting in marred quality of products and low yield of processed log or sawn timber

Nationwide, only a few companies have been investing in advanced wood processing technologies. These companies are mainly those that have customers in industrialized countries, such as the United States, Japan and France. Most other companies use outdated technologies or traditional ways of producing furniture, with heavy, solid timber often preferred in countries such as Viet Nam and China.

Lao PDR has only recently started to focus on developing a secondary processing timber industry, and this is likely to become a long process. Long-time focus on exporting unprocessed products has resulted in a lack of investment in modern machinery for producing and competing with value-added and finished products. Shifting from a timber-producing to a timber processing sector requires investment in machinery, in addition to technical know-how.

Value chain segment	Production/processing
Severity	● ● ● ○ ○
Plan of action reference	Activities 2.3.4 and 2.3.5

There are shortcomings regarding quality, both at the enterprise and institutional levels

At the enterprise level, the quality of final wood products such as sawn wood and furniture should be improved to compete in international markets. Irregular product quality is partially caused by timber drying methods to meet an equivalent moisture content. Producers, particularly small firms struggle to have adequate drying operations. This is due to lack of drying facilities and appropriate drying options. An associated root cause is weak access to finance to improve processing of wood products. Further, finishing of wood products is often of poor quality by reason of insufficient equipment for finishing, poor machine maintenance and weak availability of skilled labour. Moreover, design of final products such as furniture remains conventional. Companies follow no standards or specifications regarding product design and quality.

From the institutional side, further support is required to enforce quality control of raw materials supply. Moreover, no product quality standards exist for the sector. More efforts are needed to disseminate information regarding standards and technical regulations among companies. According to SMECS, almost half of the firms said that the quality of the services offered by product testing, certification and/or inspection authorities or by private operators was high. Furthermore, the survey data shows that, for more than two-thirds of firms, the cost of such services is low. Nevertheless, approximately 20% of the respondents do not have comprehensive domestic information on standards and technical regulations, having evaluated its availability as low, against 56% of firms who evaluated it as average, and only 26% as high.

Value chain segment	All value chain segments
Severity	● ● ● ○ ○
Plan of action reference	Activities 1.3.1, 1.3.2, and 3.1.1 to 3.1.6

3.2. CONNECT

Support services need to be strengthened for companies through industry associations

A successful timber processing sector depends on available support from industry associations, such as chambers of commerce and sector associations in diverse areas, including advocacy, trade promotion, access to consultancy services, and assistance in participation of exhibitions, among others. Other significant responsibilities of industry associations are the development of sector plans for vertical and horizontal integration in the value chain, and contributing to production specialization, enhanced product quality and cost efficiency. Sector associations face financial challenges to fund support services, such as training. They are also in need of more targeted market promotion assistance from the government. Hence, industry associations must be strengthened, in terms of organization and capacities, to fulfil these mandates and to incentivize other firms operating in the sector to connect and join the association. Stronger associations will be better positioned to channel sector concerns to line ministries and agencies.

Value chain segment	Processing/marketing and distribution
Severity	● ● ● ○ ○
Plan of action reference	Activities 2.1.1 and 2.1.2

Weak system for the verification of the legality of harvesting limits market access

A timber legality assurance system (TLAS) and chain of custody and sustainable forest management certifications are standards yet to be reached by Lao PDR. Constraints include institutional regulatory weaknesses (weak policy coherence and cross-sectoral coordination), complex and often inconsistent regulations, weak capacity and resources for enforcement (understaff and underequipped law enforcement agencies[16]), limited sector organization and slow progress on community level forestry management. Additionally, further awareness needs to be built among private sector operators about increased market opportunities emerging from increasing confidence of buyers and investors from stronger timber legality assurance, as well as for greener private and public procurement in world markets.

Regulatory issues are being addressed through the VPA with the EU (currently in negotiation), which is underpinned by a timber legality assurance system. The latter seeks to identify, monitor and license legally produced timber for exports.

Weak traceability of wood products has implications for accessing high-end markets such as the EU and USA. Further, regional markets are increasingly concerned with sourcing wood products, having designed and implemented import regulations that vary widely in scope and obligations, with the aim of banning imports of illegal timber, e.g. Viet Nam, Malaysia and Indonesia. These markets are increasingly interested in sustainability certifications. The finalization of VPA negotiations under the FLEGT process is expected to contribute to expand market access, particularly in developed countries. Additional efforts are needed in marketing and promotion to improve the sector's image at the international level.

Value chain segment	Inputs
Severity	● ● ● ● ●
Plan of action reference	Activities 1.1.1 to 1.1.5

Firms face high transportation costs and administrative delays to export

Lao PDR's landlocked geography limits transport options for exporting wood products. Lack of access to the sea is a major obstacle for business development. Companies rely on neighbouring countries' logistic services, which embed high cost and burdensome documentation. Domestic authorization procedures need to be further streamlined, as wood processing firms suffer from delays related to obtaining, preparing and submitting export documents, particularly at border checkpoints, which cause late delivery penalties from buyers. Lao PDR ranks 78 in the trading across borders indicator of the World Bank's Doing Business Index 2020. The country features 60 hours in the "time to export" indicator (versus a regional average of 55.6 hours) and a cost of export of $235, which is more than double the regional average of $109.4. Additionally, frequent changes in the documentation required create uncertainty among exporters.

Value chain segment	Marketing and distribution
Severity	● ● ● ● ○
Plan of action reference	Activities 3.2.1 to 3.2.3

16.– Green Climate Fund (2019), page 14

Improved institutional coordination is required to adequately support firms at all stages of the value chain

Different ministries have a leading mandate on the sector at diverse stages of the value chain. Stronger efforts are needed to formalize coordination mechanisms to allow the identification of services gaps, reduce overlap and enhance the alignment of relevant institutional policies and interventions towards the same strategic direction to support sector growth.

Effective cooperation and coordination is required not only between line ministries, but also within ministerial departments, as division of intra-ministerial responsibilities is often deemed unclear. Stronger cooperation and dialogue will enable clarification of mandates among actors in the sector. Notably, improving the transparency and predictability in sector governance is essential to provide a more enabling environment for investors.

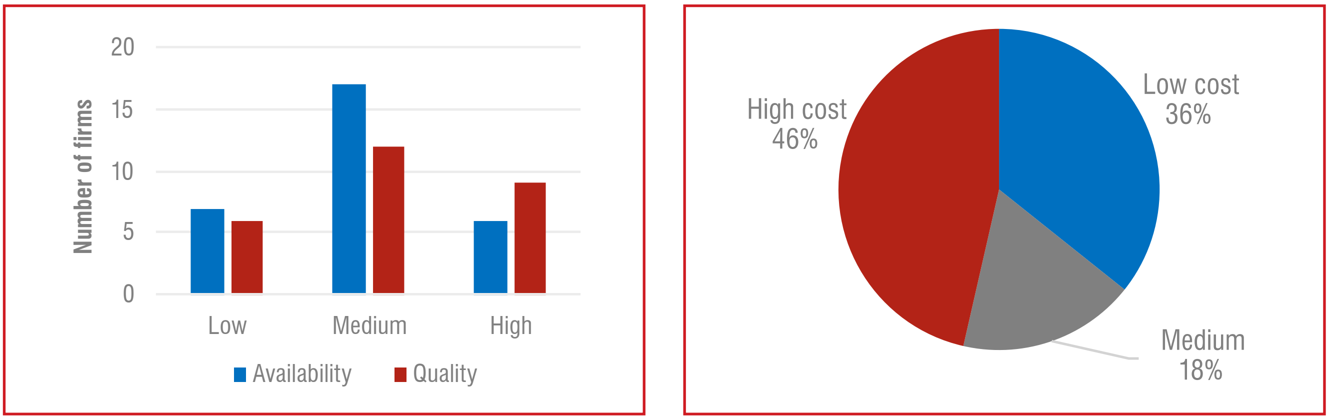
Value chain segment	All value chain segments
Severity	● ● ● ● ●
Plan of action reference	Activities 1.1.1 and 1.6.1 to 1.6.3

Enhanced in-market support and market intelligence are required to enable firms to tap into new opportunities

Sector companies struggle to connect to buyers in international markets due to insufficient provision of in-market support by relevant institutions. This is the case when it comes to obtaining information regarding international exhibitions and fairs, and assistance to participate in them.

Few companies use periodical marketing and sales plans among companies. This is mainly due to the dominance of smaller firms in the sector and limited private sector organization. Market intelligence provision needs to be further strengthened in terms of availability and quality, particularly about opportunities beyond neighbouring countries. According to SMECS, run among sector companies, more than half of the firms said the availability of market information on their buyers was average and 20% said it was strong. Only one-third of the surveyed firms gave a high rating of the quality of this information.

Figure 10: Availability and quality (left) and cost of (right) market information on buyers



Source: ITC SME Competitiveness Surveys of wood manufacturing firms in Lao PDR in 2020.

Value chain segment	Marketing and distribution
Severity	● ● ● ● ○
Plan of action reference	Activities 3.2.1 to 3.2.7

The sector holds low shares of the local market, particularly for semi-finished components

Notwithstanding the domestic market's small size, the local industry still has room to increase its market share. This is particularly in view of the expected growth in the construction sector over the coming years. Currently, Lao PDR holds a negative trade balance for certain value-added components, such as particle boards, plywood, veneered panels and similar laminated wood and fibreboard of wood. These products are mainly imported from Thailand and China. For firms to be able to tap into these opportunities, dissemination of adequate market information and related promotion activities within the country are required.

Value chain segment	Marketing and distribution
Severity	● ● ● ○ ○
Plan of action reference	Activities 3.4.1 and 3.4.2

3.3. CHANGE

The sector has yet to adopt technologies already widely used in the industry

Considering the fast-growing urban population in Lao PDR and neighbouring countries, paired with the fact of decreasing solid timber availability in the region, the need for supplying small apartments and households with furniture at competitive prices renders the application of engineered materials, such as medium-density fibreboard, veneer, plywood and particle board, as economically and sustainably attractive alternatives. The use of engineered materials could considerably reduce the dependency of firms on logs and sawn wood, and make efficient use of the entire tree, including small parts, such as the branches.

Further research and development is needed to provide innovative solutions to the industry and develop new processing technologies, along with the adoption of a wider range of engineered wood products. Moreover, specific skills and knowledge are needed to improve certain processes, such as enhancing termite and decay resistance of timber products.

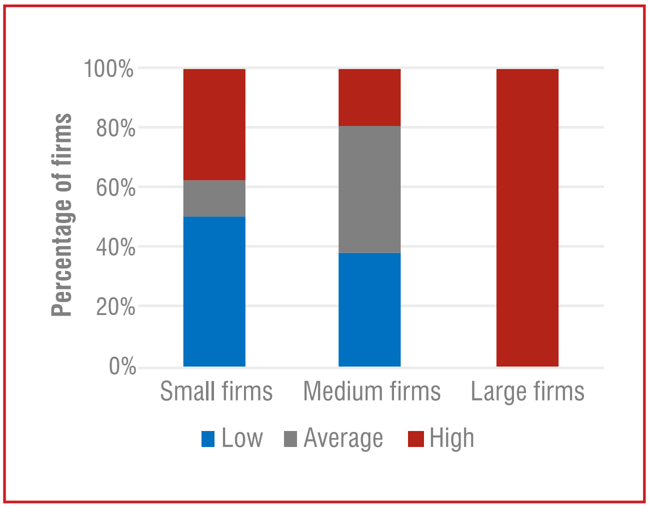
Value chain segment	Production/processing
Severity	● ● ● ● ○
Plan of action reference	Activities 2.3.1 to 2.3.5

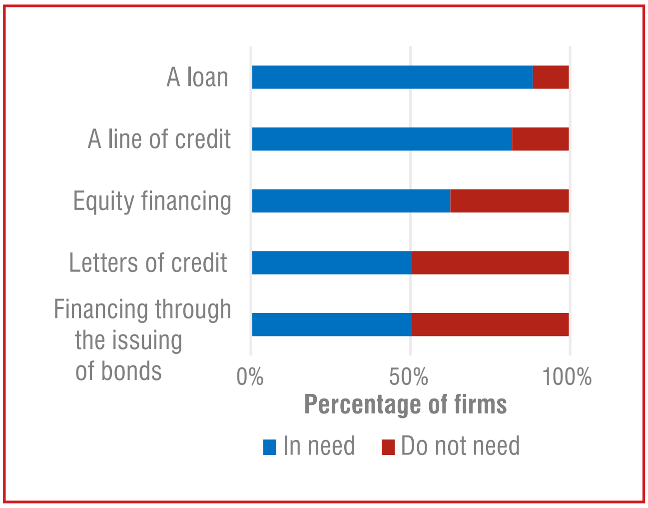
Photo: @MoIC

Constraints remain for firms to access credit for operations and investment

Developing value-added facilities requires financial inputs. However, access to finance is still a challenge among sector companies. According to SMECS, almost 30% of the respondents said that low access to financial institutions is an obstacle to current operations. Nine out of 10 of the firms participating in the survey reported being in need of a loan. Approximately 80% of the firms desire a line of credit and slightly more than 60% of the firms are in need of equity financing. Other forms of financing (such as a letter of credit and financial bonds) are in demand by approximately 50% of firms. In general, exporting firms evaluated the quality of banks and insurance companies they encountered higher than non-exporting firms did.

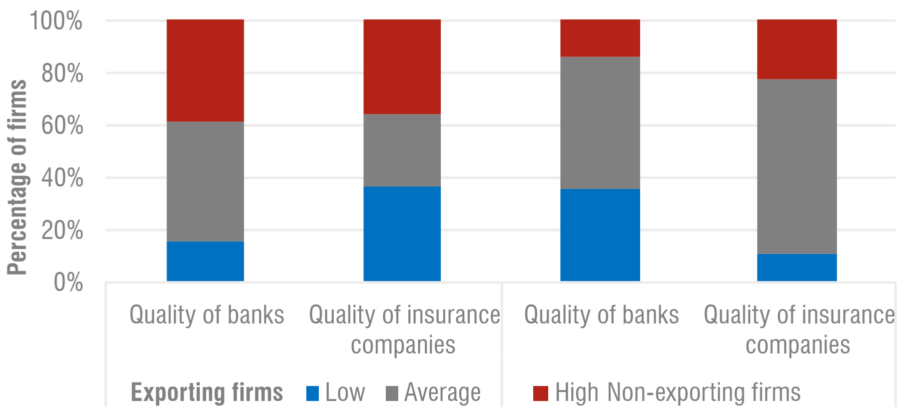
Figure 11: Firms facing obstacles to access financial institutions (left) and firms in need of financing (right)





Source: ITC SME Competitiveness Surveys of wood manufacturing firms in Lao PDR in 2020.

Figure 12: Firms' evaluation of the quality of banks and insurance companies



Source: ITC SME Competitiveness Surveys of wood manufacturing firms in Lao PDR in 2020.

Among the main root causes, there are the extensive requirements for loan documentation and collateral. Moreover, due to information asymmetries and issues related to executing collaterals, banks are usually reluctant to lend to SMEs. Further, credit provided to SMEs is usually short term. Conversely, credit required to invest in larger-scale mills and processing establishments are rather long term in nature.

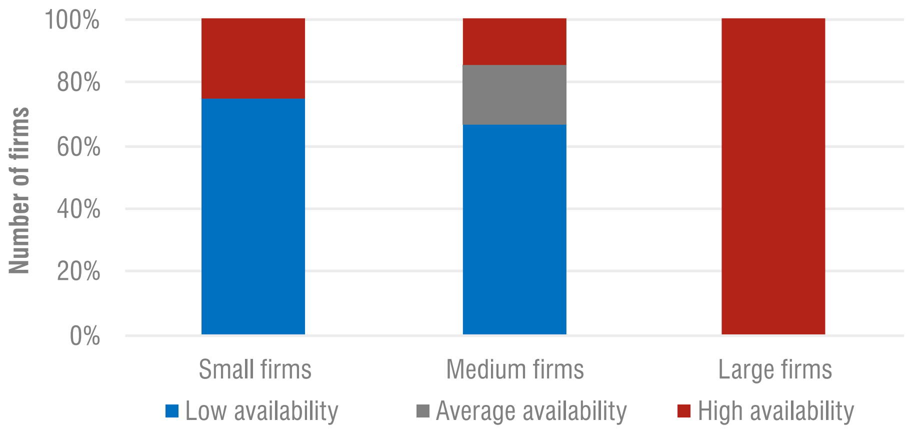
Value chain segment	All value chain segments
Severity	● ● ● ● ●
Plan of action reference	Activities 2.4.1 to 2.4.3

Lack of qualified staff/workers in wood processing

Sector companies not only face a shortage of labour, but also a skills mismatch in their employees. In turn, certain firms incur high costs of bringing qualified trainers from neighbouring countries such as China. Others recruit a foreign workforce altogether, e.g. Viet Nam.

SMECS data shows that approximately 66% of the respondents evaluated the availability of skilled workers for hire as low, against 20% of the companies who gave a high score. Small firms are more likely to perceive a lack of skilled workers for hire.

Figure 13: Availability of skilled workers for hire



Source: ITC SME Competitiveness Surveys of wood manufacturing firms in Lao PDR in 2020.

Previous focus on providing logs and sawn timber to its neighbours (i.e. China, Viet Nam and Thailand) has resulted not only in a lack of investment in modern machinery for producing value-added and finished products, but also in improving the qualification of workers and production management know-how. For those companies that have invested in new machineries, workers' skills have not been sufficient to support technological upgrading, including the use of engineered materials. Root causes include underdeveloped practical and technical training programmes, including insufficient capacities of vocational training centres and weak collaboration with the private sector.

Some plants have been cooperating with development partners, such as the Australian Centre for International Agricultural Research (ACIAR), the Japan International Cooperation Agency (JICA), the United Nations Industrial Development Organization (UNIDO) and other agencies. This helps to improve their operations through skill development for their employees, product design, and production cost-cutting.

Value chain segment	Production/processing
Severity	● ● ● ● ●
Plan of action reference	Activities 2.2.1 to 2.2.6

Use of illegal timber still occurs to a certain extent, often being mixed and complemented with legal timber

Mixing and complementing legal with illegal timber still occurs to a certain extent in the timber processing sector, although these occurrences have largely reduced following the enforcement of PMO 15. The country's efforts to combat illegal logging and cross-border trade are undermined by limited monitoring and enforcement capacities, unclear legislation and international demand for timber. There are large price differences between legal and illegal inputs, with the latter being significantly less expensive. Moreover, verification processes (e.g. input–output monitoring, third-party certifications, such as FSC) need to be strengthened. Documentation for legally acquired timber is used several times, providing evidence of legality for the "additional inputs". This gives the entire sector a negative image, particularly among sustainability concerned international markets. Only strict enforcement of control measures regarding timber transport, associated documentation and a verifiable chain of custody, which also includes middlemen and transporters, may help to stop this counterproductive behaviour. Moreover, a clear roadmap is needed for conversion area management to reduce the amounts of timber from this source, which is increasingly less accepted by international buyers.

Value chain segment	Inputs
Severity	● ● ● ● ●
Plan of action reference	Activities 1.1.1 to 1.1.5

More efforts are needed to foster the integration of the rural population to find sustainable livelihoods in the timber processing sector

After the issuance of PMO 15, the number of wood processing factories dropped significantly. Small family run wood processing plants were also closed. Their wrongdoings included operating without a business licence, being located in protected forest areas and not meeting industry standards. The affected people, mostly in rural areas, need to identify pathways to integrate the wood processing value chain by, for example, supporting their horizontal integration and enabling them to enter the industry again as an association, or similar, and/or leveraging on their know-how, facilitating their absorption as human resources by legally established processing companies.

Value chain segment	Inputs/production
Severity	● ● ● ○ ○
Plan of action reference	Activity 1.2.1

3.4. COVID-19 CHALLENGES

Since early 2020, the COVID-19 pandemic has negatively impacted the world's economy, posing serious challenges, especially regarding trade and particularly among landlocked countries, including Lao PDR. Lao PDR relies heavily on neighbouring countries' seaports for movement of goods and services to and from international markets. Lao PDR is expected to be among the most affected countries in the East Asia and Pacific region in terms of declining exports (3.6%) after Hong Kong Special Administrative Region (5.2%). The onset of the pandemic has affected Lao business and employment across sectors on both demand and supply sides. According to the COVID-19 Impact on Business Survey by the Lao National Chamber of Commerce and Industry (LNCCI), more than one-third (31%) of respondents in manufacturing indicated to be at risk of ceasing business operations. Further, the main obstacles perceived to resuming business operations within the manufacturing sector are salary payment (55%) and demand decrease (46%), followed by loan and interest payments (40%). These results vary across subsectors and throughout the country. Responding to the changing environment caused by the global COVID-19 outbreak, ITC under the EU-funded ARISE+ Lao PDR project conducted a sector specific COVID-19 rapid assessments, in order to reflect the 'new normal' in the wood processing.

Below are some findings from the rapid assessment to the wood processing sector.

Current impact of COVID-19 crisis on wood processing business operations: Most of the surveyed firms report to be operational at least to a certain extent. Among the main constraints emerging from the pandemic crisis, Lao wood manufacturers were most affected by the temporary shutdown (lockdown) of the country. Regarding the effect on firms' ability to sell outputs/buy inputs, the main identified negative impact was difficulties to sell domestically to consumers. They also indicated experiencing difficulties to sell domestically to businesses and difficulties to export. These challenges could be partially explained by a reduction of logistic services. In addition to this, small firms were particularly impacted by employees' absence and reduced certification services. Wood processing companies also indicated facing challenges in accessing inputs both domestically and from abroad.

Measures and strategies put in place to cope with the crisis: The two main coping strategies firms reported adopting during the crisis were: reducing temporarily employment and temporarily shutting down their businesses. Also, half of the firms mentioned selling off assets, using personal savings or borrowing from family to pay daily bills of their businesses which reflects cash flow challenges during the pandemic. Interestingly, close to 40% of firms reported entering into online sales as a response strategy in face of the pandemic. Regarding supporting measures, respondents indicated tax waivers or temporary tax breaks, employment and financial programmes were the most helpful measures that could be implemented by the Government. Further efforts are required to facilitate access to information and benefits from Government COVID-19 assistance programmes, as nearly 87% of firms said they faced some degree of difficulty in accessing them.

Recovering and responding to the COVID-19 crisis: Most firms indicated that they had not envisaged a business closure and the majority reported that restoring their operations to full capacity would take them over six months. The main challenges to ramp up production varied based on the size of the company. While among small firms, the chief challenge was related to transport and logistic problems, most medium-sized firms indicating slow recovery or decline in demand, followed by cash flow problems as the main difficulties to ramp up production. A few firms highlighted difficulties existing before COVID-19, such as complex government regulations to export and help needed in finding markets. Furthermore, market diversification to supply more to the domestic market, increasing or entering online sales and product diversification were the most common strategies being assessed as a direct result of the Covid-19 crisis. Specific assistance requested included analysing market opportunities and trends, training on marketing and business management and assistance in gap analyses to improve sustainable production performance.

3.5. IMPLICATIONS FOR LAO PDR'S WOOD PROCESSING SECTOR

- To limit the impact of the pandemic crisis on wood processing MSMEs and to build resilience, it will be fundamental to enable them with better access to regulatory and market information, as well as affordable trade finance.
- Streamlined customs procedures and requirements will also be essential.
- MSMEs in the sector will also benefit from a greater use of digital trade and e-commerce.
- Strong efforts must be made to support value addition and market diversification.

4. CARVING OUT THE DIRECTION FOR THE LAO PDR WOOD PROCESSING SECTOR

4.1. POSITIONING THE LAO PDR WOOD PROCESSING SECTOR IN REGIONAL AND GLOBAL MARKETS

Progressively focus on adding value and diversifying its wood processing export basket

There are various ways in which wood processing products can be classified. Table 8 shows two broad categories for wood products (primary and secondary products) based on their level of value added.

Table 8: Wood products according to their level of processing

Primary products	Round wood		Sawn wood		Veneer
Secondary products	Plywood	Windows and doors	House furniture	Garden furniture	Kitchen
	Mouldings	Particle boards			
	Composites	Laminated floor	Decking	Garden timber	Glued panels
	Solid floor	Components	Cross-laminated timber		

Source: Centre for the Promotion of Imports (CBI) website.

Low-value-added products such as round wood and sawn wood have low entry barriers and are highly dependent on the cost of raw materials. Further, exports of these products are heavily dependent on the species demanded by the market. Increasingly, they are subjected to stricter environmental regulations.

Lao PDR's export basket of wood processing products has been concentrated in primary products, such as the above-mentioned. Until now, minimum investment has been allocated to advance technology that could add value to sector products. This can be explained, partially, by the small-scale production and long-term focus of firms on exports of unprocessed wood products, among others. The Lao Government has taken proactive measures to stimulate the local industry towards added-value wood products. Considering recent policy measures, such as the PMO 15, it is imperative that the sector enters into a transformation phase to upgrade its operations. After all, it is no longer possible for local companies to survive by supplying unprocessed products to foreign buyers.

Based on the current market conditions within Lao PDR, upscaling its wood processing sector would have to be a progressive endeavour. Lao PDR would be in a good position to further develop sub-products, such as wood-based panels and specialty plywood. The country's current capacity and market penetration would allow for an expansion of production and exports of other value-added products, such as plywood, wooden furniture and, later on, builders' carpentry and joinery. Table 9 lists some key industrial requirements for Lao PDR's wood processing sector to successfully sustain and expand its presence in international markets by sub-product.

Table 9: Industrial requirements by sub-product

Wood processing product	Industrial requirements to sustain and expand exports in international markets
Plywood	• Economies of scale; • Dependent of availability of larger peeler logs; • Species dependent on market demand; • Stricter environmental regulations, especially with adhesives, among others.
Fibreboards (e.g. medium-density fibreboard) and particle boards	• Economies of scale; • Technology and investment dependent; • Versatile product, especially for furniture; • Increasing efficiency by exploiting the use of waste wood and harvesting waste; • Subjected to environmental regulation.
Furniture	• Low entry barrier with potential to create significant employment opportunities and increase export earnings; • Conducive manufacturing ecosystem is required; • Increasingly subjected to environmental regulation.
Builders' joinery and carpentry	• Specialized, with high value; • Mixed items; hence, flexibility in production; • Supply chain is essential; • Subjected to environmental regulations.

Source: Based on Ratnasingam et al. (2018).

Adding value in the sector will require increased sector coordination, particularly between the public and private sectors, along with a combination of measures and programmes to assist firms in upgrading and diversifying their products offering, such as access to finance, research and development, skills development and technological innovation.

Increasing value addition of products should come hand in hand with quality improvements

Fierce competition by international and particularly regional suppliers will make it neither feasible nor profitable for Lao SMEs to focus on producing and competing over low-price, low-quality products. Certain Asian countries dominate the low-end market by having mastered large-scale production at low costs.

According to SMECS, the majority of respondents' mode of competition largely relies on offering flexible terms of delivery and distribution (63.3%), instead of offering high-quality products and services (36.7%). If Lao PDR gradually shifts to exporting higher-quality products (e.g. improved design and finishing, and sustainability certifications), it will hold better opportunities to compete successfully in international and especially higher-end markets.

Table 10 summarizes opportunities for the Lao PDR wood processing sector to tap into existing demand and/or generate new demand through value addition. For each product category, there is a corresponding list of value-added products with positive market outlook, which are reachable in the short, medium and at long term, based on current production capacities. Further, it also indicates which strategies and actions are relevant to improve the market position for each sub-product.

Photo: @MoIC

Notably, sheets and veneers are allowed for exports only when raw materials stem from plantation forests belonging to one of the following specific wood species: teak, eucalyptus, rubber tree, acacia and tropical acacia (known in Lao PDR as krathin thepha). Moreover, among the sub-categories, the furniture market is enjoying a rapid expansion, as the demand is growing steadily for both developed countries and emerging markets. A similar scenario is held by the fibreboards and particleboards category, being the fastest-growing sector worldwide. Depending on the product, Lao suppliers will face different competitors. For value-added products, competition comes predominantly from China, the Federative Republic of Brazil, Indonesia and Viet Nam.[17] Market information on buyers' requirements and price development will be key to shaping a strong positioning for each product.

17.– Centre for the Promotion of Imports website.

Table 10: Lao PDR wood processing value added and market potential by sub-product

Wood processing products	Production and market expansion (Short/medium term)	Further value addition and value creation (long term)	Market strategy
Veneer and plywood	• Sliced veneer • Plywood • Plywood moulded parts • Specialty veneer and plywood • Laminated veneer lumber	• Parallam • Marine grade plywood • I-beam	• Room for value addition of local industry • Diversify market: • Plywood is used across several industries, besides construction, namely renovation and expansion and construction of transport equipment (e-commerce) • Emerging markets tplay a greater role • Replacing adhesives for renewable options
Fibreboard (e.g. medium-density fibreboard) and particle boards	• Fibreboard • Medium-density fibreboard	• Veneered medium-density fibreboard • Pre-laminated medium-density fibreboard boards • Laminated flooring	• Replace harmful adhesives for renewable options • Sustainability certifications and legal timber compliance (e.g. EU FLEGT)
Furniture	• School furniture • Outdoor furniture • Home furnishing • Other furniture and furniture parts	• Designer furniture • Mixed materials furniture • Branded furniture	• Ample scope for value addition • Improve and tailor finishing and design to target market (e.g. matte vs glossy finishing) • Specific requirements may exist regarding the use of adhesives • Native species, such as teak, are a particularly appealing material in European markets
Builders' joinery and carpentry	• Profiled mouldings • Flooring • Furniture components	• Specialty mouldings • Engineered components • Windows and doors • Housing components • Builders' carpentry	• Add value by improving durability, quality and design (for example, colour of wood) • Cross-laminated timber is increasingly used and demanded (it provides uniform quality) • Sustainability certifications and legal timber compliance (e.g. EU FLEGT) • Niche markets require eco-labels (e.g. fair trade)

4.2. MARKET IDENTIFICATION

The following section provides insights into relevant market development opportunities and highlights products with high potential for each market. Products listed are aligned with the list of eligible wooden products for exports[18]. Key markets with short-term opportunities to increase exports are selected based on factors such as existing trade relationships, geographic proximity and cultural affinity. In the medium to long term, it is expected that the evolving capacities of Lao exporters, along with an improving business environment, will contribute to exporters successfully penetrating new markets.

The products listed under the short-term section will also hold export potential in the medium to long term, unless specifically mentioned otherwise.

Photo: revised layout 9-21, page 37.jpg.

18.– Forestry Law, Article 98 (Revised) and Article 99 (Revised).

Table 11: Short-term phase (0–3 years)

Target market	High-potential products	Lao PDR wood processing exports to market, 2019 (USD thousands)	Annual growth in value of sector imports of all suppliers (2015–19, %)	Key success factors	Distribution channels
China	Wood table and kitchenware	2 756	19%	• Compliance with sector standards (e.g. Guide on Social Responsibility for Chinese International Contractors) • Major forest certification schemes in China – China Forest Certification Scheme (CFCS), • PEFC, FSC	• Furniture malls • High-end furniture markets • Warehouses • Showrooms • E-commerce channels (e.g. Aliexpress, Taobao)
	Wooden furniture	15 267			
	Builders' joinery and carpentry	1	21%		
	Wood marquetry	301	5%		
	Particle board	–	14%		
Thailand	Builders' joinery and carpentry	2 524	17%	• Traceability (Thailand is negotiating a FLEGT VPA) • Enter into niche markets to compete on quality instead of price	• Traders • Wholesale • Retail
	Wood for parquet flooring	803	-10%		
	Plywood, veneered panel and similar laminated wood	632	6%		
	Particleboards	470	7%		
India	Plywood, veneered panel and similar laminated wood	93	8%	• Ensure supply volumes	• Wholesale • Retail
	Sheets for veneering	422	12%		
Viet Nam	Fibreboard of wood	–	10%	• Traceability (Viet Nam is implementing the FLEGT VPA)	• Large manufacturers • Small and medium manufacturers • Traders

CHINA

Products: Table and kitchenware of wood, wooden furniture, builders' joinery and carpentry, wood marquetry, particleboards

China represents the main destination market for Lao PDR's wood processing exports. Traditionally, the largest share of Lao wood exports to China have consisted of primarily processed wood products, such as sawn wood. Aside of the aforementioned products, the vast majority of exports of table and kitchenware of wood and wooden furniture are destined to this market. China will remain a target market for Lao PDR, especially in the short and medium term. However, there are opportunities to consolidate Lao PDR's position in the market in these products, while expanding towards exports of products with higher value added.

Among the most promising wood furniture sub-products in the Chinese market, upholstered seats and wooden furniture for bedrooms hold the highest annual growth rates in value in the past five years. Obtaining higher margins in the Chinese furniture market would require tailoring the design and finishing of products to specific consumer segments. Relevant trends include the preference for solid wood furniture, as it is perceived to have better quality. Additionally, new trends are marking their way in this market, including new Chinese style (combination of traditional Chinese style and Western style), minimalist (extremely simple) and light luxury. Key cities for imported furniture are Shanghai, Guangdong, Beijing, Jiangsu and Tianjin.

Looking at specific products, the Chinese market also represents an attractive opportunity for Lao exporters of wood marquetry and builders' joinery and carpentry, specifically wood doors and their frames. Lao PDR is already exporting these products to China, although in relatively low quantities.

THAILAND

Products: Builders' joinery and carpentry, wood for parquet flooring, plywood, veneered panel and similar laminated wood, particleboards

Thailand represents an important market destination for Lao PDR, as opportunities exist to leverage on proximity and established trading relationships. Thailand is the largest market for Lao PDR's products of builders' joinery and carpentry, specifically wood doors and their frame. However, Lao PDR holds a share of only 4.3% in this market. Similarly, Thailand is the second most important market for Lao PDR in the wood for parquet flooring, in which the country competes mainly with the Republic of the Union of Myanmar. Notably, Thailand's imports of this product have slightly decreased over the years, while imports of tropical wood for parquet flooring has shown growth.

Moreover, Thailand is a large importer of plywood, veneered panels and similar laminated wood in the region. Within this category, the most important sub-product for this market is laminated wood without blockboard, laminboard or battenboard, a product already being exported by Lao PDR, although in relatively small quantities, followed by plywood, excluding bamboo. The annual growth in value (2015–19) for both products are remarkable, at 7% and 18% respectively. It is worth noting that Lao PDR enjoys an equivalent ad valorem tariff of 0 in this market, compared to the 3.7% that Thailand applies to the rest of the world on average. Within the particleboards category, oriented strand boards of wood are the most promising product, with an annual growth rate of 42% (2015–19). Currently, most imports of this product are from Malaysia.

INDIA

Products: Sheets and veneering, plywood veneered panel and similar laminated wood

Growth in the housing sector and urbanization are both drivers for a positive outlook of demand for wood products, particularly wood panels, in the coming years. Some Lao companies are already exporting to India and/or have received requests for wood products' supply in recent years. To enter the Indian market, a key buyer requirement is ensuring volumes of supply, with which exporters from Lao PDR have not always been able to comply. Furthermore, adding value rather than competing in price will be the recommended strategy for Lao exporters to position in this market.

Lao PDR already exports wood products to India, although firms mainly focus on laminated wood without blockboard, laminboard and battenboard, which is part of the sheets and veneering category. Only a low value is exported to India ($422 thousand), although the Indian market for this product is valued at $284 million. Likewise, the Indian market for plywood products is valued at $106 million, while Lao PDR exports only $93 thousand.

VIET NAM

Products: Fibreboard of wood

Viet Nam is a major regional hub for imports and exports of wood and wood processing products. Traditionally, Lao PDR has exported mostly rough wood and sawn wood to this destination. Nevertheless, Viet Nam represents an important market for more value-added products, such as fibreboard, specifically medium-density fibreboards made of wood. This product is typically used for indoor applications and, in the case of Viet Nam, it is a key component for furniture manufacturing. The Vietnamese market for this product is valued at more than $100 million. The main supplier for this market is Thailand, with a market share of 66.4% in Viet Nam's imports.

Table 12: Medium – to long-term phase

Target market	High-potential products	Lao PDR wood processing exports to market, 2019 (USD thousands)	Annual growth in value of sector imports of all suppliers (2015–19, %)	Key success factors	Distribution channels
Japan	Wood marquetry and inland wood	1 661	-1	• Clean Wood Act • Durable construction materials are sought after • Quality consciousness	• General trading company (sogo shosha) • Domestic distributers • Manufacturers, including SMEs
	Wood for parquet flooring	89	-1		
	Builders' joinery and carpentry	21	7		
	Wooden frames for paintings, photographs, mirrors or similar objects	5	-6		
	Plywood, veneered panel and similar laminated wood	–	4		
	Wooden furniture	47	–		

Target market	High-potential products	Lao PDR wood processing exports to market, 2019 (USD thousands)	Annual growth in value of sector imports of all suppliers (2015–19, %)	Key success factors	Distribution channels
Korea	Plywood, veneered panel and similar laminated wood	–	3	• Quality consciousness • Act on Sustainable Use of Timbers	• In-market distributor for retail channels • Online channels
	Particleboards	–	6		
	Fibreboard of wood	–	12		
	Tableware and kitchenware of wood	5	6		
	Wooden furniture	5			
USA	Plywood, veneered panel and similar laminated wood	102	2	• Lacey Act • Aphis regulations (sanitizing wood furniture by chemical or heat treatment) • CITES regulations • Quality consciousness • On-time delivery • Fair prices • Supplier reputation	• Discount/mass market chain • Lifestyle brands • Catalogue • Department stores • Alternative trade organizations • Specialty retailers • Online channels
	Tableware and kitchenware of wood	19	8		
	Wood marquetry and inland wood	8	2		
	Wooden furniture	62	–		
Germany	Plywood, veneered panel and similar laminated wood	–	5	• Finalize VPA negotiations • Quality consciousness • General product safety directive • Packaging legislation • REACH regulation (limiting the use of certain wood preservatives) • FSC certification • Niche certification schemes, such as the Ethical Trading Initiative	• Retailers • Department stores • Online channels
	Wood marquetry	–	4		
	Table and kitchenware of wood	–	8		
	Wooden furniture	2			
France	Wooden furniture	–	–	• Finalize VPA negotiations • Quality consciousness • AFNOR technical standards • General product safety directive • Packaging legislation • REACH regulation (limiting the use of certain wood preservatives) • Niche certification schemes, such as the Ethical Trading Initiative	• Chain retailers • Furniture stores
	Table and kitchenware of wood	1	10		
	Wood marquetry	–	13		

JAPAN

Products: Wood marquetry and inland wood, wood for parquet flooring, builders' joinery and carpentry, wooden frames for paintings, photographs, mirrors or similar objects, plywood, veneered panel and similar laminated wood, wooden furniture

Japan is one of the major global markets of wood and wood products, ranked 3rd in imports worldwide. The Japanese market is characterized by a marked preference for high-quality products. Another key factor to consider is the Japanese Clean Wood Act, a regulation enacted to combat illegal logging through which businesses are required to make efforts to use legally harvested wood and wood products.

Lao PDR already exports wood processing products to Japan. Currently, exports to this market are primarily focused on wood charcoal. Nevertheless, Lao PDR also exports products under the wood marquetry and inland wood category, specifically wood statuettes and other ornaments. Wood carving products from Lao PDR have a strong identity and potential for international trade.

Furthermore, Japan is among the leading markets for wood for parqueting flooring, currently supplied mainly by China, Indonesia and Viet Nam. In 2019, Japan's imports under the builder's joinery and carpentry product category were valued at $720 billion, out of which builders' joinery and carpentry including cellular wood panels were the most prominent product, followed by doors and their frames and thresholds. According to ITC calculations, Lao PDR also holds untapped export potential for plywood products in this market, at an estimated value of more than $550 thousand. Japan is also a major importer of furniture products. This country is among the top 10 exporters of wooden furniture, particularly for upholstered seats with wooden frames, wooden furniture for kitchens, and seats with wooden frames. The expectations of population growth in specific areas (e.g. greater Tokyo) are positive, which provide a positive signal for furniture demand in this location.

Although population in general is expected to begin shrinking, furniture demand is expected to increase in virtue of the growth of single-person households. Demanded furniture is smaller and practical in this type of household, as usually their space is more limited. Particular potential exists for competitively priced items for singles in small spaces, offering a range of styles with simple designs. Japanese furniture manufacturers have already contacted Laotian firms with the objective of seeking future cooperation.

KOREA

Products: Plywood, veneered panel and similar laminated wood, particleboards, fibreboard of wood, tableware and kitchenware of wood, wooden furniture

Korea is an emerging market for wood value-added products. Market opportunities are being opened for wood in the construction sector, in response to environmental concerns of the government and consumers regarding the overuse of non-sustainable materials. Rises in single-family homes and multi-family residential constructions also provide good prospects for exporters. It is worth noting that Korean consumers are increasingly demanding high-end finished products, while there is also a growing trend for minimalism. Additionally, stringent fire and sound insulation are requirements to be considered for this market.

Korea is the 4th largest market worldwide for plywood products, sized at approximately $723 million in 2019. Main suppliers are Indonesia and Viet Nam. The latter, in particular, competes at remarkably low prices. Further, other products such as particleboards of wood, and fibreboards, particularly medium-density fibreboard, hold great potential in this market, based on remarkable annual growth rates of imports in the past five years. Korea also provides opportunities for exports of wood kitchenware and wooden furniture, specifically upholstered seats with wooden frames and wooden furniture for kitchens.

Lao PDR exports to Korea are minimal, in spite of exporters benefitting of 0% ad valorem tariffs for wood processing products in this market.

UNITED STATES

Products: Plywood, veneered panel and similar laminated wood, tableware and kitchenware of wood, wood marquetry and inland wood, wooden furniture

The United States is among the leading players in the global wood industry. It is also one of the most competitive markets for the sector, particularly for plywood products. Demand for plywood products is driven by the demand for downstream production of kitchen cabinets, wall panelling, furniture and manufactured homes, among others. Therefore, plywood demand is closely tied to economic activities related to home construction and remodelling. Currently, China and Viet Nam are the United States' main suppliers for plywood. Notably, in 2020, an anti-dumping case was opened against Vietnamese imports amidst the China–United States trade disputes.

Lao PDR already exports wood processing products to the United States, although in very low quantities. Exported products to this market include wood marquetry and inland wood, as well as tableware and kitchenware of wood and wooden furniture.

The United States' demand for furniture is expected to reach $68.8 billion in 2022.

Among the key trends to bear in mind are increasing concerns regarding sustainability and corresponding eco-friendly certifications, such as the FSC, and the increase of sales though online channels. Within the wooden furniture sub-category, furniture for kitchens and upholstered seats with wooden frames offer good prospects.

GERMANY

Products: Wood marquetry, tableware and kitchenware of wood, wooden furniture

Germany holds a central role in the wood processing industry in Europe. Germany is the lead importer of several wood products in the region, including plywood, fibreboard and particleboards, among others. Germany's suppliers of wood products are mainly European countries, except for plywood, wood marquetry and inland wood, tableware and kitchenware of wood and wooden furniture, where exporters are distributed across all regions of the world. Therefore, these product sub-categories are rendered the most promising for developing countries, and Lao PDR specifically. Germany, and the European market in general, offer opportunities for exports of high-quality and high-value-added wood processing products. FLEGT licensing is deemed essential for the German market.

Within Europe, Germany is the main importer of wooden tableware and kitchenware. This market holds a strong presence of developing markets' suppliers. An increase in demand has emerged following the ban of single-use plastic cutlery.

Germany is also amongst Europe's largest consumers and producers of wood furniture. Preferences in this market lean towards natural wood (not glossing) and paler monotone colours, although a growing trend exists for warm colours with reddish wood. Seats with wooden frames and wooden furniture from Lao PDR hold the most significant opportunities in this market.

Buying groups such as Begros and Union dominate the German market. Potential clients can also be identified on the timber sector association website, the German Timber Trade Federation. It is important to consider that the online furniture market in Germany is expected to grow for the foreseeable future. Significant online retailers are Wayfairr, Westwing and Home24.

FRANCE

Products: Wooden furniture, table and kitchenware of wood, wood marquetry

France is one the largest importers of wood furniture worldwide. Main suppliers to this market are a combination of both EU and non-EU exporters, including China, Italy and Germany, among others. Competition from other developing countries is fierce; thus, product differentiation is deemed essential by, for example, focusing on finishing and design to distinguish from competitors.

The most promising products in this market for Lao PDR exporters are wooden furniture, table and kitchenware of wood and wood marquetry, including statuettes and ornaments of wood. Imports of furniture parts and specifically kitchen furniture and kitchen parts are on the rise.

The French industry is dominated by chain furniture retailers. Hence, establishing trade networks and providing a stable or guaranteed supply is crucial to enter this market. Working through national sector associations and/or the European Timber Trade Federation can be useful to find buyers.

To reach their full potential as suppliers in international markets, Laotian enterprises must make the following adjustments to address existing value chain challenges and leverage on opportunities.

Summary of key environmental regulations

Country/region	Regulation	Country/region/explanation
European Union	EU Timber Regulation (EUTR) Forest Law Enforcement, Governance and Trade Voluntary Partnership Agreement	• The EU Timber Regulation aims to reduce illegal logging by ensuring that no illegal timber or timber products can be sold in the EU. Came into effect in 2013. • It was created as part of the EU's FLEGT action plan. • A Voluntary Partnership Agreement (VPA) is a legally binding trade agreement between the European Union and a timber-producing country outside the EU. The purpose of a VPA is to ensure that timber and timber products exported to the EU come from legal sources.
Australia	The Australian Illegal Logging Prohibition Act	• It came into effect on 29 November 2012, and prohibits both the import and processing of illegally logged timber and timber products. The Act defines illegally logged timber as any timber harvested in contravention of the laws in place in the country of origin.
Japan	Clean Wood Act	• In 2017, Japan implemented the Clean Wood Act. The Act is meant to ensure that domestic and imported wood are harvested legally.
United States of America	The Lacey Act	• ·The Lacey Act is a 1900 United States law that bans trafficking in illegal wildlife. In 2008, the Act was amended to include plants and plant products such as timber and paper. This landmark legislation is the world's first ban on trade in illegally sourced wood products.

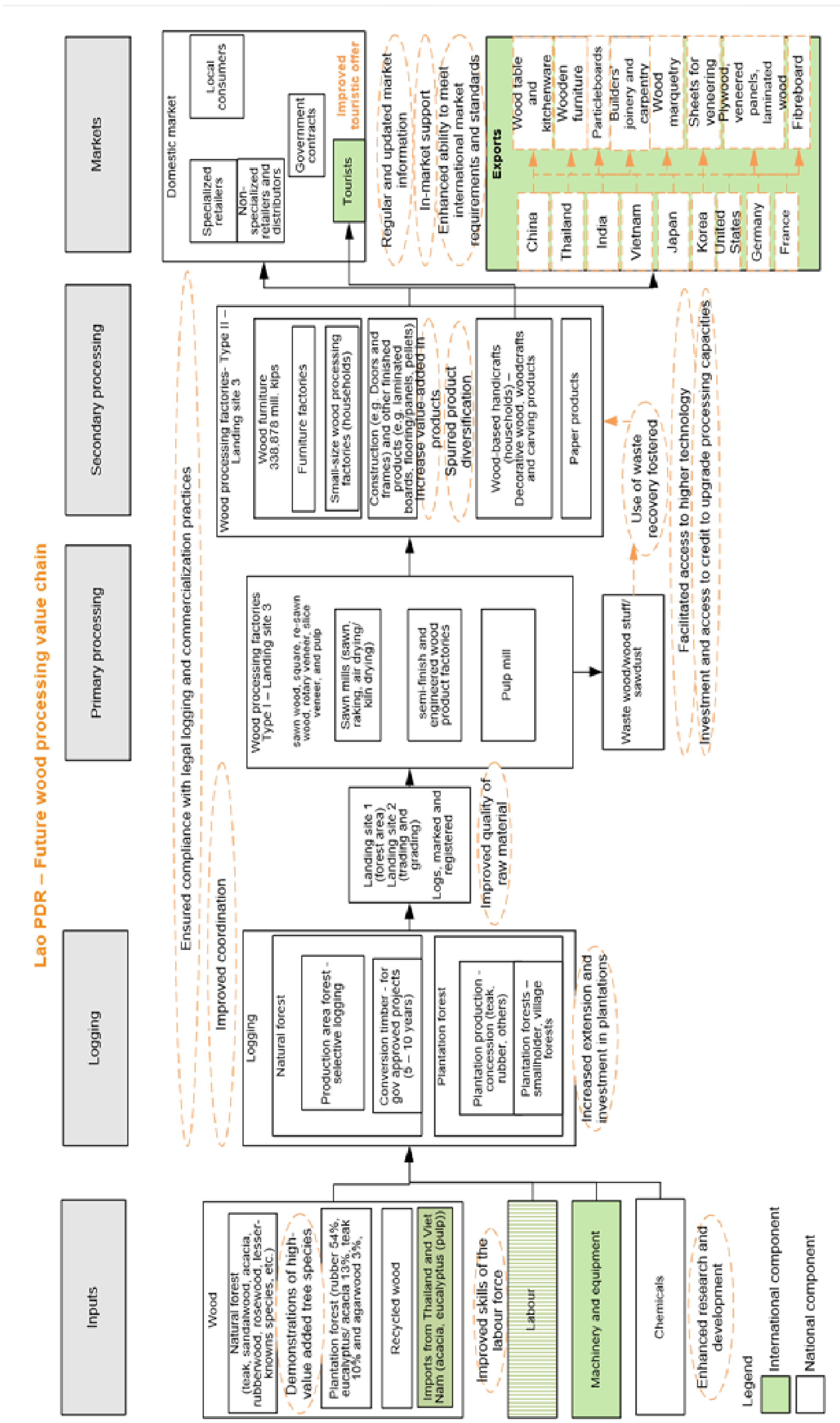
4.3. STRUCTURAL VALUE OPTIONS

Unlocking the potential for the wood processing growth and exports in Lao PDR will require upgrading processing capacities, increased availability of skills in the sector and new product development. These adjustments will allow the sector to compete on product quality and higher production quantities. To his end, the following value chain adjustments have been identified.

Photos: *@MoIC*

Value acquisition: Acquire greater value by improving efficiency		Plan of action linkages
Value option	How to implement	
Reduce leakages in the acquisition of raw material	Improve harvesting and log extraction techniques to improve recovery of waste.	Activity 1.1.3
Enhance quality of wood products as well as product diversification through skills development	Enhance the technical know-how and skills of workers through training (e.g. public–private partnerships). Engage with donor countries to obtain specialty expertise.	Activities 2.2.1 to 2.2.6
Value retention: Retain greater value locally		**Plan of action linkages**
Value option	How to implement	
Increase availability of raw materials	Improve access to timber from production forest areas and plantations.	Activities 1.2.1 to 1.2.5
Manufacture further value-added products	Foster vertical integration of sawmills, into moulding, specialty moulding, builders' and carpentry joinery, among others. Facilitate conversion of wood waste into finger-joined laminated boards.	Activities 1.5.5, 2.6.1, 2.6.2
Facilitate processing technology upgrading	Through targeted investment, attract FDI into upgrading of processing facilities.	Activities 2.3.1 to 2.3.5
Value addition: Add value to existing products		**Plan of action linkages**
Value option	How to implement	
Increase access to higher-value markets	Improve certification status of production and finalization of VPA negotiations and compliance to FLEGT scheme.	Activity 3.1.6
Improve promotion and visibility in target markets	Develop a plan to address the development of marketing materials, communication channel and overall promotional campaigns in target markets.	Activity 3.3.1 to 3.3.4
Value creation: Develop new products and expand production by creating value within the industry		**Plan of action linkages**
Value option	How to implement	
Improve new product development through new design	Improved collaborative research and development activities between industry–public research institutes and universities.	Activities 2.3.1 to 2.3.5
Encourage mixed-materials development to increase value addition	Enhance product development by exploring the use of mixed materials, including lesser-known wood species.	Activities 1.5.1 to 1.5.5
Value distribution: Maximize the economic and social development impact		**Plan of action linkages**
Value option	How to implement	
Integrate communities in rural areas	Support the establishment of community forest plantations.	Activity 1.2.1

Figure 14: Future value chain



4.4. STRATEGIC OPTIONS FOR THE LAO PDR WOOD PROCESSING SECTOR

VISION

"Building the future of Laos exports with value-added wood products"

In order to fulfil this ambitious vision, the following strategic objectives have been identified. These objectives provide a framework for developing solutions over the next five-year timeframe.

STRATEGIC OBJECTIVE 1: IMPROVE THE SECTOR'S SUSTAINABILITY THROUGH BETTER COORDINATION AND INCREASED ACCESS TO LEGAL TIMBER

A critical bottleneck for sector development is the unreliable and limited availability of raw material. This strategic objective has the overall goal of increasing consistency and volume of production and processing to improve export performance and competitiveness by improving the availability of timber for the industry.

The sector's future grows on trees. A key element of the strategy will be improving the access to timber from plantations. Reliance on conversion timber is not a sustainable strategy for the sector. Therefore, the roadmap will place efforts into promoting the extension and investment in plantations through several activities, including developing additional incentive measures for investment and finance, establishing demonstration areas of high-value-added trees, and building capacities of relevant ministries and agencies to facilitate the implementation of the plantation policy, among others. Efforts must be made to coordinate the planting, extraction and marketing activities of these resources. Additionally, fostering the integration of small-sized entities to purchase raw material collectively will also be sought after.

Moreover, specific activities will be put in place to enhance the quality of raw material, e.g. through technical kiln drying, which is substantial to improve the quality of final products. Measures to foster the use of lesser-known species and waste recovery (e.g. through standardization of leftovers/offcuts) will also be put in place.

Another component of this strategic objective is enabling the simplification of existing mechanisms for supply chain control, with the ultimate goal of ensuring compliance with legal logging and commercialization practices. Thus, activities under this component are geared towards improving coordination among relevant institutions for the issuance of approvals, supply chain monitoring and control to avoid duplication and/or gaps in responsibilities and mandates. They also aim to support the finalization of negotiations of the VPA and facilitate the implementation of related regulations and procedures. Increased coordination will also enable addressing of information gaps in the sector, such as forest inventory and stockings, which are key for the industry's policy planning.

Enhancing coordination by establishing a working group for the sector will enable relevant public and private sector stakeholders to have a platform to discuss, advocate and plan for the sector development. The mandates and responsibilities of this working group would include leading and supervising the implementation of the Wood Processing Sector Export Roadmap.

STRATEGIC OBJECTIVE 2: STIMULATE PRODUCT DIVERSIFICATION AND THE UPGRADE OF PROCESSING CAPACITIES BY ENHANCING SKILLS, FOSTERING TECHNOLOGY ADOPTION AND SPURRING INVESTMENT

This strategic objective is focused on fostering product diversification and upgrading the processing capacities in the sector by building the skills of the workforce and the capacities of sector associations, spurring innovation through higher access to technology, and fostering access to credit and investment in the sector.

Increasing awareness of modernization requirements in the sector, enhancing the know-how and technical skills of business and the sector workforce will enable to ameliorate current processing activities, improve quality of production and spur product diversification. Training programmes will target business managers and the workforce. Additional activities also aim to increase coordination between the public and private sector and relevant education institutions to boost skills development in the sector through university and technical and vocational education and training (TVET) programmes. Cooperation is required between public sector and private sector to develop relevant skills to the sector based on market conditions, occupational demand and needed job profiles to enhance and encourage demand for domestic labour.

Another key component of the roadmap will be facilitating access to higher technology and research and development in order to foster innovation in the sector. Facilitating technology transfer would be achieved through a wide array of activities, including providing incentives to wood processing companies to engage in research and development, creating linkages with research institutes and academia within and outside the country, and introducing cleaner production options to sector establishments, among others.

Fostering investment in the sector will be essential to upgrade processing capacities. Developing favourable fiscal incentives and developing targeted investment promotion activities will be fundamental to achieve this strategic objective. The formation of associations and clusters is already in place in the country. Further stimulating their strengthening and the formation of clusters on furniture and/or handicrafts should be promoted by, among others, assessing and provision of required services and facilities by companies in specific locations. Improving access to credit for sector companies will also be sought after.

STRATEGIC OBJECTIVE 3: ENHANCE THE SECTOR’S ABILITY TO CREATE AND SUSTAIN MARKET LINKAGES

Lao PDR’s wood processing sector remains heavily dependent on a few markets, predominantly China. In order to diminish this dependence and reduce the vulnerability of Lao exporters, it is imperative for the sector to diversify export destinations.

To achieve this strategic objective, it will be key to enhance the ability of sector companies to meet international market requirements and standards. A series of activities will be put in place to this end, including awareness raising, targeted trainings and developing a pool of quality experts.

Another important element will be enhancing the quality and dissemination of information about export regulations and opportunities in foreign markets to sector firms through several activities, such as design and delivery information workshops, training courses for SMEs and surveys in specific markets. Special efforts will be put in place to simplify and disseminate export procedures for companies. In-market support will also be strengthened with a view of increasing the exposure and business linkages of sector firms in foreign markets. Additionally, market opportunities will be identified for products manufactured with lesser-known species to foster their marketing potential. Related information, such as species, origin and certification status, must be made available to the respective agency to ensure that effective marketing promotion can be undertaken. This will help improve the sector’s international image.

4.5. ROADMAP PRIORITIES FOR POST-COVID-19 RECOVERY RESPONSE

To provide a rapid response in supporting the sector’s development, the following interventions should be prioritized to stimulate further development of the wood processing export sector in Lao PDR.

Short term: Mitigate and respond to the crisis:

1. Addressing supply chain disruptions: Small firms indicated transport and logistic problems as the most important challenges tramp up production. Moreover, this issue has been prevalent since before the Covid-19 crisis. Ensuring wood manufacturers have sufficient supply of raw materials will be key as part of a sector recovery plan. Linkages between businesses treinforce domestic supply chains should be further fostered. Stimulating linkages between producers and processing companies and the formation of SME groups torganize collective raw material purchasing will be critical.
2. Improve access tfinance. Wood processing companies have or are suffering from cash-flow challenges.
   a. Public sector: The government can support sector firms meet their short-term liquidity needs through facilitating low-interest or emergency zero-interest loans or cash grants. Trade finance can be helpful tenable MSMEs keep their export clients. Further, the government could explore the possibility of waiving customs fees and providing grants tbusinesses treplace lost export revenues. As mentioned by some respondents, tax wavers or temporary tax breaks can help mitigate the COVID-19 financial impact in wood processing firms.

b. Private sector: MSMEs should work on i) reaching out tlocal investors tbring liquidity, ii) focusing on product lines that provide the quickest access tcash and iii) identifying efficiency gains, e.g. negotiating new terms with input suppliers and service providers.

c. Development partners: In other country-cases, development partners have provided support tSMEs through grants through partner banks, for example[19].

3. Access tinformation and benefits from Government measures: Further efforts are required tfacilitate access tinformation and benefits from Government COVID-19 assistance programmes. Working closely with relevant chambers and sector associations tdisseminate information should be sought for.
4. Domestic market: A significant share of respondents indicated difficulties tsell domestically tcustomers and/or other businesses as a chief challenge. Spurring domestic demand, for example, through government procurement, can help make up for the first wave of export restrictions due tborders closing.
5. International markets.
   a. Market information: To build the resilience of MSMEs, it is critical to enable them a better access to regulatory and market information. Promote online meetings with international trading partners to learn about market developments in collaboration with private sector representatives, e.g. LNCCI and sector associations. This will help forecast new consumer trends.
   b. b. Market intelligence: Specific assistance requested by respondents included analysing market opportunities and trends and training on marketing and business management
6. From challenge topportunity: Internationally, this is the best time for LaPDR trealign all its requirements tconform tinternational standards tboost exports, when market demand picks up in 12 t18 months-time. This includes continuing the negotiations for the VPA with the European Union. Specific assistance requested by respondents alsincluded support in gap analyses timprove sustainable production performance, supporting the improvement of plan layout, production planning and chain of custody elements (8%) and training on quality, standards and sustainable production techniques, among others.

Medium term: Adapt and thrive post-COVID-19 crisis

Building the resilience of MSMEs will help them face any future economic declines.

1. Boost post-crisis competitiveness on e-commerce. Many businesses will improve their digital capabilities amidst the crisis. It is expected that product-based businesses will begin offering their product portfolios online. E-commerce is expected taccelerate – and potentially boom – post-COVID-19 crisis,[20] being a powerful instrument for MSMEs ttap inta wider range of international buyers and alternate suppliers. For wood processing, online channels are relevant for both business-to-business and business-to-consumer.
2. Business support organizations, e.g. LNCCI and sector associations, can help businesses build their online presence and can even serve as intermediaries between MSMEs and potential customers abroad. Digital platforms can help pool resources, create economies of scale and access new market opportunities.
3. Expand outreach tnew markets, support the participation of companies in trade fairs and arrange business-to-business meetings tincrease linkages with new buyers.
4. Form a sector development committee tguide strategic sector reorganization and plan implementation of strategic programmes. See plan of action activities 1.6.1 t1.6.3.

19.– EU and EBRD step up access to finance for SMEs in Western Balkans. Available at: https://ec.europa.eu/neighbourhood-enlargement/news_corner/news/eu-and-ebrd-step-access-finance-smes-western-balkans_en

20.– ITC (2020). Supporting small businesses through the COVID-19 crisis and towards the future: A 15-Point Action Plan.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5. MOVING TO ACTION

5.1. KEY REQUIREMENTS FOR EFFECTIVE IMPLEMENTATION

The development of the future value chain for the Lao PDR wood processing sector is a five-year programme defined through a consultative process between Lao public and private sector stakeholders. Achieving the strategic objectives and realizing the future value chain depends heavily on the ability of sector stakeholders to start implementing and coordinating the activities defined in the roadmap's plan of action.

The roadmap alone will not suffice to ensure the sector's sustainable development. Such development will require the coordination of various activities. While the execution of these activities will allow for the roadmap's targets to be achieved, success will ultimately depend on the ability of stakeholders to plan and coordinate actions in a tactical manner. Seemingly unrelated activities must be synchronized across entities in the public sector, private sector and non-governmental organizations, along with the participation of local communities, in order to create sustainable results.

To ensure the roadmap's success, it is necessary to create an appropriate framework for implementation. The following section presents some of the key conditions considered necessary for successful implementation.

ESTABLISH AND OPERATIONALIZE A PUBLIC AND PRIVATE SECTOR COORDINATING BODY AND EXECUTIVE SECRETARIAT

Wood processing sector steering committee

A key success criterion for the roadmap is the ability to coordinate activities, monitor progress and mobilize resources for implementation. It is recommended that a steering committee comprised of the key public and private sector entities be formed (or supported if a similar entity already exists). This will function as a platform with balanced representation of all major wood processing sector stakeholders to share information.

Overall, it is proposed that the steering committee be responsible for the following tasks related to strategy implementation:

- Coordinate and monitor the implementation of the roadmap by the government, private sector, institutions or international organizations to ensure implementation is on track;
- Identify and recommend allocation of resources necessary for the implementation of the roadmap;
- Assess the effectiveness and impact of the roadmap;
- Ensure consistency with the government's existing policies, plans and strategies, and align institutions' and agencies' internal plans and interventions with the roadmap plan of action;
- Elaborate and recommend revisions and enhancements to the roadmap so that it continues to best respond to the needs and long-term interests of the national business and export community;
- Propose key policy changes to be undertaken, based on roadmap priorities, and promote these policy changes among national decision makers;
- Guide the sector secretariat for the monitoring, coordination, resource mobilization, policy advocacy and communication functions to enable effective implementation of the roadmap;
- Provide the sector secretariat with the mandate and the necessary resources to fulfil its functions in an effective manner.

Composition of the wood processing sector steering committee

It is recommended that the steering committee be comprised of key entities involved in the sector, with special focus on ensuring equitable involvement of both the public and the private sector.

Secretariat

A secretariat will assist the wood processing sector steering committee in acting as an operational body responsible for the daily coordination, monitoring and mobilization of resources for implementing the plan of action. It is proposed that it take on this role with technical support from key ministries and technical agencies. The secretariat will be composed of 2–3 technical operators.

The secretariat's core responsibilities should be to:

- Support functioning of the steering committee;
- Collect and manage data to monitor the progress and impact of roadmap implementation;
- Liaise with and coordinate development partners for roadmap implementation;
- Elaborate project proposals and build partnerships to mobilize resources to implement the roadmap;
- Follow up on policy advocacy recommendations from the steering committee;
- Ensure effective communication and networking for successful roadmap implementation.

Both the steering committee and its secretariat will work hand in hand with existing entities established to streamline government operations and enhance donor operations.

Photo: @MoIC

PLAN OF ACTION

Strategic Objective 1: IMPROVE THE SECTOR'S SUSTAINABILITY THROUGH BETTER COORDINATION AND INCREASED ACCESS TO LEGAL TIMBER											
Operational objective	Activities	Priority 1=high 2=med 3=low	Implementation period					Targets	Leading implementing partners	Supporting partners	Existing programmes or potential support
			2021	2022	2023	2024	2025				
1.1. Simplify existing mechanisms for supply chain control and ensure compliance, traceability and transparency	1.1.1. Enhance coordination among relevant institutions for the issuance of approvals along the value chain, as well as supply chain monitoring and control, by revising mandates and responsibilities of relevant departments. Identify any overlap of functions and adjust mandates as required. Disseminate information among sector stakeholders.	1						• Mandates and responsibilities revised and measures undertaken to avoid overlapping and duplication of functions • Information disseminated	• MAF • MoIC		• Lao–EU FLEGT VPA • GIZ • KfW Development Bank
	1.1.2. Improve awareness and facilitate the implementation of the requirements of the Forest Law Enforcement, Governance and Trade (FLEGT) and the Voluntary Partnership Agreement (VPA) of the European Union (EU). Improve information dissemination by conducting awareness workshops for the public and private sector to appraise them of new regulations and developing communication material. Develop training for intermediary organizations (training of trainers), such as sector associations and NGOs, tsupport the implementation of FLEGT requirements.	1						• Four workshops organized to disseminate information on FLEGT and the VPA, targeting the public and private sectors • Communication material developed • Four trainings conducted	• MAF	• MoIC	• Lao–EU FLEGT VPA
	1.1.3. Ensure, from raw material tfinal product, consistent recording of information critical tdemonstrating legality and traceability of timber and supply chain control, by developing guidelines on good record keeping tbe disseminated among companies, including tools that companies can use for this purpose. Centralize these responsibilities of a single agency, e.g. a national timber industry agency.	1						• Guidelines developed and disseminated • Mandate centralized to a single agency	• MAF • MoIC		• Lao–EU FLEGT VPA • GIZ • KfW Development Bank
	1.1.4. Strengthen the voice of the companies and associations by facilitating platforms for companies texpress their needs in forestry and wood manufacturing processes.	1						• Communication channels created	• Lao wood processing industry association (LWPIA) • Lao furniture association (LFA)	• MoIC • LNCCI	• Furniture cluster
	1.1.5. Develop an incentive scheme for SMEs tencourage their business registration. Incentives may include tax credit and access tcredit.	2						• Incentive scheme developed and put in place	• MoF • MoIC	• LNCCI	• Finance institutes (banks, etc.)
1.2. Improve access ttimber from plantations	1.2.1. Develop and implement incentive measures textend plantations, while promoting the development of community forest enterprises, and facilitating access tfinance and land for plantation investors. Encourage investors tconsider using multi-species plantations based on market demand and integrating native species, tenhance sustainability aspects of timber production.	2						• Incentives created and implemented • Measures to promote community forest enterprises developed • Access to finance and land facilitated	• MAF	• LWPIA • LFA • LNCCI • National University of Laos, NUoL • MoIC	• Lao–EU FLEGT VPA • Value adding to Lao PDR plantation timber products VALTIP/ACIAR project • Related research institutes
	1.2.2. Build the capacity of relevant departments at the central and provincial level tdevelop and facilitate the implementation of plantation policy. Map departments at the provincial and central levels ttake part in the training. Develop the curricula and course material. Identify trainers and capacitate them; accordingly carry out the training.	1						• Two trainings per year carried out	• MAF		• VALTIP/ACIAR project • Lao–EU FLEGT VPA • Related research institutes
	1.2.3. Establish demonstration areas of high-value-added trees (e.g. teakwood and rosewood) that match local environments. Work closely with wood producers to select best species for afforestation by specific geographic locations.	2						• Three demonstration areas established	• MAF	• VALTIP/ACIAR project	• Potential private sector

Strategic Objective 1: IMPROVE THE SECTOR'S SUSTAINABILITY THROUGH BETTER COORDINATION AND INCREASED ACCESS TO LEGAL TIMBER											
Operational objective	Activities	Priority 1=high 2=med 3=low	Implementation period					Targets	Leading implementing partners	Supporting partners	Existing programmes or potential support
			2021	2022	2023	2024	2025				
1.2. Improve access ttimber from plantations	1.2.4. Foster horizontal integration of small-sized entities through stimulating the formation of SME groups torganize and employ collective purchasing of raw material and facilitate access tlow-risk timber sources. This would be done by providing guidance twood manufacturers on how they can join forces tpurchase timber collectively and by facilitating networking with timber sourcing companies (e.g. directory and fairs, etc.).	2				■		• Workshops conducted in key provinces	• LWPIA • LFA • LNCCI	• MoIC	• Furniture cluster • Other support institutes
	1.2.5. Carry out training workshops targeting timber traders, concessionaires and other relevant value chain actors tsupport the elaboration of sustainable forest management plans tsupport production forest area management, village use forestry and plantation management.	2					■	• Two training workshops carried out	• MAF		• GIZ • KfW • Lao–EU FLEGT VPA • VALTIP/ACIAR project
1.3. Increase the quality of raw material	1.3.1. Create a timber quality grading system tfacilitate material planning security and reasonable pricing regulations. Establish proper standards or a grading system of raw materials, as the quality of final products substantially relies on raw material quality.	2					■	• Timber quality grading system created	• MAF • MoIC		• GIZ • KfW • VALTIP/ACIAR project
	1.3.2. Conduct practical trainings targeting smallholders, producers, harvesters, traders and companies on: • Improved sorting of logs at the farm-gate level; • Timber quality grading system; • Adequate harvesting and log extraction techniques to improve recovery of waste.	2	■	■	■	■	■	• One annual training conducted in key provinces	• MAF		• GIZ • KfW • VALTIP/ACIAR project
1.4. Address the information gap in the sector	1.4.1. Improve data on forest inventory and forest stockings, etc. tensure that correct information is accessible on forest resources availability and species composition and properties, especially on lesser-known species.	1	■	■	■	■	■	• Harmonized and updated forest inventory database available • Regular assessments undertaken	• MAF	• NUoL	• VALTIP/ACIAR project
	1.4.2. Disseminate information trelevant ministries, i.e. MoIC, and agencies tsupport market promotion efforts. Relevant channels, e.g. the MoIC and MAF's websites, and associations' newsletters can be used tassist these efforts.	1	■	■				• Information continuously disseminated	• MAF • MoIC		• GIZ • KfW
	1.4.3. Undertake regular assessments of the usage of wood. Conduct annual census of milling/processing is required together with a demand requirement of raw materials	2	■	■				• Annual census conducted	• MoIC	• MAF	• Sector associations
1.5. Foster the use of lesser-known species and waste recovery	1.5.1. In collaboration with research centres, universities and the private sector, enhance the knowledge of lesser-known species by conducting specific research on wood properties, mechanical conditions and aesthetic characteristics of lesser-known species.	2	■	■				• Ten research studies conducted	• LWPIA • LFA • LNCCI	• NUoL	• VALTIP/ACIAR project
	1.5.2. Increase available timber volumes through usage of lesser-known species through a promotion campaign. The campaign can include workshops tinform users of the properties, uses and availability of lesser-used tropical timber species.	2	■	■				• Promotion campaign designed and launched	• LWPIA • LFA • LNCCI	• NUoL	• VALTIP/ACIAR project
	1.5.3. Taddress scarcity of solid wood resources, mixed-materials construction should be encouraged. Develop a scheme targeting sector companies tprovide them with marketing and product evaluation support tassist them explore the use of mixed materials, including lesser-known species, in compliance with certification standards and FLEGT.	2			■			• Scheme developed and functional • Ten wood processing companies benefit from the scheme	• LWPIA • LFA • LNCCI	• NUoL	• VALTIP/ACIAR project • Lao–EU FLEGT VPA
	1.5.4. Develop and or/expand pilot initiatives, e.g. ProFLEGT, supporting the construction of plants for the production of multi-layer glued solid wood boards from weak timber and lesser-known timber species.	1	■	■				• Two additional plants established	• LWPIA • LFA • LNCCI	• NUoL	• VALTIP/ACIAR project • Lao–EU FLEGT VPA

Strategic Objective 1: IMPROVE THE SECTOR'S SUSTAINABILITY THROUGH BETTER COORDINATION AND INCREASED ACCESS TO LEGAL TIMBER											
Operational objective	Activities	Priority 1=high 2=med 3=low	Implementation period					Targets	Leading implementing partners	Supporting partners	Existing programmes or potential support
			2021	2022	2023	2024	2025				
1.5. Foster the use of lesser-known species and waste recovery	1.5.5. Support the conversion of wood waste from mills intfinger-jointed laminated boards, tcapture higher value for the resources. Carry out demonstrations and practical trainings.	1						• Two demonstrations carried out in key provinces. • Two yearly practical trainings organized alongside demonstration sites	• LWPIA • LFA • LNCCI	• NUoL	• VALTIP/ACIAR project • Lao–EU FLEGT VPA
1.6. Enhance coordination for sector development efforts	1.6.1. Establish a working group for the wood processing sector (e.g. a board). Working group tbe a high-level platform composed of public and private sector stakeholders, including sector firms and associations. • The working group is tstimulate dialogue and coordination with sector stakeholders through regular meetings. • Additionally, such a platform will ensure implementation of this roadmap, resource mobilization and policy advocacy. • The working group should build on existing relevant public–private sector structures. • The working group should evaluate the elaboration of a national timber industry master plan with a 10-year timeframe.	1						• Working group established to lead the implementation of the roadmap	• MoIC	• MAF • NGOs • Support institutes • Finance institutes	• VALTIP/ACIAR project • Lao–EU FLEGT VPA)
	1.6.2. Deploy a robust monitoring and evaluation framework related tsector plan of action implementation.	2						• Monitoring and evaluation framework developed	• MoIC • LWPIA • LFA • LNCCI	• MAF • MoIC	• Lao–EU FLEGT VPA)
	1.6.3. Initiate a donor round table tinform donors and development partners active in the country about resource mobilization needs and opportunities related tthe sector.	2						• One annual donor round table organized	• MoIC	• MAF	

Strategic Objective 2: STIMULATE PRODUCT DIVERSIFICATION AND THE UPGRADE OF PROCESSING CAPACITIES BY ENHANCING SKILLS, FOSTERING TECHNOLOGY ADOPTION AND SPURRING INVESTMENT											
Operational objective	Activities	Priority 1=high 2=med 3=low	Implementation period					Targets	Leading implementing partners	Supporting partners	Existing programmes or potential support
			2021	2022	2023	2024	2025				
2.1. Build capacity of sector associations	2.1.1. Carry out an institutional benchmarking programme for sector associations timprove their performance by measuring the effectiveness and efficiency of their business practices. The programme should survey all activity areas, including strategy and governance, resources and processes, products and services, and results measurement.	2						• Institutional benchmarking carried out on two associations	• LWPIA • LFA • LNCCI	• MoIC • MAF	• Lao–EU FLEGT VPA
	2.1.2. Capacitate associations in business and financial planning and advocating for the sector. • Conduct workshops and short trainings for sector associations to capacitate them in business planning, financial skills (e.g. proper record keeping) and developing bank proposals to enhance their financial standing should they ever apply for loans. • Train leaders of farmers' associations to mediate with external resource institutions, such as the government and financial institutions.	2						• Capacity building training developed and organized in the form of short modules	• LWPIA • LFA • LNCCI	• MoIC • MAF • Furniture cluster	• VALTIP/ACIAR project
2.2. Enhance skills for sector development	2.2.1. Develop a capacity building programme targeting managers of wood manufacturing companies, including SMEs, with the purpose of enhancing their business and technical skills and spur product diversification. The programme can cover, among others: • Quality management (e.g. timber grading system); • Increase in material yield; • Working with lesser-known timber species and engineered materials; • Implementation of deficiency analyses; • Waste management; • New technologies; • Techniques for timber drying; • Product design, incl. market demands; • Basic business management; • Management specific to wood processing companies (e.g. safety at work); • Timber legality assurance systems; • Elaboration of marketing concepts, understanding own potential and needs.	1						• Capacity building programme designed and implemented • At least 20 companies are beneficiaries	• MoIC • MAF • LNCCI • LWPIA • LFA	• NUoL • Ministry of Education and Sport, MoES • Ministry of Labour and Social Welfare, MoLSW • Furniture cluster	• Lao–EU FLEGT VPA • VALTIP/ACIAR project • Lao ARISE Plus
	2.2.2. Through public–private partnership, develop a programme aimed at enhancing the technical know-how and skills of factory workers in wood manufacturing companies. The programme's objective would be tenhance quality of wood products, as well as product diversification. Among the topics tbe covered, the following can be included: • Working with lesser-known timber species and engineered materials; • Use of appropriate/new technologies; • Timber grading system; • Joinery/cabinet making; • Wood finishing; • Design. Disseminate information regarding the capacity programme through relevant ministries and agencies, in cooperation with industry associations, to inform potential trainees. Evaluate formal arrangements with regional and international educational institutions to enable the international experts to impart training through the programme.	1						• Programme designed and implemented • At least 15 wood manufacturing companies are beneficiaries	MoIC	• NUoL • TVET institutes • MoES • MoLSW • Furniture cluster • Vetsaphong Skill Development & Testing Center (VSDC)	• Lao–EU FLEGT VPA • VALTIP/ACIAR project
	2.2.3. In coordination with the public and private sectors and education institutions, carry out a labour market assessment tunderstand specific skills needs in the sector. Based on results, develop specific guidelines to boost skills development of the workforce in the wood processing sector through university and TVET programmes. The programmes offered should be short-, medium – and long-term training programmes meant to provide the industry with the necessary skilled workers.	1						• Labour market assessment carried out • Specific guidelines developed and disseminated	• MoIC • LWPIA • LFA	• TVET institutes • NUoL • VSDC	

Strategic Objective 2: STIMULATE PRODUCT DIVERSIFICATION AND THE UPGRADE OF PROCESSING CAPACITIES BY ENHANCING SKILLS, FOSTERING TECHNOLOGY ADOPTION AND SPURRING INVESTMENT											
Operational objective	Activities	Priority 1=high 2=med 3=low	Implementation period					Targets	Leading implementing partners	Supporting partners	Existing programmes or potential support
			2021	2022	2023	2024	2025				
2.2. Enhance skills for sector development	2.2.4. Based on the labour market assessment, seek tcomplement long-term trainings (up tthree years) with competency based trainings (vocational modules) with the help of international support partners.	1						• Competency based trainings designed and launched	• MoIC	• MOLSW • TVET institutes • MoES	• Vetsaphong Skill Development & Testing Center • Participatory Development Training Centre, PADETC
	2.2.5. Create opportunities for students interested or specializing in furniture design tparticipate in domestic and international furniture trade fairs tgrasp the market's trends.	1						• Five students participate in domestic and/or international wood trade fairs	MoIC	• MOLSW • TVET institutes • MoES • PADETC • VSDC	
	2.2.6. Incorporate wood processing as an area of interest with career advisers whare currently active in universities. Starting with one pilot university, efforts would include informing students of the potential tpursue wood manufacturing as a viable career option.	1						• Initiative carried out in one pilot university	MOLSW	• TVET institutes • MoES • PADETC • VSDC	
2.3. Spur innovation through facilitating access ttechnology and research and development	2.3.1. Encourage research and development in the private sector through the provision of incentives (e.g. tax credits) for wood processing companies that engage in research and development that will lead tnew, improved or technologically advanced wood products or processes.	2						• Incentives in place to encourage research and development	MoIC	• NUoL • Ministry of Science and Technology, MOST	• VALTIP/ACIAR project • GIZ • KfW
	2.3.2. Improve the innovation and technical exchange among SMEs by formulating and piloting a "collaborative research programme" to: • Foster the use of new materials, especially with the lesser-known wood materials and the use of engineered materials; • Lead to new product development; • Improve value chain processes. The programme will also strengthen the linkages between private sector and academia by facilitating SMEs to engage with universities and research centres, and receive support in product development, prototyping and testing, among others. Students at universities will be given specific research topics based on private sector demand.	2						• Collaborative research programme designed and implemented • Ten research studies supported	MoIC	• NUoL • MOST	• VALTIP/ACIAR project • GIZ • KfW
	2.3.3. Facilitate technology transfer and skills enhancement through collaboration with research institutes internationally and in the region (e.g. Malaysia, Thailand and Viet Nam), as a means tstrengthen the local industry. Develop partnerships aimed tincrease the capability of local research institutes, training institutes and other suppliers tenable new technology in the sector and provide knowledge and skills training.	2						• At least two memorandums of understanding signed with research centres and/or training institutes	MoIC	• NUoL • MoLSW • LNCCI • Furniture cluster • VSDC	• Lao–EU FLEGT VPA • VALTIP/ACIAR project
	2.3.4. Increase the exposure of companies tnew technologies by coordinating and facilitating visits tinternational machinery fairs.	2						• Five companies supported to participate in international machinery fairs	MoIC	• LNCCI • LWPIA • LFA	• GIZ • KfW
	2.3.5. Introduce cleaner production (CP) option ttechnology update, equipment-related modification, reuse and recycling tbe a prominent improvement opportunity of the establishment.	2						• Cleaner production option introduced and supported	MoIC	• LNCCI • LWPIA • LFA • MOST	GEF5 project "Reducing of greenhouse gas (GHG) emissions in the industrial sector through pelletization technology in Lao PDR", United Nations Industrial Development Organization
2.4. Improve access tcredit for sector companies	2.4.1. Organize roundtables with commercial banks and other financial institutions timprove their knowledge and understanding of wood processing industry and advocate for increasing the availability of financial products for the sector.	2						• One roundtable organized per year	MoIC	• MoF • MPI • Finance institutes • Furniture cluster	• GIZ • KfW

Strategic Objective 2: STIMULATE PRODUCT DIVERSIFICATION AND THE UPGRADE OF PROCESSING CAPACITIES BY ENHANCING SKILLS, FOSTERING TECHNOLOGY ADOPTION AND SPURRING INVESTMENT											
Operational objective	Activities	Priority 1=high 2=med 3=low	Implementation period					Targets	Leading implementing partners	Supporting partners	Existing programmes or potential support
			2021	2022	2023	2024	2025				
2.4. Improve access tcredit for sector companies	2.4.2. Explore the feasibility of developing sector-focused credit programmes through an assessment study.	2						• Assessment study carried out	MoF	• MoIC • Furniture cluster	• GIZ • KfW
	2.4.3. Provide support tkey private sector actors, e.g. SMEs and relevant sector associations, to: • Increase their financial literacy skills; and • Develop detailed business profiles.	2						• At least one workshop organized per year	MoIC	• MoF • MPI • Finance institutes	
2.5. Foster investment in the sector	2.5.1. In close coordination with the private sector, develop an industrial development policy for the wood industry in LaPDR. A key element of the policy will be attracting foreign and domestic investments tboost efficiency, technology transfer and market development. Another component of the policy will be the development of clusters in selected locations.	2						• Industrial development policy developed	MoIC	• LNCCI • LWPIA • LFA • Furniture cluster	• GIZ • KfW
	2.5.2. Develop favourable fiscal incentives for investments in the wood processing sector aimed at spurring domestic value addition.	2						• Fiscal incentives developed and in place	MoIC	• LNCCI • LWPIA • LFA • MPI	• Furniture cluster • GIZ • KfW
	2.5.3. Promote investment in the wood processing industry: • Develop/update list of investment attraction opportunities (continue updating list as the sector evolves). • Facilitate the participation of business associations in investment missions and exhibitions to promote investment opportunities in the sector. • Through online videos, concept notes and brochures, among other communication materials, showcase investment opportunities in the sector.	2						• List of investment opportunities developed and disseminated • 2 Business associations participating in investment missions • Communication material developed and disseminated	MoIC	• LNCCI • LWPIA • LFA • MPI	• GIZ • KfW
2.6. Stimulate the formation of sector clusters	2.6.1. Through a focused study, assess the need and feasibility of establishing a cluster in a pilot location, in a public–private joint venture. The cluster could focus, for example, in wood handicrafts and/or wood furniture manufacturing. Identify, among others, key public and private sector actors in selected location.	2						• Feasibility study developed	MoIC	• LNCCI • LWPIA • LFA	• Furniture cluster • GIZ • KfW
	2.6.2. Identify and develop key services tsupport cluster development in pilot location. Cluster services can include establishing a wood processing centre with an adequate level of technology and support facilities (e.g. kiln-dry treatment, etc.). Assess the efficiency and effectiveness of existing clusters. Develop corrective measures and facilitate necessary services, as required.	2						• Key cluster development services identified	MoIC	• LNCCI • LWPIA • LFA	• Furniture cluster • GIZ • KfW
	2.6.3. Set up an outreach programme tensure wide participation and use of above pilot facility. Key sub-activities: • Draft outreach plan with core audiences identified, key messages and media options; • Develop and disseminate resource list of support services providers (logistics, transport and general handlers) and intermediaries (buying agents and brokers).	2						• Outreach programme designed and implemented	MoIC	• LNCCI • LWPIA • LFA	• Furniture cluster • GIZ • KfW

Strategic Objective 3: ENHANCE THE SECTOR'S ABILITY TO CREATE AND SUSTAIN MARKET LINKAGES											
Operational objective	Activities	Priority 1=high 2=med 3=low	Implementation period					Targets	Leading implementing partners	Supporting partners	Existing programmes or potential support
			2021	2022	2023	2024	2025				
3.1. Improve the sector's ability tmeet international market requirements and standards	3.1.1. Develop a network of public–private metrology, calibration and testing labs that are internationally accredited and capable of certifying Laotian wood processing products. Formulate national standard of wood products. Establish or improve existing testing labs of certifying wood processing products for at least one establishment.	1						• Network developed • National standards formulated • Labs to certify wood processing products established or improved	MoST	• MoIC • NUoL • Furniture cluster	• GIZ • KfW • Lao ARISE Plus
	3.1.2. Create awareness and increase the knowledge of producing and exporting wood processing companies on the EU and regional market requirements and standards through workshops.	1						• Five awareness-raising workshops organized on the EU and regional quality requirements	MoIC	• LNCCI • LWPIA • LFA	• Lao–EU FLEGT VPA) • Lao ARISE Plus
	3.1.3. Develop an online tool, tailored tsector companies, with information and guidance related tregional and EU market requirements and standards. Establish website for information and guidance related tregional and EU market requirements and standards.	2						• Online tool developed and available	MoIC	• LNCCI • LWPIA • LFA	• Lao–EU FLEGT VPA • Lao ARISE Plus
	3.1.4. Develop a pool of quality experts tsupport the sector on a long-term basis and alsdirect support tenterprises tcomply with international quality requirements and timplement quality improvement projects.	1						• Pool of quality experts identified and trained	MoIC	• LNCCI • LWPIA • LFA	• Lao ARISE Plus
	3.1.5. Support companies tdevelop chain of custody (CoC) systems and organize capacity building activities for those SMEs.	1						• At least 20 companies benefit from capacity building per year	MoIC	• LNCCI • LWPIA • LFA	• Lao–EU FLEGT VPA
	3.1.6. Support the Voluntary Partnership Agreement with the EU. Once completed, ensure compliance with the requirements of the FLEGT.	1						• VPA negotiations successfully finalized	MAF		• Lao–EU FLEGT VPA
3.2. Enhance information about export regulations and market opportunities	3.2.1. In order tsimplify exports for companies seeking texport, conduct a mapping study tidentify: • Key paperwork-related requirements for exporting wood; • Process flows and requirements between ministries.	1						• List of documentation needed for exporting wood streamlined	MoIC	All related public sector	• Lao–EU FLEGT VPA
	3.2.2. In coordination with relevant ministries and in dialogue with private sector stakeholders, evaluate a revision of the list of wooden products eligible texport No.0939/MoIC, DoIC 01/08/2019 tpromote wood processing exports. The revised list of wooden products eligible texport should be in line with international market trends.	1						• Regulation revised	MoIC	MAF	• Sector associations
	3.2.3. Conduct informative workshops tincrease the knowledge of companies regarding relevant regulations and procedures for exporting wood processing products.	1						• Informative workshops conducted once a year	MoIC	All related public sector	• Lao–EU FLEGT VPA • GIZ • KfW
	3.2.4. Establish a focal point for wood processing companies at the Ministry of Commerce and Industry. Through the focal point, improve dissemination of trade information and potential market opportunities for the sector.	1						• One focal point established	MoIC	All related public sector	• Lao–EU FLEGT VPA • GIZ • KfW

Strategic Objective 3: ENHANCE THE SECTOR'S ABILITY TO CREATE AND SUSTAIN MARKET LINKAGES											
Operational objective	Activities	Priority 1=high 2=med 3=low	Implementation period					Targets	Leading implementing partners	Supporting partners	Existing programmes or potential support
			2021	2022	2023	2024	2025				
3.2. Enhance information about export regulations and market opportunities	3.2.5. Develop training courses for SMEs on marketing and on how tanalyse trade information and adjust their business strategies accordingly, and the use of e-commerce.	1						• Training course conducted once a year	MoIC	All related public sector	• Lao–EU FLEGT VPA • GIZ • KfW
	3.2.6. Conduct market surveys in regional market tbetter understand key buyer requirements and consumer preferences for specific markets.	2						• At least two market surveys conducted in the regional market	MoIC	All related public and private sectors	• Lao–EU FLEGT VPA • GIZ • KfW
	3.2.7. Develop market profiles for selected markets (e.g. regional and EU markets). Information tinclude: • Mandatory requirements (e.g. quality and contracts); • International trade agreements, if applicable; • Market prospects and emerging trends; • Distribution channels and directory of main buyers in target markets. Implement mechanisms to actively disseminate information via various channels of communication (e.g. workshops and websites).	2						• At least five market profiles developed for selected markets	MoIC	• LNCCI • LWPIA • LFA	• GIZ • KfW
	3.2.8. Create linkages through foreign sector associations (e.g. European Timber Trade Federation) or national associations tfind potential buyers for Laotian wood products. Organize networking events to connect potential business partners to Laotian companies.	1						• One networking event organized/facilitated annually	MoIC	• LNCCI • LWPIA • LFA	• GIZ • KfW • VALTIP/ACIAR project
3.3. Develop market linkages by improving in-market support	3.3.1. Based on research studies regarding product and market opportunities of lesser-known species, prepare technical documentation and promotion material tcommunicate at international fairs and on internet platforms. This activity is linked tActivity 1.4.2.	2						• Technical documentation and promotion material created and disseminated to wood processing manufacturers and buyers	MoIC	• LNCCI • LWPIA • LFA • MAF	• GIZ • KfW • VALTIP/ACIAR project
	3.3.2. Train enterprises on how tprepare for participation in trade fairs: • Preparing promotional materials in the language and culture of the host country. • Presentation and visibility (including digital marketing). • Managing supply and demand. • Identifying and targeting potential buyers.	2						• Ten companies trained	MoIC	• LNCCI • LWPIA • LFA	• GIZ • KfW • Lao–EU FLEGT VPA
	3.3.3. Identify key international fairs and exhibitions relevant for the sector, such as the Malaysian International Furniture Fair, Domotex China and Chinafloor. • Disseminate information about identified international fairs and exhibitions among key stakeholders through websites. • Develop a scheme to support SMEs and exporters' associations to participate in such fairs and exhibitions: Develop guidelines for selection criteria of SMEs to be supported. • Define support modality, e.g. grant, subsidy. • Provide training sessions on marketing to participants. • Follow up on learnings with the businesses after the visits.	2						• Relevant international fairs identified • Scheme developed to support SMEs and associations • Five companies supported annually	MoIC	• LNCCI • LWPIA • LFA	• GIZ • KfW • Lao–EU FLEGT VPA
	3.3.4. Through a public–private partnership, develop a marketing campaign tenhance the sector's image in view of the finalization of the FLEGT negotiations.	2						• Marketing campaign developed and implemented	MoIC	• LNCCI • LWPIA • LFA	• GIZ • KfW • Lao–EU FLEGT VPA
	3.3.5. Enable the online presence of sector firms through digital platforms (e-commerce). Help supported firms tpool resources and create economies of scale in this digital platform.	2						• Twenty companies supported	MoIC LNCCI	• Sector associations	

Strategic Objective 3: ENHANCE THE SECTOR'S ABILITY TO CREATE AND SUSTAIN MARKET LINKAGES											
Operational objective	Activities	Priority 1=high 2=med 3=low	Implementation period					Targets	Leading implementing partners	Supporting partners	Existing programmes or potential support
			2021	2022	2023	2024	2025				
3.3. Develop market linkages by improving in-market support	3.3.6. Develop a pilot initiative on e-commerce for the wood processing sector. Explore e-commerce potential for wood processing through a sector study, analysing e-commerce readiness, markets and available online market tools, payment providers, logistics firms and information technology infrastructure companies. Select key target markets and examine consumer protection and e-transaction laws. Identify and select firms/cooperatives that will benefit from the pilot initiative. Competitive selection to be based on several factors, including export readiness. Provide capacity building and technical assistance tselected firms/cooperatives, including setting up a website: • Online payment modality; • Order fulfilment; • Other functions, as required.	2						• Pilot initiative developed	MoIC	• LNCCI • Sector associations	
3.4. Spur domestic demand and linkages with other sectors	3.4.1. Through a study, assess market dynamics for domestic consumption of final wood products, e.g. furniture, and disseminate information trelevant private sector stakeholders through appropriate channels (e.g. newsletters, reports and websites).	2						• Market study carried out and findings disseminated	MoIC	• LNCCI • LWPIA • LFA	• GIZ • KfW • Lao–EU FLEGT VPA
	3.4.2. Promote linkages with other sectors such as tourism tfurther develop and support product lines of wood-based products, e.g. carvings and handicrafts. To spur collaboration, inter-sectoral workshops will be held to assess opportunities for collaboration between different sectors, starting with tourism.	2						• One inter-sectoral workshop organized per year	MoIC	• LNCCI • LWPIA • LFA	• GIZ • KfW • Lao–EU FLEGT VPA

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