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Research Note

Rubberwood Value Chains in Laos: early observations from an emerging opportunity

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Notes

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Readers are referred to the following related outputs from this project

- Smith, H., Lu, J., To, P.X., Mienmany, S. and Soukphaxay, K. (2020). Rubber Plantation Value Chains in Laos: Opportunities and Constraints in Policy, Legality and Wood Processing, Technical Report
- Info Brief No. 8. Smith, H., Lu, J. and To, P. (2020) Prospects for a Sustainable Rubberwood Industry in Laos
- Info Brief No. 9. Smith, H., Lu, J. and To, P. (2020) Land for Rubber Plantations in Laos
- Info Brief No. 10. Smith, H., Lu, J. and To, P. (2020) Labour in the Rubber Sector in Laos
- Info Brief No.11. Smith, H., Lu, J. and To, P. (2020) Natural Rubber Production in Laos
- Info Brief No. 12. Belleville, B. and Chounlamounty, P. (2020) Can Lao Smallholder-grown Rubber trees produce high-grade veneer?
- Belleville B, Chounlamounty P, Soukphaxay K, Phengthajam V, Saetern L, Smith H, Ozarska B (2020) An investigation on peeling recovery and quality of senile plantation-grown rubber trees in Laos, *European Journal of Wood and Wood Products* August 2020

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Executive Summary

This report builds on a study of rubber value chains undertaken in 2019-2020 (Smith et al., 2020). That study explored opportunities and constraints in policy, legality and wood processing and was complemented by trials of rubber wood processing undertaken at the National University of Laos' (NUoL) Faculty of Forestry (FFS) (Belleville et al. 2020). At the time of that study there were no rubberwood processing enterprises in Laos and findings related to rubberwood were based on experiences of neighbouring countries - Vietnam and China. In early 2022 researchers on our project team became aware of a rubberwood veneer processing facility operating in Luang Namtha Province in Northern Laos. It was in that province that, in 2019, we had shown government officers and rubber growers examples of rubberwood plywood products developed at NUoL. This presented us with an opportunity to extend our research to include one Lao rubberwood value chain.

During the period of our first study, the Government of Laos (GoL) was also reforming strategies, laws, regulations and the governance of the forest and wood processing sector. We reported on some of these reforms but since the study was completed there have been further revisions and clarifications of new and existing legislation and changes to Ministerial mandates which will influence the rubber growing and rubberwood sectors in the future.

This short report updates the 2020 report, drawing on limited field work in Luang Namtha in 2022 focussing on the new rubberwood factory, and changes to policy, regulatory and governance settings. Further trials of processing rubberwood were also undertaken in 2022, the results of which are reported separately.

Key observations:

1. The policy position on the rubber plantation sector remains as it was in 2019.
2. The policy position with respect to the rubberwood sector is somewhat clearer than in 2019.
3. Some of the administrative complexities have been clarified with new mandates for the Ministry of Agriculture and Forestry and the Ministry of Industry and Commerce.
4. There is increasing interest in rubberwood as a production input in Laos.
5. There is increasing interested in rubberwood research.
6. The potential contribution of rubberwood to producers and nationally remains unquantified.

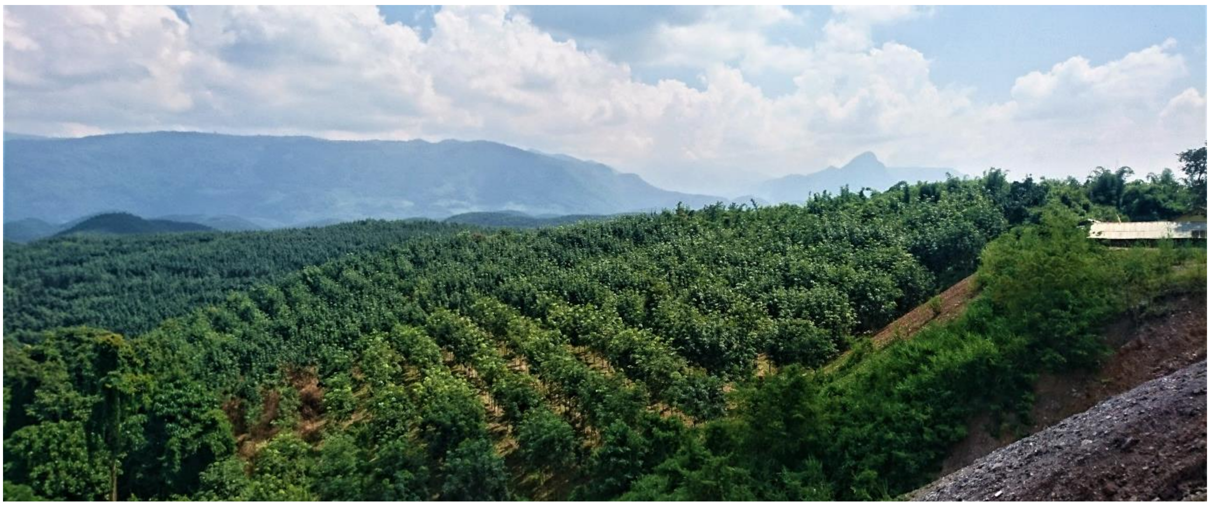

Figure 1: Rubber plantations in the Landscape

Recommendations

No.	Action	Responsible
1	An integrated rubber sector plan including latex and rubberwood industry development should be developed. This should draw on recent research and Government reviews of the quality of land investments in Laos. To support this, mapped data on rubber - plantations should be collated and consolidated, this will aid in understanding long term resource (latex and wood) supply.	DoF NAFRI, Lao Rubber Association Other partners
2	The moratorium on rubber concessions (No. 09/PM) should either be lifted or made permanent, this will remove uncertainty for investors	MPI in consultation with MAF
3	The current review of the procedures for leasing land (Instruction No. 457/MPI), which includes for rubber plantations should be tested against a range of investment scales, especially small-scale. Dissemination to relevant government departments and growers is required	MPI, MAF, MRLG
4	Rubber plantations and rubberwood must be adequately addressed in the Lao-European Union (EU) Voluntary Partnership Agreement (VPA) and Laos' Timber Legality Assurance System (TLAS) and in considerations of the EU's new Deforestation free regulations.	MAF EU-GIZ
5	Rubberwood processing infrastructure and skills are needed in Laos. Skills and technology are already available at NUoL and industry training centres, and these could be expanded though collaboration with the private sector and donors.	NUoL, NAFRI Private sector ACIAR
6	Further research is needed to better understand the properties and quality of Lao rubberwood and to establish niche products that are regionally competitive. Species specific product grading rules may be needed.	NUoL, NAFRI Private sector ACIAR
7	Communication materials are needed to inform rubber growers, wood processors, manufacturers, and the government of the potential value of rubber plantations for rubberwood and any new regulations that have been put in place for the sector.	NUoL, NAFRI

Figure 2: Peeled rubber logs from Luang Namtha at NUoL

Introduction

This research note explores an emerging opportunity for the development of a rubberwood industry in Lao PDR. It builds on research undertaken in 2019/2020 (reported in Smith et al. 2020) and in various project Information Briefs through a targeted study associated with an emerging rubberwood industry in Luang Namtha which opened in 2021. This note follows up on some of the many findings and recommendations from Smith et al. 2020 associated with the policy position on the rubber sector, administrative complexities and regulatory uncertainty and obstacles.

This report contributes mainly to one of the three sub-objectives within and ACIAR project "*Advancing enhanced wood manufacturing industries in Laos and Australia*" knowns as 'VALTIP3' - namely Objective 1, which aims to identify the key elements of the policy, governance and administrative environment that constrain the development of plantation forests and wood value chains in Lao PDR, identify other constraints to improving the value chains, and to develop strategies for engaging with this environment.

The value chains have been analysed to help address the following specific research questions:

a) What are the principal value chains for Lao planted forest resources?
b) What are the key elements of the policy, governance and administrative environment that constrain the development of plantation forests and value-adding to their products, and what are the most important and promising pathways for policy change?
c) What are the barriers that prevent small and medium plantation-based enterprises in Laos from investing and developing new technologies and how can they be rectified?
d) What are the major impediments to resource availability for domestic processing, and how might they be addressed?

Methods

A team from NUoL and Queensland Department of Agriculture and Fisheries (QDAF) visited Luang Namtha on 26th and 27th of June 2022 and interviewed company representatives, officials from the Provincial Agriculture and Forestry Office (PAFO) and Provincial Office of Industry and Commerce (POIC), and a farmer supplying wood to the mill. A review of revised and new policy and regulations was also undertaken.

The name on the company and interview respondents have been anonymised for the purposes of confidentially.

Findings

This section summarises the main policy and regulatory issues and any changes to them since the first study was undertaken and reported.

About the Company

Located in Ban Bouamphiang in Luang Namtha, The "Rubberwood" Furniture Factory Individual Enterprise officially registered[1] with POIC in 2020 and commenced operations in 2021. The registered owner is female. Currently the mill produces rubberwood veneers and sawn teak. The equipment consists of a spindleless lathe, de-barker and veneer jet dryer. At the time of our interview the company was still in the process of importing other machinery for plywood manufacturing into Lao PDR. While only in start-up phase the company owns 2 ha of land to expand onto, with plans for 8 peeler lines owner and anticipates 300+ employees.

The rubberwood veneers are exported to China for processing into plywood. The company sells to just one Chinese company which pays 450,000 Kip / tonne dry veneer. They commented that until (their) plywood manufacturing commences in Laos, their Chinese buyer will send the plywood back to the Rubberwood company, but the price they would pay could not be confirmed. They plan to sell the plywood locally for ceilings.

When questioned about the quality or specifics of products requested in China, the owner stated that they did not know what they needed to have, and let China propose the product type. The Chinse manufacturer specifies grades of veneer as A or B. Grade A refers to a Moisture Content % between 0 and 10% and B is veneers with end splits and other defects. Grading is not based on appearance for Chinese products, and this could be an issue for the product performance in the future. Target peeler thickness is 0.6 mm – they do not conduct any quality assessment of their veneer thickness. The product will be stamped with its properties/ descriptions (similar to markings used in most products). The company was using the train to export veneers to China which was "fast and cheap" but they had received any plywood back from China, as the COVID-19 zero policy in China had delayed the arrival, with no products in or out of the country.

Plantation area and ownership

There are various sources of data about the area of rubber replantation in Laos generally, and Luang Namtha specifically (see Smith et al 2020) (Figure 1). During our interviews PAFO reported just over 36,200 ha of rubber plantations in Luang Namtha Province, of which 57% (20,700ha) is owned by smallholders. This was confirmed by data later provide to us, which also shows that over the last four years there has been very little net change in the total area of rubber plantations in the Province, with modest decreases in concessions and small increases in contract faming (Figure 4). The data also reported that 93% of area of plantations is currently producing latex.

[1] http://www.ned.moic.gov.la/index.php/en/explore-data-en/search, accessed 22/07/2022

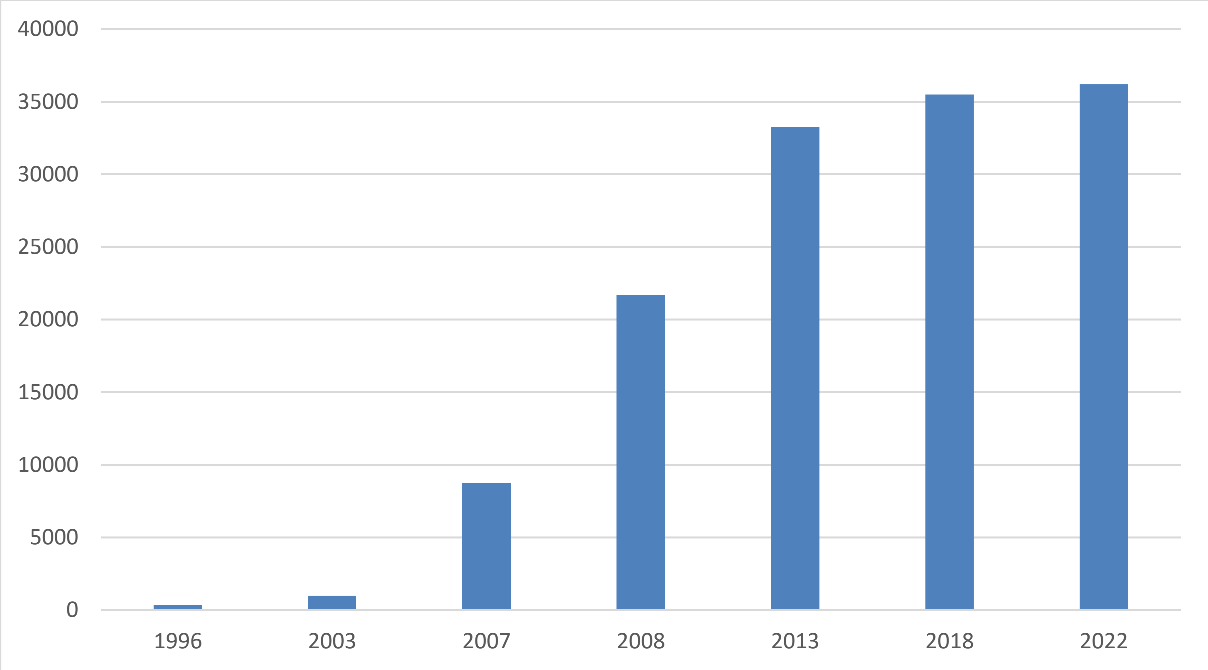

Figure 3: Area of rubber plantation in Luang Namtha

The data suggests that the rate of new plantings has slowed and population growth in the province was seen by government officers, the rubberwood company and the grower we interviewed as a threat to replanting after harvesting; they noted that rubber plantations may be cleared to make way for housing in this district which is close to Luang Namtha city. This will have implications for long term wood supply as plantations transition from latex to wood production.

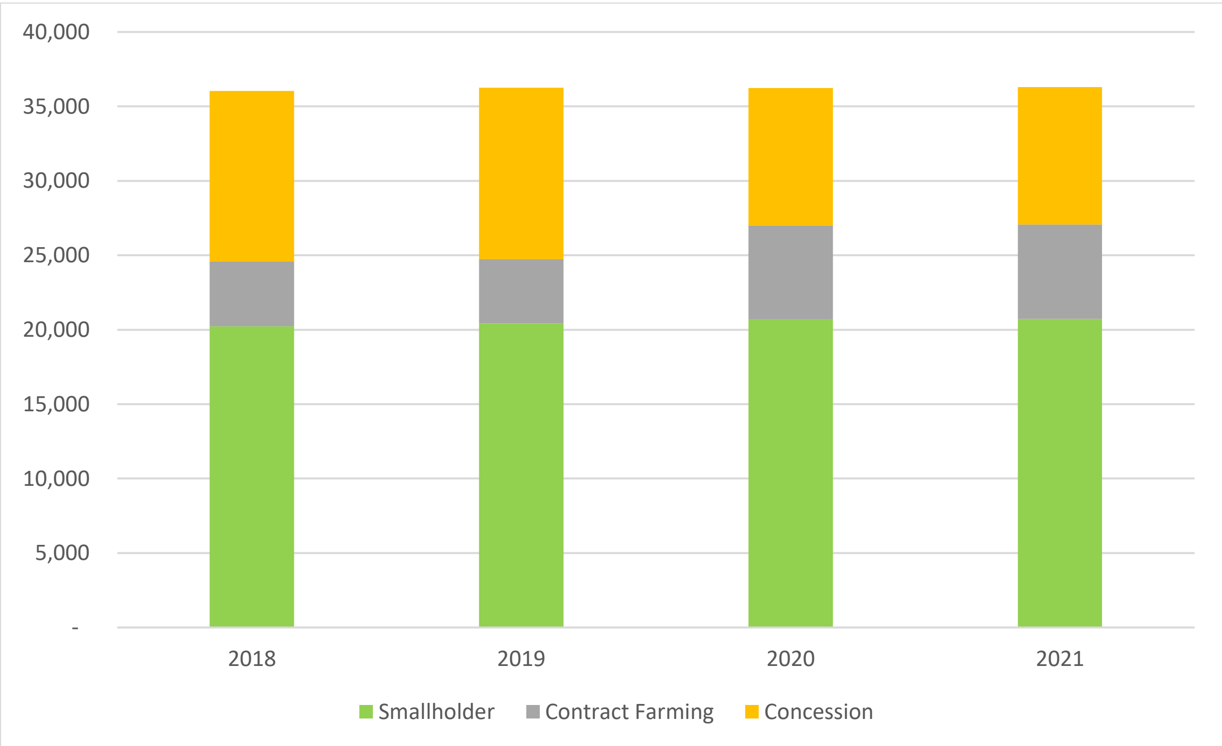

Figure 4: Area of rubber under different investment model in Laung Namtha 2018-2021

Wood Supply and Demand

The mill owners commented that there is an increased demand for rubberwood for plywood production in China; and at the same time, remarked that that latex is worth more than the timber, so growers are hesitant to sell trees for the asking price from the mill. There was no suggestion that the mill might increase the price paid for wood to compete with latex.

The company reported three ways of obtaining logs:

- Through either purchasing trees and harvesting them,
- Buying logs and collecting them from village or where they have been felled,
- Buying logs as they arrive at the mill from village,

Tree sizes attract different price: ≥ 300 mm diameter - 80,000 Kip, 200 mm to 300 mm - 50,000 Kip, and 30,000 Kip for 120 mm.

The grower we spoke to commented that mill had asked to buy his trees at 100,000 Kip per tree. When the mill first opened, they were offering 1,000 Kip/kg which was a better price than current offer. While his trees stilled produce latex, the income from which was 1 to 2 million Kip/ month, he would not sell for wood. The price of latex was 11,000 kip/kg, which was significantly higher than in 2019, when the project last visited the area.

POIC reported to us that their role is to promote use and management of industrial commerce and promote products and investment specific to the province (One District One Product). They mentioned that they do not currently influence the cost of rubberwood as it is not a large enough commodity, but they do influence the cost of latex which is the province's largest export at 62%). However, as discussion turned to rubber expansion in the region it was clear that government practice had indirectly influenced rubberwood process. As a result of past infrastructure projects, the government paid compensation for lost rubber trees at a rate of 50,000 Kip / tree. The mill had learned of this and based their asking price for trees on this mark, considering it to be fair if the government is offering it. The farmers were not happy with this is very low price compared to the income they get from latex. POIC mentioned that there are more than 13 latex buyers which ensures a fair, competitive price for latex but that because there is only one buyer for rubberwood the mill dictating what price they will pay.

Asked what would happen when his trees stopped producing latex, the plantation owners replied that he was unsure, and this would depend on the economic climate at the time. He said that firewood is easier to produce and sell than having the mill come in and log the trees and that some trees will die every year, but it is not worth having the mill come in and log the dead trees, so he doesn't bother. He wasn't aware that the wood was potentially valuable before the mill started.

When asked about the future the grower told us that he was unsure whether he would plant rubber again. He said this would depend on the economy and talked of population expansion and increased demand for land; he might sell his depending how much people want to pay. When questioned about short rotation crops, he said they were too much effort.

Governance

Tree Planting

In 2019 policies for the promotion of tree planting were included in the revised Forestry Law (No. 64/NA) and a New Decree on Plantation Promotion for Commercialisation (No. 247/PM). Both are silent on specific species and as such do not refer to rubber. In 2018 the government extended a moratorium issued in 2012 (No. 13/PM) on the granting of land for rubber concessions. The new order (No. 09/PM) promoted (at least allowed) planting of rubber on private land. There have been no changes to these policies then.

However, the status of rubber plantings, which was previously been somewhat unclear - with the crop straddling the agriculture and forestry sector – has been clarified by DoF. Rubber plantations are considered to be forest and contribute to forest cover targets but are classified separately to other tree plantations.

While the Forestry Law requires all plantings to be registered, PAFO commented that it is not yet policy for all growers to register and that the budget of PAFO is not enough to purse it. Their position was that only plantations with more than 1,100 trees per ha must be registered. This is inconsistent with the new Forestry Law and regulations on plantation registration.

> *The Forestry Law (a. 41)*
>
> *"Registration of Planted Forest, Planted NTFPs and Planted Trees Tree and NTFP Plantations owned by individuals, legal entities, or organization shall be registered with the agriculture and forestry sector to verify ownership and origin of the wood and the NTFPs. The aim is to facilitate the management, protection of planted trees and NTFPs and to implement the policy of promoting such plantations according to the Law."*

The instruction[2] on plantation registration includes specific provisions for rubber plantations – only plots planted at 400 trees/ ha, with 60% survival at 3 years are eligible for registration.

It was suggested that because the policy to register rubber plantations is relatively new, introduced in 2019, and, that because the requirement understood eb that only plantations over 10 ha in size or stocked at over 1100 trees/ha need to be registered, most smallholder plantations are not registered. Further explanation was these types of plantations needed to be registered by PAFO, otherwise registration is not needed. However, the plantation registration instruction requires all plantations greater than 5 ha to be registered with Plantations; smaller areas can be registered with the village administration (<1600m^2) or the District Agriculture and Forestry office (DAFO) (<1600m^2 – 5 ha).

It was agreed that growers are not aware of the need to register their plantation and that they cannot afford the costs of registration, so they do not pursue registration. The rubber grower we spoke to told us that he had not been informed by DAFO / PAFO of a need to register his plantations; this is consistent with our results from 2019/2020.

In all, our interviews indicated that more dissemination of the requirements for plantation registration at the Provincial, District and Village level is warranted.

Lack of registration has implications for the wood processing company, which told, us it had experienced issues associated with notifying PAFO about wood purchases. An example given

[2] Instruction No. 2492/AF On the National Registry of the Plantation Forests and Certified Planted Trees dated 23/12/2020

was that the owner has to provide documents to POIC and PAFO when purchasing logs from growers. This is consistent with MOICs chain of custody and export rules (described below) but these were not understood by the company.

PAFO explained the mill must inform them when they have made a purchase and provide correct documents to both PAFO and POIC. They commented that even if a Chinese company was to purchase logs from Laos and then take them into China, the Chinese company would need to inform PAFO of the purchase, it is the responsibility of the buyer to inform the government – not the grower. However, sale-purchase and export documentation all require proof of wood origin, which in the case of plantations, comes in the form of plantation registration.

Harvesting and Transport

The company reported issues associated with transporting logs between districts, something also found in teak value chains (Smith et al. 2018). Fees of on average 100,000 to 150,000 Kip were being charged for every truck load at each district boundary crossing. It could not be confirmed if this was each way or per day, or once only.

The Government made efforts in 2017 to clarify, simplify, expedite and reduce the costs associated with the transport of logs, including between Districts and Provinces. In 2019 the Forestry Law removed all requirements for permits for the transport of planted logs

> *The Forestry Law (a. 36)*
>
> *Transportation of all species of planted trees can be done without applying for a permit but the owner of such planted trees shall report the volume or weight of wood being bought or sold to the District Agriculture and Forestry Office so that they can monitor and record the information.*

Wood Processing

In March 2021, the Ministry of Industry and Commerce (MoIC) released a new Decision on Wood Processing Industries (No. 222/MOIC), which would apply to rubberwood processing. Later that year it was announced that bureaucratic responsibility for the wood processing sector would be transferred from the Ministry of Industry and Commerce (MoIC) to the Department of Forestry (DoF) in the Ministry of Agriculture and Forestry (MAF) [3]. In 2022 a new Timber and NTFPs Business Management Division created[4]. That division has clear lines of responsibility for the wood industry, however responsibilities for plantations remain dispersed across several DoF divisions.

During our interviews both PAFO and POIC confirmed recent changes to bureaucratic duties - with responsibility for wood processing transferred from POIC to PAFO and commented that POIC is still in charge of business registration matters; this is consistent with the legislation that sees MAF provide technical operating licences and MOIC formally registering enterprises. The company told us it had completed registration and operational formalities with:

- District of National Resource and Environment (DONRE),

[3] Decree No. 603/PM on Ministry of Agriculture and Forestry Organizational Structure and Operations, dated 15/10/2021

[4] Decision No. 1505/AF on the organization and Functionality of Department of Forestry (DOF), dated 22/04/2022

- Districts Agriculture and Forestry Office (DAFO), and provincial counterpart (PAFO),
- District Office of Industry and Commerce (DOIC) and provincial counterpart (POIC),

In 2020, we raised the lack of clarify about the business registration requirements for plantation investors and the extent to which this applies to smallholder who sell latex or wood to generate an income. This issue remains unresolved.

With respect to processing requirements no specific treatments different from those in place for other species were noted. When it was explained that there are differences with the processing of rubberwood that need to be considered they stated that if chemicals needed to be imported by a processor to Laos PAFO would need to be informed.

POIC commented that they no longer check mills as this is now the responsibility of PAFO due to the recent changed in duties.

<u>Export</u>

In 2016, when the Government imposed restrictions on wood exports,[5] all plantation wood was initially included. Overtime these restrictions were eased and plantation wood products can be exported, assuming various requirements are met. MOIC remains responsible for wood export and import.

In 2019 a Ministerial Decision Regarding Approval on the Item List of Wood Products for Export (No. 0939/IC-DEXP, 1/08/209) explicitly approved the export of rubberwood in all forms, processed or unprocessed.

In 2021, MOIC issued an Instruction on the export of plantation wood products[6]. The instruction required that exports be licenced, and that exporters must compile a dossier of documents including (amongst others) verification by DAFO of the timber source, species, weight, or volume. Without plantation registration it is not currently possible to verify source. The company told us simply that POIC needs to be informed of all exports to different countries.

Conclusions

Based on this small research activity we make the following conclusions:

The policy position on the rubber *plantation* sector remains as it was in 2019 – it is not yet clear if the government wants to promote further investment in rubber planting at scale.

The policy position with respect to the rubberwood *processing* sector is somewhat clearer than it was in in 2019. Some of the administrative complexities have been clarified with new mandates for the Ministry of Agriculture and Forestry and the Ministry of Industry and Commerce but there are still some procedures that need to be clarified and disseminated. Lack of plantation registration remains an obstacle to many steps.

There is increasing interest in rubberwood as a production input in Laos but the potential contribution of rubberwood to producers and nationally remains unquantified. Lack of resource information and competition from other land uses means that it still difficult to understand, with any certainty long-term wood supply.

[5] Order No. 15/PM on Strengthening Strictness of Timber Harvest Management and Inspection, Timber Transport and Business, dated 13/05/2016

[6] Instruction No. 0918/MOIC on exportation of plantation timbers, dated 19/10/2021

Appendix 1: Executive Summary from Smith et al 2020

Studies on rubber (*Hevea brasiliensis*) in the Lao People's Democratic Republic (Lao PDR, Laos) have largely focussed on land allocation and relations between the Lao State, investors, and Lao rubber farmers. The history and international context, and some environmental and social impacts have been investigated to a lesser extent, and there are no comprehensive studies that consider entire rubber value chains in Laos.

Concerns for the sustainability of natural rubber and rubberwood are rising among manufacturers and consumers, spurring interest in tracing these social and environmental impacts along the commodity chain, as well as product legality. However, there are gaps in knowledge, particularly with respect to rubberwood. This study starts to address these gaps by exploring the four themes of land, labour, latex, and wood. It traces interactions along the rubber value chain, including the role of foreign investors specifically from China and Viet Nam, the top foreign investors in rubber in Laos, the primary market destinations for Lao produced rubber and the likely destinations for rubberwood.

Key observations:

1. The policy position with respect to the rubber sector in Laos is unclear, due to an extended moratorium on rubber concessions.
2. Administrative complexities within and between government ministries and agencies confuses decision making and creates uncertainties for investors.
3. Rubber plantations are by far the largest plantation type by area covering approximately 275,000 ha, or 58% of the total area of planted forest.
4. Rubber has been planted by farmers, through contracts between farmers and companies and under concessions from the government. Concessions have been granted for over 210,700 ha of which 128,800 ha have been planted, 120,000 ha of contract farms have been approved with 68,000 ha planted and there are 78,000 ha in rubber smallholdings. Detailed information about these investments is limited, hindering long term and strategic planning for the sector.
5. Rubber has been planted though-out Laos. In Northern Laos, smallholder and contract farming are common, while in the centre and south investments are dominantly concession-based. The main foreign investors are from China and Vietnam.
6. Approximately 44% of rubber plantations are mature enough to be harvested for latex. Natural rubber latex is a significant and established industry with important socio-economic contributions, nationally and in the local areas where the sector operates.
7. Rubber latex markets are volatile.
8. There is considerable, and likely growing market demand for rubberwood products. Rubberwood could provide significant income for Lao rubber growers and an opportunity for domestic wood processors to value add to this resource.
9. The potential contribution of rubberwood to producers and nationally, has not been quantified, and its value is not widely understood by key stakeholders in Laos. Rubberwood represents a potentially significant sector on its own and an important source of income to growers and for state revenue.
10. Some of the earliest rubber plantations are already being harvested, and this will increase as trees mature, with rubberwood becoming available to industry at scale in around 2030-2035. Without incentive to replant, the area of rubber plantations could start to decline quickly in around 2040.
11. Investment in research into the quality, quantity, and long-term supply of rubberwood, processing technology and market development are needed now so that the opportunity to value-add is not missed.
12. The diverse ownership arrangements for rubber plantations will pose challenges for demonstrating legality and sustainability of both timber and latex. It is difficult to differentiate between owning

trees for the purpose of tapping latex and outright ownership giving rights to harvest and sell trees for wood.

13. Lack of regulatory clarity, including on land and production agreements, and tree ownership could result in conflicts over benefit sharing when the opportunity for harvesting rubberwood arises.
14. There are several international organisations involved in setting standards, advocacy, and research in the rubber sector. However, Laos is not a member of any of these organisations.

Recommendations

A. The Government, together with the private sector should decide quickly if they wish to have a high-performing, sustainable, long-term, and locally beneficial rubber sector, and develop the right policies to support this. To enable this, a review of rubber concessions and contracts should be expedited, producing clear actions for investors and government authorities to resolve outstanding issues, followed by a resolution of the moratorium.

B. There is a need to develop a consolidated spatial database of information about rubber plantations in Laos including on concessions, leases, contract-farms, and farmer-owned plantations. A strategic field inventory of existing rubber plantations should be undertaken by the Department of Forestry with partners, for the purpose of estimating wood volume, and long-term rubber latex and rubberwood supply. This could inform strategic planning for the sector.

C. To capture the value of rubberwood within Laos, geographically strategic primary processing, with targeted investment by the industry within rubber-growing provinces is needed, and this represents a good opportunity to value add to the tree crop within Laos. There are good opportunities for participation by small and medium enterprises.

D. Rubberwood processing infrastructure and skills are needed in Laos. Skills and technology are already available in the National University of Laos and industry training centres and these could be expanded. This could be aided by a targeted study tour of rubberwood processing in China/Viet Nam/Thailand for Lao Government agencies, research and industry representatives with subsequent information dissemination to smallholders.

E. Further research is needed to better understand the properties and quality of Lao rubberwood and to establish niche products that are regionally competitive. This could be catalysed through partnerships between wood processors, the National University of Laos Faculty of Forestry, The Ministry of Industry and Commerce, NAFRI's Rubber Research Institute and donors.

F. Market research in demand for rubberwood, particularly for niche products, in neighbouring countries, should occur.

G. Communication materials are needed to inform rubber growers, wood processors, manufacturers, and the government of the potential value of rubber plantations for rubberwood.

H. Rubber plantations and rubberwood must be adequately addressed in the Lao-European Union (EU) Voluntary Partnership Agreement (VPA) and Laos' Timber Legality Assurance System (TLAS).

I. An integrated rubber sector plan including latex and rubberwood industry development should be developed– targeting existing rubber growing provinces, strategically engaging with the private sector and strengthening the role of the newly established Lao Rubber Association as a focal point for connecting growers, industry and the government.