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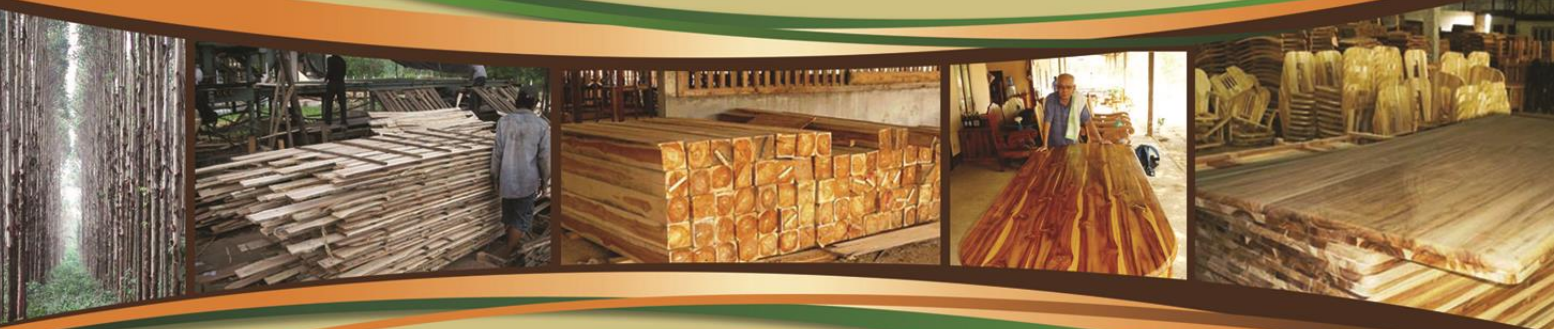
# ENHANCING KEY ELEMENTS OF THE VALUE CHAIN FOR PLANTATION GROWN WOOD IN LAO PDR

## Making smallholder plantation owned wood legal: Alternatives to plantation registration

Final Report Objective 1.2 a

Hilary F. Smith

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**VALTIP2**

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## Disclaimer

This report was prepared as a research output from Project FST/2010/012, "*Enhancing Key Elements of the Value Chains for Plantation-Grown Wood in Lao PDR*" funded by the Australian Centre for International Agricultural Research (ACIAR), with the aim of *improving livelihoods for farmers and processing workers and the international competitiveness of Lao PDR wood industries through improved efficiency of the planted wood value chain*. The contents and views represent the views of the authors and do not necessarily represent the views of the Government of Lao PDR, the Australian Government, or of ACIAR.

The statements and opinions contained in the report are given in good faith but, in the preparation of this report, the authors have relied, in part, on information supplied from other sources, or from documents and interviews held in Lao and translated into English. The report has been prepared with care and diligence, however, except for those responsibilities which by law cannot be excluded, no responsibility arising in any way whatsoever for errors or omissions (including responsibility to any person for its negligence), is assumed by the authors or contributors for the preparation of this report.

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Boundary Marker, Luang Prabang (H. Smith 2015)

## Acronyms

ACIAR	Australian Centre for International Agricultural Research
CoC	Chain of Custody
CoO	Certificate of Origin
DAFO	District Agricultural and Forestry Office
DBH	Diameter at Breast Height
DIMEX	Department of Import and Export
DLAD	District Land Administration Department
DOF	Department of Forestry
DOFI	Department of Forest Inspection
DOL	Department of Lands
FS2020	Forestry Strategy to 2020
FSC	Forest Stewardship Council
GOL	Government of Lao PDR
ha	Hectare
LADD	Land Allocation and Development Department
Lao PDR	Lao People's Democratic Republic
LFAP	Land Forest Allocation Policy
LPTP	Luang Prabang Teak Program
M	million
m <sup>3</sup>	Cubic metre
MAF	Ministry of Agriculture and Forestry
MOIC	Ministry of Industry and Commerce
MOJ	Ministry of Justice
MONRE	Ministry of Natural Resources and Environment
MOPI	Ministry of Planning and Investment
NA	National Assembly
NGO	Non-Government Organisation
NGPES	National Growth and Poverty Eradication Strategy
NLMA	National Land Administration Department
NTFP	Non-timber Forest Product
NUOL	National University of Lao PDR
PAFO	Provincial Agriculture and Forestry Office
PFS	Provincial Forestry Section
PLAD	Provincial Land Management Agency
PLUP	Participatory land Use Planning
PM	Prime Minister
PMO	Prime Minister's Office
POIC	Provincial Industry and Commerce Division
<i>rai</i>	a unit of area, equal to 1,600 metres (40 m × 40 m), used for measuring land.
TLUC	Temporary Land Use Certificate
\$USD	United States Dollar
VFO	Village Forestry Unit

## 1 Introduction

This study is part of a project funded by the Australian Centre for International Agricultural Research (ACIAR) on "Enhancing Key Elements of the Value Chains for Plantation-Grown Wood in Lao PDR" (Project FST/2012/012, VALTIP2), which has an overall aim to improve livelihoods for farmers and processing workers, and the international competitiveness of Lao PDR wood industries through improved efficiency of key elements of the planted wood value chain. Specific objectives of the project are to:

1. address constraints and inefficiencies in the value chain, from harvest to processor stages, that limit returns to smallholder growers;
2. increase returns to processors and smallholders through improved efficiencies of the primary wood processing sector;
3. improve the value and quality of wood products for domestic and export markets; and
4. enhance the competitiveness and capacity of wood processing industries.

This report contributes to the first objective, by examining options for addressing barriers to the legal registration of smallholder planted trees. It builds on an earlier report (Smith 2014) that describes in detail the policy and regulatory framework for the smallholder plantation wood value chain, including plantation registration.

Rather than focussing specifically on plantation registration, however, this report explores options for addressing barriers to the production of legal wood from smallholder planted trees. It emphasises the need to demonstrate the legal source of origin of smallholder plantation grown wood rather than the need for plantation registration *per se*, which has become the *de facto*, and in the absence of an alternative the *de jure*, evidence of legal wood origin.

Building on the legal mapping undertaken in the first report (Smith 2014), this report explores the policy basis for plantation registration, the incentives that have been used to encourage registration and the attitudes of plantation owners to plantation registration. In undertaking this research a central question, largely overlooked in project design was revealed – that of plantation ownership. This is fundamental to the motivations of plantation owners with respect to plantation ownership, registration and participation in the timber value chain.

Finally, the study considers whether plantation registration in its current form is needed to meet market-based requirements for legality and explores some alternatives that are focused on the project objective of addressing constraints and inefficiencies in the value chain that limit returns to smallholder growers.

The methods utilised include:

- A review of the policy and regulatory basis for plantation registration and changes in the use of plantation registration over time.
- Deconstruction of the regulatory process for plantation registration, drawing on the legal systems mapping reported in Smith 2014, to fully understand why plantation registration has become a bottleneck in the time value chain
- Analysis of what influences farmers compliance with plantation registration regulations

The analysis results in consideration of a number of options as alternatives to plantation registration and the benefits, costs, risks and risk mitigation measures for smallholders, the government and industry.

The conclusion reached in the study is that full plantation registration is not essential for the supply of legal timber in the planted wood value chain and that a simplified approach utilising local level institutions is feasible.

## 2 What is plantation registration and why is it required?

The establishment of plantations in Laos PDR has been a policy priority for decades. In the contemporary, post-independence era plantations have been promoted for a range of policy outcomes that span a spectrum of socio-economic and environmental objectives. An overarching priority has been poverty eradication through national socio-economic development. Other associated drivers have included the stabilisation of shifting cultivation, the promotion of permanent production systems, resettlement of upland populations, supplying timber to industry, reducing forest cover loss, increasing and forest cover. Smith (2016, forthcoming) describes and discusses the history of plantation policy in further detail and the evolution of regulations associated with plantations is summarised in Appendix 1. A brief summary of key policies is provided below.

### 2.1 National Growth and Poverty Eradication Strategy (NGPES)

Since 2004 National Growth and Poverty Eradication Strategy (NGPES) has been the guiding document for Lao PDR's overall national rural development program; it includes sustainable forest management as central to both poverty eradication and economic development. The NGPES was driven by the desire to attract foreign and domestic investment and to generate trade across a range of largely industrial and agricultural sectors to provide revenue to the State budget. The NGPES prioritised agriculture and forestry sector development for achieving food security and improved livelihoods for the people of Lao PDR. Village-based natural resource management, sustainable participatory management, tree planting, capacity building and the participation of villagers in conservation activities were among the measures proposed to alleviate poverty and ensure more sustainable management of forests (Government of Lao PDR (GOL) 2003 in Katila 2008).

### 2.2 The Forest Sector Strategy

The Forest Sector Strategy 2020 (FS2020; GOL 2005) is concerned with the development of forestland and resources. The overall objective of FS2020 is to contribute to the indicative targets of the NGPES, to provide goods and services and to reduce dependence on and increase concrete efforts to sustainably manage the country's natural resources. It identifies 144 actions ranging from fostering village participation to improving capacity in planning and utilisation and monitoring both within the forest and by processors. It also promotes efforts to enhance biodiversity conservation and the establishment of plantation forests.

The implementation principles of FS2020 include the development of village based natural resource management and the promotion of sustainable and participatory non-timber forest product (NTFP) management and processing. The strategy aims to complete the land-forest allocation programme by 2020 (GOL 2005).

The major forest sector targets, which must be achieved to contribute to poverty eradication, are:

- 1) To improve the quality of the existing forested area, which is about 70% of the total land area, by naturally regenerating up to 6 million ha and planting up to 500,000 ha of trees in un-stocked forest areas, as an integral part of a rural livelihood support system encompassing stable water supplies and prevention of natural disasters.
- 2) To provide a sustainable flow of forest products for domestic consumption and to generate household income through sale and export, thus contributing to livelihood improvement, fiscal revenue and foreign exchange earnings whilst increasing direct and indirect employment.
- 3) To preserve the many species and unique habitats, which are, for different reasons, threatened both within the country and elsewhere.
- 4) To conserve the environment including protection of soil, conservation of watershed and climate.

With respect to plantations these include a priority policy to "promote tree planting and management by setting clear purposes with relevant target owners and markets, and investment schemes to strengthen wood supply base and farmers' income base.

## 2.3 Land Forest Allocation Program

The land-forest allocation programme (LFAP), which has been a policy priority in Lao PDR since the early 1990's, categorised, zoned and allocated land to specific land uses (Fujita and Phengsopha 2008). In early 1993, the Ministry of Agriculture and Forestry started to carry out Land Use Planning and Land Allocation (LUP-LA) to increase land security by distinguishing between state production forest and village forest land through the demarcation of community boundaries, the issuing of temporary land use certificates, and by encouraging a shift from swidden to intensive farming, which it was believed would improve livelihoods, reduce poverty and protect natural resources (refer to Ministerial Instruction to Prepare for the Complete Stopping of Slash and Burn, and Shifting Cultivation by 2010No. 0022/MAF (2005). The promotion of plantations was a component of the land allocation program.

The LFAP authorised village organizations, together with local authorities, to draw up a resource management plan based on the land use categories defined under Instruction No. 0822/AF, 1996 on Land Forest Allocation for Management and Use. The land was then allocated to households on the basis of labour, capacity and intended use. The LFAP process involves:

- delineating village boundaries and distinguishing resource boundaries within the village, including forest, agricultural and other land;
- prescribing how different lands should be accessed, used, and managed;
- transferring resource management responsibilities to a village committee consisting of members of the village administrative organization including village leaders and members of mass organizations; and
- systematically allocating agricultural land and degraded forestland to individuals and households.

LFAP was focussed at village level and applied village-by-village through a one-time only planning exercise led by DAFO and DOF. The approach used an adaptive methodology taking into account funds and capacity available at the time. A Village Land use planning committee was established, and the process resulted in the signing of a Village Forest Management Agreement (VFMA) with pre-defined (by DAFO) village regulations. A Village management plan was approved by the district authority, the District Chief's Office, and was then implemented through the village organization (Fujita and Phanvilay 2008). The allocation of land was to be formalised through a land registration process which is undertaken in accordance with the Land Law 2003.

The LFAP also attempted to decentralise administrative responsibility for land by legally recognising village-based institutions. The basic premise supported decentralized resource management but also redefined local resources in terms that were compatible with the central authority by categorizing them according to the Forest Law which prescribes the way that resources should be managed (Fujita and Phanvilay 2008). The recognition of local institutions was reiterated in Prime Minister's Instruction No.09/PB in 2004, and Instruction No/13 (2007) on "Building Villages and Village Development Clusters" which required that: "land use planning and allocation instructions be given to provinces in order to ensure the continuity and sustainability of village and village cluster development based on the Land Law and the land and forest allocation policy". It stated further that the National Land Management Authority (NLMA) and MAF should co-ordinate with local authorities to review and evaluate the implementation of land and forest allocation through-out the country, to improve the policy and process appropriate to new conditions, and to issue instructions and references for local authorities on appropriate land allocation. In 2008, a technical advisory group was formed to develop new approaches and procedures and prepare an improved manual on Participatory Land Use Planning (PLUP) which was released in 2010.

## 2.4 The Draft Land Policy

The Land Policy establishes, as a principle, the legal equality of all Lao citizens, ensuring their rights and interests in relation to the possession of land use rights and their lawful obtaining of land use rights for living and working purpose. It aims to protect the rights and interests of the state, organizations, individuals, entities, collectives, communities, local and foreign investors that use land, including customary land use rights of peoples.

The Lao Government is in the process of re-drafting the Land Policy with the following purposes:

- To protect land use rights of individuals, entities, organizations, collectives, and communities;
- To clearly allocate, zone, and classify land;

- To make land management and administration strong, transparent and effective;
- To broaden investment promotion policy by allowing foreigners of Lao origin and foreign investors to purchase land use rights for residential or business purpose, so that a better socio-economic development and a sustainable natural resources conservation could be fostered, and eventually help erase the country from the least developed country list by 2020.

The draft Land Policy reiterates the existing policy of “turning land into capital by determining land use areas for the highest benefits.” The Policy will influence the revisions to the Land Law and Forest Law which will have consequential implications for plantations. Of particular relevance to forest plantations are the recognition of customary land use rights, the allocation land use rights including customary rights and measures to recognise and compensate for the loss of land use rights.

Within the draft Land Law, plantations are included within the Agricultural Land category. As before, this allows for allocation to individuals/households (up to 3 ha per labour force, based on capacity) but also introduces allocation to domestic private juridical entities (up to 30 ha) and collective enterprises (up to 40ha). Larger allocations of land continue to require a lease or concession.

Villages will have some opportunity to enter into concession/leasing arrangements with third parties, but unlike concessions for plantations there is no stated limit to the area or duration of the arrangement.

Industrial plantation are included as a land use in the Agricultural Land category for which land can be allocated to individuals in households; the allocation of forest land to individuals in households is not permitted. This suggests, although it is not clear, that plantations could be treated as an agricultural crop which could have flow on implications for representation under the Forestry Law and associated regulations.

## 2.5 The *Sam Sang* “Three Pillars” Policy

In 2000 the Government of Lao PDR initiated a policy of decentralization for its development efforts. *Prime Ministerial Instruction No. 01/PM (2000) regarding the policies to building the province to become the strategic unit, the district as budget-planning unit and the village as the implementation unit* sets out the general principles to build up “provinces as strategic units, districts as planning and budgeting units, and villages as implementation units.” This was complemented by detailed recommendations by the State Planning Committee on the competence, functions, and responsibilities of the stakeholders regarding planning; and a MOF recommendation on establishing and implementing provincial budgets (OECD 2010). The decentralization policy enables the Provinces to formulate 5-year and annual socioeconomic plans and related budgets, and delegates the revenue collection tasks linked with these plans.

Through *Politburo Resolution No. 03/CPP (2012) on the Formulation of Provinces as Strategic units, Districts as Comprehensively Strong Units and Villages as Development Units* (known as the *Samsang* policy or ‘three pillars’ directive), the Government of Lao PDR aims to decentralize rights and administration to the local level, although a strong centralized democracy is seen as a precondition to effective decentralization. Resolution No 03/CPP acknowledges weaknesses in the current structure, and aims to systematically reform the functions and capacity of administration at all levels. Included within this is a recognised need to review laws, norms and regulations as well as decision making power and administrative responsibilities.

The decentralization strategies are relevant in both administrative and operational aspects of the smallholder teak plantation value chain and in the context of understanding and navigating the legality drivers that are influencing success. In particular they have relevance in terms of the legal framework for land allocation and entitlement which is an essential precursor to plantation and resource ownership, whereby the intention is that local institutions (at village and district level) will be in charge of functions such as land registration, tax collection, complying with land use plans, land distribution and conflict resolution.

## 2.6 Relevance of policies to plantation registration

The elements of these policies that were aimed at encouraging farmers to plant trees have been successful, particularly in Northern Laos, and particularly in Luang Prabang Province where Boer and Senanachack (2016)

mapped over 15,000 ha of Teak plantations as part of this project. Other elements of these policies had adverse outcomes, including land accumulation, alienation and scarcity.

This escalation of plantation establishment led the Government of Laos to introduce measures to formalise plantation ownership through plantation registration and utilise this as a tool for ongoing plantation promotion including through the provision of land use rights and exemptions from the payment of land tax, discussed further below. However the scale of the challenge was not fully recognised and, based on registration work undertaken to date which suggests an average parcel size of 0.75ha, in Luang Prabang Province alone there could now be around 20,000 parcels that need to be registered. Given that the Government estimates are that there are in the order of 40,000 ha of teak in Lao PDR, this means that there are potentially more than 50,000 plantation parcels that need to be registered if the wood is to be made legal.

The rapid expansion of plantations and the early incentives for plantation registration, that came at the same time as the LFAP resulted in the creation of an inextricable link between the establishment of plantations and land ownership or securing land use rights. However efforts to formalise these rights have been ineffective and many records associated with the LFAP including maps and TLUCs that are to be held in District offices have been lost. This does not mean that plantation ownership is not recognised, but rather that pre-existing records and local knowledge, which may be informal, may be used if adjudication is required.

Overtime the justifications for plantation registration have changed, and have included:

- eligibility for rights to compensation associated with government authorised land acquisition
- ensuring plantations meet technical standards (stocking, survival etc.)
- assisting with data collection, record keeping, administration, planning and quota allocation to industry
- facilitating the licensing of timber harvesting
- exemption from reforestation fees, forestry resources fees and other income tax in cases where the harvesting of planted timber is for household use and public benefits
- exemption from reforestation and forestry resources fees where the use of timber from plantations is for domestic processing and for export; however income tax must still be paid;
- preventing the theft and sale of wood from state owned and other individual plantations.
- expediting requests for logging and export permits for planted timber;
- the receipt of technical assistance for collecting seeds and establishing nurseries; and
- consideration of government supplied credit for tree planting.

## 2.7 Legal source of origin

Lao PDR has been responding to largely consumer country measures for addressing illegality in the consumption of timber. This is mainly focussed on timber imports sourced from natural forests but plantations have also been included. Plantation registration certificates have been included in the regulations for timber processing and export as the evidence for legal wood source of origin and as such have become a linchpin in the legality of the timber value chain.

Definitions of legality vary (refer Smith 2014, Flanagan and Laity 2015). Generally legal timber must be harvested in accordance with applicable legislation in the country of harvest. Relevant legislation typically includes:

- legal rights to harvest
- timber harvesting regulations
- transport permission
- payment of fees and taxes
- third-party rights

In Lao PDR a definition of timber legality is currently being developed to meet the requirements of a Voluntary Partnership agreement under the European Union's Forest Law Enforcement Governance and Trade platform (FLEGT). This will codify the regulatory processes and documents needed to demonstrate legality and will have impacts on the efficiency and effectiveness of the plantation timber value chain.

### 3 Plantation regulations that affect smallholders

Smith (2014) and Smith and Alounsavath (2015) describe in detail the legal framework for the value chain of smallholder plantation wood. This report focusses on those aspects of particular relevance to smallholders - plantation registration, timber sale, and harvesting. It also describes the ways in which plantation registration certificates are used along the value chain.

#### 3.1 Land Allocation

The land allocation process for the purpose of planting trees is supported by legislation including the Land Law and the Forestry Law. In summary, each labour unit within a household can be allocated up to 3 ha of degraded or bare forest land for the purpose of planting trees. While the use of agricultural land for tree planting is discouraged both plantation woodlots and individual and small groups of trees (officially <0.16 ha) have been planted on agricultural to mark boundaries, around paddy fields, in home gardens and along roadsides. Government approval is not required for individuals and organizations who plant trees on their own land with their own funds and labour. However, smallholder plantation owners do need to comply with some planting standards.

#### 3.2 Planting standards

Two tree planting systems are formally recognised<sup>1</sup>:

- 'Planting in a parcel', which includes:
  - a defined planting pattern (1.5m x 1.5m or 2m x 2m or 2.5m x 2.5m), with an initial stocking of not less than 1100 trees/ha, with trees planted in a monoculture.
  - an agroforestry planting method with spacing of not more than 6m x 2m or not less than 800 trees/ha in the lowlands and 8m x 2m or not less than 600 trees/ha in the mountains, intercropped.
- 'Scattered planting' with trees planted in clusters, rows or scattered.

The regulations require that a technical and socio-economic study is made for plantations with an area of 5 ha or more (as one complete parcel) or in the cases where the combined area of contiguous individual plantings made together is 5 ha or more. While most smallholders are likely to be exempt from this provision due to the size of their plantations, grower groups who might jointly register their plantations and plantation established under the proposed arrangement under new land law, described above, could be required to submit a technical and socio-economic study.

The requirement to have a plantation management plan is reiterated in many legal instruments along the value chain although there is little evidence to suggest that these are developed or implemented by smallholders. Processes that refer to or require a plantation management plan include cleaning and pruning<sup>2</sup> and harvesting and transport<sup>3</sup>.

#### 3.3 Plantation Registration

Regulation No. 0196/MAF specifies that each individual tree planting parcel, whether private or owned by an organization, must be registered with the authorities concerned.

In order to be eligible for registration plantations must meet the following criteria:

- Be an area of 1,600m<sup>2</sup> (0.16 ha or 1 rai<sup>4</sup>)
- Trees must be 3 or more years of age

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<sup>1</sup> Regulation No. 0196/MAF 2000 regarding the long-term development and promotion of tree planting

<sup>2</sup> Regulation No 196/MAF, Art 11

<sup>3</sup> Regulation No 196/MAF, Art 14

<sup>4</sup> The term 'rai' is taken to be 40m x 40 m however a 'rai' can also refer to a plantation or to a 'slash and burn area' (see for example the Basic Guiding Manual on Initial Land and Forest Allocation in Luang Prabang Province, 1995)

- The number of trees planted must have a survival rate of 80% or more based on the total saplings planted at establishment
- Further provisions are made on the basis of tree spacing, tree height and diameter.

The process for the registration<sup>5</sup> of plantation established in a parcel >0.16 ha requires that the plantation owners make application to the District Agriculture and Forestry Office (DAFO) which includes:

- letter of application
- a certificate of residence,
- land declaration/certificate of land ownership,
- land tax receipts, and

DAFO undertakes a survey of the land parcel and produces a sketch map and a description of the planting system and tree species. For plantation parcels < 5 ha DAFO has the authority to issue the plantation registration certificate. For parcels >5 ha the application must be submitted to the Provincial Agriculture and Forestry Office (PAFO) for approval. The Village head (*Nai Ban*) has the authority to certify the ownership of scattered trees (<0.16 ha), with notification to DAFO<sup>6</sup>.

The plantation registration regulations do not specify the term for which registration applies, although it is generally understood that plantation registration lapses when a plantation is fully harvested or if that land reverts to non-forest (DOF pers. comm.). This has implications for long term management and the harvesting regimes adopted by farmers who may be discouraged from applying harvesting practices that optimise wood supply for fear of losing land use rights. Furthermore, should a plantation owner clear-fall and replant teak they are required to repeat the plantation registration process and incur the associated costs again. As a result plantation owners typically selectively harvest a few trees as needed, leaving the stand relatively intact.

### 3.3.1 Plantation Registration costs

The plantation registration regulations<sup>7</sup> specify a fee of 1000 LAK per 1,600 m<sup>2</sup> (0.16ha) for registering a tree planting parcels, while other regulations sets fees on the basis of area<sup>8</sup>, these may amount around 90,000 Kip (Smith 2014; Table 1). However, the observed total costs are much higher ranging from around to up to 150,000 Kip per parcel (Midgley *et al.* 2011) or 300,000 Kip per certificate (Schneider 2014) and over 3,000,000 Kip per parcel (LPTP pers. comm. Table 2).

The cost of plantation registration in conjunction with the time and effort needed to undertake the administrative steps required is a deterrent for plantation owners to comply with requirement. Despite the incentives, the level of teak plantation registration remains very low. To date the Luang Prabang Teak Program (LPTP), for example, has completed registration for 857 plantation parcels covering an area of 646 ha, an average parcel size of 0.75 ha. Given the mapped teak plantation area of over 15,000 ha, it can be estimated that around 4% of the plantation area has been registered since 2008 when the program commenced – a rate of about 100 ha per year.

Table 1: Regulated costs associated with plantation registration

Procedures	Fee per ha (Kip)	Average cost (Kip based on 0.75 ha) <sup>9</sup>
Measurement fee (Kip/ha <5 ha)	80,000	60,000
Application form	4,000	4,000
Application Stamp	5,000	5,000
Plantation Registration certificate	20,000	20,000
<b>Total</b>	<b>109,000</b>	<b>89,000</b>

<sup>5</sup> Directive No 1849/AF concerning the registration of tree planting parcels

<sup>6</sup> Notification No. 1374/MCAF (2010) on the use of plantation licence and certificate of planted trees

<sup>7</sup> Directive No 1849/AF concerning the registration of tree planting parcels

<sup>8</sup> Presidential Edict No.03/PM, (2008) on Fees and Service Charges.

<sup>9</sup> Based plantation registration data provided by LPTP

Table 2: Reported costs associated with plantation registration

Procedures.	Fee (Kip)	Fee (Kip) per average plantation parcel (.75 ha)
Measurement fee (Kip/m <sup>2</sup> ) (excluding travel costs) <sup>10</sup>	400	3,000,000
Application form	4,000	4,000
Application Stamp	5,000	5,000
Plantation Registration certificate	40,000	40,000
<b>Total</b>		<b>3,049,000</b>

### 3.3.2 Land Use Documentation

Some form of land use right is required in order that a plantation can be registered. In areas where land allocation has occurred TLUCs together with a contract for a plantation may be used if available. However this is often not the case and as a result many different types of documents are used as evidence including land use certificates, land tax receipts, plantation management plans and land use contracts.

The relationship between registered plantations and the demonstration of land use rights is complex. Where land allocation has occurred TLUCs may be issued for three years, and together with a plantation contract they give a farmer the right to establish a plantation on a parcel of land. Regulations and the plantation contract associated with the TLUC specify the planting system and after three years, if the contract conditions are met, the plantation owner may apply for both permanent land use rights and plantation registration. Boundary markers may exist where land use rights have been formalised

However permanent land use rights are not a requirement for plantation registration and plantation registration does not confer permanent land use rights to the farmer; although it is a common perception that this is the case and that both plantation and land can be transacted. Neither the regulations nor the plantation registration certificate specifies a term for which registration persists - for one, two or more plantation rotations or in perpetuity assuming the parcel continues to be managed as a plantation.

In some cases there may be no underlying formalised land use rights associated with plantations or planted trees. Boundaries are established and known in reference to features in the landscape such as large trees or draining lines.

### 3.3.3 Land Tax Exemptions

The exemption from paying land tax was introduced as an incentive for plantation establishment and to encourage plantation owners to proceed through the plantation registration process. The land tax payable for tree plantations ranges from 8,000 to 25,000 kip/ha<sup>11</sup> depending on type and location of the land - on average 6000 – 18,750 per plantation parcel per year (Table 3).

Table 3: Land tax rates

Land tax Rate (Kip/ha/year)					
Lowland		Plateau		Mountainous	
Urban	Rural	Urban	Rural	Urban	Rural
25,000	15,000	20,000	10,000	12,000	8,000

There are some inconsistencies in the regulations and in its application including with respect to the point in time that the land tax exemptions come into effect, the condition of the plantation to which the exemption applies and the duration of the exemption (See Smith 2014).

<sup>10</sup> Instruction No. 3204/PMO.NLMA specifies a service charge for the measurement of agricultural land as being between 150,000 and 300,000 Kip/m<sup>2</sup>, which is 1000 times the amount for surveying construction land. It is unclear whether the amount indicated in the Instruction is accurate or a typographical error. The measurement fee of 400 Kip/m<sup>2</sup> was reported in personal communication with LPTP as a fixed fee charged by DAFO regardless of the size of plantations, exclusive of travel costs.

<sup>11</sup> Decree No 01/PO on Land Tax 2007

The current regulation<sup>12</sup> on Land Tax (Decree No 01/PO 2007) specifies that in order to be eligible for the exemption plantations must be registered, be 1ha in size and consists of 1,100 trees. The exemption commences from the year of land use change (i.e. planting) and has *a term of 3 years*.

However this contradicts the plantation registration regulations that require that plantations must be *at least 3* years of age before they can be registered. It also eliminates plantation established under systems in which a stocking of 1100 trees per ha is not achieved or desirable for production purposes (e. some agroforestry systems). This also runs counter to several earlier instruments which, are still in force and continue to be applied despite the introduction of Decree No. 01/PO. For example,

- Decree No. 96/PM, 2003 (Art. 3) which states that there is: exemption of land tax for land that is used for planting trees in accordance with Article 34 of the Law on Forestry (1996).
- Regulation No. 0196/MAF, 2000, which state that individuals or organizations who use land under their ownership for planting trees in compliance with the procedures, from 1,600 m<sup>2</sup> or 1 rai or more, and apply the agro-forestry system (i.e. 800 trees/ha in the lowlands and 600 trees/ha in the sloping areas), shall be exempted from land tax from the date the tree planting parcel is registered. For the scattered tree planting system, there will be no land tax exemption.
- Directive No. 1849/AF, 1999, in which a tree planting parcel which is officially registered shall be exempted from land tax from land tax forever<sup>13</sup>.

The relative worth of the land tax incentive is made apparent through comparison with the costs of registering a plantation described above. For an average teak plantation parcel of 0.75 ha the land tax incentive would amount to a minimum of 6,000 Kip per year. Depending on which regulations applies this amounts to a total of either 18,000 Kip for the first 3 years only, in accordance with Decree No 01/PO; or around 162,000 Kip for an optimal teak plantation rotation of 30 years (less the first 3 years prior to registration, based on Directive No 1849/AF 1999), noting in reality average rotation lengths are typically much shorter (Fogdestam and Galnander 2004) and the benefit therefore less.

It seems likely that farmers would rather pay 6,000 Kip in land tax per year than 300,000 Kip or more in one payment for registration, particularly if this is required well in advance of harvesting, when a financial return from the plantation is expected.

### 3.3.4 Harvesting and Sales

While the sale of plantation grown wood is the responsibility of the grower the government retains control over harvesting and transport through a permit system. This appears to be a carry-over from the regulation of the harvesting of natural forests and while some specific regulations for plantations have been developed procedures are inferred on the basis of more general legal sources (refer Smith 2014). The Ministry of Agriculture and Forestry (MAF) is responsible for issuing specific rules including on harvesting and the preparation of annual logging plans for plantation timber. One of the reasons for this is that historically plantation timber has been included in national harvesting plans and allocated quotas (Southavilay and Castrén (1999), Baird (2010), Barney and Canby (2010) and Grace *et al.* (2012)).

In summary, a national harvesting plan is prepared by MAF on the basis of proposals prepared by each PAFO and Provincial Office of Industry and Commerce (POIC). The source of the logging quota is specified according to the origin of the timber (production forests, infrastructure development areas, conversion forest, plantations) and the allocation of the quota to the processing sector is based on a target for production (domestic industry or export). Other criteria for establishing the harvesting plan include factors such as budgetary needs and infrastructure development. The annual quota is consolidated nationally and then allocated to the wood processing industry by MOIC in collaboration with MAF. Timber from registered plantations should generally be considered within this

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<sup>12</sup> Chapter III, Article 5.a.4 of Decree No 01/PO on Land Tax 2007

<sup>13</sup> It is unclear whether this literally means in perpetuity or whether in a practical sense this means for as long as the land continues to be used for plantation purposes and the original conditions attached to the exemption continue to apply - eg continuing to meet minimum stocking and spacing conditions, and also survival rate. Overtime, as timber is harvested stocking rates and spacing will alter.

Annual Quota (Grace *et al.* 2012)<sup>14</sup>. The need to survey plantation areas owned by individuals and families has been emphasised so that they can be included in annual plans and as a means to encourage them to “actively participate in the forest plantation process”<sup>15</sup>. Thus plantation information is to be collected by DAFO and incorporated in the annual harvesting plans. Plantation registration is viewed as a means for doing this.

Despite these guidelines, however, it is not evident how or whether the wood from both registered and un-registered smallholder plantations is included in annual plans, or how information on sporadic smallholder sales and harvesting of timber, of typically low volumes are incorporated. Furthermore, given that timber sales are the responsibility of the plantation owner, the incorporation of these in government quota allocated to industry seems to be meaningless.

For smallholder plantations the harvesting process begins with a direct sales negotiation between the plantation owner and the buyer of the wood. Trees are selected by the grower, buyer or trader to meet market requirements and specifications. A contract between the parties is required in order that a harvesting approval can be granted by DAFO.

The Ministry of Industry and Commerce (MOIC) is required to develop the specific rules for the sale of plantation timber, and any business entities wishing to export plantation timber in the form of round logs, square logs, or sawn timber must apply for approval from MOIC with the consent of the MAF<sup>16</sup>. Once developed, the sales contract<sup>17</sup> becomes a purchasing reference that the trees are officially sold. It must be witnessed by a third party and approved by the *nai ban* of the village that the seller is living in.

Once a sales contract has been reached, a pre-harvest inventory of the trees that have been sold is required and these are to be recorded on a Tree List. It is generally understood that this inventory should be undertaken by DAFO at the cost to the plantation owner, although anecdotally this task is frequently undertaken by the plantation owner, with payment still made to DAFO.

On the basis of this inventory, the plantation registration certificate and the sales contract, the plantation owner applies for and DAFO issues a harvesting permit.

Harvesting is generally conducted by the plantation owner (for small volumes) or logging contractors engaged by the buyer of the plantation timber (traders). Traders may engage contractors that are responsible for harvesting and hauling the timber to Log Landing 2, theoretically under the supervision of DAFO<sup>18</sup>. Contract harvesting businesses must be registered according to the Enterprise Law, (2005). They are not permitted to own timber processing facilities or buy logs and conversely timber industries are not permitted to undertake logging (MAF 2009).<sup>19</sup> This provision adds a step to the value chain, filled by timber traders. It also appears to prohibit the harvesting of trees and mill-gate sales by plantation owners themselves. Whether this provision is implemented or enforced in practice requires further investigation.

Manual falling, which is the standard harvesting technique, imposes unique restrictions and costs associated with the importation and ownership of chainsaws. Chainsaws can be purchased by individuals but must be registered with DOF and kept at provincial or district forest offices<sup>20</sup>. Each individual chainsaw must be registered annually with the Department of Forestry and PAFO must be notified each time the chainsaw is to be used. PAFO also have the right to inspect chainsaws prior to each use. Registering a chainsaw attracts an annual fee as specified in the Presidential Edict on Fees and Service Charges for that period. Importing a chainsaw also requires a license

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<sup>14</sup> In 2008-2009 the logging quota included 2,280 m<sup>3</sup> of plantation timber mostly from teak plantations in Luang Prabang and Saravane with 1,000 m<sup>3</sup> and 570 m<sup>3</sup> respectively.

<sup>15</sup> Guideline No 0105/MAF 2008

<sup>16</sup> Order No 15/PM 2016 introduced a ban on the export of logs and unfinished wood products, including from plantations.

<sup>17</sup> The Law No. 02/NA 1990 on Contract comes into force.

<sup>18</sup> PM Order No 17/PM Art. 16.1 (1)

<sup>19</sup> Ministry of Agriculture and Forestry Department of Forestry; Sustainable Forestry for Rural Development Project Additional Financing (SUFORD - AF) October 15, 2009 Timber Sales Procedures Draft.

<sup>20</sup> Decision No 0080/MAF (2012) on Procedures for Importation, Management and Utilization of Chainsaws,

from DOF, which in turn requires a valid Enterprise Registration Certificate issued in accordance with the Law on Enterprise. Acquiring a chainsaw licence attracts an application fee and customs charges.

Approaches to harvesting and transport vary with distance from the roads, steepness of the terrain, volume cut and the situation (for domestic household use or for commercial sale where someone else will pay or reimburse for harvest and transport). Most logging in smallholder plantations is selective and only in cases of clearing for infrastructure projects are plantations clear-felled. The dominance of manual labour to bring logs to the roadside, coupled with the steepness of terrain imposes a natural restriction on log size. Most harvesting systems adopt a standard 2.4m length for plantation logs which further limits options for processing (Midgley *et al.* 2007). Small piece size also facilitates hand loading onto trucks. The log extraction process from plantation sites to (typically) the nearest road may involve teams of two-four men carrying logs over distances of up to 1km (Mohns and Laity 2010). Local haulage machinery may also be used.

Log Landing 2 is the focal point for recording and sale of all logs harvested from licensed areas in Laos. Log Landing 2 is a temporary log yard where DAFO and PAFO measure and grade logs, and use this information to develop a log list that includes log numbers, identified species, measured diameter and length which are used to calculate volume. Theoretically log lists and log numbers are used to track the material back to a specific licensed harvest area (registered plantation), and this has become the basis of certificates of origin used in export.

### 3.3.5 Transport

The plantation owner must report to the village forestry unit for the harvesting of trees and movement of logs. All trees harvested through official quotas are required to be measured, graded, stamped and recorded on an official Log List at Log Landing 2 by PAFO and DAFO. PAFO must also issue a certificate of wood origin for wood that is to be exported. Once the logs are transported from Log Landing 2 the timber becomes the property of the buyer and fall under the regulatory responsibility of POIC which is responsible for

- Receiving and verifying from DAFO/PAFO the Log List at Log Landing 2;
- Monitoring the sale-purchase contract with the wood processors;
- Issuing the controlling licence for transport;
- Inspecting and monitoring transport of wood products from Log Landing 2 to the point of exportation.

The documents accompanying the transport permit include, depending on the type of wood product and distance of transport:

- a copy of the Enterprise Registration certificate;
- a transport controlling licence issued by DOIC;
- a copy of the log list of from Landing 2 approved by PAFO;
- a copy of the timber sales contract (signed between PAFO, POIC and buyer);
- payment receipts (Royalty, tax and fee) issued by Provincial Finance Division a required; and
- a receipt from the purchaser (processor distributor) that has been certified by the DOIC.

For timber that is to be exported, in addition to those documents listed above, the following approvals are also required:

- An Export licence from the Department of Import and Export (DIMEX);
- A customs declaration form;
- Letters of exemption from export duties, in the case of finished products;
- A certificate of wood origin, based on the plantation registration certificate
- A copy of the sale/purchase agreement with the foreign buyer; and
- A copy of payment receipt from the bank.

In 2011, MOIC issued instructions<sup>21</sup> to offices of Industry and Commerce throughout the country, to terminate the issuing of permits for the movement of all types of goods, with some exceptions. This provision was implemented

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<sup>21</sup> Letter No. 0395/MOIC dated 25 February 2011 and Letter No 2215/MOIC, Dated 21 November 2011

to allow smooth movement of goods. However, in some provinces these permits are still being enforced. Whether the termination notice has been fully implemented and whether timber is an exception to this rule is yet to be determined. As it stands, with MAF and MOIC still requesting transport control licences the financial impact on growers and traders can be substantial.

Other official fees and service charges imposed at various stages include:

- The measurement of standing volume by DAFO
- Application for and issuing of a harvest permit
- Annual registration and use of a chainsaw
- Log Stamping
- Issuing of Log List at Log Landing 2
- Transport permit

Actual fees paid in association with harvesting are reported in Midgley *et al.* (2011), revealed in discussions with representative of Luang Prabang Teak Project (LPTP-this study) and during interviews with growers (Said 2016). These are summarised in Table 4. Additionally, where government employees are required to provide a service (for pre-harvest timber inventory) a *per diem* must be paid<sup>22</sup>.

Table 4: Reported costs associated with harvesting and haulage

Procedures.	Fee (kip)	Fee (kip)	Paid to
Pre harvested measurement (Kip/m <sup>3</sup> )	7,700	7,000	DAFO
Application for Harvesting Permit	Not specified	10,000	PFS
Logging certificate	7,700	10,000	PAFO
Log Measuring and Grading (Kip/m <sup>3</sup> )	40,000	5,000	DAFO
Log Stamp at Log Landing 2 (Kip/m <sup>3</sup> )	12,000	10,000 + per diem	PAFO
		35,000	
Certificate for Transport	7,100	30,000	PAFO
Profit tax (Kip/m <sup>3</sup> )	80,000	20,000	DAFO
Source	Midgley <i>et al.</i> 2011	LPTP, Pers. Comm.	

Many plantation owners, and some government employees, now interpret the regulations to require plantation registration only in order for wood to be sold and harvested. Given the cost, it is unsurprising that a plantation owner may opt to delay registration until just before selling wood and being guaranteed of an income to offset that cost. Furthermore the often remote nature of the plantations, coupled with scarce departmental resources means that inspections are few and the risk of sanction for non-compliance is consequentially low. Checking of plantation registration is more likely at the time of harvesting and sales when other monitoring tasks are also need to be undertaken – a practical reality.

### 3.3.6 Processing and Export

In 2016 the Prime Minister issued Order No 15/PM On Strengthening Strictness of Timber Harvest Management and Inspection, Timber Transport and Business. This order, amongst other things, suspends the export of logs, large sized sawn timber, sawn timbers, split wood, roots, stumps, knots, branches and standing trees or decorative trees, from harvested natural forest and plantations. The objective of this order is to stop illegal logging and illegal wood exports and improve domestic processing of wood. While not explicit in the Order, plantation grown wood is included for the purposes of increasing wood supply domestic wood processing, reducing the export of illegal plantation grown wood and reducing the risk of illegally harvested timber from natural forests being hidden in consignments of plantation timber.

The tracking of timber from Log Landing 2 through processing to export is done on the basis of the documentation described above plus input and output records (Chain of Custody) at processing facilities. The

<sup>22</sup> Decision No. 2348/MOF, (2008) on Public Administrative Budget expenditure Norms (Improved) - Annex IX

certificate of wood origin and logs lists, which are both contingent upon plantation registration, are both required in this process.

The underlying regulatory process for the export of plantation grown wood requires that exporters have approval from MAF and hold an enterprise registration certificate from MOIC under the Enterprise Law.

The government is the only body authorized to grant permission for the export of natural logs and planted trees of prohibited species, sawn timber, tree stumps and trees. Planted trees that are not prohibited or special species can be exported in compliance with the related regulations. However other regulations have allowed provinces to directly authorize wood exports. As a result the application of export regulations has been inconsistent. For teak, as a 'controlled species'<sup>23</sup>, this is particularly the case. The treatment of plantation teak and application of tax rules to prohibited, special and controlled wood is inconsistent between Provinces. Wood Industry representatives report harvested teak may be transported between Provinces so that export can take place from a province that treats teak as a plantation species as opposed to a 'special' species, thus attracting lower tax rates and avoiding export restrictions.

For prohibited, special and controlled timber, including teak the company/wood processing factory requesting the licence must lodge with MAF a letter of intent and other relevant documents to verify the origin of the timber after which The Permanent Office of the Ministry of Agriculture and Forestry will issue a verification letter to the Permanent Office of the Ministry of Industry and Commerce. DIMEX subsequently assesses the application according to the proposal of the Permanent Office of the Ministry of Industry and Commerce and checks the following documents:

- The origin of timber letter from the Permanent Office of the Ministry of Industry and Commerce.
- Copy of enterprise registration for the timber business;
- A copy of Tax registration;
- The Log List acknowledged by PAFO;
- Document to release the timber from the Agriculture and Forestry Sector; and
- Tax payment and Fee Receipt.

For plantation timber that is not prohibited special and controlled timber the company/wood processing factory requesting the licence must lodge with PAFO a letter of intent and other relevant documents to verify the origin of the timber and issue an inspection report, after which they will issue a verification letter to POIC. POIC assesses the application and associated documents and may undertake a second inspection according to the regulations. Documents required in this application include:

- The origin of timber letter from PAFO.
- Copy of enterprise registration for the timber business;
- A copy of Tax Registration;
- The Log List acknowledged by PAFO;
- Document to release the timber from the Agriculture and Forestry Sector; and
- Tax payment and Fee Receipt.

This process involves multiple approvals and inspections.

Driven largely by export regulations, certificates of origin are now used to certify the place of growth, production or manufacture of goods from Lao PDR. Reforms based on certifying the origin of products have been prompted by the ASEAN free trade agreement, which Lao PDR will join in 2017, the ASEAN China Free Trade Agreement, Lao PDR's ascension to the WTO and in response to international illegal logging measures. They have become an essential document in the export and verification of legal products.

The drive to verify the legal source of wood origin, which is based on measures introduced by consumer countries primarily to reduce the risk of the importation of illegally harvested wood from natural forest has created a bottleneck in the plantation wood value chains, increased the cost burden placed on smallholder

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<sup>23</sup> Decision No 0116/MAF (2007)

plantation owners in the production of legal timber, thereby restricting the availability of legal wood to domestic processors for the manufacture of export commodities. Wood from unregistered plantations cannot meet the legality requirements of consumer countries and plantation owners wishing to sell their wood may consequently opt to participate in informal markets; much of the teak being harvested in Lao PDR is being directly exported to China.

#### 4 Smallholder attitudes to plantation registration

While the intent of the regulations is that all plantations should be registered, in reality most are not. To better understand why this is the case structured surveys of plantation owners were undertaken. The interviews were undertaken in January 2014 with sixty-eight (68) households in five teak growing villages in Luang Prabang Province. Purposive sampling was undertaken to identify farmers who own teak plantations and this sample was then differentiated on the basis of whether their plantation had been registered or not.

Survey questions were focussed on land use rights, plantation ownership, the registration process (where applicable) and the perceived benefits of registration as well as timber harvesting and sales. Contextual information about household ethnicity, income, education and assets was also collected.

Thirty-seven interviews were conducted with teak farmers who had registered their plantation and 31 interviews were conducted with farmers who had not registered their plantations. Both types of plantation owners were interviewed in each village (Table 5).

The questionnaires used were developed in English and translated into Lao. Interviewers were Lao employees of LPTP.

Further information was collected through interviews undertaken for the ACIAR project FST/2012/041 on teak-based agroforestry systems to enhance and diversify smallholder livelihoods in Luang Prabang Province. One hundred and fifty nine (159) households were surveyed in three districts in November 2014. While these interviews were designed to analyse the role of teak in rural livelihoods, questions relevant to teak plantation registration were also included. The detailed data from these surveys was not available at the time this report was written.

The farmers interviewed as part of this study were from two ethnic groups: Lao Loum and Khmu, with the majority of interviewees being Lao Loum. General information about the interviewees is provided in

Table 6 and can be summarised as follows:

- There was little difference between groups with respect to the average family size and length of time families had been resident in the village.
- The contribution of teak to household income was reported as being greater for registered plantation owners than for unregistered plantation owners, despite no timber being reported as having been sold from registered plantations
- Registered teak plantations were on average larger than un-registered plantations (1.71 ha as opposed to 1.19 ha), but were planted at a lower stocking rate on a per hectare basis (964 trees/ha as opposed to 1300 trees/ha).
- Registered plantations had more trees per plantation overall (1665 trees versus 1558 trees).
- Other general data on household assets, livestock and the level of education attained showed little significant variation between the owners of registered and unregistered plantations.

Table 5: Number of interviews in each village

Village	Number of farmers interviewed	
	Registered	Un-registered
Ban En	10	10
Ban Sing	8	7
Ban Thin Som	9	4
Ban Xieng Lom	10	10
Total	37	31

Table 6: Summary of results of interviews with plantation owners

Question	Parameter	Registered plantation owners	Unregistered plantation owners
Ethnicity	Khmu	4	4
	Lao Loum	33	27
Individual/HH		5.2	5.6
Length of time in village	Before 1960	12	14
	1960-1970	3	1
	1970-1980	9	3
	1980-1990	6	6
	1990-2000	7	1
	2001-Present	0	6
Sources of income as a percent of total (average across all famers) (%)	Teak	7.0%	2.9
	Livestock	9.2	4.2
	Agriculture	44.1	36.0
	Natural wood	0.0	0.3
	Labour work	7.2	4.5
	Other	32.5	52.4
Plantation	Area Average (ha)	1.71	1.19
	Largest (ha)	8	2.5
	Smallest (ha)	0.24	0.3
	Date of oldest planting	1975	1965
	Date of youngest planting	2010	2010
	Overall average number of tree per ha	964	1300
	Overall mean number of trees per plantation	1650	1558

#### 4.1 Reasons for Registering Plantations

When interviewed about their reasons for registering their plantations farmers provided a range of responses (Figure 1). Farmers indicated that receiving a higher wood price (22%), obtaining a legal land use right (19%) and because the registration was being paid for by LPTP as the main benefits of registering their plantations (19%). Land Tax exemption was reported as a benefit by only 15% of registered plantation owners.

For the majority of the owners of un-registered plantations the perceived benefits of going through the registration process were mixed (Figure 2). More than 50% did not know what the benefits of registration might be. Only 10% saw land tax exemption as a possible benefit and the possibility of improved prices for wood was also recognised by than 10% of respondents.

For the same group of un-registered plantation owners the actual reasons given for not registering their plantations were also diverse (Figure 3) with lack of understanding of the process (28%), or the benefits (11%), being the primary reasons given. However, many of the farmers interviewed indicated that they had not registered because their plantations were too small (20%) or because their trees were scattered (6%). When asked if there were any risk associated with plantation registration 19% saw a some risk associated with land use conflict while 39% did not know if there were any risks and 23% did not consider there to be any risks.

Figure 1: Perceived benefits of registering plantations by smallholders with registered plantation

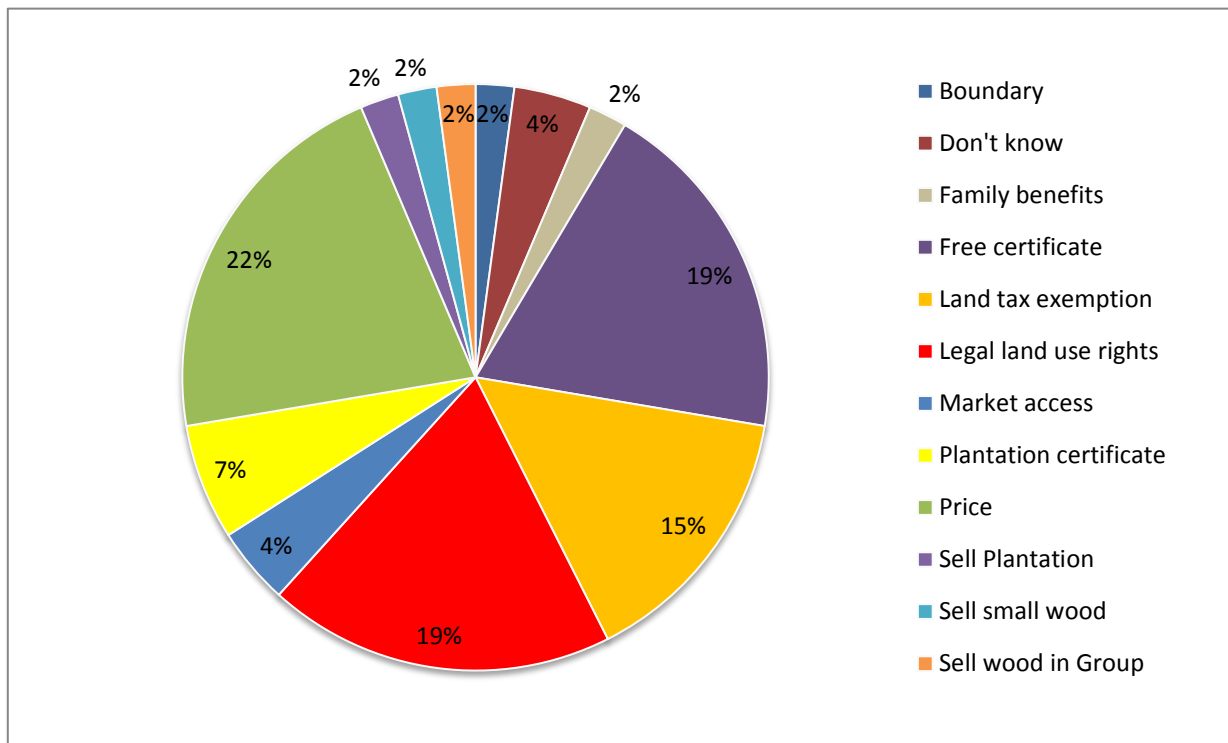


Figure 2: Perceived benefits of registering plantations by smallholders with unregistered plantation

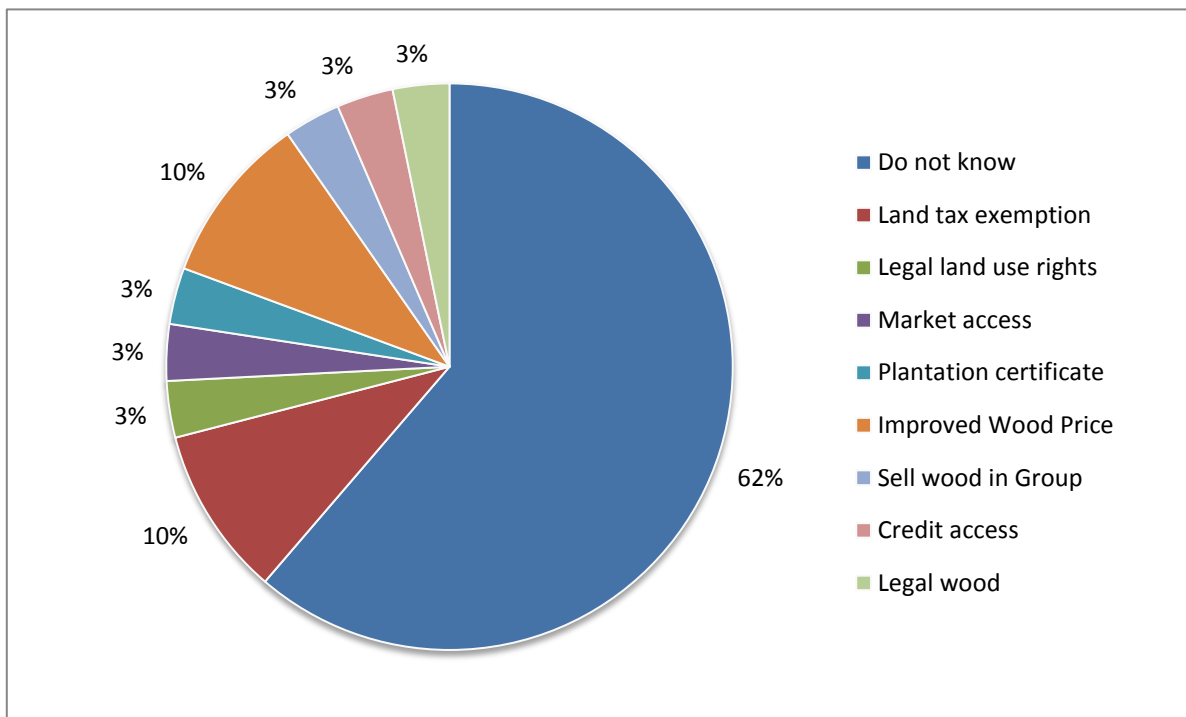
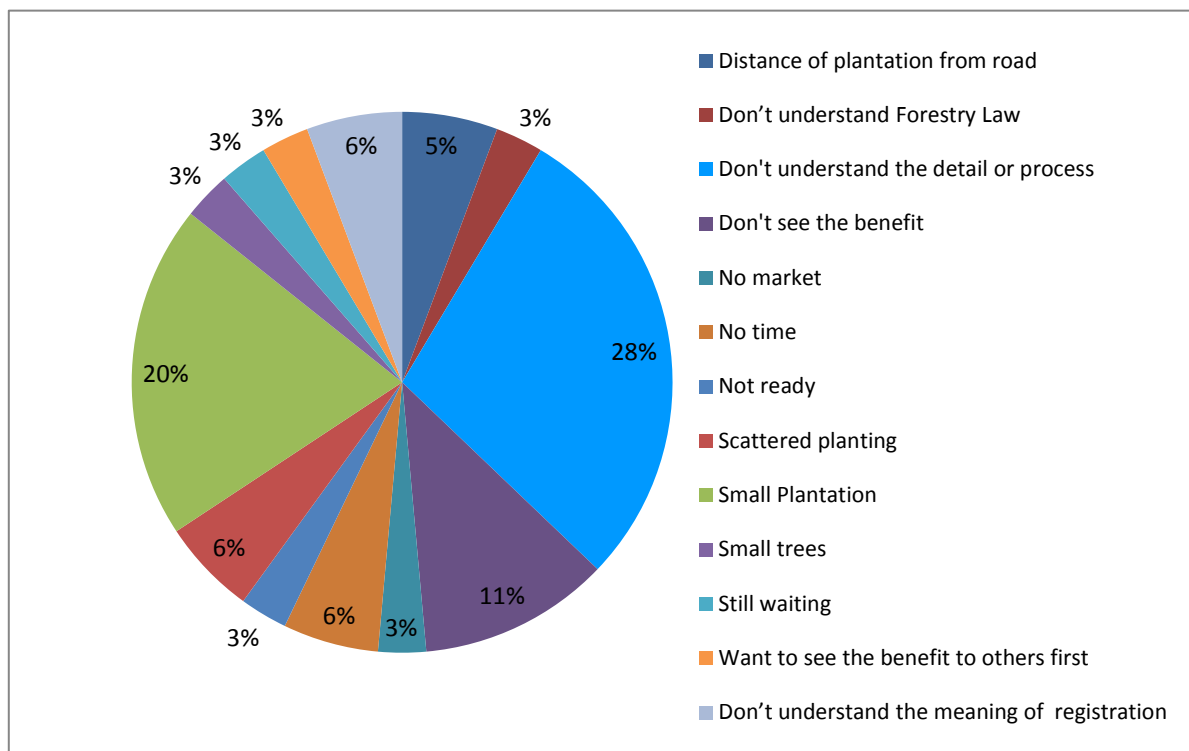


Figure 3: Reasons for not registering plantations with unregistered plantations



For many farmers the main purpose for initially planting teak was to gain formal land use rights, and while wood sales and wood price were lesser factor, teak contributes proportionally little to regular household income (Table 7, this study and see also Newby *et al.*, 2014; Ling 2013). In Luang Prabang farmers tend to sell trees for income on an as-needed basis, for often unplanned expenses (Ling 2014) and large annual costs such as school fees (Anttila 2016). Similar observations have been made of smallholder plantation practices in other countries (Rohadi *et al.* 2015). When faced with immediate need to sell wood, the burdensome nature and costs of the tasks associated with registering, harvesting and selling trees, act as deterrents to compliance. Individual smallholders opt to sell wood to traders as standing trees and pass on these administrative responsibilities and costs. This reduces the price paid for wood and the potential contribution to farmer livelihoods (Anttila 2016; Schneider 2014). According to Anttila (2016) farmers prefer to pay traders or contractors to undertake the approvals processes and harvesting operations, and take a lower price for their wood; fees charged for approvals for harvesting can represent up to 16% of the price paid to farmers for standing trees (Smith, this study).

Of the farmers interviewed in this study only nine reported that they had sold teak logs, all of which was from unregistered plantations. Of these most had harvested trees more than once, with an average of 18 trees sold each time. In all cases trees were sold to a trader who also sought the approvals associated with harvesting.

Table 7: Sources of income as a percent of household total

Income Source	Proportional sources of household income	
	Registered plantations	Unregistered Plantations
Teak	7	3
Livestock	9	3
Agriculture	44	36
Natural wood	0	0
Labour	7	5
Other	32	52

## 5 Who owns teak plantations?

This project has a focus on smallholder teak plantations, and maximising the returns to smallholders by improving the efficiency of the value chain. There is an implied assumption in the project design that teak plantation owners are all farmers and that all teak plantations are smallholdings that are integrated in farming systems. However, during this course of this study, based on informal discussions with farmers, industry, government and the project team, and review of other project results, it became clear that this is not the case. Furthermore, the geographical pattern of teak plantation, as mapped in this project, indicates that there are some larger contiguous plantations within a landscape patchwork of small plantation parcels that may represent more substantial holdings; continuous plantation areas >10ha represent more than 25% of the total area mapped in Luang Prabang Province (Boer and Seneanachack 2016).

As such a fundamental issue with respect to efficiency of the timber value has been overlooked and requires further research - the question of who owns teak plantations and why. This has significant implications with respect to the motivation of plantation owners for their investment in teak trees, their management intentions and capacity and decision making around harvesting timber. It may also impact their willingness and ability to comply with regulations such as plantation registration.

An exploration of existing information about teak plantation owners was made to develop a framework through which analysis of plantation ownership and management intent could be undertaken.

Based on their research in 1997, when teak plantation establishment was in a high growth phase, Hansen *et al.* (1997) reported that the most commonly reported reasons for establishing teak plantations were to:

1. Sell timber.
2. Use the timber domestically for construction of houses, boats, etc.
3. Use the plantations as collateral for obtaining credit.
4. Ensure land-use rights.
5. Sell the plantations to investors shortly after establishment.

However, they also found that farmers usually claimed that selling timber or using the wood domestically were the main reasons for growing teak, which was line with official policy and which farmers were informed about through the extension system.

Midgely *et al.* (2007) suggest that the motivations for planting teak by farmers vary but include securing title to fallow land that might otherwise be (re)allocated to others; in order to enable, or add value to, a future land or plantation sale (see also Newby *et al.* 2012); or as a long term investment. It is not necessarily the case that it is the intention of the grower to establish and manage a plantation to provide a regular income stream through the sale of timber and many sales are made on an ad hoc, as needed basis. It is a common practice for plantation owners to harvest a few large trees for such sales. How this has played out on the ground can be seen in the characteristics of the teak plantations as described by Boer and Seneanachak (2016) who found that 17% of plantations of all size classes were only partially stocked and around 30 % were of mixed size classes. This also clearly has implications for generating a sustained supply of wood to industry that is of a volume and standard required for market needs. In the diversity of systems that has emerged some may not conform to the standards described in the regulations, making them ineligible for registration and thereby limiting the legality of their timber when sold. This may be a factor that necessitates participation in informal markets.

Newby *et al.* (2012) have shown that the boom in teak planting in northern Laos, while contributing to a forest transition at the landscape scale, is also accelerating processes of agrarian differentiation, with a small group of better-off farmers and urban-based outsiders capturing the majority of the benefits, while those with the greatest dependence on swidden agriculture are often made worse off through declining access to land. Planting teak has also converted the land into capital, a stated objective of land reform policies, and this can be used as security for loans or sold to investors.

Research undertaken as part of the ACIAR project FST/004/057 has revealed that farmers that grow teak are not a homogenous group but rather that they are diverse; with teak forming a part of livelihood strategies influenced by a range of factors and following a number of pathways. The integration of teak into household asset portfolios

is resulting in various teak-based production systems ranging from woodlots to more complex agroforestry systems. Based on this research Newby *et al.* 2014 describe a typology of teak plantation livelihood systems based on a theory of forest transition. These are summarised in Table 8. In addition they identify a separate type of plantation owner- the urban based absentee land owner, who may buy established plantations or use tenants to manage newly planted trees, while intercropping in early years. Both the land and teak becomes available to outsiders as farmers seek to take advantage of off-farm opportunities (e.g. tourism), invest in other opportunities or address substantial expenses. As a result many urban-based landowners are now involved in small-scale teak plantations, either by planting on land they previously used for swidden agriculture or by acquiring existing teak stands including from family.

The absentee land owner is not necessarily a recent phenomenon. Hansen *et al.* (1997) and Kolmert (2001) have both reflected on the opportunity to sell teak plantations soon after establishment. In 1996, depending on the location and the age of the trees, growers could expect to sell plantations for US\$700–\$2,000/ha. While it was expected that the sale would include only the trees, many such arrangements were perceived to include the land as well. In 1997 extension staff estimated that, given the opportunity, 80–90% of upland farmers would sell their plantations and between 1993 and 1997 this occurred in villages close to Luang Prabang. In some villages it was reported that the establishment of plantations was financed by external investors, who took over the land-use rights after farmers' intercropping had ceased. Kolmert (2001) also reported that prior to 1997 many farmers took the opportunity to plant teak on sites adjacent to roads, and to sell these blocks after 3 years to investors from Luang Prabang and Vientiane. This led to the alienation of some high-quality agricultural land to teak plantations. Legislation introduced after 1997 restricted teak establishment on flat agricultural land and allowed growers to sell their trees, but not the land, in a teak plantation.

How trees and plantations are incorporated into household livelihood systems, including those of absentee land owners, may be locally specific and influenced by a range of factors including general access to land, access to land for agriculture, quality of land for plantations, household size and available labour, income, access to wood market/remoteness, access to markets for other crops, capital, access to finance and credit, off-farm labour opportunities and investment perspectives (Sikor 2011; Sandewall *et al.* 2010). These factors may influence the overall production perspective of the households, and Sikor identifies three "ideal types of household" to illustrate the range of practices associated with investment in and financing of plantation:

- 'Survival-focussed households' concentrate on meeting their immediate needs, primarily food and basic consumer items, and possibly saving a small surplus as a buffer against unexpected expenses.
- 'Surplus oriented households' are more likely to integrate plantations into the household economy, each year, seeking to maximise surplus from all their activities combined.
- 'Investment-oriented households' make decisions about plantations independently of other livelihood decisions.

This differentiation is important because it impacts the effectiveness of policy measures designed to influence the behaviour of plantation owners particularly those that are aimed at increasing length of plantation rotations, altering the types of products and the timing and magnitude of harvesting events. It may also influence how they respond to regulatory requirements, including for plantation registration.

Table 8: Typology of teak farmers

Household Type	Teak	Paddy	Rice Status	Upland Orientation	Description
Type 1a Paddy Farmer	Yes	Yes	Surplus;	Teak Cash Crops	Access to paddy land. Households with more productive alternatives to swidden (paddy, vegetables or non-farm employment) don't; need upland swidden and convert to teak. Labour shortage - May need tenants to manage young teak in exchange for land for cultivation (inter cropping land)
Type 1b Vegetable Farmer	Yes	Yes	Self-sufficient - Deficit;	Teak Cash Crops	Access to small area of paddy land. Households with more productive alternatives to swidden (paddy, vegetables or non-farm employment) didn't need upland swidden. Labour shortage - May need tenants to manage young teak in exchange for land for cultivation (inter cropping land)
Type 2 Upland cash crop farmer	Yes	Yes	Deficit - Self- sufficient	Cash Crops	Income from upland and NTFP important; Some established teak on large upland areas but need access to other land (as tenants/lease) to bridge the gap until teak can be harvested. Livelihood shocks threaten the ability of these to maintain ownership of teak.
Type 3 Upland Dependent household	Yes	No	Deficit;	Food Cash Crops NTFP	Where access to land types is constrained results in complex agroforestry on upland plots with diverse activities providing a range of income streams over time. Teak and pineapple. Looks similar to type 2 but the drivers of land use change and implication for livelihood vary based on labour scarcity and land scarcity. Resulting in land renting or wage earning. Vulnerable to distress sales.
Type 4 Agroforestry household	Yes	No	Deficit;	Cash crops NTFP	Where access to land types is constrained this results in complex agroforestry on upland plots with diverse activities providing a range of income streams over time. Teak and pineapple. Looks similar to type 2 but the drivers of land use change and implication for livelihood vary based on labour scarcity and land scarcity. Resulting in land renting or wage earning. Vulnerable to distress sales.
Type 5a Non-teak, paddy and upland farmer	No	Yes	Surplus;	Cash Crops, Livestock	Access to paddy land. Income from upland and NTFP important; Uplands utilized mainly for cash crops (e.g. maize and Job's tears) and also important for the grazing of cattle.
Type 5b Non-teak upland farmer	No	No	Deficit - Self- sufficient	Food Cash crops, livestock	No access to paddy land. Income from upland and NTFP important; Uplands utilized mainly for cash crops (e.g. maize and Job's tears) and also important for the grazing of cattle.
Type 6 Non-teak, short fallow swidden farmer	No	No	Deficit	Food	No access to paddy land or river gardens and less access to upland plots. Upland rice grown as an important food crop and the shortening of fallow resulting in low and declining yields. Off-farm employment typically necessary to generate cash income to meet consumption needs.

## 6 What influences compliance with plantation regulations?

In addition to livelihood and investment factors the ability and willingness of smallholders to comply with rules and meet standards will also be influenced by instrumental, normative and contextual factors that are not readily apparent to policy makers. Policies and regulations tend to adopt generalisations so as to be broadly applicable and many of the day-to-day decisions that smallholders make lie beyond the authority or scope of the state; local realities affect the ways in which broader scale plans and governance are played out (Colfer 2011). This is the case for smallholder grown teak in Lao PDR (Smith *et al.* 2016).

Ramcilovic-Suominen and Epstein (2012) propose an analytical framework for examining compliance in forestry. Drawing on theoretical models of individual rule compliance and a review of global studies on illegal forest activities they consider:

- instrumental compliance models in which actors are seen as rational individuals weighing up the costs and benefits of compliance, the likelihood and magnitude of gain and the likelihood and severity of sanctions.
- normative models which emphasise the role of largely social norms, but also individual morals, and which may include concepts such as reciprocity, fairness, legitimacy and cooperation. Individuals adjust their behaviour in response to the behaviour of others.
- legitimacy, in which people's willingness to comply with rules is influenced by their perceptions of the institutions making the rules.

Their model also recognises the need to consider external contextual factors such as markets.

The instrumental perspective emphasizes rational choice and deterrence. Actors are seen as rational individuals, choosing among alternatives, based on their self-interest and calculations of expected costs and benefits of compliance versus non-compliance. Compliance is therefore determined by the likelihood and magnitude of material/financial gain, and the likelihood and severity of sanction. Accordingly, this perspective emphasises coercive measures, such as enforcement (detection) and sanction (punishment) as the main measures for eliciting compliance which can also be elicited through inducement such as rewards. Within the legal framework for plantation in Lao PDR these measures are very weak. The risk of detection of non-compliance with plantation registration rules, at least until the time of harvest, is very low and sanctions are weak. The enforcement of forest laws in the past has been inhibited by capacity, and only recently has a forest inspection authority been adequately resourced. Nevertheless the perceived risk and severity of illegal activity associated with smallholder plantations is low, relative to actions in natural forests, and as such inspections are infrequent.

The normative perspective encompasses behavioural and normative dimensions of human behaviour and action. It emphasises the role of norms (social and personal norms, or morality) in determining compliance. Norms can be defined as commonly accepted rules that prescribe desirable behaviour, and include reciprocity, fairness, and cooperation. Norms tend to be dynamic; they are obeyed without the force of formal law and critically depend on the behaviour of others. In places where formal law (or its enforcement) is weak and customary practices or informal law persist the normative perspective is particularly relevant. In rural Laos this is the case. Compliance based on norms may quickly erode if it is realised that other members of the peer group are not complying. Peer behaviour is particularly important in this context, as individuals may observe the non-complying behaviour of others, and in the absence of effective sanction, replicate that behaviour.

Legitimacy refers to a complex set of factors associated with the creation, content and implementation of rules and laws (Ramcilovic-Suominen and Epstein 2015). The level of acceptance of political, administrative or other authority leads to an obligation to comply with the rules made by that authority. Factors that affect perceptions of legitimacy may include validity of the government authorities or local leaders, opportunity to participate in the rule-making process and the consistency of the application of

the rules. Legitimacy has normative underpinnings in terms of what is right and fair (Hall *et al.* 2011) and may result in the creation or perpetuation of legal pluralism (von Benda-Beckmann 2001).

Contextual factors, including flawed policy and legal framework, poor law and policy implementation capacity, insufficient data and information, corruption, lack of transparency, livelihood needs and poverty also influence compliance decisions by altering instrumental and normative factors (Ramcilovic-Suominen and Epstein, 2012).

On their own the legal complexity and costs of plantation registration create one set of barriers to plantation registration. However, compliance is also influenced by the ways that teak is integrated into livelihoods systems as well as other instrumental, normative and contextual factors. Efforts to reform regulatory processes and remove barriers may fail where these differences are not taken into account.

By bringing together the models proposed by Sikor 2011 on investment, Newby *et al.* 2014 on livelihoods and Ramcilovic-Suominen and Epstein, 2012 on compliance theory it is possible to build a hypothetical framework to better understand how plantation owners, with different livelihood strategies that include teak, may respond to efforts to reform rules and increase compliance (Table 9). More in depth analysis of the surveys undertaken by ACIAR project FST/2012/041 on teak-based agroforestry systems is needed to test this.

Table 9: Proposed framework for livelihood, investment and compliance for teak plantation owners.

Household Type (Newby et al 2014)	Production system	Transition pathway	Influencing policy	Teak investment perspective	Tree System	Timber production perspective	Compliance perspective
Paddy Farmer (Type 1a)	Paddy Rice surplus Teak Cash Crops	Economic Development	Swidden reduction. Land allocation	Investment oriented	Wood lot	Strategic ability to allow trees to reach maturity	Normative/ instrumental More likely to register plantation
Vegetable Farmer (Type 1b)	Paddy Rice - self- sufficient/ deficit; Teak Cash crops	Economic Development	Swidden reduction. Sedentary agriculture	Surplus oriented	Wood lot	Strategic ability to allow trees to reach maturity	Normative/ instrumental More likely to register plantation
Upland cash crop farmer (Type 2)	Paddy Rice deficit/self sufficient Cash crops	Economic Development Smallholder - Intensification	Swidden reduction. Sedentary agriculture	Surplus oriented	Small wood lot	Strategic and some distress	Normative Unlikely to register.
Upland Dependent household (Type 3)	No paddy Rice deficit Food Cash crops NTPF	Smallholder - Intensification	Sedentary agriculture Resettlement?	Survival oriented	Agroforestry	Strategic and some distress (ad hoc) sales minimum merchantable size	Normative Unlikely to register. Small volume harvesting. Teak may not comply with registration regulations
Agroforestry household (Type 4)	No paddy Rice deficit Cash crops NTPF	Smallholder - Intensification	Sedentary agriculture	Surplus oriented	Agroforestry	Strategic and some distress (ad hoc) sales minimum merchantable size	Normative Unlikely to register. Small volume harvesting. Teak may not comply with registration regulations
Absentee Owner (Type 7)	No paddy Rice deficit	State Policy	Land as capital	Investment oriented; however value may be in land rather than teak	Small and accumulated large woodlots	Strategic and infrequent – but may retain trees for land security	Instrumental. Able to afford registration costs. Willing to comply to protect land acquisition

## 7 Alternatives to plantation registration

The description of the regulatory environment provided in this report focuses on plantation registration because this was the task set in the project scope, and at the outset the identification of options for addressing barriers to the legal registration of smallholder planted trees emphasised regulatory analysis and reform. Further research highlighted that barriers may also be the result of the unintended consequences policy objectives, including those associated with illegal logging of natural forests, they may be a consequence of socio-economic transformations that have occurred through policy implementation such as how now teak has been integrated in different livelihood systems, or they may be associated with instrumental or normative perspectives of compliance or the perceived legitimacy of the rules and the institution that make and enforce them.

The process of plantation registration that is set out in Directive No 1849/MAF 1999 includes steps required to register a plantation that have been designed to formalise land use rights associated with that plantation and these have evolved over time to become increasingly precise with respect to geo-locating plantation parcels. Where previously this was a "sketch map" made at the village level, this is now undertaken through time consuming and costly field-based mapping of plantation boundaries using GPS and an inventory of a small (statistically insignificant) sample of trees that is used to describe the plantation. The resultant map is reproduced as a geo-reference polygon on a formal plantation registration certificate. Such a formal product is typically associated with land surveys required for land titling and to enable land related transaction (such as sale, transfer and inheritance). It may serve to heighten to perception that ownership of the trees also extends to the land.

This spatial precision that is now expected from plantation surveys is expensive. Cost estimates in the preceding sections range from 90,000 to 300,000 Kip, and more, per parcel, and the paperwork and the time it takes to register a plantation are a deterrent to farmers.

For the Government, registering the thousands of plantations parcels using these procedures is not a realistic, cost-effective or an efficient option. Limited financial and human resources make it difficult for the Government to undertake and administer plantation registration and monitor and enforce regulations. The process is heavily reliant on outside funding.

For households, finding the finance required to register their plantations may be challenging, and there is little benefit to plantation owners for undertaking plantation registration if the cost cannot be immediately offset by wood sales. For households, who may harvest only a few trees at a time, it is difficult to recover the full cost of plantation registration in the price they charge for the wood. Annual land tax exemptions for small plantations are minimal and inadequate compared to the one off-cost of plantation registration.

As a result, many owners delay plantation registration until just before harvesting and it may be undertaken with the assistance the timber trader. Sometimes official registration procedures are not followed and unofficial documents are created and used. In other cases plantation wood is sold without a plantation certificate. There is limited inspection of plantation registration and the weak sanctions included in regulations are not a deterrent.

For the typically better off absentee plantation owners, who are better able to afford plantation registration, this provides means to further protect their investment and it adds a level of a formality that can be used to secure long term land use rights and enable land transactions. Timber sales may not be the motivating factor for registration.

Taking a step back to review the policy basis for plantation registration and reconsider what it is needed for at present, it seems clear that there are two purposes one is related to the timber produced and one to land on which the trees grow. While full registration may be appropriate for the purposes of land tax exemptions, claiming compensation, selling, transferring or bequeathing plantation ownership; it may not

be necessary for the purpose of demonstrating the legal origin of wood in a way that meets the needs of the market. To meet both of these needs a two tiered process is proposed:

1. Registration of plantations for land use rights, receiving benefits such as land tax exemption or transactions that involve the transfer of plantation ownership, plus land tax exemptions.
2. Certification of wood origin for timber sales only, with resource and reforestation fee exemptions but not land tax exemptions.

For the former, the procedures are as set out Directive No 1849/MAF 1999.

For the latter a new process is required that recognises that, for an efficient value chain for legal plantation grown wood, simplified processes that reduce the risk of illegality are required.

A number of alternative measures were considered:

- Eliminating unnecessary duplication by modifying the existing regulations and processes for land use allocation to plantations, taking into account the types of land documentation that already exist and better utilising these in the registration process.
- Adopting the regulations for other tree crops, such as rubber, but which are treated as agricultural commodities and non-timber forest products;
- Certification of origin at the village level, kumban or district based on teak mapping.
- Certification of plantations through local level institutions - village, collective and farmer group enterprises

#### 7.1.1 Utilising existing land documentation as an alternative to plantation surveys

Plantation registration processes should take into account, and not duplicate information contained within existing land use documentation.

The Forest Land LFAP was enabled through various land use documents (Appendix 2). Many of these documents are accepted as *de facto* evidence of land use rights in the process of plantation registration.

This project considered how the plantation registration process unnecessarily duplicates the collection of information already contained in these land documents and whether procedures, such as plantation surveys, could be circumvented in those cases where such documents were held.

Of the types of land documents that exist, the following contain information that locates plantations:

- Long term (permanent) land use right
- Land Survey certificate
- Temporary Land Use Certificate + Land Use Contract

These documents contain information about land use, location and the holder of the land use rights, all of which is collected again at the time of plantation registration.

As such an additional plantation survey should not be required for plantation registration in cases where plantation owners hold such documents.

Such an approach would be consistent with the other land adjudication and land use planning processes.

### 7.1.2 Developing local regulations that reduce the risk of the inclusion of illegally harvested natural teak in consignments of plantation grown teak.

The legal requirement to demonstrate the legal source of origin of plantation grown teak is largely a legacy of risks associated with illegal harvesting in natural forests and its perceived environmental impacts. The question therefore arises as to whether there is a simplified system that maintains an acceptable level of environmental and legal protection can be developed that is less of a barrier to smallholder participation in the timber value chain. Better policy measures that are effectively enforced would better address illegal and unsustainable harvesting of natural forests, while eliminating regulatory bottlenecks in the plantation timber value chain. As such plantations of species that are not naturally occurring in Laos or which occur on such a level that the risk of illegally harvested wood is low could reasonably be considered as an agricultural crop and treated accordingly.

In the case of teak, which is currently treated as 'special timber' because there is remnant natural teak forest in Laos, the case is more difficult. Large-sized teak from natural forests has features (large heartwood) that are particularly desirable to market, and fetch an increased price. Small sized teak from natural forests and teak from plantations have less heartwood and are less desirable.

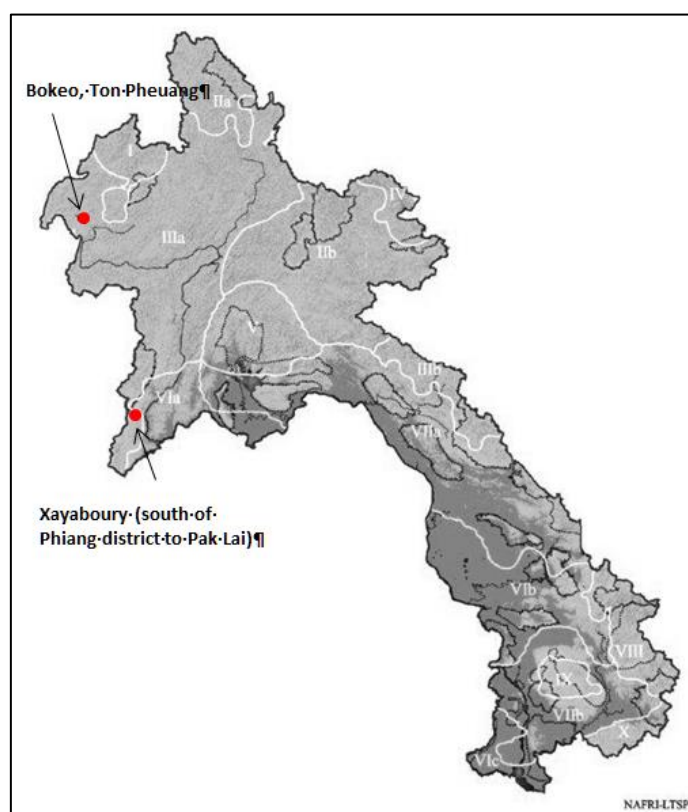
Wood from natural teak forests can be legally harvested, processed and exported from Lao PDR<sup>24</sup> and specific regulations are in place to control this. Due to their market value large-sized teak trees are likely to be targeted. However, the incidence of illegally harvested natural teak being smuggled from Laos, including in in consignments of plantation grown teak, is not known as forest inspection data is not yet collected at this level of detail (pers. comm. A. Flanagan).

In 2010 the area of naturally occurring teak was estimated to be around 16,000ha. This teak is located in Xayaboury (south of Phiang district to Pak Lai, 10,000 ha) and in Bokeo (Ton Pheuang district 6,000 ha) (Figure 4, marked red). Today the actual extent is not known.

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<sup>24</sup> At the time of writing Order No 15/PMO placed a temporary ban on the export of wood from natural forests.

Figure 4: Location of Naturally Occurring Teak in Laos (source Lao Tree Seed project 2002)



Locally specific regulations could be introduced that retain control on teak harvested and exported from these provinces. Regulations for plantation grown in other areas, such as Luang Prabang could be relaxed to facilitate harvesting and sales into domestic processing. A ban on the export of unprocessed teak (round or square logs) could also be retained to increase supply to domestic processing and make enforcement easier. As a wood product with distinct physical characteristics teak is relatively easy to recognise at border check-posts.

Alternatively, controls could be introduced to require inspections of large consignments of teak > 25 cm dbh, as large teak fetches the highest price and is therefore at the greatest risk of illegal harvesting. The mapped teak data from this project suggests that less 10% of trees are likely to be of a diameter > 25 cm dbh<sup>25</sup>.

## 7.2 Registration at the village, kumban or district level, based on teak mapping.

Undertaking the GPS-based surveys that geo-locate plantation is the most expensive and time consuming component of the registration process. Finding alternative ways to connect teak area data to ownership or administrative boundaries would expedite and reduce the cost of this step.

The mapping of teak plantations undertaken by this ACIAR project, as described by Boer and Seneanachack (2016), presents an opportunity to explore options for the registration of plantations or certification of wood origin at a broader scale than the individual parcel. While the mapped teak plantation area provides a spatial boundary of the extent of teak plantations it does not include information that can be used to delimit ownership at the individual parcel level. Other options exist for village, kumban, district or even provincial level processes where appropriate spatial information exists.

The spatial data associated with the teak mapping provides information that can be used to reduce the risk that teak wood is illegal. Depending on the scale to which the data can be attributed (e.g. village, kumban or district)

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<sup>25</sup> Based teak mapped as class 3 "large" and taking into account an estimate of large trees growing in scattered plantings and mixed size classes.

the relevant authority at that administrative level could monitor harvesting and sales to identify high-risk transactions.

### 7.2.1 Limitations

The teak mapping data exist only for Luang Prabang Province, although mapping for other provinces is proposed for the next phase of the project.

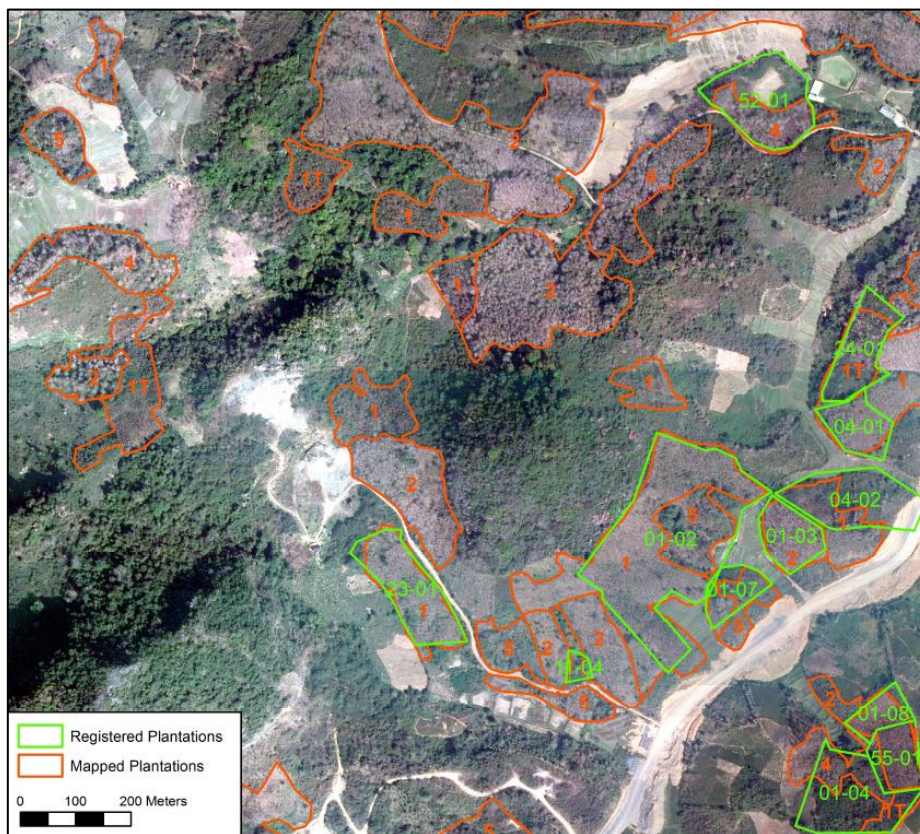
The teak mapping has not (yet) been recognised as an official an official data set; although DOF is a project partner and the mapping was undertaken together with LPTP which is supported by PFS in Luang Prabang province.

Based on available GIS data, geographically locating teak within District boundaries is possible. However it is not clear whether there are accurate spatial boundaries of kumban or villages that could be used.

Based on the plantation registration surveys undertaken to date by LPTP there are visible discrepancies between the area that is registered as teak plantation and the area that is mapped as teak (Figure 5). Reasons for this may include:

- Differences between the timing of registration and the date of the aerial imagery; for example, the harvesting of trees from plantations that have been registered in the period between registration and aerial photography acquisition; they are registered as teak plantation but no longer support teak trees and are therefore not mapped as teak.
- Limitations in the ability of the mapping to identify newly established plantation, typically in the first three years (although under the plantation registration regulations plantations cannot be registered until after 3 years so this should be unlikely).
- The resolution of boundaries captured during plantation registration surveys using GPS and the transcription of this information into maps.
- The misidentification of teak plantations during mapping.
- The exclusion from the mapping of areas that do not meet the classification, but which nevertheless support some teak tree;
- The exclusion from registration, areas of teak that do not meet the regulated standards for plantation parcels (e.g. stocking) but which is identifiable as teak and mapped as such from the imagery.
- The registration of areas of teak that have been harvested several time and within which other non-teak species have regenerated or been planted; such that the density of teak does not meet the mapping classification or is not sufficiently dominant to be identifiable on the imagery.
- The inclusion, during the plantation registration survey process, of areas that have not yet been planted with teak, but on which the farmer intends to plant teak.
- Conflation of the area of teak plantation during registration as a means of claiming land use rights, retaining land use rights or minimising land tax.

Figure 5: Registered Plantation Parcels and Mapped Teak Plantations



### 7.3 Certification of wood from individual plantations through local level institutions

Local level institutions and informal already exist that regulate plantation ownership. National policies aim to decentralise administrative procedures to local level institution such the kumban (village cluster) or the village. As such the legal origin of timber harvested from plantations could be certified at the village level. The following procs is proposed:

- The plantation owner notifies the Village Forest Unit (VFU) of a decision to sell or harvest timber ("notification to harvest").
- The VFU undertakes an inspection of the plantation and verifies plantation ownership by checking any available land use documentation (e.g. land use certificate, land tax receipts, land use contacts or plantation registration certificate if available) or through community consultation where necessary. The Village Forestry Unit makes recommendation to *nai ban*.
- The plantation owner negotiates the sale of the timber ("sales contract")
- The plantation owner or contractor harvests the trees.
- For harvesting <1000 logs, the Village Forest Unit verifies the logs at Log Landing 1, before movement from the plantation.
- For harvesting > 1000 logs the Village Forest Unit notifies DAFO who may undertake a post-harvest assessment before movement from plantation.
- The *nai ban* issues a "certificate of wood origin" to the plantation owner (for example, as per the form attached to existing Notification 1374/MCAF).
- The "certificate of wood origin" and "sales contract" is provided to DAFO and Department of Finance.
- Approvals for movement of wood from the plantation to Log Landing 2 within the district can be through a notification system to the Village Forest Unit or kumban, with reporting to DAFO.

### 7.3.1 Benefits

For plantation owners the proposed approach provides a simplified process that removes the need for a detailed and costly boundary survey, and which can be undertaken at the village administration level.

For the government the provision of a 'certificate of wood origin' means that plantation wood meets market legality requirements. There are reduced administration costs and use of scarce resources. The approach is consistent with the Sam Sang Policy which aims for decentralisation of administration to the local level.

For industry the simplified approach would result in more efficient harvesting applications, resulting in increased flow of legal wood. Certification of wood origin could also be done rapidly for consignments from multiple plantations in one village.

### 7.3.2 Costs

For plantation owners there might need to be a small fee paid to the Village Forest Unit for site assessment and issuing a certificate. However as this is undertaken at each sale the cost is more easily transferred to the trader or buyer. The approach removes the provision of land tax exemptions, however given the low value of this exemptions, as indicated by the low level of take-up of plantation registration, this is not this is unlikely to be a constraint.

For government there may some reduced revenue to DAFO through a decrease in participation in plantation registration process and harvesting approvals. However increase flow of wood should see returns to government budget elsewhere along the value chain.

For industry, an increase in the ability of plantation owners to transfer costs up the value chain may impact wood price.

### 7.3.3 Risks

For plantation owners there may be some risk that plantation wood ownership is disputed at the local level. This is a greater risk for absentee owners than local residents. Again, as plantation registration was intended to curtail this threat, given the low level of plantation registration the risk theft can assumed to be low.

For Government there may a risk of an increase in informal practices being used to circumvent the regulations. Unofficial "certification of wood origin" documents may be created and used as evidence of legal source of origin. However, this risk also arises with existing plantation registration procedures. There will also be a reduction in control over timber harvesting at the district and provincial level.

### 7.3.4 Risk Mitigation

For plantation owners local knowledge of plantation ownership and mediation practices can be used to minimise and resolve disputes. This is consistent with the Forestry Law.

For Government DAFO retains responsibility for inspection of large wood sales. The mapping of teak plantation provides information to assist in the monitoring of wood harvesting and sales. With the enhanced knowledge of the resource, the ability of DAFO to judge the likelihood of teak log production and harvest requests, and hence possibly illegal log sales is improved. For example, in a district with a small area of teak plantations, a request for a permit to harvest large volumes of wood could indicate a possibly illegal transaction.

In all cases greater enforcement of plantation regulations will be required if the harvesting and sale of unregistered or uncertified wood is to be reduced. While this is not currently a priority, random inspections could be undertaken to increase awareness of this risks associated with non-compliance.

A draft Policy Brief proposing this approach, together with a draft notification was provided to LPTP and DOF for comment in September 2016.

## 7.4 Providing information about plantation regulations to plantation owners

The surveys undertake with famers showed a low level of understanding about plantation registration, either with respect to the purpose, the process or the benefits provided.

Other ACIAR projects have found similar results. For example project ASEM/2003/052 on Improving Financial Returns of Smallholder Tree Farmers in the Philippines found low levels of plantation registration amongst smallholders and cite one of the major reasons for the low registration being lack of knowledge and understanding of government policy and regulations for tree registration (Gravoso *et al.* 2009). Only a few farmers claimed to know how to register trees while others thought that registering trees was too costly. Herbohn *et al.* (2004) presented evidence relating to large differences in the rates of tree registration between the Community Environment and Natural Resource Offices (CENROs) throughout Leyte Island and found that differences were due largely to the complexity of the regulations and variations in the way CENRO personnel understand and implement them. In response the project developed a Primer on Tree Registration Policies.

Providing improved communication about plantation registration was considered as an output of this project. Initially the systems diagrams that map out the regulatory process were translated into Lao. This assisted with communication with highly literate stakeholders in government, industry and NGOs. The approach was taken up in a separate project (Funded by the FAO/World Bank and GiZ) which developed a Legality Compendium to the Forest Law in Lao PDR (Smith and Alounsavath 2015). It maps out and described the regulatory process for wood from all sources, including smallholder plantations. GiZ, through their Pro-FLEGT partnership with the Lao Government, have established a technical working group on smallholder plantations, comprising provincial and district staff from a number of agencies as well as industry and growers, and is utilising and reviewing the Forestry Legality Compendium.

These flow diagrams could incorporate information on costs and fees, and be designed in a graphic format, that is more suitable for famers.

Another format was also trialled – a video-graphic, which uses simple animation and a voice over to describe the plantation process (<https://vimeo.com/143587744>). The use of visual media is a simple but powerful way to communicate simple clear messages.

When coupled with appropriate methods for monitoring and evaluation, such a tool are useful in understanding audience reactions, changes understanding and attitudes towards policy measures.

## 7.5 Providing information about project outcomes and recommendations to government

Policy briefs were developed to communicate the findings and recommendations of this research to government, industry and NGOs.

Three policy briefs, in Lao and English, were developed for this objective and Objective 1 as a whole:

- Policy brief on legal barriers and legality issues for smallholder plantation owners and their wood (Smith and Phengsopha 2014)
- Policy changes are needed to unlock the potential of the smallholder plantation resource in Lao PDR (Smith *et al.* 2016)
- Demonstrating Legal source of origin for plantation grown wood: an alternative to plantation registration (Smith 2016, in draft).

## 8 Conclusions

The legal framework for, plantations and timber production in Lao PDR is extensive and complex. A diversity of interconnected issues has created a regulatory environment that is difficult to navigate and to keep up-to-date, particularly when faced by a rapidly changing policy environment. National strategies clearly dictate support for plantation expansion, in response to deforestation and illegal logging in the natural forest estate; and the opportunity that plantations could provide smallholders in moving from subsistence to market-based production are well articulated in theory. However, the current regulatory framework does not effectively enable this transition and new international drivers for legality may serve to further alienate smallholder from some markets.

Bottlenecks in the value chain occur where complex, ineffective, unclear or out-of-date rules inhibit the process or where excessive regulatory complexity, with associated costs in time and money, discourage compliance; and while lack of compliance is generally associated with illegal activities, corruption, inequality and unsustainable resource use (Ramcilovic-Suominen and Hansen 2012), other factors may also be at play. Norms rather than coercive measures may impact the ability and willingness of individuals to comply with the law, and these need to be understood if a workable regulatory environment is to be created. This is true in as much for the individuals to whom the laws apply as the agents of their enforcement. These barriers are not, however, insurmountable.

For smallholder plantation growers, legal barriers to registering plantations have been identified as factors which limit their participation in, and the benefits they could derive from, the plantation timber value chain. In its current form the regulatory process for registration certainly acts as a disincentive for smallholder to enter into this process. In order to find workable solutions some inherent policy assumptions about the risks associated with legality smallholder plantations must be questioned and solutions tested against a set of criteria that will ultimately determine their effectiveness.

Grower empowerment begins with transparency, understanding who pays what along the chain and within the existing regulatory processes costs are often inconsistent or hidden. Earlier reports describe these in an effort to duplication, inefficiencies, excesses and misapplication of rules (Smith 2014, Said 2016). However addressing one regulatory component legal value chain is unlikely to yield positive outcomes for growers, given the inefficiencies, bottlenecks and barriers throughout the value chain. In offering alternatives to rules for plantation registration as a means to increase returns to smallholders, it is important to consider that factors that influence compliance will differ across rules and between value chain actors. Thus changing rules to alleviate one regulatory bottleneck many not make the whole value chain more efficient. There needs to be consideration of how new rules for plantation registration will affect the rest of the value chain including the associated regulations and other actors who should comply. Isolating and addressing all of those factors that create the barriers along the value chain were beyond the scope of this project.

The mapping and characterisation of teak plantations usefully reveals the extent and nature of the smallholder owned resource but it does not automatically make it available to market. It is erroneous to treat the teak plantation as a homogenous resource owned by a single type of farmer with a common objective. New policy measures must recognise that past policy interventions have resulted in the emergence of a complex and dynamic agrarian environment in which teak plantations have become an asset under diverse ownership arrangements with multiple livelihood functions. Past incentives, such as land use rights and land tax exemptions, which were effective in promoting plantation development, may not be effective in encouraging smallholders to realise their asset in a way that also meets the needs of industry. Reforms needs to consider whether the existing measures are still valid and without this review, codifying existing regulations to meet new legality requirements could create a legislative environment that is impossible for smallholders to comply with. This may further exclude smallholder from markets and pragmatic growers may choose to sell timber through informal channels at reduced prices, where there is a low risk of sanction.

Policies may reinforce universalising tendencies and apply generalisations about the targets of interventions, and while some level of generalisation may be necessary, the human factor cannot be overlooked when designing regulations which are intended change human behaviour. When smallholder plantation owners are treated as a homogenous group with ubiquitous aspirations, and their plantation are viewed as a common asset to meet

national policy objectives, friction may occur. Policy making and regulatory reform needs to be expansive and take into account the normative as well as instrumental factors that influence compliance if they are to be effective.

In order to find workable solutions to address barrier to legal registration of smallholder plantation, some inherent policy assumptions about the risks associated with the legality smallholder plantations must be questioned and solutions will need to be tested against a set of criteria that will ultimately determine their effectiveness. A typology of plantation that brings together livelihood, investment and compliance perspectives, is proposed for doing this. Recommendations from this research encourage the consideration of options and measures based on localised issues and utilising local institutions.

Taking a step back to review the policy basis for plantation registration and reconsider what it is needed at present two distinct purposes are identified one which is related to the timber produced and one to land on which the trees grow. While they are not unrelated the legality of trees and the wood they produce are not necessarily contingent on formal rights to land on which they are planted. A two tiered process is proposed that allows for the registration of land use rights for plantations and the certification of the legal origin of the wood produced.

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## Appendix 1: History of Plantation Regulations in Lao PDR

Initiative/Document	Matter Relevant to Plantation Registration and timber legality	Year
French Occupation	Introduction of Teak in plantations and generation of revenue from timber and forest products. Establishment of colonial forestry service in 1926; Forest code 930 including prohibition on shifting cultivation; promotion of teak and rubber plantations	from 1900's
CM Instruction 74 on Forest Protection	Promoted the development and management of tree plantations in order to reduce pressure on natural forest.	1979
Decree No. 117/CPM Management and Use of Forest and Forest Land	Allowed for the allocation of land and forest to individuals including for the planting of trees on degraded land.	1989
Shifting Cultivation Stabilisation and Arranging Permanent settlement Program	Aimed to eliminate shifting cultivation by focussing on permanent agriculture and livestock to reduce poverty; for environmental protection; forest and land allocation; promotion of "permanent occupations"; food self-sufficiency. Introduced Forest and Land Allocation trail in some Provinces.	1989
No 99/PM Decree on Land	Established the rights of individuals and collectives to possess land including pursuant to the forest land allocation program outlined by for agroforestry and industrial production and services.	1992
Land Use Planning and Land Allocation	Allocated forest and agricultural land for villager use; to contain and reduce shifting cultivation; promote "permanent production"	1993
No 169/PM Decree Management and Use of Forests	Reduced dependence on natural forests as main sources of revenue. Established the rights of individuals, collectives or juridical entities who plant or maintain trees with their own labour or capital. Established the basis for forest management contracts, including for plantations.	1993
Decree on Land Tax	Set land tax rates for 'long term industrial trees at 20,000-5,000 kip/ha. Provided exemptions for long-term industrial tree and fruit tree orchards for a period of 2-5 years from the day of planting based on the rate of yield of each type of planted trees.	1993
No 186/PM Allocation of Land and Forests for Tree Planting and Preservation.	Promoted the allocation of degraded and bare land for plantations, specifying fast growing species and teak. Authorized local private business entities and individuals to invest in planation of trees on their own land. Specified Land tax exemption for planted forests and agroforestry systems with no less than 1,100 trees per hectare. Provided exemptions from other royalties and charges, but not income tax, in the sale of an individual's own trees. Provided for compensation for the loss of trees for land acquired by the state. Set the authority for approving tree planting on the basis of area	1994
No 0234/ MAF Management of plantations and planted forests	Encouraged sedentary living /permanent cultivation. Allowed for planting on an individual's own land with supporting documentation; but discouraged planting on agricultural land. Exempted owners of scattered plantings from restoration and forest resource fees only at the time of harvest but no exemption from land tax. Allowed for the inheritance, transfer and sale of standing trees but not the land.	1995
Guidance on LFAP in Luang Prabang	Specified the process for the implementation of LFAP in Luang Prabang Province to stop slash and burn, encourage permanent settlement, clarify and secure tenure, reduce land disputes, reform land management. Allocated not greater than 4 parcels per family. Allowed for the allocation of land for planting industrial trees to public servants. Specified 'zones' for land uses: allowed for the use of areas of	1995

Initiative/Document	Matter Relevant to Plantation Registration and timber legality	Year
	'previously used' roadsides and river banks for industrial tree plantations on 'mountains'.	
Forestry Law	Replaced Decree 169/PM and Decree 186/PM. Promoted the rehabilitation, planting and propagation of forestry resources. Reiterated the rights of ownership of planted trees. Set the limits 3ha of degraded forest land per labourer in a family for planting trees, with the authority of DAFO. Required the registration of forestry activities according to the Business Law promulgated by the State.	1996
No 03/PM Instruction on Land-Forest Allocation for Management and Use	Reiterated instructions and recommendations on the continuation and expansion of Land Management and Land and Forest Allocation. Further promoted tree planting, specifying "denuded land and grass land, brush land, open land and degraded forest land". Reiterated exemption from land tax and the rights to use, transfer, inherit, usufruct right and the right to receive compensation at requisition of land by the state.	1996
No 01/ N 97 Land Law	Not available	1997
No. 1849/AF Registration of plantations and tree planting parcels	Set the criteria for eligibility for a plantation to be registered: $\geq 1,600$ m <sup>2</sup> (or 1 rai); > 3 years old, 80% survival; specific planting patterns; documents to demonstrate rights; reiterated tax and fee exemptions; established approving authorities (<5 ha DAFO; > 5 ha PAFO); set the fee at 1,000 Kip per 1,600 m <sup>2</sup> or 1 rai;	1999
No. 0196/AF Development and Promotion of Long Term plantations	Promoted the development of long-term plantations. Recognised two planting systems: 1. Concentrated planting system a) in a block or in agroforestry; 2. Scattered plantings; Set requirements for plantation >5 ha to have a technical assessment. Established silvicultural and plantation management requirements. Specified land tax exemptions for System 1 plantations but not scattered trees. Reiterated resource fee exemptions; specified the calculation of compensation.	2000
Land Law (current, being revised)	Allows the allocation of 3 ha per labourer of Agricultural land for industrial plantations; Allows for the allocation of 3 ha per labourer of degraded r barren forest land and the registration of those rights for three years by MAF in accordance with the Forestry Law; Establishes the basis for land registration and land titling,	2003
No 96/PM Commercial tree planting and environmental protection, 2003	Promotes tree planting through exemptions from land tax, forestry restoration and natural resource fees and other duties for timber harvested from the tree plantation. Encourages investment and provides for compensation.	2003
No 0115/PM	Reiterated the need for plantation registration to address difficulties with issues permits for timber harvesting and to reduce the risk of un authorised cutting of other people's trees or theft from state plantations.	2003
Forestry Strategy 2020	Sets the Forest Policy for Lao PDR to 2020 Set a target for plantation establishment at 500,000 ha	2005
No. 01/PO Land Tax	Sets land tax exemptions for registered plantations >1ha and consisting of $\geq 1,100$ trees.	2007
No NA/06 Forestry Law 2007 (current, under review)	Sets the basic principles, regulations and measures on sustainable management, preservation, development, utilization and inspection of forest resources and forestland, promotion of regeneration and tree planting, and increase of forest resources. Identifies the planting of trees as a business activity; Promotes the planting of trees;	2007
No 564/NLMA Adjudication of Land	Provides for the systematic adjudication of land rights.	2007

Initiative/Document	Matter Relevant to Plantation Registration and timber legality	Year
Occupation and Rights		
Notification No 3097/DIE on Documents for export of planted timber	Documents necessary for export include Certificate of plantation; and memo of log certification	2008
Order No 17/PM on Strengthening the Forest Management , Protection and the Coordination of management Forest and Forestry Business	Specifies that the origin of timber harvested from the plantation must certified by PAFO based on the plantation registration made by DAFO.	2008
Guideline No 0105/MAF Of the Minister of Agriculture and Forestry Concerning the Implementation of the Prime Minister's Order No. 17/PM,	Specifies PAFO shall issue the certificate of origin of planting tree to be exploited from the forest plantation garden based on the registration certificate of forest plantation garden issued by the DAFO	2008
Notification No 0403/CD of Exemption of Determination of Customs value of exported wood products for basis of calculation of export royalties	Every exportation of finished wood products shall be accompanied by a Certificate of Origin (If available)	2009
Notification No. 0032/MAP on the exportation of prohibited and special plantation timbers and non-prohibited plantation timbers	Requires plantation certificate, tree harvesting from plantation permit, standing tree list (pre-harvested inventory), log list, wood transcript from plantation timber and prohibited, special and fruit tree timber	2010
Decree No 228/PM on the Origin of Import and Export Goods	Defines Certificate of Origin	2010
PLUP Guidelines	Provides guidance on specific steps and procedures for LUP-LA at the village cluster and clarifies the roles of MAF and MONRE agencies. Identifies documents that are acceptable evidence of land use rights	2010
Notification No 1374/MCAF Plantation Registration Certificates	Reiterates the requirement for Plantation Registration and elaborates the approving agencies	2010
Notification No 1791/MOIC.DIMEX on Procedures to issue import and export license for plantation timber	Specifies PAFO will verify the origin of timber	2010
Notification No 094/STA on Guidance on The Implementation of Ministerial Guidance on the Management of wood exportation for the purpose of revenue collection in timely manner	Assigns State Inspection the authority to check and monitor the payment of the royalties and taxes of timber. In the case of lumber, semi-finished and finished wood products, the payment obligation shall be newly issued by identifying the origin of lumber, semi-finished and finished wood products before the movement takes place.	2013
Decree No 41/PM On the authorization for Provinces, the Capital To consider and make decisions on exportation of planted timber in the form of logs and sawed timber	Specifies PAFO will verify the origin of timber	2015
Order No 15/PM On Strengthening Strictness of Timber Harvest Management and Inspection, Timber Transport and Business	Prohibits the export of unfinished wood products, including from plantations.	2016

## Appendix 2: Land and land use documents

Document	Land Use Rights	Term	Description	Who can qualify	Issued By	Legal Basis
Long term (permanent) rights	<ul style="list-style-type: none"> <li>• Protect;</li> <li>• Use;</li> <li>• Usufruct;</li> <li>• Transfer;</li> <li>• Inherit;</li> <li>• Lease;</li> <li>• Exchange;</li> <li>• Sale</li> <li>• Collateral;</li> <li>• Compensation</li> </ul>	Valid for life of holder, unless transferred through sale or exchange or lost in Court.	<p>Non-forestland used for house or settlement, paddy or permanent agriculture.</p> <p>No title issued for natural forest.</p> <p>Titles have only been issued in urban areas.</p>	Lao Citizens	Provincial or municipal LAD	Land Law A. 49; Decree No 88/PM A 16
Land Survey Certificate (or Land Map Sheet)	<ul style="list-style-type: none"> <li>• Protect;</li> <li>• Use;</li> <li>• Manage;</li> <li>• Usufruct</li> <li>• Inherit;</li> </ul>	Until cancelled or title is issued	<p>Certifies land utilization rights assigned according to land category; Non-forestland used for housing, permanent agriculture.</p> <p>No title shall be issued for land categorized as natural forest.</p>	Lao Citizens	Provincial or District LAD	Decree No 88/PM A 16
Temporary Land Use Certificate	<ul style="list-style-type: none"> <li>• Possess;</li> <li>• Restricted Use;</li> <li>• Manage;</li> <li>• Inherit;</li> </ul>	3 years	Issued on the basis of LFAP for 3 years for specified developmental land use.	Lao Citizens	District government through the land use planning and land allocation process and request by villager	Land Law A. 40; Decree No 88/PM A 16
Land Development Certificate	Evidence of land use		Issued to certify the specified TLUC land use has occurred. Is required with TLUC on application for Land Title.	Lao Citizens	Agriculture and Forestry Sector	Land Law A 18 and 43; Decree No 88/PM A 16
Certificate of Land Ownership History	Evidence of land use		Document certifying the acquisition of land which shows the historical	Lao Citizens	PAFO	Decree No 88/PM A 16

Document	Land Use Rights	Term	Description	Who can qualify	Issued By	Legal Basis
			evolution of land use.			
Village Forest Management Agreement	<ul style="list-style-type: none"> <li>• Possess;</li> <li>• Restricted Use;</li> <li>• Limited Management</li> </ul>	No term specified	Natural forest zoned within village boundary as determined under the LFAP	Village Forestry Unit	District authorities through the land use planning and land allocation process	Forestry Law A 83
Lease or Concession	<ul style="list-style-type: none"> <li>• Possess;</li> <li>• Commercial Use;</li> <li>• Limited Management</li> </ul>	20-75 years	Any type of land including natural forest refer various Acts	Individual; household; Domestic and foreign investors; the State or social organisations	DOIC with approval by sectoral agencies	Chapter 2, Land Law.
Land tax receipt	<ul style="list-style-type: none"> <li>• Evidence of payment of land tax.</li> <li>• Not inheritable</li> <li>• Not for sale;</li> <li>• Not for collateral</li> </ul>	Annual	Official Receipt for Land tax	Individual; household; Domestic and foreign investors; the State or social organisations	Department of Finance (Previously DOL)	Land Law, A 49
Land Tax Declaration (LTD) (No.1)	<ul style="list-style-type: none"> <li>• Not inheritable</li> <li>• Not for sale;</li> <li>• Not for collateral</li> </ul>	Annual	Land tax calculation	Individual; household; Domestic and foreign investors; the State or social organisations	Department of Finance (previously DOL)	Land Law, A 49
Provisional Land Certificate	<ul style="list-style-type: none"> <li>• Not for sale</li> <li>• Not for collateral</li> <li>• Can be leased for up to 5 years</li> </ul>	Until Land Title is issued	Issued when Land Title cannot be issued due to uncertain information. After 10 years of occupation can apply for permanent Land Title.	Individual; household; Domestic and foreign investors; the State or social organisations	PONRE (previously DOL)	
Sources	Decree No 88/PM, Ministerial Instruction No 564/NLMA, GTZ 2004, ADB 2005					