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

Over regulated and under marketed: Challenges in supporting feasible verification processes in Lao PDR

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VALTIP2

Disclaimer

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1. Acknowledgements

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2. Acronyms and abbreviations

ACIAR	Australian Centre for International Agricultural Research
ASEAN	The Association of Southeast Asian Nations
CIFOR	Centre for International Forestry Research
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CoC	Chain of Custody
COO	Certificate of Origin
DBH	diameter at breast height
DoC	Duty of Care
DoF	Department of Forestry
EU	European Union
FLEGT	Forest Law Enforcement, Governance and Trade
FS2020	Forest Sector Strategy
FSC	Forest Stewardship Council
FTA	Free Trade Agreement
GATT	General Agreement on Tariffs and Trade
GFTN	Global Forest Trade Network
GoL	Government of Lao PDR
Ha	hectare
HSV	High Conservation Value
I/ENGO	International/Environmental Non-Government Organisation
ISO	International Standards Organisation
ITTO	The International Tropical Timber Organisation
Lao PDR	Lao Peoples' Democratic Republic
LEAF	Lowering Emissions in Asia's Forests
LPTP	Luang Prabang Teak Program

m^3	Cubic metres
MAF	Ministry of Agriculture and Forestry
MoIC	Ministry of Industry and Commerce
MoNRE	Ministry of Natural Resources and Environment
MRC	Mekong River Commission
MRB Agreement	Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin, 1995
NGPES	National Growth and Poverty Eradication Strategy
PEFC	Programme for the Endorsement of Forest Certification
PFS	Provincial Forestry Section
PM	Prime Minister
RCEP	Regional Comprehensive Economic Partnership
REDD+	Reducing Emissions from Deforestation and Forest Degradation
RTA	Regional Trade Agreement
RTE	Rare, Threatened or Endangered
SFM	sustainable forest management
SLIMF	Small and/or Low Intensity Managed Forests
SVLK	Indonesian timber legality verification system
TBTA	Technical Barriers to Trade Agreement
TFT	The Forest Trust
TPP	Trans-Pacific Partnership
TTIP	Transatlantic Trade and Investment Partnership
UK	United Kingdom
US	United States of America
VPA	Voluntary Partnership Agreement
WBCSD	World Business Council for Sustainable Development
WEN	Wildlife Law Enforcement Network

WTO	World Trade Organisation

3. Recommendations

A risk-based value chain analysis of voluntary verification and involuntary regulatory compliance systems that operate, or could operate, within Lao PDR was undertaken to determine ”What forms of grower organisation and group certification are feasible and sustainable, and will improve returns to plantation smallholders?”

In general, current systems apply a similar risk profile to both private, smallholder plantation growers and large, industrial growers, with little differentiation in the level of risk associated with production. The low levels of certification by smaller, private growers indicates that a failure to effectively differentiate verification or compliance requirements at an appropriate scale to risk has proven to be too complex and costly when adopted by smaller plantation owners, especially within less developed economies where existing management and regulatory structures are evolving.

Allocating a low risk profile to Lao PDR’s private, small plantation growers was considered reasonable by the authors given that the timber is plantation-grown, most of whom are traditional land owners, there exists national system that specifies legal and regulatory obligations, and that the majority of plantations are established, or being established, on previously cleared land which limits or avoids impacts on High Conservation Value (HCV) areas or values.

The authors developed a methodology for comparing approaches to plantation certification that might be appropriate to the circumstances in Lao PDR. A low risk profile was used as the basis for an assessment of the feasibility of existing systems, as applied within a Lao PDR context. The approach adopted involved defining ‘feasibility’ as providing a net benefit when assessed against three broad criteria (Appropriateness; Practicality; and Cost Effectiveness) and 17 associated elements. An assessment score from 1 (very positive) to 10 (very negative) was used.

The authors developed a method for comparing approaches to plantation verification and certification that to determine which systems are likely to provide a net benefit to private, small scale plantation growers in Lao PDR, and therefore require further analysis or operational trialling, The approach adopted for assessing the feasibility of being able to influence change (at a local level), and identify areas of improvements to existing systems, incorporated four influencing factors: the project’s internal capacity; the potential for multi project collaboration opportunities; an ability to engage with system partners; and the interest of system partners in working within Lao PDR.

It is clear that each system varies in regards to the area of influence that could be achieved. To meet the authors' 'minimal test' of net benefit, the analysis indicated there were seven feasible actions that could be undertaken to test the appropriateness, practicality, and cost effectiveness of established systems. Consequently, it is recommended that efforts be focused on the following actions:

- Streamlining the Luang Prabang Teak Program (LPTP) system, with emphasis on reducing Cost and Time requirements
- Developing and testing a checklist issued by government for Legal compliance, with emphasis on reducing Cost and Time requirements;
- Engaging with Forest Law Enforcement, Governance and Trade (FLEGT)/Voluntary Partnership Agreement (VPA) process to ensure the issue of impacts on small growers reflects associated risks (both legal and environmental);
- Assessing the potential benefits that the Programme for the Endorsement of Forest certification (PEFC) may provide, with emphasis on increasing its Cost Effectiveness, and decreasing the Cost and Time requirements;
- Working with existing ACIAR: Project FST/2012/012 industry plantation partners (Burapha Agroforestry Company (Burapha) and Oji Forest & Products Company) to include small growers under their Forest Stewardship Council (FSC) licence, with emphasis on reducing Time requirements and increasing Relevance requirements;
- Further assessing the effectiveness of expanding FSC, with emphasis on identifying market opportunities that provide financial premiums; and
- Streamlining processes associated with FSC requirements in regards to LPTP and Burapha, with emphasis on reducing Cost and Time requirements, and increasing the Cost Effectiveness and Relevance requirements.

4. Introduction

4.1 Overview of the Study

Demand for forest products will continue to increase as populations increase. The Millennium Ecosystem Assessment of 2005[1] estimates that by 2050, there will be an additional 3 billion people living on the planet and a quadrupling of the world economy. These changes will increase pressure on natural forests and support the development of agriculture and forest plantations.

Lao PDR is not immune to these pressures. Its population is 6.7 million, of which over 60% live outside urban centres and around one third live in poverty {WBCD, 2010 #156}. It has a growing population which is forecast to increase to 7.4 million by 2020, and to just over 10 million by 2050, with ongoing migration from rural to urban centres estimated to be 5.6% annually {CIA, 2010 #37}.

Lao PDR is also one of the world's poorest and least developed countries. It has a gross domestic product (GDP) per capita of less than US$1,417, making it the 124th poorest nation from a list of 186 {IMF, 2010 #155}[2]. It is an underdeveloped country which is still heavily dependent on subsistence agriculture, which contributes around 30% of GDP and 80% of total employment {CIA, 2010 #37}. Consequently, the use of its natural resources (including forests and forest lands) is seen as critical to the generation of wealth.

While Lao PDR is a unified nation, it is ethnically and linguistically diverse which adds an additional level of complexity when responding to the promotion and compliance of policies and laws. There are 44 ethnic minority and/or language groups recognised by the Government of Lao PDR (GoL), although some researchers believe that these distinctions support a greater categorisation {Hodgdon, 2009 #1}. Many of these groups are tribal and have strong regional kinship links. For example, along its eastern border, there are many Lao people with Vietnamese background (S*ao Viet*), while Thailand's northern region has a strong 'Isan' population whose language is a dialect of Lao, but written in the Thai alphabet. Lowland Lao (*Lao Loum*) constitute the largest ethnic group (estimated between 55-68% of total) and dominate political and economic structures {Republic, 2006 #2}.

These cultural and family links often promote cross border trade/exchange, including agricultural and forest goods {LoC, 2009 #65}. This trade is often outside the legal framework, or only meets minimal compliance requirements.

[1] Source: Millennium Ecosystem Assessment Board, 2005.

[2] "Report for Selected Countries and Subjects (PPP valuation of country GDP)". IMF. April 2014

The Government of Lao PDR (GoL) forest development policies and strategies build on biophysical and geostrategic advantages, including:

- low labour and taxation costs;
- secure and good quality water resources;
- proximity to established and emerging markets;
- access to an expanding renewable energy capacity;
- access to suitable land at a scale which supports industrial developments;
- strategic links to market infrastructure (close to regional port facilities and trade nodes);
- low population densities: 26.87 people/km^2 compared to 280.35 (Vietnam), 135.3 (Thailand), 143.43 (China) and 80.09 (Cambodia)[3];
- existing trade liberalisation agreements between the Greater Mekong Subregion countries and Association of South-East Asian Nations (ASEAN) partners, and membership of the WTO; and
- maturing transportation networks, including friendship bridges linking Lao PDR with Thailand, national highways into Vietnam, and proposals to develop a high-speed train link with China (Flanagan, Smith *et al*, 2013).

The opportunities for the development of commercial scale plantation and agribusiness in Lao PDR have long been known. The GoL has established a policy framework that encourages the development of plantation forest resources. These include the National Growth and Poverty Eradication Strategy (NGPES) which is the guiding document for the overall national rural development program; the Forest Sector Strategy (FS2020) which promotes the nation-wide development of forest-lands and resources, and the establishment target of 500,000ha plantations; and numerous laws and associated regulatory instruments.

The key to maintaining forest cover or improving forest health is to ensure they remain a valued asset so they can compete with alternative land uses that require them to be converted. Sustainable forest management, as verified through certification systems, is recognised as one way to achieve this. However, these systems are not necessarily delivering benefits to small growers or meeting emerging legal requirements for market access.

The plantation resources of Lao PDR, including the private Teak resource, have the capacity to generate substantial benefits to growers, and to support a domestic industry, capable of successfully operating in a globally competitive environment. To achieve this potential, value must be realised across supply chains to create 'market pull' drivers for products by focusing on quality, adaptability and design. The alternative is to be a commodity supplier, whose products are subject to greater market variability and, ultimately, lower returns.

This study is part of a project funded by ACIAR: Project FST/2012/012 "Enhancing Key Elements of the Value Chains for Plantation-Grown Wood in Lao PDR", which aims 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 are to:

[3] Source: www.tradingeconomics.com.

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 paper addresses part of the first objective by reviewing voluntary verification and involuntary regulatory compliance systems that influence market promotion and access. The study considers mechanisms which operate internationally and those that operate, or could operate, within Lao PDR. Emphasis is placed on the feasibility of these mechanisms in regards to the value chain for smallholder plantation growers. Feasibility is defined under three broad criteria: Appropriateness, Practicality, and Cost Effectiveness.

The overall methodology used in this paper is a risk-based value chain analysis that allocates an assessment score from 1 (very positive) to 10 (very negative) against each of the criterion and their 17 elements. This approach provides the basis for addressing the research question:

> 'What forms of grower organisation and group certification are feasible and sustainable, and will improve returns to smallholders?'

One of the challenges for policy makers, knowledge creators, growers, manufacturers and innovators will be how to identify models for growers that deliver benefits and are able to adapt to dynamic market requirements, including those relating to new drivers and emerging market access requirements based on legality[4] or sustainability. Smith (2014) provides a comprehensive discussion on the complexities of defining legality in the context of Lao PDR's culturally diverse and legally plural society in the ACIAR Project FST/2010/012 legality report.

This challenge is neither simple nor one dimensional. However, there are emerging market signals that will influence the success of the resource potential. There is now increased focus within trade and aid policies to encourage developing countries to adopt higher levels of sustainability in forest management approaches and reduce incidences of illegal trade in forest products. Initiatives to achieve these outcomes range from the adoption of legislated and enforceable trade and market access policies, through to voluntary and independent certification and chain-of custody systems. Often, these approaches require a demonstrated and enforceable commitment to sustainability or legality to meet due diligence requirements, as outlined in Figure 1.

It is apparent that the major change occurring within international markets is that a demonstration of sustainability is no longer a primary requirement to access markets; management and governance systems must now demonstrate a commitment to legality of product and transparency of supply. However, markets that already claim legality and sustainability may choose not use this minimum primary requirement. Consequently, while trends exist, they are not consistently applied across or within all markets or associated supply chains.

[4] Defining legality is complex. Appendix 1 provides a summary of different definitions.

Figure 1: Key components for enabling rigorous legality and sustainability claims or for due diligence programs.

It is important to recognise that sustainability and legality outcomes are not the same, but they can be where national (e.g. The NGPES) and international (e.g. Millennium Goals) objectives align. Therefore, to maximise benefits across the social, economic and environmental benchmarks, approaches must be strong enough to support links between poverty alleviation and livelihood improvements, economic diversification and wealth creation, and sustainable practices and environmental enhancement, and be legally robust. Without such links, social, economic and environmental sustainability objectives and legality requirements cannot be effectively aligned.

The challenge for researchers under ACIAR Project FST/2010/012 is to identify which system is likely to reduce risk to the buyers and users of wood from smallholder plantation growers in Lao PDR, and support access to markets at lowest cost to growers.

This question is particularly important under the Project as it involves developing a framework for a maturing private plantation resource which is supported by a substantial number of small growers, whose disposable/discretionary income is limited and where real poverty exists.

Importantly, Lao PDR's privately owned, small holding plantation resources are a tangible asset that can be readily liquidated by growers to generate capital that can then be used to improve livelihoods. These improvements can be direct benefits (such as those associated with medical care, nutrition, or shelter) or indirect benefits that come through improved education or mobility (transport).

In examining appropriate systems, it is important to recognise that where poverty exists, peoples' needs are immediate and the need to dispose of assets (such as Teak) is not always driven by price, but often by simplicity and immediacy in commerce. In other words, what is the best price that involves the least cost (both time and money in regards to administrative, regulatory or production

requirements)? The disposal of assets is often undertaken without consideration of broader industry needs or government policies as these usually impose higher costs or result in delays for approval.

The plantation resource, if managed appropriately, can add value along supply chains through the generation of additional employment opportunities associated with market focused, domestic wood processing industries through improved efficiency supported by a secure resource of known volume and quality over time.

The Forest Stewardship Council (FSC) is currently the only verifiable certification system operating in Lao PDR, but is only one international option that is available to growers. However, take-up has been limited and as a consequence it is unclear whether the current focus on it should be maintained, or be replaced by alternatives such as the Programme for the Endorsement of Forest Certification (PEFC), International Standards Organisation (ISO), Voluntary Partnership Agreements (VPAs), or simplified Chain of Custody (CoC)/legality approaches. This question is particularly important as legality becomes a principle for access to some markets, including Lao PDR's major trading partners.

In addition, many private, smallholder plantations have been established within riparian zones, on steep slopes or within environmentally sensitive areas which may contain remnant, mature and over mature trees. Under existing FSC certification requirements, there are expectations that continuing improvements will lead to further restrictions in access to land for environmental reasons, restriction on use of chemicals or other inputs, reduced impacts/intensity of harvesting or forest utilisation, etc. The potential loss of land to meet certification environmental requirements may undermine potential, future benefits and the successful uptake of this scheme.

A review of the suitability of alternative systems is also warranted given that no certification or verification standard is officially recognised by consumer countries' legality requirements as being automatically compliant. For example, Vietnam is progressing with establishing a 'proof of legality' system that meets European Union (EU) market access requirements and incorporates requirements to verify the legality of timber from countries such as Lao PDR. Consequently, timber or logs entering Vietnam from Lao PDR will be required to meet the Vietnam-EU 'proof of legality' requirements which are independent of FSC standards. This is known as the FLEGT or VPA negotiations.

By contrast, if an ISO CoC standard is developed as a replacement for existing voluntary systems, this will be automatically recognised under consumer countries' legality requirements, where such countries are members of the WTO. It is now likely that ISO standards will be developed that incorporate environmental management (14001[5]), processing (9001) and CoC (being developed) standards which will collectively meet legality requirements and many sustainability criteria. Importantly, ISO standards provide outcomes that are similar to certification systems in terms of legality. However, ISO verification costs are generally lower. This is because the market for providers of ISO auditing is more competitive and less onerous than those for forest certification, and ongoing savings may be achieved under such systems. Consequently these systems should be considered alongside certification and verification approaches, and are further discussed in this paper.

[5] Note: ISO 14001 is currently under review. ISO/DIS 14001:2015 is likely to be amended to facilitate the alignment and compatibility of the EMS standard with other management system standards such as occupational health and safety (OHSAS 18001) and quality (ISO 9001). There is also likely to be an increased focus on the actual environmental performance of the organisation, cycle analysis, communication and auditing, and a strengthening of CoC compatibility.

In response to broad market demand for legality/sustainability systems, voluntary systems are being replaced by market access-based sovereign legislative responses which place a 'duty of care' (DoC) by exercising 'due diligence' or 'due care'[6] to importers/traders in wood products to demonstrate products are sourced legally (that is, they comply with national laws). This requirement is emerging as the primary requirement to access markets where such laws apply.

Significantly for businesses, DoC requirements are also important when addressing commercial reputation, the values of a company, and customer demands (Mitchell 2012). In order to meet their DoC, a variety of first, second, and third party verification or compliance mechanisms are used to verify sustainability or legality.

These changes are important considerations for policy makers and the industry as they operate in an international, competitive and dynamic market, where systems developed to meet legality requirements must also maintain or improve efficiencies, competitiveness and profitability across supply and value chains.

To contribute to the development of benefits associated with the small and disparate plantation resources, this paper considers constraints and inefficiencies in the value chain by assessing which legality and sustainability systems provide benefits to smallholders and others.

This approach will allow for the identification and development of options to promote:

- A simplified system more appropriate to sustainable smallholder tree growing, production and marketing;
- More effective organisation and coordination of smallholder tree growers to comply with market needs; and
- The development of systems that support clear demonstration of legality requirements for market access and development.

Ultimately, the challenge for forest growers and producers of wood products is to determine which system is likely to reduce risk and best support access to markets at lowest cost. It will be important to ensure that adopted market access requirements do not result in higher costs and lower outputs, reduce operational flexibility, create confusion or be open to interpretation, or impose excessive restrictions solely to meet environmental stewardship outcomes

Irrespective of the approach adopted, it is clear that political and trade relationships between trading partners will continue to have a major influence on the level of success in maintaining and strengthening the domestic forest and forest products industry. This is because consumers are essentially indifferent to initiatives designed to develop sustainability credentials and continue to be influenced primarily by price and design.

[6] These terms are used to describe a process by which individuals or organisations identify, consider and address the potential for illegal or unregulated or unapproved timber or other forest products to enter the supply or value chain. These processes extend the principles detailed within international agreements by specifying prescriptive compliance measures. Initiatives include the *United States Lacey Act 1900*, the European Union's FLEGT Action Plan and Regional Programming for Asia (including Regulation No. 995/2010[6]); and *Australia's Illegal Harvesting Prohibition Act* (2012).

5. International Trade and market access

This section provides an overview of international Laws, Treaties and initiatives that provide diversified approaches to extend the principles of trade by applying criteria which incorporate a commitment to delivering social equity and environmental sustainability by specifying prescriptive compliance measures.

A large component of this section reproduces and builds on the work of Flanagan, Smith *et al* (2013), with relevant updates. A comprehensive review of the legal and regulatory framework associated with small plantation growers in Lao PDR is found in Smith (2014).

5.1 Introduction

Voluntary standards, as well as legislative and sustainability pressures, are influencing forest management practices and the trade in illegal forest products.

International trade is increasingly underpinning improvements in forest practices and supporting a transition to the adoption of more sustainable management policies and practices. This is occurring through regulatory and market measures. Regulated trade arrangements are also addressing the complex issue of illegally sourced wood products, even between strong trading partners {CFCN, 2009 #90;Chatterjee, 2007 #4;CIFOR, 2000 #24;Durst, 2010 #25; (Meyfroidt, Rudel et al. 2010)}.

In trade and aid policies there is now increased focus on encouraging developing countries to adopt higher levels of sustainability and proof of legality in forest management approaches and thereby reduce incidences of illegal trade in forest products. Initiatives to achieve these outcomes range from the adoption of legislated and enforceable trade and market access policies, through to voluntary and independent certification and Chain-of-custody systems.

These approaches are increasingly becoming the basis for trade and access to market. As Lao PDR becomes more integrated and directly linked to international markets, it will be under increasing scrutiny to demonstrate a commitment to, and delivery of, social equity, environmental sustainability and legality in the production and manufacturing of goods, including timber and other forest products.

Table 1 provides an overview of international forest conventions that are most relevant to Lao PDR and are discussed in more detail in the following sections.

Table 1: Relevant multilateral conventions related to forests

Convention	Adoption (d/m/y)	Entry into force (d/m/y)	Number of parties	Ratified by the GoL (d/m/y)	Web site
Important in terms of forests					
Climate Change Convention	09/05/1992	21/03/1994	196	16/2/2004	www.unfccc.int
Convention on Biological Diversity	05/06/1992	29/12/1993	194	20/9/1996	http://www.cbd.int/
Desertification Convention	17/06/1994	26/12/1996	195	20/9/1996	www.unccd.int

ASEAN Agreement on the Conservation of Nature and Natural Resources		Ratified in 1985			http://www.asean.org
Other conventions of relevance					
Ramsar Convention on Wetlands	02/02/1971	21/12/1975	168	28/9/10	www.ramsar.org
World Heritage Convention	16/11/1972	17/12/1975	191	20/3/1987	www.unesco.org/whc
Convention on International Trade in Endangered Species	03/03/1973	01/07/1975	180	30/5/2004	www.cites.org
Ozone Layer Convention	22/03/1985	22/09/1988	197	21/8/1998	www.unep.org
International Labour Organization	27/06/1989	05/09/1991	185		www.ilo.org
International Tropical Timber Agreement	26/01/1994	01/01/1997	68	Not a member[7]	www.itto.int
Kyoto Protocol to the United Nations Framework Convention on Climate Change		Ratified in 2003			tps://unfccc.int/kyoto_protocol/items/2830.php
Mekong River Commission Agreement on the Cooperation for the Sustainable Development of the Basin ratified in 1995		Ratified in 1995		Founding member	http://www.mrcmekong.org/
World Trade Organization	15/04/1994	01/01/1995	160	2/2/2013	www.wto.org
Source: Adapted from Unasylva, 2001					

[7] The GoL participates in ITTO initiatives, such as the Transboundary biodiversity conservation project in the Mekong River Basin between Thailand, Cambodia and Lao PDR.

5.2 International Laws

5.2.1 The United Nations Framework Convention on Climate Change - REDD+

The aim of REDD+ is to provide an economic incentive for developing countries to change their land use practices and reduce deforestation and degradation. This is achieved via payments (either fund or market based) from developed countries that have both an emissions reduction obligation under the Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC). In order to access these funds developing countries are required to demonstrate that they meet, or have a plan to meet, a set of pre-determined criteria that make them an eligible recipient. These criteria include reforms to governance, legislation and law enforcement over land and forests.

The narrative around REDD+ reflects some recent changes that have been observed in the policies of international development agencies that have accompanied an upsurge in what has been called neoliberal conservation governance[8]. In order to be ready for REDD+ developing countries must meet conditions for the conservation and sustainable use of forest resources, introduce mechanisms to address the 'real causes of deforestation' and demonstrate that the state has been able to 'reach out to forest-dependent communities, including traditional peoples and other forest dwellers'. And, while the issue of how to implement REDD+ remains 'the sovereign decision of each country', funding, and ultimately the success of REDD+, is considered to be contingent upon law reform that provides, among other things:

- sound National governance, legislation and institutions;
- effective monitoring, compliance and enforcement of law;
- counter-corruption measures (both direct and indirect);
- consistent, transparent and robust forest policies and programs that incorporate accountability at all levels;
- recognition of traditional rights;
- recognition of formal and customary property and user rights that are clear, strong and secure; and
- the creation of new property rights in carbon.

REDD+ is viewed as a new transformational tool that can be used to reinvigorate development-based law reform programs in the forest and land sectors, with particular emphasis on forest tenure.

The GoL accepted accession to this Convention on 05 January 1995. As a signatory to this Convention, it agreed to conduct and publish national inventories of the mass balance of greenhouse gas emitted and removed by the nation's sources and sinks. Lao PDR has progressed participation in REDD+ through a number of programs (including the Lowering Emissions in Asia's Forests (LEAF) program) and joined the UN-REDD Programme in October 2012. The REDD+ Office is under the Department of Forestry (DoF), within the Ministry of Agriculture and Forestry (MAF), and is responsible for the development of national REDD+ policy. However, the Ministry of Natural Resources and Environment (MONRE) Department of Forest Resource Management (DFRM) has responsibility for REDD+ implementation in Protection and Conservation Forests.

[8] See for example Igoe and Brockington 2007, Igoe *et al* 2009

5.2.2 **Convention on International Trade in Endangered Species of Wild Fauna and Flora**

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)[9] is an international treaty that came into force in 1975. It monitors and regulates trade between its 180 Parties, and between Parties and non-Parties, in species listed in its three Appendices.

The treaty's purpose is to ensure that international trade in around 350 listed species of wild animals and plants is legal, sustainable and traceable.

CITES parties agree to implement international trade controls, based on a system of permits and certificates for import, export, re-export and introduction from the sea, for species listed in its three Appendices (Cooney *et al* 2012).

CITES is enabled through the enactment of domestic legislation by the countries that are party to it. National legislation to implement CITES must, as a minimum:

- designate a Management Authority and a Scientific Authority;
- prohibit trade in specimens in violation of the Convention;
- penalize such trade; and
- allow for confiscation of specimens illegally traded or possessed.

CITES works by subjecting international trade in specimens of selected species to certain controls. All imports, exports, re-exports and introductions from the sea of species covered by the Convention have to be authorized through a licensing system. Each party to the Convention must designate one or more Management Authorities in charge of administering that licensing system and one or more Scientific Authorities to advise them on the effects of trade on the status of the species.

It is standard that legality requirements associated with trade and market access require CITES declarations.

The Lao PDR is a member of CITES.

[9] Source: http://www.cites.org/eng/disc/what.php

5.3 International Trade programs

5.3.1 International Tropical Timber Organisation

The International Tropical Timber Organisation (ITTO) is an intergovernmental organization promoting the conservation and sustainable management, use and trade of tropical forest resources. Its members represent about 80% of the world's tropical forests and 90% of the global tropical timber trade.[10]

ITTO develops internationally agreed policy documents to promote sustainable forest management and forest conservation and assists tropical member countries to adapt such policies to local circumstances and to implement them in the field through projects. In addition, ITTO collects, analyses and disseminates data on the production and trade of tropical timber and funds a range of projects.

Lao PDR is not a member of the ITTO. However, it is influenced by decisions as they relate to trading requirements and it participates in regional, cross border initiatives.

5.3.2 World Trade Organisation

Lao PDR became the 158th member of the World Trade Organisation (WTO) on 2 February 2013. By joining the WTO the country is binding itself to a political framework designed to help countries realise gains from trade. Consequently, it will need to meet the requirements of the WTO, including provisions for transparency in identifying the origin of timber harvested in the processes of land conversion.

The WTO is the only international organization dealing with the rules of trade between nations[11]. At its core are the WTO agreements, negotiated and signed by the bulk of the world's trading nations and ratified in their parliaments. The WTO has 33 agreements through which WTO members operate a non-discriminatory trading system that spells out their rights and their obligations. Each country receives guarantees that its exports will be treated fairly and consistently in other countries' markets. Each promises to do the same for imports into its own market. The system also gives developing countries some flexibility in implementing their commitments.

WTO agreements include 'Rules of origin' which are the criteria used to define where a product was made. They are an essential part of trade rules because a number of policies discriminate between exporting countries: quotas, preferential tariffs, anti-dumping actions, countervailing duty (charged to counter export subsidies), and more. Rules of origin are also used to compile trade statistics, and for 'made in' labels that are attached to products.

Rules of Origin Agreement requires WTO members to ensure that their rules of origin are transparent; that they do not have restricting, distorting or disruptive effects on international trade; that they are administered in a consistent, uniform, impartial and reasonable manner; and that they are based on a positive standard (in other words, they should state what does confer origin rather than what does not).

[10] Source: http://www.itto.int/about_itto/

[11] A full description of the functions of the WTO is at http://www.wto.org/english/thewto_e/whatis_e/whatis_e.htm

For the longer term, the agreement aims for common ('harmonized') rules of origin among all WTO members. The agreement establishes a harmonization work programme, based upon a set of principles, including making rules of origin objective, understandable and predictable. The outcome will be a single set of rules of origin to be applied under non-preferential trading conditions by all WTO members in all circumstances.

WTO legality measures are designed to influence international trade in timber and timber products and interact with the rules governing international trade (Brack 2009). However, conflicts between consumer country measures and the WTO do arise and the WTO provides mechanisms to resolve these issues.

Within this framework, issues of discriminatory policy have arisen in relation to consumer countries implementing laws that are designed to restrict trade in, or processing of, illegally harvested timber. For example, to date, market forces and environmental activism, not government interventions (other than those associated with aid programs), have been the principal drivers for the adoption of improved forest management standards. However, voluntary standards have a capacity to restrict trade and distort markets when applied in a discriminatory or punitive way.

Timber trade/legality measures implemented by the EU, USA and Australia have the potential for conflict with respect to WTO rules where:

- the more the trade measure diverges from the core WTO principle of non-discrimination in the trade, the more vulnerable it could be to challenge; so where trade measures are imposed without agreement, care must be taken to treat domestic products similarly to imports;
- the more trade-disruptive the measure is, the more vulnerable it could be to a challenge under the WTO; so the more frequently measures such as providing capacity building support are also taken, for example, the less disruptive the trade controls become; and
- the measures are agreed between importing and exporting states (as in FLEGT licensing) there is no real prospect of any successful challenge through the WTO' (Brack 2009, 12).

To avoid such practices, the WTO's General Agreement on Tariffs and Trade (GATT) considers that voluntary environmental standards fall under the Technical Barriers to Trade Agreement (TBTA) definition of a 'standard'. As a standard, they should comply with Non-product related Process and Production Methods (PPMs) which exist as the basis for various voluntary eco-labelling and certification programs under the TBTA.

TBTA requires standard setting bodies (in particular, governmental bodies) to comply with the Code of Conduct for the preparation, adoption and application of standards which should be non-discriminatory, internationally consistent, and not restrict trade based on international standards.

According to GATT Article I, non-product related standards should not grant any advantage to products of one country in comparison with products from another country.

TBTA objectives should ensure that regulations, standards, testing and certification procedures do not create unnecessary obstacles to trade.

Members are required to take reasonable measures to ensure that certification and labelling systems operated by ENGOs comply with Article 5 (Procedures for Assessment of Conformity by Central Government Bodies) and 6 (Recognition of Conformity Assessment by Central Government Bodies) of the TBTA {WTO, 2010 #165}.

While there have been a number of discussions on how, if at all, the TBTA could be strengthened to take into account the increasing use of standards, at present no agreement has been reached.

The development of these approaches raises concerns, not on the merit of such approaches or their objectives; rather because they mandate the adoption of voluntary systems that increase compliance costs and may therefore conflict with WTO principles specifically designed to prevent such outcomes. Unless they are also applied sensitively and provide supportive measures to assist exporting nations meet these requirements they have the potential to distort markets and lead to perverse outcomes that undermine legality objectives.

In the absence of a test case (as there has never been a dispute case dealing with illegal harvesting) it is difficult to predict what the outcomes of such a case would be (Brack *et al* 2012). However, a common issue is that all three existing pieces of legislation utilise the concept of legality in the context of a sovereign nation's laws with respect to timber harvesting (although the scope of what constitutes timber harvesting varies in each case). The method (sustainability or environmental friendliness) of the harvest is not in question; two identical products made with timber logged using an identical method would be treated differently if the timber in one product was from a country where that method was legal and the timber in the other product was from a country where that same method was illegal (Mitchell and Ayrers 2012).

In essence, WTO requirements prevent the adoption of policies which discriminate against competition, except in situations which are designed to protect natural or cultural values and address issues of legality. While some conflict may arise, no international or national trade based system endorses illegal practices.

5.4 Regional Agreements

5.4.1 Free Trade Agreements

WTO rules promote non-discrimination in trade between member states. However, regional free trade agreements (RTAs) are exempt only for those parties who are signatories to such agreements (GATT Article XXIV for goods and Article V for services). Bilateral free trade agreements (FTAs) are also exempt.

There are currently 252 FTAs and four RTAs. Figure 2 illustrates the regional scope of each of the RTAs.

Legality requirements are integrated into these agreements (based on existing WTO 'Rules of Origin' requirements), while generally sustainability is not (with exception of CITES or other requirements relating to species of high value).

Lao PDR is a member of ASEAN and a beneficiary of the Asia-Pacific FTA, and has indicated interest in joining the *Trans-Pacific Partnership* (TPP) agreement, as is one of its largest trading partners (Vietnam) who are formally negotiating membership. There are also three important RTA:the Regional Comprehensive Economic Partnership (RCEP); the Japan-EU FTA/EPA; and the Transatlantic Trade and Investment Partnership (TTIP) between the US and EU.

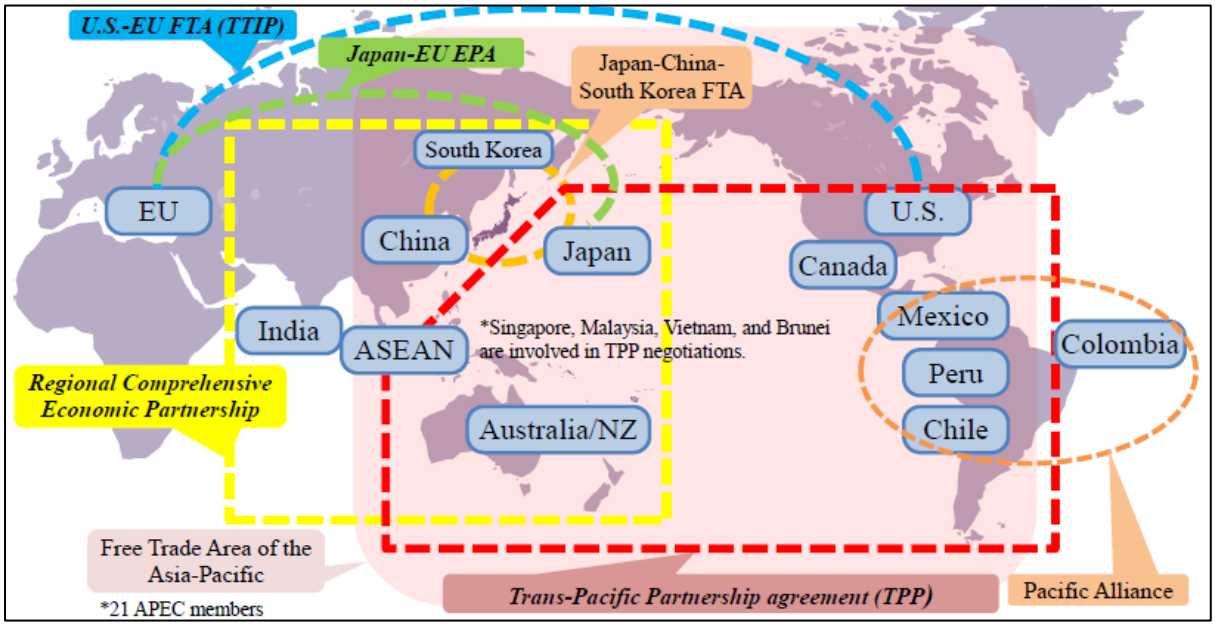

Figure 2:World Free/Regional Trade Agreements. Source: JETRO (the Japanese trading organisation, www.jetro.go.jp) 2013

5.4.2 Trans-Pacific Partnership (TPP) Agreement[12]

The TPP builds on the 2006 Trans-Pacific Strategic Economic Partnership Agreement, and currently has 12 negotiating parties. It is being promoted as an opportunity to expand benefits achieved under ASEAN by streamlining supply chain costs, reducing tariffs and barriers, reducing access to partner markets, and facilitating investment capital flows. An important feature of the TPP is the introduction of certification as a mechanism to meet 'Rules of Origin' requirements, although the final approach is yet to be developed. There are also discussions relating to the introduction of 'environmental safeguards'.

5.4.3 ASEAN Economic Community (AEC)[13]

ASEAN members are working to establish the AEC in 2015 with the goal of eliminating tariffs and Non-Tariff Barriers (NTB) by 2018, and promoting free trade and the movement of skilled workers. It is designed to extend the 1993 Asian Free Trade Agreement.

5.4.4 Self-certification under ASEAN[14]

The 2009 ASEAN Trade in Goods Agreement (ATIGA) provides a mechanism for certified exporters to make 'Certificate of Origin' (COO) declarations rather than these declarations being made by government agencies. Eligibility is based on criteria that include a history of integrity, transparent and accurate record management systems, and independent auditing systems. Case studies under this system indicate that time savings of 2-3 days in regards to applications, and an overall 50% reduction in paperwork have been achieved under COO systems[15]. A formal adoption of this initiative is expected in late 2015.

Lao PDR are considering the benefits of the self-certification approach[16], and with over 50% of Japanese wood traders using FTA systems, it is likely that the adoption of this system will promote further efficiencies in supply chains.

5.4.5 ASEAN Wildlife Law Enforcement Network

The Association of Southeast Asian Nations' Wildlife Law Enforcement Network[17] (ASEAN-WEN) is the world's largest wildlife law enforcement network. It involves police, customs and environment agencies of all 10 ASEAN countries – Brunei, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, Singapore, Vietnam and Thailand.

ASEAN-WEN is an integrated network among law enforcement agencies and involves CITES authorities, customs, police, prosecutors, specialized governmental wildlife-law enforcement organizations and other relevant national law enforcement agencies from across the ASEAN region. It operates on national and regional levels.

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[12] Source: http://tppinfo.org and www.dfat.gov.au

[13] Source: http://www.asean.org/communities/asean-economic-community

[14] http://www.Lao PDRtradeportal.gov.la/ and *www.**asean**.org*

[15] http://www.wcoomd.org/en/events/upcoming-events/wco-origin-conference-2014/~/media/F0C227DA7D9743EDAC3D0106CD9FDC2E.ashx

[16] www.Lao PDRportal.gov.la

[17] http://www.asean-wen.org/

The aim of ASEAN-WEN is to facilitate increased capacity and better coordination and collaboration of law enforcement agencies between members, at a regional and global scale. Members are expected to establish a national inter-agency task force of police, customs, and environmental officers. These task forces are the enforcing mechanisms of a regional network committed to stopping national and trans-regional illegal wildlife trade. Law enforcement officers in national task forces receive training in investigations, species identification and wildlife laws to improve their capacity and expertise in wildlife crime. National task forces are responsible for stopping wildlife crime in their country and coordinating with counterparts across the region to stop cross-border wildlife crime.

In Lao PDR, the Lao-Wildlife Enforcement Network (or Lao-WEN) was established in September 2010 by the Ministry of Agriculture and Forestry (MAF) as the outcome of an inter-agency enforcement workshop in March 2010. Lao-WEN coordinates national enforcement activities to combat wildlife crime.

Agency Members are MAF (via DOFI), the Lao CITES Management and Scientific Authorities, Police, Customs, the Army, The Ministry of Justice, Ministry of Industry and Commerce (MoIC), Ministry of State Inspection and Ministry of Natural Resources and Environment (MoNRE).

5.4.6 **PanASEAN Timber Certification Initiative**

The ASEAN working group on the PanASEAN Timber Certification Initiative[18] has been operating since 2002. The Group's main objective is to encourage coordination and cooperation among the ASEAN member States in their efforts to implement credible forest certification. At the Group's 7th meeting in 2008 the elements of the ASEAN definition of Legality of Timber were approved, with six main elements agreed:

- compliance with all relevant forest laws and regulations;
- payment of all lawful charges;
- CITES compliance;
- implementation of a system that allows for the tracking of logs to the forest of origin;
- the timber must be harvested by parties which have legal rights to carry out the harvesting at the designated forest areas based on approved cut; and
- the party which harvests the timber shall comply with the laws governing social and environmental aspects (i.e. worker's safety and health), as well as environmental impact assessment.

[18] Source: http://www.aseanforest-chm.org/forest-and-timber-certification/

5.4.7 Agreement on Cooperation for the Sustainable Development of Mekong River Basin

The GoL is a member of the Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin 1995[19] (the MRB Agreement). This is a framework agreement which outlines areas for cooperation and sets up an extensive institutional arrangement to carry out river basin management by member states (Hirsch *et al* 2006).

Ratifying members of MRB Agreement are the Kingdom of Cambodia, Lao PDR, the Kingdom of Thailand, and the Socialist Republic of Viet Nam.

The MRB Agreement is designed to set out a framework for cooperation in 'all fields of sustainable development, utilisation, management and conservation of the water and related resources of the Mekong River Basin' (Article 1), including for navigation (Article 1, 9).

It outlines general principles to be followed, decision making procedures and an institutional structure to aid implementation. Having a framework agreement enables flexibility and the option of future dialogue and negotiation to define clear rules for implementation. This framework characteristic is evidenced by Article 38 which states that '…parties may enter into... special agreements or arrangements for implementation and management of any programs and projects to be undertaken within the framework of this Agreement.' To date, a set of procedural rules have been agreed to in addition to technical guidelines on their implementation.

Under the MRB Agreement the Mekong River Commission (MRC) has the legal authority to guide or develop 'joint and/or basin-wide development projects and basin programs through the formulation of a Basin Development Plan.' The MRC has the status of an international body, including for entering into agreements and obligations. National Mekong Committees are established under member's national laws.

[19] Source: http://www.mrcmekong.org/

5.5 Consumer Country Measures

In response to ongoing concerns regarding the effectiveness of global certification systems and good forest governance initiatives, 'legality verification' is now emerging as a leading policy instrument with which to combat forest degradation and deforestation associated with illegal harvesting. It is possible that as international measures become enshrined in legislation and practice, legality will overtake certification as the dominant trade and market access requirement.

Legality represents a hybrid of global certification, international law and FLEGT efforts. Similar to FLEGT, legality verification recognizes and promotes national sovereignty. However, like certification it relies on third party verification. Unlike certification, it does not have to rely on altruistic customers' support of socio-economic or sustainability practices. Instead, it only needs to find a way to remove illegal supply (or a portion of it) from a global forest product supply chain.

Despite the widespread potential support for legality verification it has a limited policy scope in that it is designed to address a relatively narrow set of issues associated directly with illegal timber harvesting. It does not prescribe a wider set of 'global' environmental and social standards, although these may be the justification for, or embedded within, the national laws. However, this approach makes it easier to implement from the perspective of consumer countries such as the EU, USA and Australia (see following sections for more detail).

Importantly, the development and adoption of VPA with the EU will provide the market access framework under which all forest products will be deemed 'legal' under EUTR 995 provisions, and the proof of legality and DoC will transfer from the manufacturer to the signatory exporting government. Consequently, it will be mandatory for exporters of timber to the EU market to meet national compliance requirements and will no longer require secondary certification credentials (unless demanded by a purchaser). It is also likely that the VPA system will meet other legality requirements, such as those required under the *Lacey Act*.

Consequently, depending on the final compliance requirements imposed on the forest and forest products industry, the VPA has the potential to reduce the reliance on certification as a demonstration to legality or sustainability. However, these benefits will only be realised where there is a simplification in compliance, flexibility in approach and a reduction in costs.

Importantly, importers of timber from Lao PDR, such as Vietnam or China, will need to comply with these measures. The anticipated response will be that trade related pressure placed on Lao PDR will encourage it to create a robust and transparent governance framework with a clear chain of legality for its timber.

5.5.1 **United States, *Lacey Act (1900)***

One of the most widely known examples of a national government's initiative is the United States' 2008 amendments associated with the *Lacey Act 1900* which was originally passed in 1900 to control wildlife trafficking. The *Lacey Act* was amended in 2008 to include plant products, making it 'unlawful to import, export, transport, sell, buy, or possess fish, wildlife, or plants taken, possessed, transported, or sold in violation of any federal, state, foreign, or Native American tribal law, treaty, or regulation'. The amendment to the Food, Conservation, and Energy Act of 2008 expanded protection and Section 8204 targets illegal harvesting practices under three objectives:

- prohibit all trade in plant and plant products (e.g. furniture, paper, or lumber) that are illegally sourced from any US state or any foreign country;
- ensure importers declare the country of origin of harvest and species name of all plants contained in their products; and
- enforce compliance and apply penalties for violation of the Act, including forfeiture of goods and vessels, fines and jail time {Fisher, 2000 #166; NCBFAA, 2008 #167; Saltzman, 2010 #168}.

The *Lacey Act* covers the entire supply chain and illegal activity at any point means that the product may not be legally traded in the United States. The law is fact-based, not document-based, which means that there is no requirement to have certification or verification of legal origin. It is up to each individual US buyer to determine how best to conduct due care and avoid illegal timber.

5.5.2 European Union Legislation

5.5.2.1 Forest Law Enforcement, Governance and Trade FLEGT

The World Bank's Forest Strategy acknowledges illegal harvesting and lack of appropriate forest governance as a major obstacle to the efforts of client countries to alleviate poverty, to develop their natural resources and to protect global and local environmental services and values.

In part owing to certification's limited uptake in the tropics, international agencies, led by the World Bank, shifted their focus to promoting capacity building and learning within tropical countries. The idea, supported by studies showing that many developing countries have numerous but largely unenforced forest practice regulations, was to help countries develop and implement their own policy priorities and goals for sustainable forest management (Cashore and Stone 2012).

The World Bank actively supports regional FLEGT initiatives and hosts a Program on Forests (PROFOR) partnership which also addresses forest governance issues.

FLEGT was enabled, through an East Asian Ministerial Declaration in Bali in 2001 and similar declarations in other regions, to combat corruption and address forest policy enforcement challenges. This level of support for forest law enforcement and governance initiatives created the political space at national and regional levels to address the complex and politically sensitive issues related to illegal harvesting.

FLEGT initiatives have involved communities, INGOs and ENGOs, the forest sector, and governments to support improved enforcement and monitoring capacity, and address contradictory legal systems (Cashore and Stone 2012).

UK, German and EU development agencies undertook initiatives, under the auspices of FLEGT, to improve capacity building as well as foster policy learning networks in hopes of strengthening, rather than challenging, sovereignty and domestic policy development (Thang 2008, in Cashore and Stone 2012).

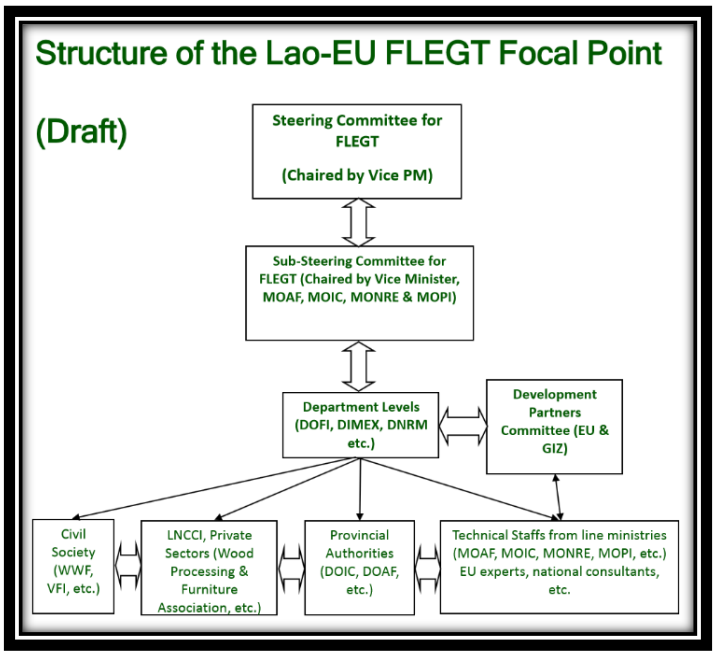
EU's FLEGT[20] Action Plan is a voluntary partnership approach that recognises the role of both producers and consumers in curbing illegal harvesting and trade, and addresses supply and demand drivers by prohibiting the sale of timber logged illegally under the rules of the country of origin. The Action Plan 'aims at improving forest governance and thus contributing to poverty reduction and sustainable natural resources management in Asia'. It requires companies to adopt a system of due diligence to ascertain that the timber they sell in the EU was harvested legally. This initiative is supported through direct funding by the European Commission Regional Programming for Asia which has an allocated budget of €5.187 billion for the 2007-2013 period {EU_ECP, 2006 #50}**.**

The FLEGT process has played an increasing role in addressing economic and forestry issues during policy dialogues at ASEAN meetings since the Bali Declaration in 2001. ASEAN members adopted a *FLEGT Work Plan 2008-2015* to provide a guide for implementation in each country. Lao PDR is engaged with the FLEGT process through ASEAN working groups. Despite initial strategic action plans and commitments to support FLEGT, there is still the need to identify specific activities to implement broad policies in order to improve forestry practices in the field.

5.5.2.2 FLEGT-Asia

The EU FLEGT Asia Regional Support Programme, commonly known as 'FLEGT Asia', promotes good forest governance in the Asian region by strengthening regional cooperation in forest governance and by promoting and facilitating international trade in verified legal timber.

The collection and sharing of information such as trade statistics, market developments, baseline studies and stakeholder analysis is an important first tier of FLEGT-Asia's work. In addition, capacity building initiatives are funded to support stakeholders in improving forest governance.



FLEGT in Lao PDR commenced in 2009, although it was not until 2012 that formal agreement was reached on the framework. The most recent discussions were held in October 2014 which centred on an action plan and roadmap. The structure of the twenty-member national support and development committee, which is tasked with developing the Lao PDR VPA action plan, is detailed opposite.

5.5.2.3 EU Regulation No 995/2010

The EU Regulation No 995/2010 of the European Parliament of 20 October 2010 'Laying Down the Obligations of Operators who Place Timber and Timber Products on the Market' is part of the FLEGT Action Plan. This legislation requires all operators who first place timber products on the market to

[20] The addition of the 'T' refers to trade.

undertake due diligence and makes it an offence to place illegal products on the EU market. The regulation obliges operators on the EU market to have systems in place that assure that the timber is of legal origin. The definition of legal is based on the law of the country of harvest.

The core of the due diligence obligation is that operators are required to undertake a risk assessment and risk management process to minimise the risk of placing illegally harvested timber or products that contain illegally harvested timber on the EU market. Each country within the EU has a designated national authority for enforcing the regulation and penalties for non-compliance.

In addition, FLEGT includes a measure to establish bilateral agreements between the EU and supplier countries; called VPAs. Under these agreements supplier countries commit to establishing a timber legality assurance system designed to ensure the legality of timber exported to the EU. A FLEGT licence accompanies timber exported from countries with VPAs and under the EU regulation timber accompanied by a FLEGT licence is considered to be risk free requiring no other due diligence assessment by the importer.

On 3 March 2013 Regulation No. 995/2010 came into force.

At the start of 2015, Lao PDR does not have a VPA or a FLEGT licence although negotiations between the European Union and the GoL are progressing.

5.6 Australia, Illegal Harvesting Prohibition Act (2012)

The *Australian Illegal Harvesting Prohibition Act (2012)* places a prohibition on the importation into Australia of illegally logged timber and timber products and the domestic processing of illegally logged raw logs. The Act requires importers of regulated timber products and processors of raw logs to undertake due diligence to verify the legal origins of timber products and disclosing species, country of harvest and any certification at the first point of entry of timber products onto the Australian market by:

- introducing legislation to make it an offence to import any timber product that has not been verified as legally harvested;
- implementing a code of conduct to ensure that suppliers that place timber on the market have carried out the proper tests to ensure wood coming into the country is legal; and
- developing a trade description and the circumstances under which it can be used, to give consumers confidence that they are purchasing legally sourced wood {DAFF, 2012 #170}.

While exports of timber from Lao PDR to Australia are minor, Vietnam is a major supplier of timber products to the Australian Market and Lao's trade to Vietnam and China in unprocessed or semi-processed wood is significant. Consequently, under this Act, there may be implication to Lao (as a supplier of wood to Vietnam and China) where wood sourced from Lao enters the Australian market via trading nations.

5.7 Regional verification systems

5.7.1 Japanese Green Purchasing Law (2006)

Individual companies providing wood products to Japanese Government entities must voluntarily certify the legality and sustainability of these criteria of timber products via third-party certifications like FSC and PEFC or other business association certifications. This is a somewhat limited approach as it only applies to timber product purchases made by government entities in Japan.

5.7.2 China Forest Certification Scheme (CFCS)[21]

The Forest Stewardship Council (FSC) has had a presence in China since early 2000. The FSC National Initiative was established in 2007, with two standards being issued: one for forest management (Standard in Forestry Sector of the People's Republic of China LY/T 1714-2007) and one for CoC (Forestry Standard of the People's Republic of China LY/T 1715-2007). In September 2014, around 3.4 million hectares of forest and 3650 chain of custody certificates (mainly reliant on imported resources) had been issued. Not all certified forests are natural or State owned as many reflect larger international industrial plantation resources.

The China Forest Certification Council (CFCC) was officially established in 2010 and amends the FSC compliant standards with the objective to apply for PEFC endorsement, which was achieved in February 2014. This indicates a change in policy that reinstates the role of the Government in setting standards.

In May 2014, only 200 CoC certificates have been issued under the updated CFCS standard. However, it is expected that as FSC licences expire, they will be replaced by PEFC/CFCS certificates.

5.7.3 Indonesia and a legality standard

In 2003, **I**ndonesian stakeholders began developing a legality definition to be used to audit the forest industry. After agreement on a definition of legality in 2007, Indonesia began developing a national timber legality system (TLAS), called *Sistem Verifikasi Legalitas Kayu*, or SVLK[22].

The SVLK serves as the basis of the Indonesia-EU VPA, which was ratified in September 2013. The SVLK does not yet have a marketing and labelling component.

SVLK is essentially designed to verify compliance with Indonesia's legal framework. *Pengelolaan Hutan Produski Lestari* (PHPL) is certified against the Indonesian Ecolabel Institute's (LEI) standards, which is recognised in the Green Procurement Policy of Japan, as well as those in the EU and US. It includes additional criteria and indicators to verify compliance with the principles of sustainable forest management. PHPL audits are required for all natural and plantation forest concessions on state land.

[21] Source: http://www.cfcs.org.cn/english/zh/index.action

[22] Source: www.SVLK.webuda.com

Businesses can use either the PHPL or SVKL systems, or both. Importantly, PHPL audits meet SVLK requirements as the criteria and indicators are already a component of the PHPL standard. However, where only an SVKL compliance is granted, the company must comply with the PHPL standard within two years.

Both the PHPL and SVLK are mandatory legal requirements under laws introduced since 2009[23].

PHPL/SVLK certification have been jointly developed and endorsed by the EU through the VPA programme. It meets EU's FLEGT licensing requirements.

Conformity Assessment Bodies (CAB) perform audits and if compliant, the CAB will issue an export licence known as a "V-legal' document or FLEGT licence if the shipment is intended for the EU.

Indonesian Forestry Certification Cooperation (IFCC) or *Kerjasama Sertifikasi Kehutanan* (KSK) was established in October 2011 to promote sustainable forest management and to gain PEFC endorsement, which was achieved on 9 October 2014.

5.7.4 Malaysian Timber Certification Scheme (MTCS)[24]

The Malaysian Timber Certification Council (MTCC) was established in October 1998 to independently develop and manage the voluntary Malaysian Timber Certification Scheme (MTCS) which is endorsed by PEFC.

The MTCS includes group certification provisions for smaller forest managers (GFMC 2/2014), standards for natural (GD-NF 2/2014) and for plantation (*Malaysian Criteria and Indicators for Forest Management Certification (Forest Plantations))* forest managers, and CoC certification (PEFC ST 2003:2012 and PEFC ST 202:2013).

As of July 2014, 4.7 million ha have been certified and 290 CoC certificates have been issued under the MTCS.

There are 460,000ha of certified forests and 166 CoCs issued for Malaysian forests. Many of these are located in the State of Sabah, where a REDD+ Roadmap seeks to have all local forests certified under FSC. WWF is a key supporting organisation that is helping to coordinate this initiative.

[23] Regulatory framework includes the Law No. 41/1999 on Forestry, Minister of Forestry regulation (Permenhut) No. P.38/Menhut -II/2009 jo No. P.68/Menhut-II/201, Minister of Trade regulation (Permendag) No. 20/M-DAG/PER/5/2008 substituted by No. 64/M-DAG/PER/10/2012 jo P. 45/Menhut-II/2012 on Standard and Guidelines for SFM Performance and Verification for Wood Legality , and Presidential Instruction Number 10/2011 on Suspension of Issuing New License for use of Primary Forests and Peatlands.

[24] Source: http://www.mtcc.com.my/

5.8 Other International Policy drivers

Voluntary, non-legal initiatives have generally evolved independent of national or international trading systems. However, the evolution of these systems has not been in isolation and many adopt similar objectives, standards and verification requirements.

While these systems have contributed to the development and adoption of more sustainable forest and land management practices, they have only had limited success in addressing illegal or unsustainable forest trade practices.

However, they remain an important mechanism which can contribute to demonstrating legality within supply chains and thereby meet legislative and international trade requirements.

5.8.1 Forest Legality Alliance

The Forest Legality Alliance[25] is a joint effort of the World Resources Institute and the Environmental Investigation Agency, supported by the United States Agency for International Development and companies in the forest sector. The goal of the alliance is to reduce illegal harvesting by supporting the supply of legal forest products.

The Alliance is an international, multi-stakeholder initiative designed to achieve better forest governance and biodiversity conservation by reducing demand for illegally harvested forest products and increasing the capacity of supply chains to deliver legal wood and paper.

To achieve its goals the Alliance aims to:

- educate and build capacity among forest product supply chains about emerging demand-side forest legality policies and new tools for increasing transparency and legality;
- equip forest product supply chain participants with practical, interactive, and freely accessible tools for exercising due care and keeping illegally harvested forest products out of the market; and
- demonstrate through a series of pilot tests with volunteer Alliance members that compliance with new demand-side requirements can be feasible and cost-effective, and identify practical ways to reduce and mitigate unintended burdens on importers and producers.

5.8.2 Program on Forests (PROFOR)

PROFOR[26] is a partnership supported by multiple donors including the European Union, Finland, Germany, Italy, Japan, the Netherlands, Switzerland, the United Kingdom and the World Bank. It was formed in 1997 to provide in-depth analysis and technical assistance on key forest questions related to livelihoods, governance, financing and cross-sectoral issues.

Housed within the World Bank's Forests Team since 2002, PROFOR is closely aligned with the Bank's Forests Strategy. PROFOR activities comprise analytical and knowledge generating work that

[25] Source: http://www.forestlegality.org
[26] Source: http://www.profor.info/

supports the strategy's objectives of enhancing the contribution of forests to poverty reduction, sustainable development and the protection of environmental services.

Strong forest governance is promoted to establish 'clear rules of the game that can encourage legitimate enterprises to make socially and environmentally sustainable investments in the forestry sector'. Addressing illegal harvesting and poaching is a focus under this initiative.

5.8.3 Global Forest Trade Network (GFTN)

The GFTN[27] is a WWF led partnership designed to create a new market for environmentally responsible forest products. The GFTN supports and facilitates greater coordination of national and regional efforts to extend certified forest management systems.

There are two members of GFTN in Lao PDR: Burapha Agroforestry Company and the Lao PDR Furniture Industry Company. Any member of GFTN must implement a program of responsible forestry. This is illustrated in Figure 3.

Stage	Baseline data	Year 1	Year 2	Year 3
Unknown/ unwanted	70%	30%	10%	0%
1st & 2nd Party	0%	20%	20%	10%
3rd Party (no accreditation)	20%	30%	20%	30%
Controlled	10%	15%	30%	20%
Certified	0%	5%	20%	40%

Figure 3: GFTN's program for responsible forestry whereby the company reduces risk associated with unknown sources.

The GFTN Common Legality Framework encompasses legal requirements across supply chains. The Framework is includes nine broad legal Principles which incorporate Definitions of Legal Origin and Definitions of Legal Compliance.

5.8.4 Tropical Forest Trust (TFT)

TFT is an international non-profit organisation that works with companies and communities aiming to help them deliver their products responsibly (see Figure 4). They focus on their members' or donors' products and supply chains to show sustainable development and risk management. Since 2003 membership has increased from 6 to 80 businesses on 5 continents. Originally TFT was focused only on wood products, aiming to bring more wood towards FSC certification. However, TFT now works across a variety of natural product supply chains and is considering adopting new approaches, stating certification is not enough to meet the social and market requirements. They now encourage their members and donors to see certification as a somewhat limited tool for creating their own responsible values, product story and traceability systems.

TFT mainly focuses on high-end companies and donors who have a similar private sector approach. They expect to move beyond certification as they continue to develop systems that develop value. In Lao PDR they have made an alliance with WWF GFTN to establish the Forest and Trade Platform. Under this platform, the Luang Prabang Teak Program (LPTP) supports responsible forest management, legality, traceability and marketing activities in Lao PDR.

[27] Source: http://gftn.panda.org/

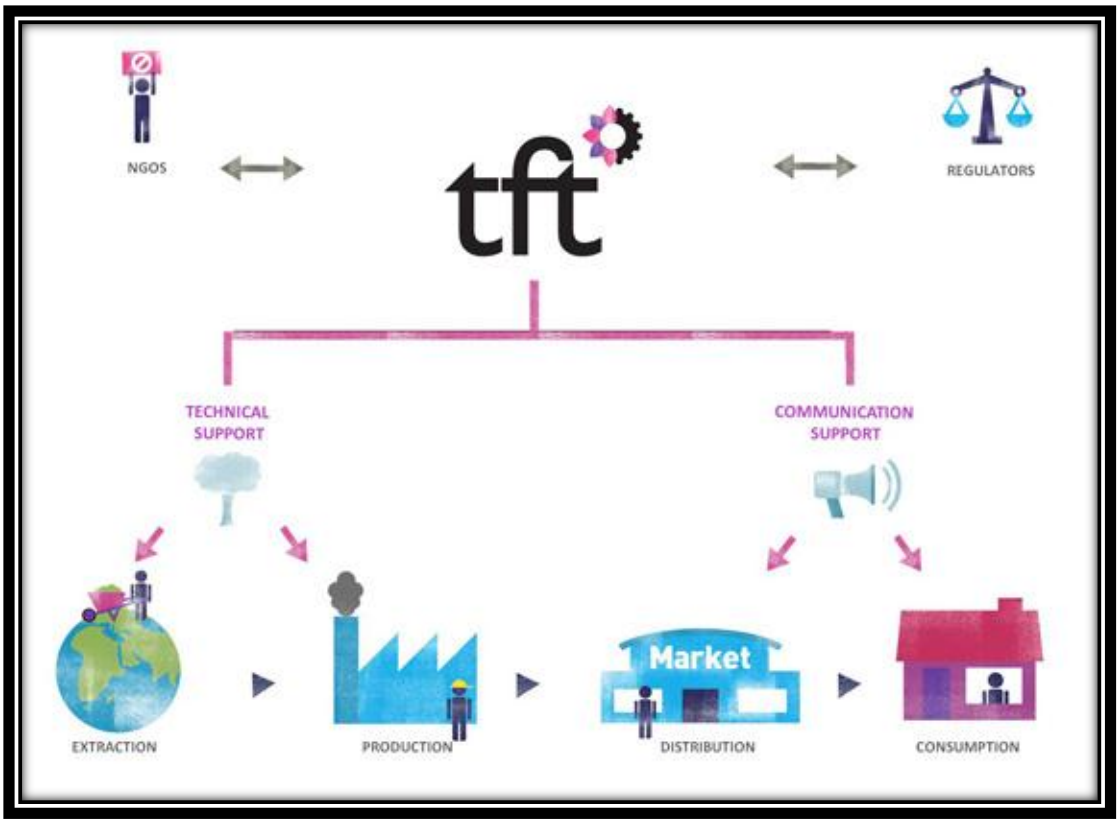


Figure 4: TFT works with their members, donors and NGOs to create and maintain responsible supply chains.

5.8.5 World Vision/Fair Forests[28]

FairForests is a voluntary self-rating system for reporting on responsible practices associated with forestry projects. The rating focuses on social and environmental impacts as well as on the on the financial and management performance and furthermore considers the business environment and production risks.

The basis for the rating is a comprehensive questionnaire that encompasses 170 indicators, of which 56 are descriptive and 116 measurable. This is managed by OpenForests UG and has been endorsed by WorldVision.

The costs for a 'package' and the generation of a rating report is 2,000 Euros for a single project. This price is fixed.

5.8.6 World Business Council for Sustainable Development (WBCSD)

WBCSD is one of the "most influential forums" (IFC/World Bank 2013) for companies on corporate social responsibility (CSR) issues. Among its members are many well-known companies such as General Motors, DuPont, 3M, Nestlé, Coca-Cola, Sony, BP, and Royal Dutch Shell. Managing Director James Griffiths stated: "*WBCSD members are committed to*

[28] Source: http://fairforest.openforests.com/ratings/

promoting certification to forest owners, encouraging full utilization of existing forest certification systems, such as PEFC, throughout the forest products value chain."[29]

6. Lao PDR laws and policies - development objectives

6.1 Domestic and Legislative initiatives

The GoL has demonstrated a long term commitment to improving forest management and promoting sustainable practices across all forest types and its forest policy framework is robust and evolving.

In 1989, the GoL sponsored a national forestry conference which identified a need to achieve sustainable forest management outcomes based around three objectives:

1. preservation of forests and improvement of management to increase production;
2. rationalisation of the use of forests to increase their economic value; and
3. ending shifting cultivation and establishing permanent settlement for the 1.5 million people affected {Kingsada, 1998 #46}.

Action was initiated in the same year through the issuing of The Council of Minister's Decree *No. 117: Management and Use of Forest and Forest Land* which defined the forest use roles and responsibility for MAF, and *No. 118: Control and Management of Aquatic Animals, Wildlife, Hunting and Fishing* which placed the management and ownership of wildlife under Government control {LaoPDR, 2005 #45}

Importantly, Decree 117 also incorporated community provisions which:

- allocate 2.5 ha of forest and forest land to each household adult over the age of 18 and 100-500 ha to each village for each family;
- allow villagers to manage and use allocated forests sustainably;
- allow villagers to inherit or transfer allocated forests to others; and
- recognise the ownership of individuals and groups of degraded land where they have planted trees, regenerated native forests, grown crops or raised livestock {Khamphay, 2007 #47; LaoPDR, 2005 #45; Samonity, 2010 #105}.

These initiatives have been refined through Prime Ministerial Decrees No 164/PM – Decree on the National Forestry Reservation over the Country {Siphandone, 1993 #42}, No. 169/PM – Decree of the Prime Minister on the Management and Use of Forests and Forest Lands {Keobualapha, 1993 #43}, and No. 186/PM – Decree on the Allotment of Forests for Plantation *and Preservation* {Siphandone, 1994 #44}.

Lao PDR has followed these decrees with action, declaring 3.31 million ha as National Biodiversity Conservation Areas. There are now 20 conservation areas, ranging in size from 20,000 at *Dong Ampham* to 353,200 hectares at *Nakai Nam Theun* {Nature_Worldwide, 2010 #91}.

[29] Source: wbscd.org/about.aspx

However, the establishment of reserves and conservation areas does not protect forests or promote sustainable forest management. To address this issue, Decree 169 provided the framework for the development of the *1996 Forestry Law* which clarifies responsibilities for "…the administration, maintenance, and use of forestry resources and forest lands…" {Inoue, 1999 #48}.

Under the *Forestry Law*, harvesting is only authorised in production forests with management plans approved by local communities {Phanvilay, 2008 #8}. While the export of whole log is banned under this law, exemptions may be made, including significant projects which are conducted in the national interest, such as roads, transmissions and hydro electrical projects project {Samonity, 2010 #105; Adams, 2010 #108}.

In 2007 the *Wildlife and Aquatic Law* was also enacted to provide legal authority to progress six main principles:

1. protection;
2. management, inspection, development and regeneration;
3. sustainability;
4. ecosystem stability;
5. maintenance of traditional rights; and
6. meeting international obligations.

These principles and objectives are supported through regulations and activities that are designed to reduce or remove environmental and ecological harm associated with human activity that impacts on aquatic and terrestrial wildlife. These include mammals, birds, reptiles, amphibians and insects. This law specifies that ownership of wild animals is invested in the national community while those in legal captivity remain the property of individuals or organisations. However, the responsibility for achieving the objectives is extended to all citizens and organisations

A unique element of both the Forest and Wildlife laws is their emphasis on community and personal responsibility for enforcing and supporting the objectives. This recognition is reflected in the Forestry Strategy to the Year 2020 of the LAO PDR (revised 2010). This strategy provides a national framework for Capital and Provincial MAF officers to develop "*the forestry sector in line with overall national plans and strategies for socio-economic development and environmental conservation including the National Growth and Poverty Eradication Strategy*". It identifies 144 actions ranging from fostering village participation, promoting the development of plantations, and improving capacity in planning, utilisation and monitoring both within the forest and by processors. It also promotes efforts to enhance bio-diversity conservation outcomes and the establishment of plantation forests.

However, concerns regarding Decree 117, and Chapter V: Scope of Preservation and Development of Forest and Forestland under the *Forestry Law* remain. In particular, a number of ENGO and GoL officials expressed, in-confidence, concern that the approach in allocating lands to individuals and villages is unsustainable as the rural population is increasing rapidly (mainly due to access to better health services and food supplies), and there will be insufficient forest land to sustain current allocation rights. For example, in 2010 there were just over 1.5 million people aged 10-20. If 25% reach maturity and live in a rural village, then collectively they would be entitled to 500,000 hectares of forest land. If only 10% established a new family, then each village would then be entitled to

access an additional 3.75 million hectares of forest land. This is clearly unsustainable as collectively this represents 23% of the total forest estate.

These structures and agreements, in combination with other domestic environmental laws (such as the *Wildlife and Aquatic Law*) and international treaties, provide a robust framework for sustainably managing forests which can be used to support market verification or compliance requirements. A summary of major policy initiatives implemented by the GoL is at Table 2.

The regulatory governance and legal framework for the smallholder plantation value chain in Lao PDR has been described by Smith (2014) and Smith and Phengsopha (2014). It is important that these reports be consulted where detailed assessment of regulatory compliance is required to demonstrate legality.

Table 2: Key Lao PDR environmental laws and initiatives

Laws and Regulations	Year	Key Provisions
New Economic Mechanism	1986	Began restructuring toward a more market-oriented economy
Decree Nº 118: Control and Management of Aquatic Animals, Wildlife, Hunting and Fishing	1989	Placed the management and ownership of wildlife under Government control.
Decree No. 117: Management and Use of Forest	1989	Defined the forest use roles and responsibilities for the Ministry of Agriculture and Forests, and provided for community and individual land use rights.
Tropical Forest Action Plan	1991	Developed forest management plans for the country, emphasising community involvement and alternatives to traditional shifting cultivation.
Decree No 164/PM –National Forestry Reservation over the Country	1993	Established National Biodiversity Conservation Areas, with a total land area of 3 million hectares.
Decree No. 169/PM: Management and Use of Forests and Forest Lands	1993	Placed all forest and forest land under the control of MAF, and excluded permanent agricultural land use activities. It also acknowledged the traditional use of the forest according to village customs.
Decree No. 186/PM: Allotment of Forests for Plantation and Preservation	1993	Formalised land and forest allocation, divided into two categories. One is the land for planting trees; the other is the land for the conservation of existing forest.
Agreement on the cooperation for the sustainable development of the Mekong River Basin	1995	An agreement between the Kingdom of Cambodia, the Lao PDR, the Kingdom of Thailand, and the Socialist Republic of Viet Nam that established the Mekong River Commission. It promotes constructive and mutually beneficial sustainable development, utilisation, conservation and management of the Basin. It recognises the need to protect, preserve, enhance and manage the environmental and aquatic conditions and maintain the ecological values within the Basin.
Forestry Law	1996	Formalised the classification of land, management and planning, and biodiversity conservation.
Water and Water Resource Law	1996	Established principles, rules, and measures relative to the administration, exploitation, use and development of water and water resources. To preserve sustainable water and water resources and to ensure quantity and quality necessary for people's living requirements, to promoting

		agriculture, forestry, and industry, developing the national socio-economy and ensuring that no damage is caused to the environment.
Land Law	1997	Allocation of land to individuals and companies.
Environmental Protection Law	1999	Established a framework to advocate public participation and the use of Environmental Impact Assessments in project planning.
National Poverty Eradication and Growth Strategy	2001	Developed five-year strategic plans for poverty reduction and eradication.
NPA Regulations	2001	Clarified the concept of National Protected Areas.
National Biodiversity Plan	2004	Established a framework for the planning for biodiversity conservation.
Prime Minister's Order No. 30	2007	Proclaimed it illegal to harvest rare species such as May Kha nhung (*Dalbergia cochinchinensis),* May Khamphi (*Dalberghia cultrata)*, May Dou Lai (*Pterocarpus macrocarpus*), May Longleng (*Cunninghamia spp*), and May Dou leaung (*Pterocarpus pedatus*).
Review Forestry Law	2008	Establishment of the Department of Forest Inspection and clarification of roles and responsibilities between enforcement agencies.
Review Wildlife and Aquatic Law	2008	Established principles, regulations and measures on the protection and management of natural wildlife and aquatic life, and established the framework for declaring species endangered and protected.
Decree No: 293 - Establishment and Activities of the River Basin Committee.	2010	Establishes an intergovernmental and multi-sectoral body to sustainably manage the priority river basins and sub-basins of the country.
Adapted from {Siphandone, 1993 #42; Cleetus, 2005 #26; Inoue, 1999 #48; Manivong, 2005 #21; PEMSEA, 2010 #22}		

6.2 National Government Policy Drivers

Since 1986, the GoL has initiated a series of reform agendas designed to stimulate development while managing impacts on traditional cultural and economic systems. These are referred to as the '*Chin-Thanakaan-Mai*', or New Thinking {Cleetus, 2005 #26} and *kanpatihup setthakit* (Reform Economy) initiatives {Mario I. Blejer, 2001 #27}. The Government's overall objective is to alleviate poverty and it has focused on changing the position of Lao PDR as a Least Developed Country status nation to one more akin with regional economies by 2020 {UNDAF, 2002 #19}.

As elsewhere in the Asia region, the rise of an educated middle class and associated increase in disposable or discretionary income is also leading to an increase in the consumption of, and demand for, manufactured products such as motor vehicles, mobile phones, fridges, televisions, and so on {Morton, 2007 #5}. The majority of these goods are imported; placing further financial pressure (associated with its budget) as Lao PDR is now a net importer of goods.

These demographic and economic drivers are leading to a policy and budgetary reliance on expanding and intensifying land use activities to generate wealth and, in doing so, fund an increased demand for services such as health and education, stable food supplies and better infrastructure {Chatterjee, 2007 #4}.

National development objectives are increasing pressure to add value to forests and their associated manufacturing and processing capacity. These changes are also causing large-scale conversion of forests, which can be viewed as a wealth creation response to the development of infrastructure which links communities and facilitates trade, and increased food production or diversification into 'cash' crops such as plantations for wood, oil or rubber {Barney, 2010 #171}.

The policy of the GoL is to promote more stable and profitable forms of land use. The development and utilisation of forest resources is seen as an important contributor to generating the wealth necessary to pay for increased services associated with a centralised government, including improvements in health and education. Integrated within this approach is recognition of individual, community and indigenous rights to land which:

- formalises land tenure through a process of land allocation;
- improves land use planning at the local level;
- develop technical packages which will improve productivity of crops and livestock; and
- develop alternatives to agricultural income for shifting cultivators (Fisher 1996).

7. Verification and Certification

Forest certification is a voluntary system that verifies standards are being met. Government regulations are involuntary and legality is demonstrated through compliance with law (usually in the form of permits or other official documentation). As a general rule, the term verification is used in regard to certification or other voluntary mechanism, while compliance relates to regulatory or other legal requirements.

The following section provides an overview of the development of verification systems within an international market context, and describes different approaches to achieve verifiable commitments to sustainable forest management.

7.1 The international context

To date, and generally independent of governments, voluntary certification has played a major role in developing concepts of sustainability (with an emphasis on environment) as a basis for facilitating market access.

Certification requires the voluntary adoption of rules governing sustainable forest management and provides a framework that demonstrates a commitment to sustainable forest management.

Forest certification emerged following the failed efforts to develop a binding agreement on forests at the 1992 Rio Earth Summit. (Cashore and Stone 2012).

There are two dominant, international forest based certification initiatives: FSC and PEFC. Both schemes support sustainable forest management outcomes, which are endorsed under verifiable certification systems based on clearly defined environmental, economic and social criteria (Spilsbury 2005).

Criteria are based on international principles and indicators that encompass economic, social, and environmental elements widely accepted as the basis for sustainable forest management. Both systems incorporate the wood products Chain-of-Custody (CoC) processes and require a commitment to legality across supply and value chains which provide certainty to consumers that labelled wood products they are using are sourced from sustainably managed forests.

FSC is arguably the first certification system developed as a response to a perceived failure to develop an internationally binding agreement on forests at the 1992 Rio Earth Summit. FSC Principles and Criteria (FSC-STD-01-001 (version 4-0) EN) are based on 10 Principles which incorporate commitments that contribute to the recovery of endangered species and enhanced biodiversity outcomes, traditional and workers' rights, as well as improving the productivity of forests and the creation of fauna and flora reserves.

FSC currently has one principle specific to plantation forests. However, under revised draft International Generic Indicators (draft v2.0, FSC-STD-01-004 V1-0 EN), the management of plantations and natural forests has been integrated which is likely to increase obligations and complexity on plantation growers.

There is a FSC streamlined set of standards within the interim and National standard for Small and/or Low Intensity Managed Forests (SLIMFs) with reduced requirements based on the scale and intensity of the operations.

FSC certification covers 112 Mha of forest in more than 81 countries.

The Programme for the Endorsement of Forest Certification (PEFC) is the world's largest forest certification body and it has endorsed 28 national schemes which cover over 220 Mha of forest. These national schemes build on inter-governmental processes for the promotion of sustainable forest management supported by 149 governments around the world covering 85% of the world's forest area.

It should be recognised that where adopted, certification has actively promoted and delivered better forest management practices, including environmental and community benefits such as water security and participation. However, it has not always addressed the issue of legality, nor has it always been consistent in its approach or benefited those who have adopted it.

However, the absence of clear and enforceable international and national market access prescriptions has led to the development of numerous voluntary sustainability-based guidelines or policies. These often mirror (at various levels) FSC and PEFC requirements and reflect the needs of organisations which operate in international markets.

Many large businesses and traders in forest products adopt risk-based purchasing or funding guidelines that require suppliers to adopt, or seek recognition of sustainability criteria. For example, alternative guidelines have been adopted by the International Monetary Fund, the World Bank Organisations, the World Trade Organisation (WTO), national aid programs and charities, and many private businesses which operate in international markets. Within developed economies, there is also an increased tendency for these schemes to include production aspects on labels such as animal welfare, labour circumstances and environmental sustainability.

Voluntary schemes often promoted under this approach include PEFC and FSC, and an example of this approach is the *1998 World Bank/WWF Alliance for Forest Conservation & Sustainable Use,* with the World Bank establishing criteria for funding forest products that adopt certification systems. The guidelines in the Bank's Operation Manual *OP 4.36 – Forests* state that "to be eligible for Bank financing, industrial-scale commercial harvesting operations must also:

- be certified under an independent forest certification system acceptable to the Bank[11] as meeting standards of responsible forest management and use; or
- where a pre-assessment under such an independent forest certification system determines that the operation does not yet meet the requirements of subparagraph 9(a), adhere to a time-bound phased action plan acceptable to the World Bank for achieving certification to such standards is required."{World_Bank, 2002 #164, clause 9}.

Criteria on acceptable standards for certification are detailed under Clause 10 and 11 of *OP 4.36 - Forests*.

Additional examples of alternative schemes include:

- Verification of legal timber (Verification of Legal Origin /Verification of Legal Compliance),
- Institutional green purchasing policies and sourcing programmes;
- The green building initiatives (US- Leadership in Energy & Environmental Design), Australia (Green Building Council of Australia) and UK (Building Research Establishment Environmental Assessment Method);
- Codes of Conduct by timber associations and individual companies; and
- Financial sector initiatives (Equator principles and IFC performance Standards).

Despite the extent of certification, less than 10 percent of the world's globally traded wood products are certified (FAO 2009). Figure 5 provides an overview of traded certified wood products, which highlights that the markets in which legislated market requirement (the EU, America and Australia) exists have a relatively high level of market acceptance for certified products. However, the use or demand for certified wood products is limited in other markets.

The development of regulated legality requirements may further reduce the demand for certified products. However, the development of green building codes may stimulate demand for wood products, certified wood products and the selection of building materials that meet criteria for recycled content, bio-based and local sources, and carbon storage (UNECF/FAO). Certification may also provide the basis for meeting legality and/or 'duty-of-care' requirements. However, the dual cost of complying with legal requirement and certification could undermine the adoption of voluntary systems unless mutual recognition and streamlined approaches are adopted to reduce costs.

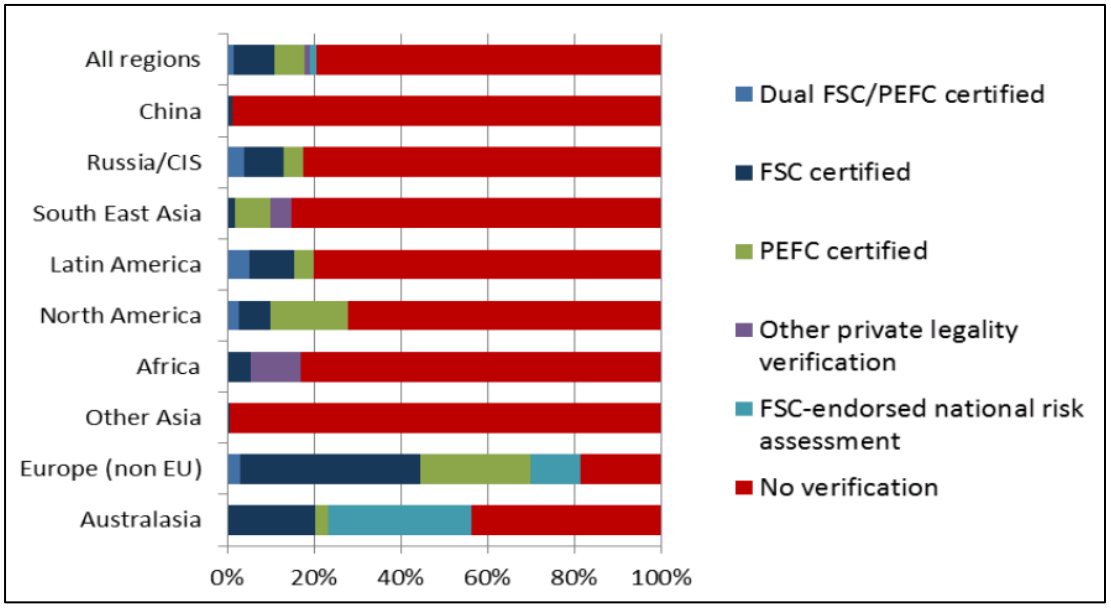


Figure 5: 2011 imports of forest products into the EU based on 3rd party verification systems as a % of total value. Source: http://www.rightsandresources.org/documents/files/doc_6138.pdf

7.2 Certification

There is no internationally enforceable certification or verification system. However, there have been numerous unsuccessful attempts to establish an international standard. These include the 1992 Rio Declaration, the Intergovernmental Panel on Forests and its successor, the International Forum on Forests, the Helsinki Ministerial Conference on the Protection of Forests in Europe, and the Working Group on Criteria and Indices for the Conservation and Sustainable Management of Boreal and Temperate Forests (the Santiago Declaration). The international criteria and indices adopted under these initiatives have been the foundation upon which other systems have been developed.

A foundation concept associated with certification is that products from sustainably managed forests generate market and price premiums. However, the reality is that only select products in niche markets have generated additional profits, while other premiums (when achieved) have failed to offset the costs of certification[30]. Consequently, the inability of certification systems to deliver on expectations is reflected in the low uptake of these schemes in the South-East Asian region.

Forest certification is a process whereby an independent auditing body conducts an inspection and awards a certificate where sustainable forest management standards are met. It is also a system that can demonstrate a commitment to sustainability and be independently verified. There are many forest certification systems (some authors suggest over 50[31]), and all differ in design, intent, interpretation and implementation.

Forest certification is one mechanism that can be used to demonstrate or verify that a specific set of conditions or standards have been met. The differences between these two terms are that **Verification** is the approach used to check that a requirement has been met, while **Certification** is used where verification has been undertaken by an accredited certification body against requirements of a specific standard (Nussbaum, 2013).

Standards establish the requirements that must be met and against which certification assessments are made.

Certification is the process of establishing whether or not the standard has been met.

Accreditation is the mechanism for ensuring the organization undertaking the certification is competent and produces credible, consistent results.

CoC verifies the source and supply chain integrity.

Claims and labelling is a mechanism that represents the fulfilment of requirements.

[30] Research on whether certification actually results in sustainable forest management (SFM) is being undertaken by the Center for International Forestry Research (CIFOR). See http://blog.cifor.org/19163/the-multi-million-dollar-question-is-forest-certification-working#.UrcQ-6Urucc

[31] Source: http://msucares.com/pubs/publications/p2447.pdf. Including FSC, PEFC, Australian Forestry Scheme, American Tree Farm System, the Canadian Standards Association, Sustainable Forestry Initiative, Malaysian Timber Certification Council.

Generally, the process to obtain certification involves initial discussions, a pre-assessment, field inspection and verification, obtaining a certification status, and follow-up audits and inspections (Figure 6). Once certified, less intensive audits occur periodically as required by the certification system.

There are three dominant international schemes that operate standard-based systems: the FSC, the PEFC and ISO. However, these systems differ between countries, and between different companies operating in the same country.

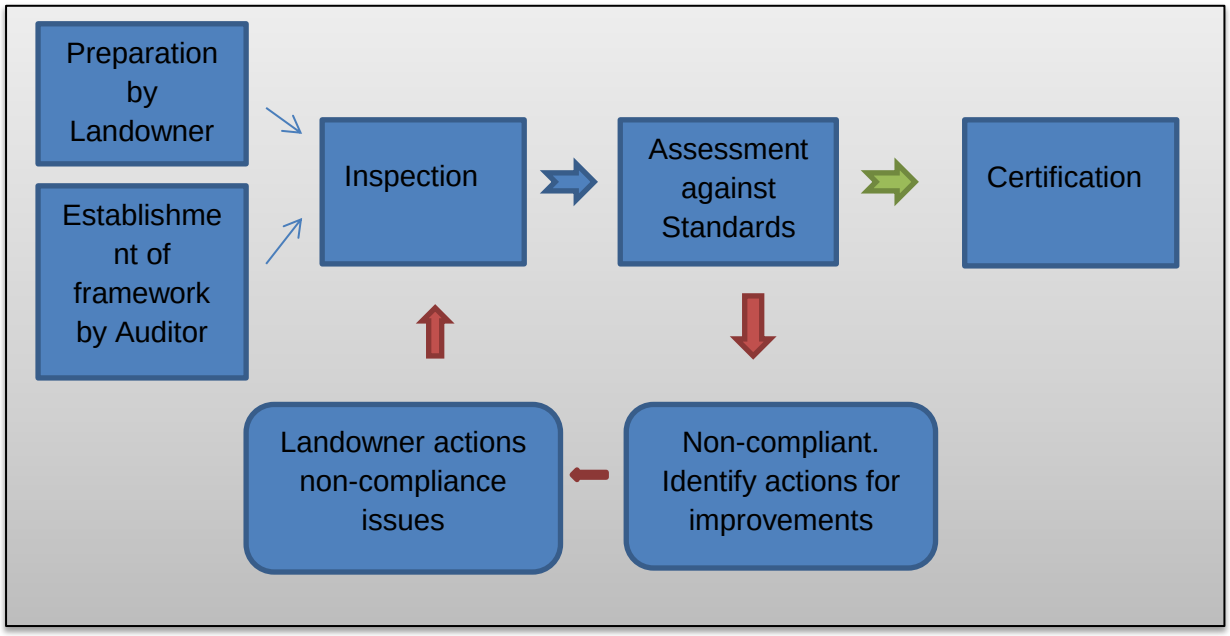


Figure 6: A flow chart outlining general certification processes[32]

Generally, forest certification systems are either performance- or system-based. Performance over time can be assessed through operational compliance with criteria and indicators. FSC and PEFC are two approaches that assess performance against a set of standards and principles. Alternatively, management based systems assess compliance against guidelines and standards that are linked to processes: ISO 14001 or Codes of Forest Practices are examples of this approach.

[32] Source: http://msucares.com/pubs/publications/p2447.pdf

7.3 Chain of Custody (CoC)

CoC costs include developing systems and an annual audit. These include costs for tagging forest products, higher record requirements, segregation and marketing. While FSC issues the majority of CoC certificates in North America, PEFC tends to be more dominant in the leading European countries

The chain-of-custody (CoC) system itself adds cost to the marketplace, with a review of published data and discussions with certified forest owners suggesting that CoC assessments appear to start at roughly $3,500 per certificate in North America (and similar in Australia and Vietnam), with annual audits costing around $1,800 (see Section 11.3 for more detailed analysis). Thus, the overall cost of chain-of-custody certification for a company would appear to be at least $10,700 per five-year period (one year of the assessment cost and four years of annual audit costs).

7.4 ISO

The International Standards Organisation (ISO) was established in 1947 with a charter to develop and promote international standards relating to trade and development. ISO standards are recognised under WTO regulations, and as meeting legality requirements sought under international initiatives such as the *Lacey Act* and FLEGT.

ISO management systems, such as 9001 (process management) and 14001 (environmental management), can deliver the same internationally recognised level of outcomes promoted by certification systems, but at a generally lower cost. These approaches also allow adopting agencies or businesses to develop systems and approaches that reflect local requirements and constraints, while still promoting continuous improvements through independent third-party auditing systems.

ISO 14001 was adopted in 1996 to meet the 1992 Rio principles for sustainable development. It incorporates performance criteria for environmental management, life cycle analysis, auditing, labelling and evaluation. The standard is based on organisational specific policies that must comply with regulatory requirements. First, second or third party certifiers can be used and reports can remain confidential.

Additionally, ISO 14001 provides mechanisms for Chain-of-Custody verification. SUFORD's work in developing FSC-approved management systems provides a solid foundation under which ISO standards can be implemented in a cost effective manner. Additionally, the market for providers of ISO auditing is more competitive than forest certification, leading to increased savings under such systems.

The development of national approaches to legality and the changing market access requirements is also reflected in an agreement by the ISO to develop a 'Chain of Custody of Forest Based Products to promote the traceability of the production chain for legally and sustainable produced goods, so that all stages of production are verified'[33].

[33] Source: http://www.iso.org/iso/home/standards_development/list_of_iso_technical_committees/iso_technical_committee.htm?commid=4952370

The proposed standard ISO/PC 287 *Chain of Custody of wood and wood-based products* has been established to develop the future ISO 19228 standard which is to apply to "wood and wood based products as well as lignified materials other than wood that originate from different categories of wood sources and are derived from mechanical, chemical and biological processing for material and energy purposes". The aim of ISO 19228 is to:

- produce internationally consistent standards on traceability of wood forest products that provides information on the origin of timber;
- reduce the current cost of double or triple certification; and
- increase the percentage of wood forest products traceable to their sources, essential for preventing illegal or controversial wood from getting into the supply chain of the forest industry.

The establishment of ISO/PC 287 reflects a trend towards mutually recognised international trade standards as promoted under WTO objectives, although there is yet to be a published standard. WTO members who currently support this initiative are listed in Table 3.

Table 3:WTO Members who support the development of an ISO timber CoC system

Participating Countries (17)	Observing Countries (18)
Austria (ASI)	Argentina (IRAM)
Belgium (NBN)	Australia (SA)
Brazil (ABNT)	Czech Republic (UNMZ)
Canada (SCC)	Hungary (MSZT)
China (SAC)	Iran, Islamic Republic of (ISIRI)
Finland (SFS)	Ireland (NSAI)
France (AFNOR)	Israel (SII)
Germany (DIN)	Italy (UNI)
India (BIS)	Japan (JISC)
Netherlands (NEN)	Korea, Republic of (KATS)
Norway (SN)	Malaysia (DSM)
Portugal (IPQ)	New Zealand (SNZ)
Spain (AENOR)	Poland (PKN)
Sweden (SIS)	Singapore (SPRING SG)
Thailand (TISI)	Slovakia (SOSMT)
Ukraine (DTR)	Switzerland (SNV)
United Kingdom (BSI)	Turkey (TSE)
	United States (ANSI)

Lao PDR's work in developing FSC approved management systems provides a solid foundation under which ISO standards can be implemented in a cost effective manner.

8. Market requirements for certification

8.1 Global Systems

A fundamental element of certification is the requirement to take action to avoid or mitigate negative social, environmental or economic impacts. There are multiple measures used across all the categories of risk to support sustainability in timber production (see Figure 7). Table 4 and Table 5 show the structure, extent and costs of existing system, and emerging systems.

Risk mitigation can be undertaken by first, second or third parties and may or may not have an independent accredited standard.

- First Party is undertaken by a land owner or firm, and involves internal process and self-generated documentation to demonstrate verification.
- Second Party may be aligned to organisations or individuals, including associations, which seek certification endorsement.
- Third Party is independent organisations or individuals that might use a variety of standards. Third Party Accredited is where independent accredited standards are used.

Figure 7: A simplified model of various risk categories associated with demonstrating sustainability when producing timber.

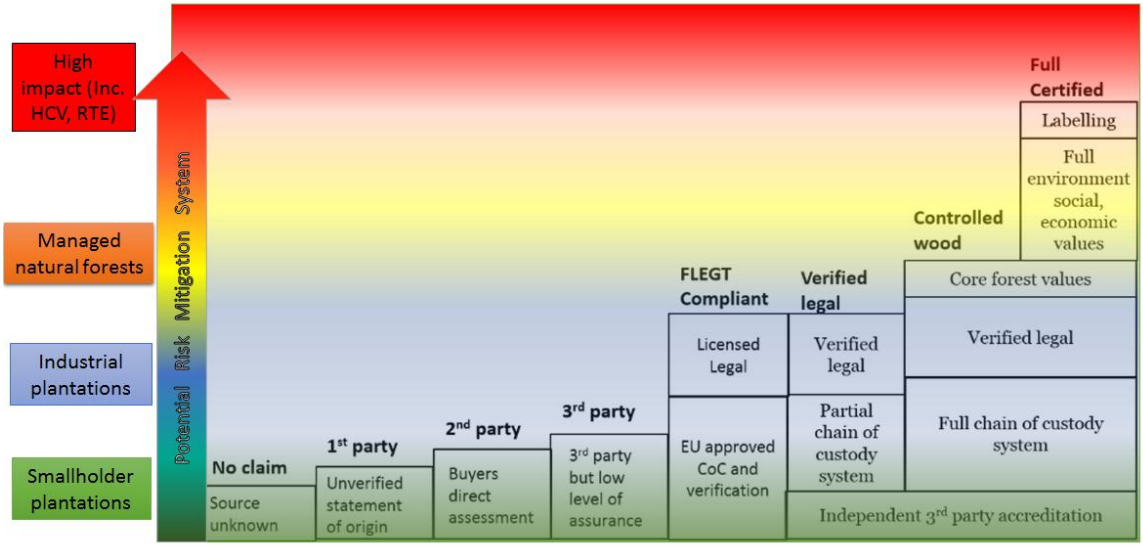


Figure 7: Certification/verification categories

Table 4: Characteristics of existing verification / certification systems (as illustrated in Figure 7)			
Responsible for the System	**Structure**	**Extent**	**Costs**
Trader/Retailer	Requires producers to implement mitigation mechanisms to phase out high risk sources	Countries requiring due diligence and companies with procurement policies	Minimal as most costs are put on producers
Producer	Supplier guarantees Engage with other parties for validation	Those who perceive a benefit from market access or premiums	Depends on the extent of internal compliance with the supplier guarantees
	Certification	Depends on the market	Varies greatly in terms of the robustness and complexity of the 3rd party

In the past, the variety of systems and their success depended on what was accepted by the market. With the large number of competing schemes there were often failures because the standards applied were too stringent to support compliance, or they were too weak for consumers to trust. In response, well-resourced and robust risk mitigation approaches were developed to meet duty of care requirements. However, these are expensive and generally designed for large industrial scale operations where unit costs are relatively low, rather than smallholder value chains. These systems also do not reflect the inherent low risk status of small scale private, plantation grown resources.

Table 5: Characteristics of Emerging market systems			
Primary driver	**Structural requirements**	**Extent of adoption**	**Costs involved**
Trader/Retailer	Increased control across supply chains	Where companies identify risk or receive additional benefit	Large unless improving primary product costs
	Due Diligence systems to eliminate high risk products, or reduce risk	Countries with mandatory regulations or companies with procurement policies	Risk assessment costs Opportunity cost from the inability to supply some products as risk cannot be specified
Producer	Country of origins compliance with regulations and laws	FLEGT VPA countries	Large costs and time associated with EU process
	National Standards that comply with legal requirements and are accepted by markets	Countries with capacity to implement standards, potentially endorsed by FSC, PEFC or other stakeholders	Developing standards, internal monitoring and external endorsement
	Forest or processing operations certified/verified through 3rd party processes	Depends on the market or investors required	Based on the compliance costs, scale and benefits
	Comprehensive evidence, transparency and the ability to communicate compliance with a specified standard (1st party)	Based on credibility and capacity for selling their "own story"	Based on the compliance costs. Marketing costs associated with "telling their own story"

8.2 Challenges associated with Certification of smallholder plantations

Under current systems smallholder plantation wood has generally been subject to the same risk assessment model as all forest products, with little differentiation in the level of risk associated with the level of production. Consequently, the adoption of certification by smaller growers has proven to be complex and costly, and take-up relatively low.

A failure to effectively differentiate verification requirements to reflect an appropriate scale of risk is magnified when applied in less developed economies where existing management and regulatory structures are evolving. The following summarises the key challenges which reflect interviews with plantation growers within South-East Asian countries (including China), and require action if certification systems are to be adopted by small growers in the region.

- Lack of consistent or appropriate national standard. While an FSC framework has been developed and implemented for natural and plantation forests, the principles, criteria, indicators and verifiers are not consistent across the region. In some countries, there are no national Code of Forest Practice, or they differ from certification standard or other criteria. This increases costs, as there is no common baseline to work from which increases variability in the interpretation of FSC standards.
- Lack of skills. There remains a shortage of local, trained people who can provide technical, administrative, management and governance services at a reasonable cost. This is particularly critical in regards to certification standards as the process is inherently complex, involving international approaches which are expected to be implemented at a local level.
- Lack of national auditors. Currently, FSC standards are audited using international cost structures which are considerable when compared to local income levels. There is a need to develop national skills which can be delivered at a reasonable, nationally appropriate cost.
- High costs of certification. Few smallholder forest growers are able to afford the direct and indirect costs associated with certification. Where an increase in price is achieved for a certified product, the benefits are usually negated by higher verification and implementation costs, which include annual costs irrespective of timber sales. The authors estimate that at least 5,000 ha is a minimal area required to reduce costs to a reasonable level, requiring a grouping of many individual smallholders.
- Lack of legal land use certificates. Certification requires clear land title to be issued in compliance with laws. In rural or remote areas, land titling has not been consistently applied or registered. There remains uncertainty as to which documents demonstrate legal land title. This can be further complicated where the establishment of a plantation predates modern land titling programs and consequently not all plantation owners are able to meet this legality requirement.
- Lack of operational efficiencies (high costs). There is a requirement for certification to improve operational efficiencies where group certification is achieved, thereby reducing costs. This may be achieved through improved management, or as a result of greater knowledge regarding the resources.
- External support. It is likely that certification initiatives in South East Asia, and Lao PDR in particular, would not have occurred without external technical, administrative and financial support.

- Other issues. The verification requirement to meet certification standards may not be economically attractive for farmers living in poverty and is problematic where literacy rates are low, and climatic conditions degrade the integrity of paper files. These requirements include establishing and documenting sustainable forest management systems, committing to replanting following harvesting, and the maintenance of operational and administrative procedures.

8.3 Cost of certification

There is no single forest certification system, nor one system that is best for all landowners. Deciding which system is best requires a consideration of:

- Initial investment, direct and indirect costs;
- suitability of management practices requirements under a standard;
- capacity to meet required standards;
- support systems and access to knowledge;
- current and projected market demand;
- availability of auditors and their qualifications (for example, FSC auditors are limited when compared to other schemes); and
- net benefits.

In addition, practical requirements may restrict suitability. For example, certification systems require that landowners have a written, technical management plan for their land and the activities carried out on the land, as well as documented monitoring systems. The obvious question is whether this is practical in a Lao PDR context or necessary for smallholders.

Currently certification is an exacting and costly process requiring regular independent audits to ensure forest owners/managers comply with the stringent requirements specified under the standard. The cost structure differs between the two most common standards FSC and PEFC, as follows:

- FSC collects all fees back to a central office and then reallocates the money to the national initiatives. PEFC allows the National Governing Body to keep most of the fees in country.
- PEFC was set up by smallholder forest owners rather than NGOs (as was the case for FSC);
- PEFC aims to have a self-sufficient national certification system that can perform even if it is not PEFC endorsed; and
- PEFC requires a national standard to be present and, unlike FSC, will not use interim standards.

Initial investment costs

These differ, depending on scale, intensity, and risk. These costs are significant: it is estimated that for a small to mid-sized plantation, costs are unlikely to be less than US$30,000 for FSC. These costs include the following activities

- Establishment of proof of ownership
- Developing forest management plans
- Establishing and documenting systems
- Engaging specialists
- Meeting Government approval, fee and survey requirements

Ongoing costs

Generally associated with activities necessary to maintain certification. Costs for a small to mid-sized plantation (up to 5,000 hectares) at estimated to be are least $10,000 pa, and may include the following:

- Commitment to improved management systems
- Maintaining records of activities
- Ongoing monitoring of commitments
- Replacement of plantation
- areas with native species for conservation
- Demonstration of commitments to enhancing natural values and reduced inputs such as fertilisers or chemicals
- Regular liaising with communities and other stakeholders
- Annual compliance audits

Opportunity costs

These vary and are difficult to quantify. These may include:

- Loss in production capacity due to restrictions associated with the establishment of buffers or conservation areas, or the avoidance of steeper slopes
- Unpaid time associated with administrative requirements
- Loss of income from other activities in order to meet requirements (monitoring, record keeping, physically preparing and managing audits)

Costs can generally be categorised as direct (initial and ongoing) and indirect (opportunity costs). It is not unusual for these costs to be 10-20% of total capital costs over a rotation. However, small landowners have higher relative costs than larger organisations.

One of the challenges in detailing costs is that data is fragmented and there is a lack of available information about the actual costs associated with certification. The estimates that are available usually only relate to the direct costs of assessments and audits. They do not include the operating costs for the certification systems or the indirect costs associated with management changes and actions required to comply with the certification standard[34]. Neither do they include lost revenue due to changes in harvesting practices to address certification standards. Brown and Zhang (2005) estimates an average revenue loss of $3.05 per hectare due to these implementation costs.

The direct financial and resource support of NGO's in developing FSC and other verification systems often masks the true costs of such systems. This may distort and cost benefit analysis and undermine the long term viability of such systems when support is withdrawn at a local level.

Direct cost estimates for small plantation owners range from US$1/ha to nearly US$60/ha (Hansen 1998, Cubbage *et al* 2003). Generally, the more detailed a system is, the more it will cost, and the larger the area, the lower the cost per ha (Figure 8). However, even these estimates do not reflect the true costs as they do not include either the costs of annual audits or any increase in operating expenses.

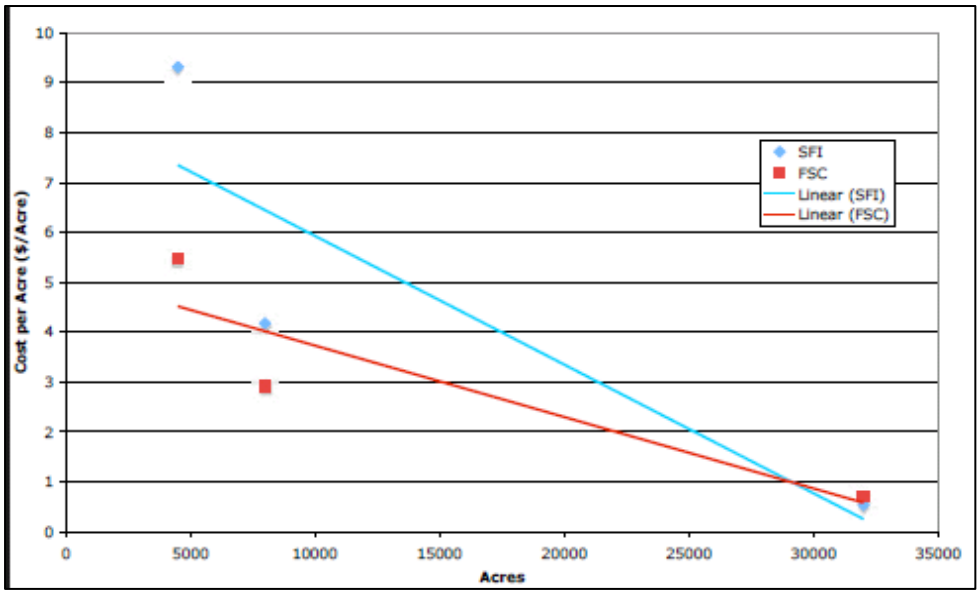


Figure 8: Direct costs of certification. Source: http://msucares.com/pubs/publications/p2447.pdf

Annual audit costs are in addition to the direct cost of a full assessment and may vary between $0.10 per hectare for large parcels to $40 per hectare for smaller areas (Hansen, 1998). By comparison, recent examples from Vietnam highlight the costs associated with FSC certification, which are:

- US$40,000 for an initial assessment of 10,000ha and US$20,000 for the first two annual audits;
- US$70,000 for an assessment cost for 2,100ha in the Phu Tho province;
- US$12,000 for an assessment and the certification of controlled wood (Dak To Forest Company); and

[34] http://www.unece.org/fileadmin/DAM/timber/publications/10.pdf

- US$200,000 for the certification of 11,700ha by Vietnam Rubber Corporation plantations[35].

Importantly, these costs can decrease over time, as periodic audits and re-assessments are less expensive than the initial assessment. This is because once certification systems have been developed and implemented there should be an overall improvement in knowledge of requirements, more efficient use of inputs, and a greater understanding of the value of the resource. There is also the cost saving potential from streamlined procedures for SLIMFs, group certification with a sampling of member types and desktop audits.

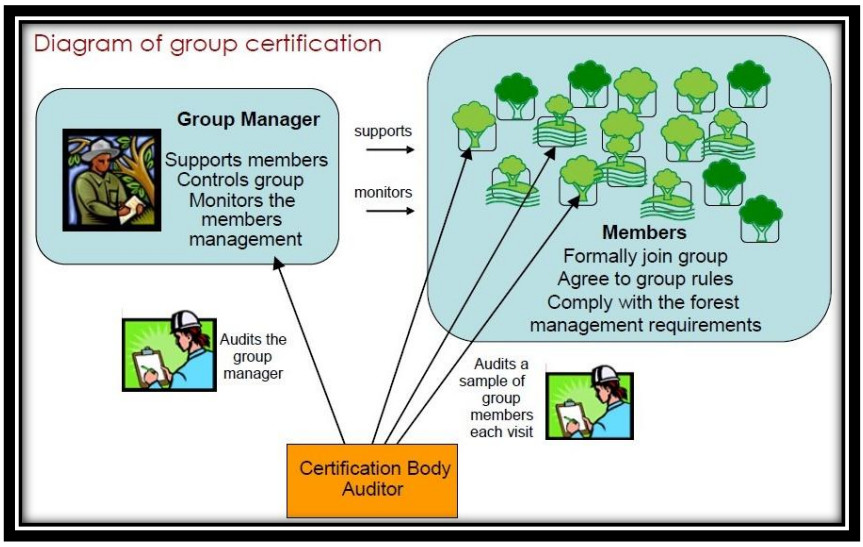


Figure 9: Structure and certification process for groups. This is one approach to reducing the costs of certification (Source: FSC smallholder training module, 2012)

Further analysis of direct costs for two North American certification systems indicates that the process required to obtain certification is the largest cost component (often over 40 percent, see Table 6). These direct costs include the development and documentation of appropriate management procedures, pre-assessment checks, training and improved transparency, including documented compliance with regulations and legal instruments. However, in Lao PDR this is likely to be higher as a percentage because FSC audits are undertaken at a fixed international rate rather than at a national rate.

[35] Source: http://www.forest-trends.org/documents/files/doc_3179.pdf

Table 6: Estimated certification costs (as a percentage of $/ha/yr) and as an average US$ total /ha/yr		
Operation	**Sustainable Forest Initiative (SFI)[36]**	**FSC**
Certification expenses (ex audit)	43%	40%
Internal preparation fees	13%	21%
External audit fees (audit specific)	22%	16%
Ongoing preparation fees	17%	20%
Community obligations	1%	2%
Management changes	2%	1%
SFI/FSC commission	2%	1%
Total Costs (USD)	0.87	2.29
Adapted from Cubbage *et al,* 2008.		

In the Lao PDR context the cost for individuals (e.g. annually US$9 000 for Rattan) and organisations (estimated to be around US$27 000 pa for state owned forests managed by the DoF, and $13 000 for controlled wood certificates). This can be a major disincentive[37] because the annual average gross national income for Lao PDR is US$1460.

[36] Source: http://www.sfiprogram.org/

[37] These are conservative figures which do not include subsidization

8.4 Determining the risk profile of private, small plantation growers in Lao PDR

Determining the level of risk, and hence the complexity of verification or compliance systems required to meet DoC requirements associated with timber and forest products, involves an assessment of the likelihood of illegal activities against the impact or severity of such activities. Such impacts may be social, economic, or environmental.

A systematic approach is required to assess the risk profile of forests which are managed for human activity, including exploitation of natural products.

A common assumption is that small plantation areas have a lower risk profile than large industrial plantations, natural forest operations, and timber sourced from HCV forests or where endangered, threatened or vulnerable species exist.

To test the above assumption, a desktop assessment of different risk approaches was undertaken. The three approaches used were the EUTR/VPA requirement; the TFT Risk Assessment Tool; and the FSC Controlled Wood Risk Assessment.

1. EUTR/VPA. This risk assessment requires processes to identify and exclude illegally harvested timber or associated forest products. The approach must incorporate processes that ensure legal and regulatory obligations are met, the verification of supply chain and source of origin, and that appropriate licences or permits are available (including a CITES licence).

   Under EUTR requirements, private, small plantation growers in Lao PDR would have a risk category of 'Negligible' as national systems for regulation and authorisation of harvesting activities are available, the origin or source is not controversial, and the species planted, in this case Teak, is not a CITES listed species.

2. The TFT Risk Assessment Tool[38] incorporates processes that involve supply chain analysis, origin of products, and country level risk assessments which assesses the extent of illegality and the reliability of official documentations; ability to identify supply chain links where timber from high risk countries is imported; and impacts on local species.

   Applying the TFT Risk Assessment Tool Country Risk Assessment criteria, private, small plantation growers in Lao PDR would have a risk category of 'Low Risk' as legality can be demonstrated through national regulatory and licencing systems, the origin or source is not controversial, Lao PDR is a land locked country whose export nodes are relatively easily managed, and the wood is not a CITES listed species, threatened, endangered or vulnerable.

3. FSC Controlled Wood Company Risk Assessment (FSC-STD-40-005 version 2-1 Annex 2)[39]. This requires an assessment against five criteria (and 15 associated sub-criteria):
   - Is it illegally harvested timber?
   - Has the timber harvested been in violation of traditional or civil rights?

[38] Source: http://www.tft-forests.org/ttap/risk-assessment/
[39] Source: au.fsc.org/download.visy-annex-2-risk-assessment.173.pdf

- Has the timber been harvested from forest in which high conservation values are threatened by management activities?
- Has the timber been harvested from areas being converted from forests and other wooded eco-systems to plantations or non-forests uses?
- Is the timber from for forests in which genetically modified trees are planted?

Applying the FSC Risk Criteria, private, small plantation growers in Lao PDR would have a risk category of 'Low Risk' for similar reasons outlined under the previous assessments, and that no genetically modified trees are used in Lao PDR commercial plantations.

However, it is noted that 'unspecified risk' exists in regards to non-plantation issues, including regional illegal logging of natural forests, the Corruption Perception Index[40] (CPI) for Lao PDR is under the acceptable threshold, there is limited information in regards to conflict resolution or adoption of ILO Convention 169 on Indigenous and Tribal peoples.

Consequently, allocating a low risk profile to Lao PDR's private, small plantation growers is reasonable as most are traditional, or small scale absentee or new migrant, land owners, a national system that specifies legal and regulatory obligations exist, and the plantations are well established (thereby limiting impacts on HCV areas or values, although some plantations may have been established through the clearing of either intact or secondary (successional forest) during the early years on plantation promotion policy).

It should be noted that there continues to be a high likelihood that Teak from smallholders is technically illegal due to the low level of plantation registration and a general view (often verified from personal discussions with landowners) that compliance with regulations at harvesting is variable and low. While the consequences of this are minor for growers (no enforcement therefore no penalties; a range of options for selling wood) the consequences can be greater further down the supply chain (e.g. market access for processors/exporters; greater scrutiny at sawmills; and loss of revenue), and in terms of impact they are low for growers but moderate or higher for others in the supply chain.

There may be also instances where teak enters the market after land is acquired by the state or companies (under concessions) for infrastructure or the development of projects and, where such processes do not fully comply with laws (such as the payment of compensation.

However, any non-compliance may be considered acceptable given the source of wood is from small plantation owners where income from sales is reducing poverty and therefore providing social benefits that outweigh legal risks.

[40] Source: http://cpi.transparency.org/cpi2013/

8.5 Verification initiatives –the Lao PDR context

8.5.1 Overview

Programs to establish management systems based on certification programs have been operating since the late 1990s for a range of forest types and products including timber from State-owned natural forest and plantations, smallholder grown wood, rattan and bamboo. Table 7 provides an overview of existing certification and verification systems which operate in Lao PDR.

Table 7. Existing verification initiatives in Lao PDR

Certified Entity	Type	Structure	Extent	Stakeholders	History
Lao PDR Government. FSC	Natural Production forests FSC certified	Central government group	2 provinces, 5 districts for natural wood and rattan	DoF, SUFORD, WWF	Established in 1990s. Included rattan in FSC certification in 2012
FLEGT	Focal point for establishment of VPA	Steering committee	Lao PDR Government Forestry Sector	MAF, DoF, EU, GIZ, LNCCI	Focal point established in 2009, initiative letter with EU (2012), and current coordinating committee established.
ISO	Quality and Environmental Management systems	Business and auditing companies	12 companies certified as of 2012	Beer Lao PDR, Lao PDR Airlines (ticketing and reservations), cement companies. SGS Thailand.	Strong uptake in Vietnam. Since 1999 a variety of non-forestry factories have been certified.
Lao Forest and Trade Platform (TFT/GFTN)	NGO providing technical support for responsible business. FSC FM and CoC certification	Membership paid annually, subsidised by donor project	Currently has 2 members: Burapha Agroforestry Co. (FM and CoC) Lao PDR Furniture Industry Co.	WWF GFTN, TFT. Forestry companies. Lao PDR national chamber of commerce and industries	In the past supported by Responsible Asia Forestry Trade projects (RAFT). Had up to 9 members in 2010.
Luang Prabang Teak Program (LPTP)	Project to support smallholders management and marketing including FSC certification	Provincial Forestry Section group entity with farmer group	10 villages and three districts in Luang Prabang. Around 1000ha between FSC and pipeline	Lao PDR Provincial Forestry Section, TFT, JICA, ACIAR and smallholders	Established in 2008, FSC certified group entity in 2010. Supporting farmer groups, forest management and marketing
Burapha Agroforestry Co.	Agroforestry development and furniture factory.	Private business	Vientiane plantations and country-wide wood purchasing	Company and smallholders.	Established in 1991, exporting timber since 2002. FSC certified in 2010 (CoC) and 2012 (FM).
Oji Lao Plantation Forest Co	Industrial plantation	Joint venture	Target to establish 50,000 Ha (around 50% established)	GoL and Oji Lao Plantation Holding	Commenced in 1999, with FSC certification obtained in 2013

A common characteristic across all certification initiatives is the requirement for flexible approaches if sustainable forest management outcomes are to be achieved. It is also critical that unrealistic economic expectations are not promoted, because they can potentially undermine the benefits such systems provide. For example, Greenpeace and WWF promote FSC as the only credible system available to the GoL and actively encourage its adoption, maintaining that this will provide market advantages and deliver price differentials {Greenpeace, 2001 #163; Renström, 2010 #169}. However, these claims are yet to be reflected in the market.

Discussions with GoL officials and other organisations involved in promoting forest management, undertaken as part of this project, also indicate that there are tensions between the GoL and FSC. GoL officials are concerned that scarce resources have been directed towards achieving certification, yet no financial gain has resulted from this investment. There is a division of opinion that while FSC has supported better practices, compliance and management costs, combined with resource restrictions, are affecting development and social improvement within Lao PDR. It has also been suggested that this situation could lead to a decision to abandon FSC certification as a sustainability framework in favour of alternative programs, such as the United Nations Collaborative Programme on REDD+[41], which is also driving improvements to forest management, or even PEFC.

In one interview, it was stated that while the GoL is supportive of international standards "REDD+ is an easier and more attractive process than FSC". There was also discussion on the merits of abandoning markets where FSC standards are required, in favour of markets which do not require this standard but which do provide returns at levels which are attractive. For example, representatives of one company[42], stated that "FSC is not providing premiums, and markets for non-certified wood are strong".

Alternatively, the adoption of ISO management systems, such as ISO9001 (process management) and ISO14001 (environmental management), can deliver the same internationally recognised level of outcomes promoted by certification systems, but generally at a lower cost.

It is evident that recent economic volatility within the EU has reduced demand for imported timber, while the introduction of EUTR 995 has increased regulatory compliance costs. The reduction in volume and profitability is supporting the regional trend for growers to supply alternative markets, which are dominated by China where the returns are lower to growers, as are the regulatory or compliance costs.

However, it has been noted that Lao PDR timber processors who have adopted CoC systems indicate that while no premium is being achieved for the certified products (or the returns do not exceed the costs), they have benefited through improved efficiencies (administrative, stock control and utilisation) within the factory.

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[41] REDD+ is an incentive based, financially valued initiate to encourage developing countries to reduce emissions from forested lands and promotes the role of conservation, sustainable management of forests and enhancement of forest carbon stocks. Further information is at < www.un-redd.org>.

[42] The company is an international paper, packaging, and forest products company, producing wood products for the global markets. The company is currently establishing fast-growing hardwood plantations Lao PDR.

Table 8 provides a summary of issues identified through discussions with ACIAR partners and individual growers, processors and marketers in Lao PDR and regional countries associated with certification and the ability of small plantation growers to benefit from such systems.

Table 8: A summary of current certification challenges for small, private forest growers

Perceived Benefits	Areas of Cost	Grower requirements to maintain certification	Certification challenges
• Price premiums (more perceived than actual) • Market access (more perceived than actual) • Increases in operational efficiencies: reduced costs from less wood waste at mill and/or in forest, and from better skid trail/road building • Assurances of a more sustainable resource base. • Heightened reputation associated with sustainability or legality (branding and credibility) • Support from international organizations[43] (financial, technical, administrative, and marketing) • Improvements in silvicultural practices (e.g., knowledge transfer	• Initial: e.g., development of management plans, awareness raising, training; hiring new staff; administration and documentation systems, CoC system; GIS, digital mapping; and biodiversity surveys • Regulatory: registration of title and associated land tenure issues. • Ongoing: e.g., conservation and biodiversity buffers; annual audits, and maintenance of records of activities • Opportunity: e.g., time lost from finding markets for certified timber, and income foregone from alternative activities. • Documentation: ongoing requirements to maintain records • Labour: inventories and silvicultural applications.	• Consumer demand will have to increase • Certification costs will have to decrease • Mutual recognition, especially with legality requirements • Financial and technical support • Reduce administrative and documentation requirements • Flexibility	• Reduce costs • Promote competitive services • Be relevant against legality requirements • Agree to mutual recognition (reducing costs) • Reduce complexity • Reduce productivity losses associated with obligations

[43] Including WWF, ACIAR, Japanese International Cooperation Agency, World Bank, etc.

and support for planting, pruning, thinning) • More efficient record keeping (better knowledge of the resource and inputs) • Gaining an edge on the competition (perceived). • Market security (more perceived than actual) • New markets (more perceived than actual) • Development of the capacity of regulators and service providers • Creation of transparency and confidence in the value chain	• Delayed return: the 15-year Teak rotation cycle means that farmers must forgo more frequent returns. • Transaction: time spent searching for buyers interested in certified timber. • Supply: capacity to meet larger orders or specifications		

8.5.2 **FSC in Lao PDR**

In Lao PDR, financial and capacity building support for FSC in natural forests began in 1996 with a project jointly funded by the World Bank and the Finnish development agency; this was known as the SUFORD program. Since then several other support initiatives have been implemented, including the TFT and other organisations that have focused on developing local capacity and expertise in sustainable forest management[44].

Over the past nine years, the area of certified production forest has increased to 105,239 hectares [45] (both plantation and natural forest), including 82,670 hectares under the group certification scheme managed by DoF (Table 9 provides an overview of FSC certified area).

The DoF group certified forests comprises 10 forest areas or just over two percent of the total area of production forest in 2012, albeit relatively high compared with other countries in the region. These include:

- Two co-managed production forests in Khammouane province totalling 23,193 hectares.
- Four co-managed production forests in Savannakhet province totalling 58,425 hectares.
- Four village rattan forests totalling 1,142 hectares in Bolikhamxay province, certified in 2011 (WWF, 2011).

Case Study:

WWF Sustainable Rattan Project

Modeling based on project data and applied to 28 villages in Lao PDR, covering 20,000ha and included CoC.

Costs annualized over 2011-14 was US$111,048 or US$64 per basket.

Returns averaged US$16.5 per basket.

Conclusion was that without direct support, the system is not financially viable.

However direct improvements in sustainable management and quality of products was demonstrated.

Source: Knowles 2011

[44] These include the ACIAR funded programme, Enhancing Key Elements of the Value Chains for Plantation-Grown Wood in Lao PDR. See details in: Smith, H.F. (2014) Smallholder Teak Plantation in Lao PDR. A study to assess the legal barriers to smallholder Teak plantations and the associated timber value chain. ACIAR, June 2014. The Luang Prabang Teak project of TFT (http://www.tft-forests.org/projects/project.asp?pr=31); the ForInfo project of RECOFTC (http://www.recoftc.org/site/resources/ForInfo/); and the Forest Investment Program of the International Finance Corporation also started a pilot programme for smallholder forestry in 2014. FIP (2013b) FIP Progress Update. September 2013. https://www.climateinvestmentfunds.org/cif/content/Lao PDR-pdr-fip-progress-update-september-2013

[45] FSC, June 2014

In addition to the DoF group certification scheme, a small number of plantations have been certified in Lao PDR, principally:

1. Smallholder Teak plantations in Luang Prabang province (with the support of TFT[46])
2. Industrial village and smallholder plantations by Burapha AgroForestry Co.
3. Industrial plantations managed by the Oji Lao Plantation Forest Company in Bolikhamxay and Khammouane provinces.

However, certification remains an exacting and potentially costly process requiring regular independent audits to ensure forest owners/managers comply with the stringent requirements specified under the standard which can be a disincentive where incomes are relatively low.

Table 9: Overview of FSC projects in Lao PDR, 2014

FSC Certificate Code	Certificate holder	Type of Forest and products	No. of Ha	Structure and history
SW-FM/CoC-001711	Department of Forestry	Natural Forest roundlogs and NTFPs	132,000 total land mass 14,000 NTFPs 50,000 production areas	Managed by the GoL with a Group Certificate. 3 Provinces with 5 Districts managing 12 FMUs at a village level
GFA-FM/CoC-002224	Luang Prabang Forestry Section	Plantation (Teak) wood	320	A group certificate held by PFS 2010 with more than 250 families across 2 districts in 4 villages
GFA-FM/CoC-002679	Burapha Agroforestry Co., Ltd.	Plantation (Eucalyptus, Acacia) wood	380	Private company established in 1993, first certified in 2013. SLIMF group of plantations both company and farmer managed
SGS-FM/CoC-009953	Oji Lao Plantation Forest Company Limited (LPFL)	Plantation (Eucalyptus, Acacia) wood	22,231	Established by GoL with international companies, now owned by Oji Paper. A Single Forest Management Certificate since 2013.

In discussions with GoL representatives, concern was expressed that the cost of obtaining FSC accreditation was too high. Discussions with Burapha Agroforestry Co. Ltd, reveal that while European supply arrangements required wood to be FSC certified, following accreditation neither market access nor the price increased. Requests for certified wood have changed over time, and have become more specific to Eucalyptus than Teak. Furthermore, the small amount of FSC certified wood available has meant that long term supply for potential product lines have not been realised. It

[46] http://www.tft-forests.org/projects/project.asp?pr=31

is possible that a more consistent, long term supply (both quality and quantity) would support the development of a more stable market for Lao PDR teak. However, until a system is developed where consistency is achieved (potentially through regional or more effective group marketing initiatives, or individuals achieving critical mass) timber supplied from small grower plantations are likely to remain subject to 'spot market' fluctuations in demand and price.

The GoL has raised concerns about its exclusion from participating directly on FSC Advisory Boards or on the boards of National or Regional Offices, even though it is the owner and manager of natural forests (SUFORD-AF 2009 report). In effect, it is being asked to implement and fund a national forestry management standard without being able to directly influence such a standard.

Tensions have also been identified within the GoL ministries where FSC rule 6.1 on conversion of forests (FSC-STD-01-001 (version 4-0) EN, Amended 2002) has been applied. This rule states that:

"Forest conversion to plantations or non-forest land uses shall not occur, except in circumstances where conversion:

- entails a very limited portion of the forest management unit[47]; and
- does not occur on high conservation value forest areas; and
- will enable clear, substantial, additional, secure, long term conservation benefits across the forest management unit"

Rule 6.1 excludes the clearing of significant areas of forest lands for conversion. However, a unique and unfortunate legacy in Lao PDR is that large areas of degraded forests contain unexploded ordnance (UXOs) and this has hampered community access to, or increased risk associated with, land use activities. Under Rule 6.1, this land cannot be converted from natural forests in order to provide safe access to this land, even though to do so would remove UXOs. Thus, plantation companies who clear UXOs on regenerated forests cannot obtain FSC certification if this land is converted.

8.5.3 **FSC sales in Lao PDR**

Since organisations in Lao PDR have been certified there have been very few products delivered to market as FSC certified; there is insufficient quantity, quality or continuity of supply to support a more consistent market pull for products. This suggests that certified wood does not have the improved market access or price premium claimed by the scheme. The main FSC wood sales are as follows:

[47] Defined as "no more than 0.5% of the area of the Management Unit in any one year, and no more than 5% in total". This definition may be modified by FSC, by due process. (cf. Controlled Wood Standard for Forest Management Enterprises, Company Evaluation of Controlled Wood, and FSC Glossary of Terms).

1. LPTP sold just over 300m^3 of logs (20m^3 square logs) to Burapha Agroforestry Co. in 2012, who has processed the wood and has stockpiled a large proportion.
2. DoF FSC group and Sophi factory sold 19m^3 of flooring to Germany in 2012.
3. TNK sold 20m^3 of Teak flooring to Japan in 2014.

The low level of adoption of FSC in Lao PDR, and by its neighbours, may reflect the concerns that there is little net benefit in adopting certification standards. FSC data from 2014 indicates there were 82,846 ha of certified forests in Lao PDR (0.4% of the national estate), 41,359 ha in Vietnam (0.3% of the estate) and 25,586 ha in Thailand (0.2% of the estate). However, in Lao PDR no timber has been sourced from FSC certified natural forests since 2011.

Market requirements for certification

Burapha's experience

In late 2000, demand for FSC plantation timber was high.

Burapha worked with LPTP to access the market. They invested in pre-certified and FSC wood, but could not source appropriate quantities or suitable quality Teak to meet market requirements.

The current US buyer of the Teak home décor range provides a good market for the small piece size wood products, but not at a premium as their markets do not value FSC.

*In Sweden, customers like Plantagen value Burapha's **CoC for traceability and due diligence**, but are not purchasing the FSC wood because of ongoing problems with fake certificates from Vietnam and China, and the process to get FSC Sweden to approve their logo use for advertising.*

*To address risk, Burapha receives third party **risk assessments** from Track Record Global for companies like Silvan in Denmark. This meets EUTR 995 requirements.*

*However, even then companies such as Biltena require a copy of a Forest Management plan, government approvals, and proof of origin certificates to meet their **FLEGT risk assessment requirements**.*

8.5.4 **Processing and CoC**

In 2013, the number of registered mills in Lao PDR was around 1150. However, only five wood processing mills have CoC systems. They are:

- Souphi and Pouthon, which are located in *Savannakhet* Province. Both produce natural timber flooring, and Pouthon also produces furniture. Souphi sold one consignment of FSC certified *Diptrocarpus* sp. to Germany.
- Lao PDR Industry Furniture and Burapha Agroforestry Co. (Vientiane). Both produce furniture, although Burapha only uses plantation timbers (Teak and eucalypt) and also produces flooring. Burapha has been the main buyer of FSC wood from LPTP.
- TNK Factory (Luang Prabang) which produces furniture from plantation Teak. The factory has bought a small amount of certified wood from LPTP and exported it to Japan. They are about to sign an MOU with Japanese investors to improve the processing and support for Luang Prabang Teak

The importance of a CoC system is highlighted in the discrepancies in, among others, the Luang Prabang Province where there are 20 sawmills. In 2012, they had a combined annual output capacity of 28,000m^3 and production levels of 3,230m^3 for semi-finished and finished goods. In that year, the registered Log Landing 2 volume in Luang Prabang was 5,099m^3 and volumes provided by mills indicated they received 7,248m^3 which equates to around 25% of annual requirements. The cause of

this discrepancy is not documented, however, a robust CoC system would provide a mechanism for identifying the source of wood entering sawmills.

As sectors, such as wood and rubber producers, adopt production, legality or certified standards, smallholders face the risk of missing market opportunities if they do not improve production practices to meet the new and potentially more stringent requirements. This will be particularly challenging for the independent smallholders such as the Teak growers; where smallholders are part of the supply chain of a certified processing facility, they may need support to improve compliance with these schemes.

For example, under verification schemes, processors are obliged to ensure that all smallholders and out-growers which form part of its supply chain are of a certifiable standard. For independent smallholders, they might achieve certification through a group certification program, as is being done in the Luang Prabang Teak Program (LPTP), described in section 9.3 and under DoF, although some may not be comfortable with such arrangements.

Within this ACIAR project there is a component considering the use of Farmer Group Enterprises such as small scale primary processors and furniture makers as a mechanism to lead the implementation of verification schemes. Ling (2012), and associated work (2012-2015) under ACIAR: Project FST/2010/012, *Activity 1.3A: Identify and Test what forms of grower organisations are feasible and sustainable*, has undertaken extensive research which has identified constraints and opportunities to expand participation by delivering improved benefits through streamlining existing systems of higher returns to growers. Further work will be undertaken under the ACIAR project to identify where common action or approaches to promote the adoption of appropriate verification or compliance systems and enhanced participation of groups can be achieved, and in doing so deliver improved value to growers.

8.5.5 **Costs of certification**

As indicated previously, while the cost of certification is variable and difficult to accurately quantify, it is high and often undermines the capacity of small growers to adopt schemes without assistance.

Further work is required to better identify the costs of certification and verification systems in Lao PDR. However, Table 10 provides the indicative costs of the existing schemes and Table 11 shows indicative costs of emerging schemes.

Table 10: Indicative Cost of existing certification and verification systems in Lao PDR

System	Costs (USD) to Principle	Barriers	Successes	Observations
TFT/GFTN	200-5000 annually. Membership paid and subsidised by donors.	Certified areas of plantations limited. Certified wood not available from natural forests	9-12 CoC certified companies Raised the profile of certification including rattan and Teak Assisted in the basic traceability systems for Lao PDR to Vietnam	Have strong international networks to make market links when wood supply is available. Committed to streamline certification. Open to PEFC
LPTP	Approx. 300,000 annually in administration. Government and Donor subsidized. Small joining fees for farmers	Scalability and volumes with so many development objectives.	Wood sales and FSC certification for 4 years. Built capacity of government and farmers	Excellent entry point for improved approaches and research. Building systems for large scale implementation
Burapha	Preparation costs (30,000) Ongoing annual costs for Forest Management (10-20000/yr) CoC (1-4000/yr)	Complex standards applied to Lao PDR context. Expected improvement in marketability did not eventuate	CoC and FM certification Investor confidence Major buyer (90%) of LPTP wood	Committed to improvement in plantation industry, continuing to buy FSC wood Buys small logs from thinning operations
TNK	Preparation costs (2-5000) and ongoing CoC costs (1-4K) a year	Availability of large logs Measurement of logs from LPTP	Successful export of FSC wood Links with Japanese investors and external projects	Interested to expand FSC certification for the communities around the factory
GoL FSC	Part of $150-200M project	Only one trial FSC wood sale	Large scale natural forest certification	Aid donors very interested in certification for development objectives
FLEGT	$8M for first phase	Awareness and capacity for market requirements	Preliminary roadmap initiated, ability to support of Vietnam VPA	May provide support for existing projects to test feasibility of FLEGT
ISO	$1,000-5,000 for direct costs	Capacity to develop, implement systems	Very good exposure for external certification	With ISO CoC, existing knowledge can be used to easily assess feasible options

Table 11: Cost of emerging legality systems relevant to Lao PDR or its trading partners				
	Costs	**Extent**	**Structure**	**Market Demand**
VPA				
-Lao PDR	Unknown, but expected to be over 100 million dollars	Country wide, across all the sector.	Through government forestry structures	EU want VPA compliant timber
-Vietnam	As above			
PEFC	$100,000-300,000 for the development and assessment fees. After establishment should be self-sufficient from certificates (CoC and FM)	It could be first targeted on specific plantations, then include more and later include natural forests	National Certification council endorsed by PEFC, established then auditing as required	Markets are becoming less discerning about FSC vs PEFC, so it is filling the certified timber demand.
ISO (linked to WTO)	$5,000-100,000 depending on the changes for the desired standard	Can apply throughout Lao PDR and value chain	Auditing against international standards	Unknown for forestry products specifically
Legality and DoC	Unknown. Could be $0. Depends on the additional costs for change in practices/supply etc. see table **	Mainly for non-contentious sources and low risk in terms of environmental and sustainability non-compliances.	Can come from producers or retailers 1st to 3rd party verification	High demand if producer can prove there is little risk associated.
EUTR 995	Depends on the scale and changes to implement a due diligence system.	Europe based operators	Operators monitored by their relevant government	High demand as it is a mandatory requirement for any operator in the country
Australia		Australian based importers		
US *Lacey Act*		American based importers and traders		
Japan		Japanese Government	Voluntary compliance	Unknown

8.5.6 **PEFC**

PEFC has two activities relevant to smallholders in Lao PDR: The Asia Promotions Initiative which involves working to raise awareness, build capacity and encourage the uptake of PEFC certification throughout Asia[48]; and the Expanding Group Certification Globally program which facilitates the exchange of experience, promotes international cooperation and develops innovative certification solutions which make PEFC certification more accessible to small landholders in developing countries[49]. Table 12 provides an overview of current PEFC pilot projects for the Asian region.

Table 12: Overview of PEFC Expanding Group Certification Projects in Asia

Country	Participants	Activities	Plan for the future
Nepal – Cross sector dialogue on role of SFM in community forests	All stakeholders	Workshops to create awareness and interest in national cert. system	Prepare certification system
Thailand – Smallholder farmers providing pulpwood	Double A, Siam Cement Group (SCG), Bureau Vistas, Thai Farmers	Partners designing a cost-effective verification system	Checklist for SFM for smallholder trees to pilot PEFC cert. system
Malaysia – Exploring certification for rubber plantations	Malaysian Timber Industry Board, Fed. Land Dev. Authority, MTCC, Rubber farmers	Scoping technical feasibility	Consider market benefits for certification
Vietnam – Strengthen cooperatives capacity for SFM	Forest Owners Association, Thua Thin Hue Cooperative Alliance	Raise awareness and begin implementing certification systems	Model for group certification

[48] Source: http://pefc.org/projects/markets/asia-promotions-initiative

[49] Source: http://pefc.org/projects/knowledge/smallholder-group-certification

8.5.7 **Conclusion**

The failure of certification to deliver either price premiums (above costs) or market security is significant because the markets for non-certified products are growing as a proportion of world trade. These provide an alternative market for producers of Teak and other wood products away from consumers with increasing discretionary incomes, individual preference and capacity to pay for higher value products. A recent ACIAR analysis of the supply and value chain in Vietnam's Acacia plantations, for example, found that furniture manufacturers are responding to these changing market signals and focusing more on emerging economies which are less sensitive to the need for legal or certified wood[50].

The trends in trade between 2007 and 2011 (as illustrated in Figure 10) indicate the general shift from mature economies to China, and more recently Vietnam, Indonesia and Malaysia. This is occurring when the mature economies are imposing additional 'legality' requirements under market access mechanisms, while these initiatives are not being adopted in the emerging economies.

There is scope to review the current focus on FSC with a view to assess whether alternative systems such as PEFC, ISO, VPA, legality verification or simplified CoC approaches provide similar outcomes but at a reduced administrative and/or financial cost. The uncertainty in regards to costs and return on investments in certification requires further analysis which should reflect the true costs and the true benefits to forest growers. It is important to note that, to date, the development of FSC and other systems has often been subsidised through International Environmental Non-Government Organisations (I/ENGOs) and/or government sponsored programs such as SUFORD, and may not be sustainable in their absence.

Figure 10: Percentage share of international timber trade by importing countries 2007-2011. Source: http://www.rightsandresources.org/documents/files/doc_6138.pdf

[50] Unpublished ACIAR report. Byron, N, et al, 2014.

9. Overview of the Teak market and trade in Lao PDR

The GoL's economic growth and poverty alleviation policies and goals recognise the natural and plantation forestry sector as one of the highest priorities for development and wealth creation.

Plantation development is not a new concept in Lao PDR. Small scale, village-focused plantation developments were encouraged under French occupation from the early 1940s, and included species such as teak (*Tectona grandis*), takian (*Hopea odorata),* and mahogany (*Swietenia macrophylla*). The promotion of rubber (*Hevea brasiliensis)* and *Eucalyptus* species was encouraged from the mid-1960s, with the Lao–Australian Reforestation Project (established in 1969) a catalyst for commercial development {Samonity, 2011 #140; Midgley, 2012 #150}.

While many of these early plantings were unregulated, today large scale plantation investments are regulated under the *1994 Foreign Investment Promotion Law* (updated in 2009 as the *Investment Promotion Law*) which details six principles under which foreign investments are approved. These principles are designed to promote domestic and international investments by creating a favourable investment environment and promote policies which support investments, except those that may seriously affect the environment and jeopardize the future, affecting peoples' health or national culture {Chairman_of_the_National_Assembly, 2004 #141}.

There are strong strategic benefits for Lao PDR to expand its forest based sector – the country is located close to regional markets where demand for wood fibre, rubber, and solid wood products is strong; rural population densities are low and there are significant areas of degraded and under-utilised forest land; and the bio-physical and climatic conditions suit the range of commercial plantation species targeted by the private sector, such as eucalypts, acacias, rubber, and Teak (Midgley, 2006, 2012).

The 2020 Forestry Strategy (Lao PDR 2005) targets a forest plantation estate of 500,000ha by 2020. Current plantings are based on both smallholder and corporate growers, of which the majority are industrial in scale and underpinned by foreign capital through direct ownership or joint venture initiatives. However, the development of the Teak estate demonstrates there is a capacity for small farm- or village-based developments which could provide significant financial benefits to these growers.

The value of early plantings is being realised as the estate matures. However, the total area of plantation Teak in Lao PDR is unknown, but may be up to 40,000 ha. Provincial *Industry and Commerce*, and *Agriculture and Forestry* reports indicate that around 24,000 ha of Teak plantations had been established by 2007 in the Luang Prabang area. Midgley *et al.* (2012) estimate a similar area, around 26,500 ha—of which 98% belongs to farmers and the private sector with the majority of this resource confined to areas close to road or rivers where access for transport is available.

On the basis of the current estimates, the national plantation Teak resource could provide around 40,000-70,000m^3 annually and support expanded investments in the processing sector {Midgley, 2007 #146}. Midgley also notes that, based on a minimal 12 year rotation (at which stage the merchantable timber is at 15cm diameter at breast height (DBH)) and with "an assumed (and modest) average MAI of 5 m^3/ha/yr for Teak smallholdings in Luang Prabang, and current annual

establishment figures offered by Provincial authorities, log harvest in Luang Prabang could increase to 60 000 m^3 [per annum] in 2020" (Midgley 2013). Current estimates by Midgley et al (2015) that around 20,000m3 of Teak was harvested from Luang Prabang area in 2013, the majority exported to Cmina as unprocessed or semi-processed wood.

The 'farm gate' value of this mature Teak plantation estate has been estimated at US$200 million. Further benefits would be achieved if appropriate domestic processing capacity is developed with an emphasis on export markets (S. Midgley, pers. comm.). However, to achieve the full benefits of such investments, existing challenges, constraints and opportunities need to be addressed in order to maximise returns to investors and land managers. Future investment decisions will require detailed information on the quality, quantity, age and geographical location/accessibility of plantations {Samonity, 2012 #105} and an understanding of the livelihood drivers that influence plantation owner's decisions about why and when they will harvest; predictability and certainty of supply from a heterogeneous resource base comprising a large number of farmers, remains a crucial barrier to investments.

Importantly, ACIAR: Project FST/2010/012, *Activity 1.1a. Characterise smallholder planted tree resource in Luang Prabang region* will develop and implement a baseline resource inventory of smallholder planted trees (focused on Teak) in the Luang Prabang region using high resolution digital aerial photography, which will improve resource information. Activities 1.2a (legality) and 1.3 (growers groups) will consider issues around socio-economic barriers to the legal registration of the plantation resource and the means to bring farmers together into entities, such as grower groups, to provide a more consolidated supply base.

A report to the Asian Development Bank estimated that larger industrial plantation growers could produce up to 500,000m^3 by 2015 and over 1millionm^3 by 2025 {Fraser, 2009 #147}. The potential wood supply available in the Lao PDR to 2030 from native forests (FMU), salvage timber from land clearing (LC), plantation logs suitable for small log processing (Pl-SLP), plantation logs for pulp (PL-Cos), rubber and Teak is provided in Figure 11.

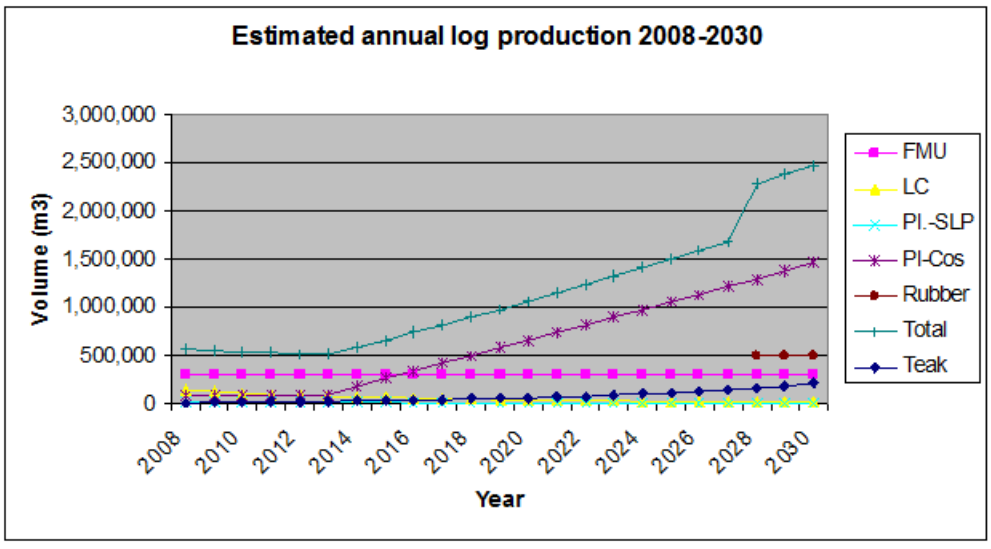

Figure 11: Estimated log production 2008-2030 from all sources in Lao PDR. Source: Fraser (2009).

9.1 Status of the current industrial plantation resource

Table 13 provides an overview of industrial plantation forests in Lao PDR, although it is unclear which of these estates have a smallholder programs. Industrial operational support for smallholder programs that include Teak have been initiated by Burapha Agroforestry which promotes extension activities that focus on plantation management and marketing skills for smallholders. Oji also supports up to 3000 ha of smallholder Eucalyptus and Acacia plantations, while Birla Lao Pulp & Plantation has a eucalyptus plantations grower scheme of 500ha which is owned by smallholders.

Not included in Table 13 are non-company led smallholders, which collectively may manage 25 to 50 thousand hectares.

Table 13: Foreign investment in plantations in Lao PDR

Company/Activity	Site	Area (ha)[51]	Concession period (years)	Investment (USD mill)
Laklak Rubber Company.	Champasak/ Saravahn	10,000	50	30.0
Viet- Lao Joint Stock Holding	Champasak	10,000	50	22.0
Quang Minh Rubber	Xekong/ Attapu	4,900	50	14.4
Bidina Rubber Company.	Xekong	9,485	30	24.1
LVF Rubber Company.	Xekong	8,000	50	10.0
Lao Quasa Geruco Joint Stock Holding Company.	Savannakhet	8,650	30	18.7
Goeco Rubber Company	Bolikhamxay	2,092	30	7.4
Ho chi minh City Rubber	Champassak	2,000	30	30.5
Huang Anh Attapu	Attapu	10,000	35	40.0
Dautieng Viet Lao Rubber Joint Stock	Champasak/ Saravahn	5,419	40	35.4
Foodinco Danang Savannakhet Company.	Savannakhet	925	30	6.0
KunninGaoshen Group	Bolikhamxay	500	30	4.5
Lao Rongxiang Rubber	Savannakhet	2, 407	45	4.6
Ruifeng Rubber Investment Management Company.	Luang NamTha	10,000	30	50.0

[51] These represent approved total areas, and progress is not reported for all companies.

Lao Thai Hua Rubber	6 Central Lao PDR provinces	2,610	50	34.5
Wood Plantations				
Sun Paper (planted 4,500)	Savannakhet	9, 235	50	199.8
Birla Lao Pulp & Plantation (only planted 15,000)	Savannakhet/ Khammouane	50,000	75	350.0
Oji Lao Plantation Forest Company.	Bolikahamxay, Khammouane	50,000	50	49.0
Oji South Lao Plantation forest Company.	Champasak/ Saravahn/ Xekong/Attapu	24,974	40	40.0
Burapha Agroforestry	Vientiane Province	2,000	30	3.2
Stora Enso Company.	Savannakhet/ Saravahn	2,000	50	3.7
TOTAL		**226,000**		**978**

9.2 Weaknesses in the Lao PDR smallholder value chain.

Table 14 provides an overview of weaknesses in the Lao PDR supply chain. This table has been developed in consultation with growers, and others involved in or supporting, the supply and value chain. These weaknesses shall be considered when determining the applicability of the verification system. These general issues provide the context for the Luang Prabang Teak Program value chain and its associated activities (section 9.3). This table does not examine weaknesses between and across the supply chain. Rather, it identifies weaknesses for each link, from resource to markets, and the policy environment in which they operate.

Table 14: Weaknesses in the forest and forest products value chain

Teak plantations	**Harvesting, transport**	**Primary processors**	**Secondary processors**	**Local markets**	**Export markets**	**Policy issues, business environment**[52]
Low quality of plantation due to limited management inputs.	Selling standing trees and lack of scaling and grading lead to losses for owners	Unsecured and unreliable log supply and log quality arrangements	Outdated equipment	Local market rather small in comparison to neighbouring countries	International quality standards not understood or met	Contradictory foreign investment policies for primary and secondary processing
Lack of logging technology restrict plantations to areas along roads	Lack of small scale harvesting technologies leads to losses in recovery rate and quality in plantation timber	Outdated / oversized equipment producing low recovery rates and which are unsuitable for small logs	Limited vertical integration with primary processors unsecured supply of (dried) sawn timber	Local market rather small in comparison to neighbouring countries	Limited certification or Chain-of-Custody systems in place yet	Weak regulatory framework for operations
Premature harvest of trees leads to long term	Limited road infrastructure leads to high	Cartel structure leads to highsaw log prices	Limited management and	Components to compete with imported MDF products	Relatively small raw material supply base for plantation timber limits	Complicated, lengthy and costly export

[52] See ACIAR: Project FST/2010/012, *Activity 1.2a:Legality, and 1.2b: Transaction costs for further analysis*

income losses and stock depletion. **Losses are related to reduced value (larger diameters generate higher returns) and potential losses in quality as poorer stock are retained while better logs are harvested earlier.**	transport costs and log prices in international standards		marketing skills	not available locally	export volume	regulations
Area and age classes of plantations is not known thus log supply cannot be forecast	Inefficiencies relating to current practice of creating short lengths of 2 m logs to enable manual handing from the plantation to the roadside.	Focus on low value exports: mainly squared, rough sawn, or sawn products	High sawn wood prices	limited information and understanding of regional/international market requirements	limited information and understanding of regional/international market requirements	No transparency in official operations
Costly/complex plantation registration limits legality of supply and impacts availability of certificate of	Inconsistent application of log lists/certificates of origin for log tracking	Non-transparent grading and pricing of sawn wood			Limited contemporary design standards	Unclear treatment of NTFP

origin						
						Irregular and inconsistent application of procedures, taxes and approvals
Lack of detailed information on resources, markets, or opportunities						
Lack of competitive finance for new investments, re-equipping Sawmills.						
Domestic interest rates for loans are prohibitive.						
limited management, technical, and marketing skills						
Inefficiencies relating to lack of economies of scale						
lack of process and product quality standards in place						
Limited investment in skill developments						
Weak linkages between suppliers and processors and related clusters.						
Uncertain bureaucratic procedures and taxation rates relating to establishment of plantations, the harvest and transport of wood, and the subsequent processing to market.						
High levels of tax, fees and other government imposts (at district, provincial and national level).						
Donors objectives constraining the activities with their own agendas						
Lack of programs for responsible investment						
Source: adapted from Wattanakool, 2010 #231; ITC, 2008 #232; Mohns, 2009 #233; Midgley, 2011 #234; WB 2012.						

9.3 Luang Prabang Teak Program (LPTP) Activities

The LPTP is implemented by The Forest Trust (TFT) in direct partnership with the Luang Prabang Provincial Forestry Section (PFS) and is working with the farmers through District Agriculture and Forest Offices (DAFO). The project is supported by donors who have contributed to LPTP since it commenced in 2008 as a pilot project in Ban Kok Ngiew. In May 2011 LPTP achieved FSC FM and CoC certification as a group entity. A 2014 project review found that the "overall program achievements range from satisfactory to very good" (Schonweger, 2014). It has successfully increased the income of Teak farmers and reduced the costs for the processors, while still aiming to deliver wood into high value EU and US markets. The pilot project has led to the formation of village farmer groups which are active in wood sales, which have been small in volume (as detailed under *Table 15*).

Comparted to the sales of exported unprocessed or semi-processed uncertified Teak (Midgley et al, 2015), the sale of certified wood under the LTTP partnership from 2009-2014 represents an estimated five percent of total sales over this period, with the majority to Burapha for domestic processing.

Table 15: History of LPTP wood sales

No	year	No of members sale	Type of harvest	Total volume (m^3)	Total value(LAK)	Details	Buyer
1	2009	4	Inter-row	10.4	10,000,000	Test measurement and sales system. Assist Burapha to make grading and price schedule	Burapha
2	2010	18	Inter-row	145	120,000,000	Pre-certified to develop farmer group functions	
3	2011	12	Thinning from below	78.3	42,375,392		
4	2011	7	Inter-row	20.5	19,937,531	FSC round logs. Test sale. Learn difference measurement and grading system	TNK
5	2012-1	8	Thinning from below	68.75	50,530,351	FSC round logs thinning and roadside clearing	Burapha
6	2012-2	9	Thinning from below and group selection	90.55	71,016,973		
7	2012	1	Clear fall	16.56	8,856,412	None FSC	
8	2013	16	Thinning from below	106.6	71,504,000	FSC round logs	
9	2014	Inter-row	Inter-row	27	54,800,000	FSC square logs to test group function and develop squaring grades and sales	

						process	
	Grand total			5646	4,020,659		
Source: LPTP, 2014							

The current extent of the project is outlined in Table 16 which shows that the total area is relatively small, although extensive in respect to the number of families (377) and villages (17) involved. Importantly, the relatively small area does not reflect the extensive work which has been undertaken to address many of the issues associated with establishing a new program, including the development of trust and confidence by both growers and GoL officials. The experience, and support tools developed under the program can now be extended relatively seamlessly to incorporate new participants and areas. With appropriate support, the potential to rapidly expand the program is high.

However, the level of donor support necessary to establish and maintain the project is substantial. The ongoing costs for the project are outlined in Table 17 with brief, indicative, analysis of scaling-up budget requirements outlined in Table 18.

Table 16. Overview of the plantation resource in LPTP group entity

	Districts	Villages	Families	Lots	Area (ha)
All activities for certification completed	2	4	138	265	222
Registration and training completed	1	8	129	169	123
Registration underway	4	5	110	154	118
Total	5	17	377	588	462

Table 17: Basic ongoing costs for LPTP

Cluster	No of Village	ha	AAC (m^3)	Potential Income	Training & extension	Monitoring	FSC audit	Plantation registration	Group Management	Total Costs
1	5	500	1,250	100,000	4,500	500	8,000	6,000	5,000	24,000
2	10	1,000	2,500	200,000	7,500	1,000	8,000	12,000	10,000	38,500
5	25	2,500	6,250	500,000	18,750	2,500	10,000	30,000	25,000	86,250
10	50	5,000	12,500	1,000,000	37,500	5,000	12,000	60,000	50,000	164,500
30	150	15,000	37,500	3,000,000	112,500	15,000	12,000	180,000	150,000	469,500

Table 18: Analysis of costs of LPTP

Cluster	No of Villages	ha	Total Costs by group entity[1]	Net income	Cost as % of net income	FSC Only Costs[3]	FSC total costs (%)	Registration total costs (%)
1	5	500	18,000	82,000	24	9,400	39	25%
2	10	1000	26,500	173,500	19	10,500	27	31%
5	25	2500	56,250	443,750	17	16,250	19	35%
10	50	5000	104,500	895,500	16	24,500	15	36%
30	150	15000	289,500	2,710,500	16	49,500	11	38%

[1] Includes a 5% cost of wood sales for the group management
[2] This does not include the costs of registration as it is a government service
[3] Includes 40% of the training costs, all monitoring, and the annual audit costs

There are issues for how LPTP will go forward in terms of certification:

1. There are limited donors who are willing to pay for FSC. Therefore, after 2015 the project will need to try a new approach.
2. There are few market options for the farmers, in particular for their thinnings.
3. The transition to square logs may increase the market options and the income for the farmers.
4. The costs of registration will always be a major component of certification work at any scale and there is a risk that high administrative costs could undermine the focus of sales within markets with due requirements by encouraging actions that are technically illegal, but actually result in negligable social, environmental or revenue impacts.

Note: LPTP analysis supports the authors broader international review findings that indicates that the cost/benefit threshold for certification is around 5000ha. That is, there is a net cost on growers for areas under this threshold. However, where additional value can be achieved in the sale of products (i.e round to square logs or small to larger diameter) then the threshold may be lower. This threshold is supported by work undertaken by Ling under ACIAR: Project FST/2010/012, *Activity 1.3.*

9.4 The LPTP Smallholder Teak Value chain: an example

Table 19 shows the direct stakeholders and their relationship within the LPTP supply chain, as well as a summary of interventions initiated by LPTP in support of smallholder, private Teak growers in Luang Prabang Province of northern Lao PDR.

From the table it can be shown that substantial work has been undertaken in developing the capacity of growers, creating links and efficiencies along the supply chain, as well as engaging with GoL agencies to progress issues relating to legality, charges and regulatory processes.

This work creates a solid foundation for work under the ACIAR project.

Table 19. Direct stakeholders and interventions initiated in the Luang Prabang Teak Program value chain

	Teak plantations	**Harvesting, transport**	**Primary processors**	**Secondary processors**	**Local markets**	**Export markets**
Actors	Farmers Absentee Land Lords	Local small to medium transport enterprise	Xieng lom wood squaring	Burapha Agroforestry TNK Furniture	Small enterprises	Depends on the product
Service Providers		Lao PDR National Wood Processing Association				
	Teak Farmers Group					
		Lao PDR National Chamber of Commerce and Industry				
Regulators	Village Organisation, District Agriculture and Forestry Office			Provincial and Central Forestry offices		
NGOs	JICA - FSCAP	ACIAR Value Chain – Lao PDR Forest and Trade Platform				
Intervention initiated by LPTP	• Information and procedures available for stakeholders to understand and participate in the value chain • Forest Management and CoC Certification			• CoC Certification	• Market links • Negotiation with buyers	
	• Volume Calculations		• Assisting in Stock control systems	• Assist with direct sourcing from producers	• Calculation of Annual Allowable cut	
	• Formalised plantation registration • Basic silviculture • Management plans/maps • Improved management • Increased income/ability to sell thinnings	• Grading rules • Standard measurement • Harvesting and transport cost			• Local Market reports/study tours	• limited, 'test' exports • National study tours and attendance to internal workshops

10. Analysis of international verification and compliance systems which are or could be adopted in Lao PDR

Given the nature and risk profile of the smallholder plantation sector in Lao PDR, as described previously, this section examines verification and compliance systems that could be applied to facilitate market access.

The authors adopted a five stage approach[53] to determine options available to small growers when seeking verification for voluntary sustainability accreditation or compliance with legal requirements (as summarised in Figure 12).

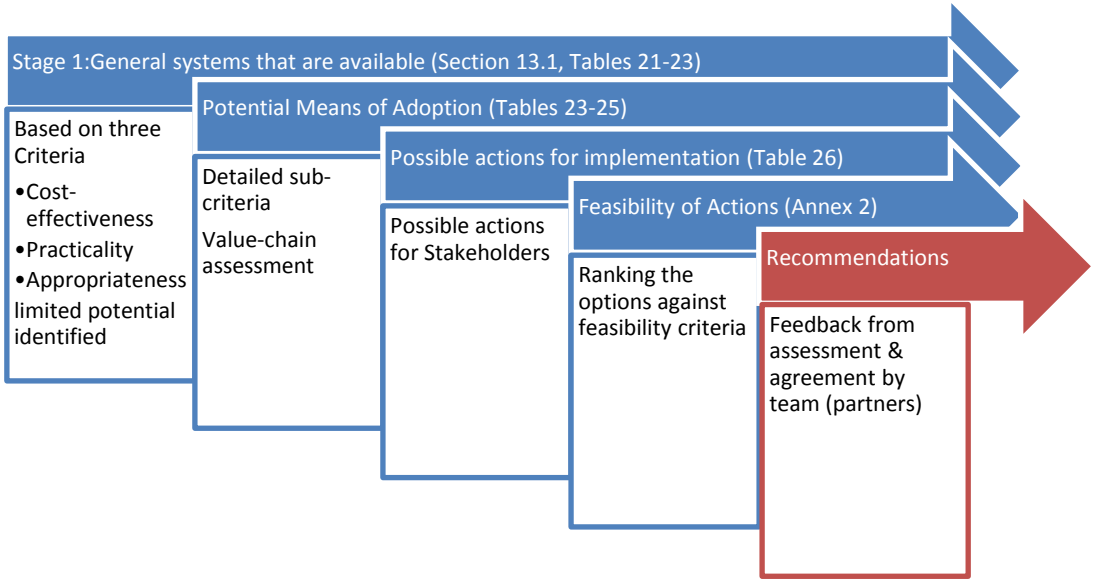

Figure 12: Flow of assessment for verification systems, means of adoption and options

These stages increase in complexity in regards to the criteria applied to assess their validity when applied to small growers in Lao PDR. Each stage applies a greater level of scrutiny to options (or systems) that remain valid, while discounting those that fall outside the criteria for adoption, which incorporate the following conditions that must be met to qualify for consideration at each stage:

- All processes are able to comply with GoL laws and regulatory instruments;
- Sustainable forest management principles can be demonstrated;
- Integration within FLEGT, or similar legal market compliance frameworks, is practical; and
- The system is able to become self-funding in the mid to long term.

[53] It is recognised that the assessment process will contain an element of bias as the authors rely on their own knowledge and that of organisations or individuals interviewed rather than academic studies. However, the assessment scores have been assessed by experienced professionals, acting independently, who have worked across, and are familiar with, the current verification and compliance systems. Consequently, inherent bias should be minimised.

The first level of assessment applies a systematic approach to analysing and assessing the potential verification and compliance systems using three criterion to rate the potential for adoption by small plantation growers in Lao PDR. These three criteria are:

1 Cost effectiveness.
2 Practicality.
3 Appropriateness.

Each of the three criteria contains sub-elements (second tier criteria) that are used to provide a guide to the appropriateness when applied to small growers in Lao PDR.

- The authors have adopted a scoring system to identify the benefits when assessed against the three criteria. The scoring system is from 1 (very positive) to 10 (very negative), as detailed in Table 20.
- Table 21 lists the three broad assessment criteria, and 17 sub-elements used when allocating a score for the assessment of each system.
- Table 22 examines the suitability of broad systems, based on the criteria and elements. The broad systems are those identified in Figure 7 and range from first party to full, independent certification.
- Table 23 presents the final assessment score against each of the criteria elements.

This approach has allowed the authors to identify those systems that provide the potential to deliver a cost effective verification and/or compliance system for small plantation growers in Lao PDR. Recommendations reflect these scores.

It is noted that while the above approach identifies potential verification and compliance systems that could deliver benefits to small plantation growers in Lao PDR, the reality is that for Teak, the continuing demand and trade into China from local traders in the Luang Prabang Province of Lao PDR indicates that a 1st party verification system is able to operate successfully where logs are generally sold whole or squared. However, where further value is an aim for growers, systems between 2nd party and legality are more suitable options, unless growers are able to increase returns through either adding value to the resource (such as larger diameter logs) or through marketing as a group (where volumes provide additional leverage when negotiating supply agreements).

Table 20. Description of scoring system used when assessing verification or compliance systems

Score	Definition
1-2	Very Positive – significantly reduces net cost, complexity and extremely appropriate in the Lao PDR context and meets market requirements. A rating of '1' is considered more beneficial than a rating of '2'.
3-4	Positive – significantly reduces net cost or complexity or is appropriate in the Lao PDR context or meets market requirements. A rating of '3' is considered more 'positive', while a rating of '4' is slightly more neutral.
5-6	Neutral – does not meet other criteria A rating of '5' is considered more 'positive', while a rating of '6' is slightly more negative.
7-8	Negative – significantly increases net costs or complexity or is inappropriate in the Lao PDR context

	Or it requires external funds to provide ongoing support to meet market requirements. A rating of '7' is considered slightly 'neutral', while a rating of '8' is more negative.
9-10	Very Negative – significantly increases net costs or complexity and extremely inappropriate in the Lao PDR context. Requires significant external funds to provide ongoing support to market requirements.

Table 21: List of Criteria and associated sub-elements used in assessing verification and compliance systems

Criteria	Element
Cost effectiveness	Ease of adoptability
	Complexity
	Financial Costs – establishment costs, maintenance compliance
	Opportunity Cost
	Market willingness to pay/subsidise
Practicality	Complexity
	Capacity of service providers
	Integration within the legal framework
	Ease of reportability
	Scalability
	Barriers
Appropriateness	Furthering government policy
	Meeting market requirements
	Scale and intensity of operations
	Cultural
	Integration within existing agricultural activities
	Increase influence and ability to participate in value chain

10.1 Strategic Assessment of general systems that meet broad verification criteria

The broad suitability of verification and compliance systems as originally outlined in Section 12 and illustrated in Figure 7 is summarised in Table 22 and the assessment findings made against each element of the three principle criteria and their sub-elements described 23 are presented in Table 23.

The initial assessment considered the broad positive and negative characteristics of each system against the three criteria, and made a conclusion as to its suitability in regards to key assumptions. This assessment recognises that 1st party verification systems are the lowest cost and simplest for adoption, with full independent certification the most complex and costly to a small plantation grower.

Further analysis of tends or links was made of the scoring as detailed under (Table 20) of the broad assessment criteria (Table 23) where one was considered ‘very positive’ and 10 ‘very negative’. This scoring system.

Table 22. General suitability of broad verification and compliance systems, based on Criteria and their sub-elements				
Criteria assessed	**Cost effectiveness**	**Practicality**	**Appropriateness**	**Concluding statement**
1st party	+ low cost - high risk	+ simple - poor assurance	- some international markets expect more	- not enough evidence for some responsible markets or legal compliance systems + growers can sell their own story with company capacity
2nd party			¬ acceptable in some markets, or to some mills or processors	+ for low risk sources this is potentially acceptable + where a level of independent assessment is involved, this may be acceptable where legality is required.
3rd party, independent	¬ medium risk ¬ may be costly	+ can be adapted	¬ Standard may not be adequate	
Legal compliance	+ low risk ¬ may be costly	+ focuses on core due diligence required		+ for low risk sources
FLEGT/VPA compliant	- government costs + no business costs	- time consuming + easy once established	- only for EU markets - might not include sustainability	+ If an established, large commodity scale market is available
Controlled	- high cost + possible for company evaluation. + inexpensive if done on large scale	- can be certified with effort + a good step if certification is not possible	+ for complementing fully certified sources - may not comply with legality	¬ If certification is required but not possible an interim step or for mixing in products. + if market demands it
Fully Certified (either FSc or PEFC)	- high cost + inexpensive if done on large scale	- complex management systems	+ additional sustainability and capacity benefits	+ if investors, market, government demand it - requires large scale groups smallholders

Table 23. Assessment of broad systems criteria and sub-elements (1=very positive, 10=very negative)								
Criteria	**Sub-Element**	**1st party**	**2nd Party**	**3rd party**	**Legality**	**FLEGT Compliant**	**Controlled**	**Fully Certified**
Cost effectiveness	Ease of adoptability	1	3	5	6	7	8	10
	Complexity	1	3	6	8	8	8	10
	Financial Costs – establishment costs, maintenance compliance	1	3	5	6	7	8	10
	Opportunity Cost	3	3	5	5	5	3	1
	Market willingness to pay/subsidise	9	9	4	7	5	9	9
	Average Sub-total Cost Effectiveness	***3.0***	***4.2***	***5.0***	***6.4***	***6.4***	***7.2***	***8.0***
Practicality	Complexity	1	2	4	5	6	8	10
	Capacity of service providers	3	5	7	4	8	9	10
	Integration within the legal framework	8	8	3	4	1	3	2
	Ease of report ability	4	3	6	7	2	8	10
	Scalability	4	6	2	5	5	8	9
	Barriers	9	8	3	3	3	8	10
	Average Sub-total Practicality	***4.8***	***5.3***	***4.2***	***4.7***	***4.2***	***7.3***	***8.5***
Appropriateness	Furthering government policy	10	9	6	1	2	3	4
	Meeting market requirements	9	8	5	6	5	4	3
	Scale and intensity of operations	1	3	4	6	7	8	10
	Cultural	1	4	6	5	8	9	10
	Integration within existing agricultural activities	1	3	5	6	7	8	10
	Increase influence and ability to participate in value chain	10	9	4	6	6	4	1
	Average Sub-total Appropriateness	5.3	6.0	5.0	5.0	5.8	6.0	6.3
	Total Average for three criteria	4.4	5.2	4.7	5.4	5.5	6.8	7.6

Further analysis of the each of the three criteria of each of the broad systems was undertaken by using radar charts, using the average value detailed in Table 23. The results are discussed below.

Error! Reference source not found. is based on the Cost Effectiveness of a system. It shows a strong ositive trend towards less complicated systems. That is, the less complex a system, the more cost effective it is to implement it. There is also an inverse relationship where opportunity cost that are simple and do not provide rigour actually decrease the benefits (higher rating number) because they reduce access to some markets.

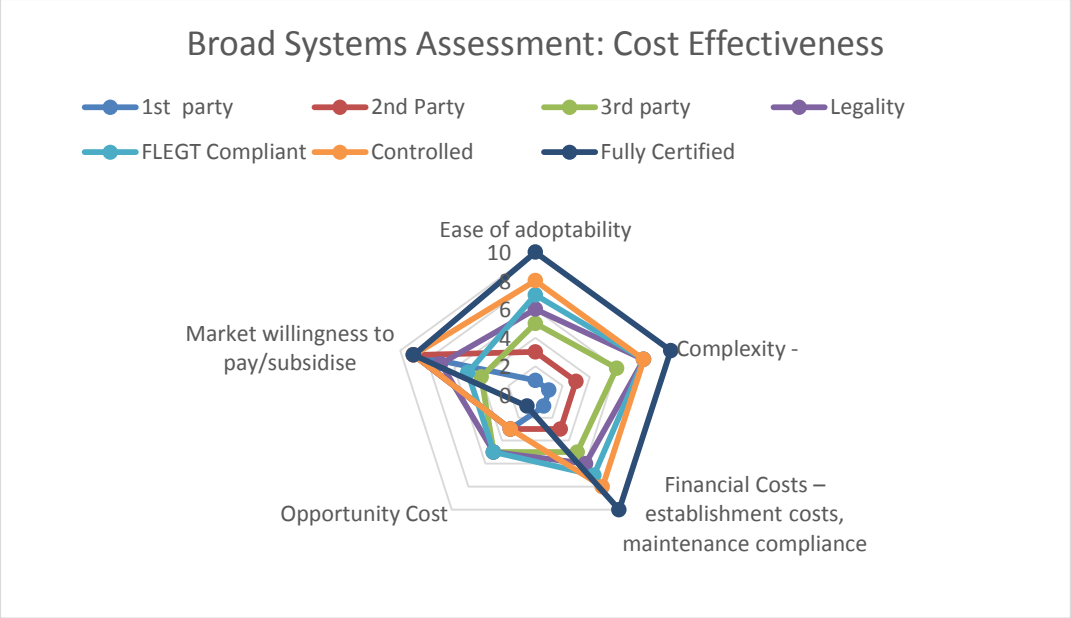

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Figure 13: Assessment of the cost effectiveness of the broad systems

Analysis of the Practicality of the broad systems (Figure 14) shows a general challenge associated with increased complexity: essentially practicality is limited as complexity increases. However barriers are present in all but first party systems, with some not providing the required risk mitigation measure and others too complex to implement. Of interest is that FLEGT, first party and legality systems provide similar benefits (lower rating scores) than other systems.

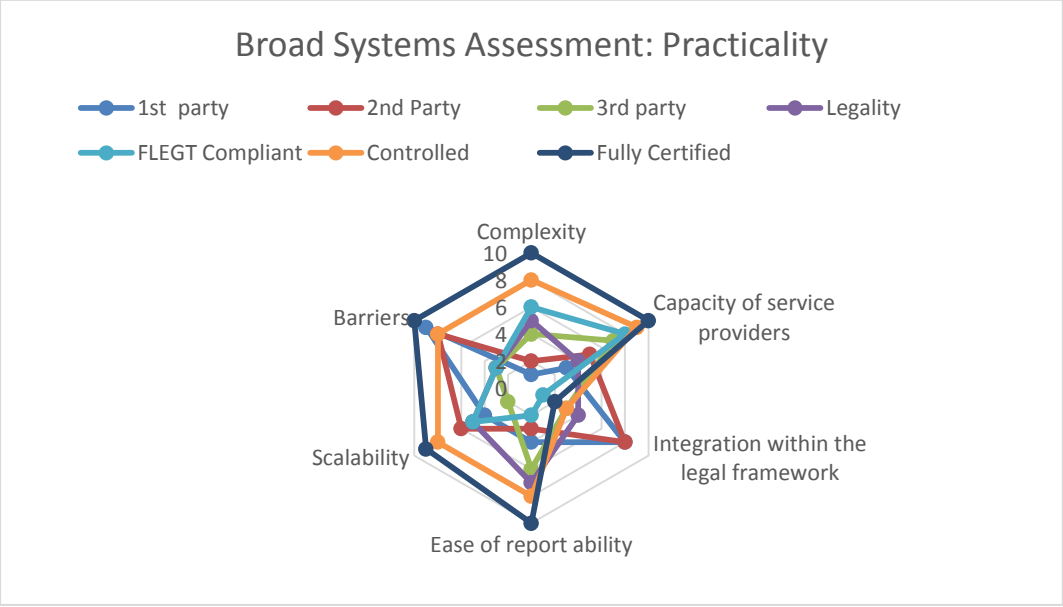

Figure 14. Assessment of the practicality of the broad systems

Analysis of the Appropriateness of the systems (Figure 15) clearly demonstrates that systems which are very positive in terms of local practices (lower rating scores) are very negative in terms of National and International requirements (higher rating scores). The exception to this is third party certification that is generally neither positive nor negative.

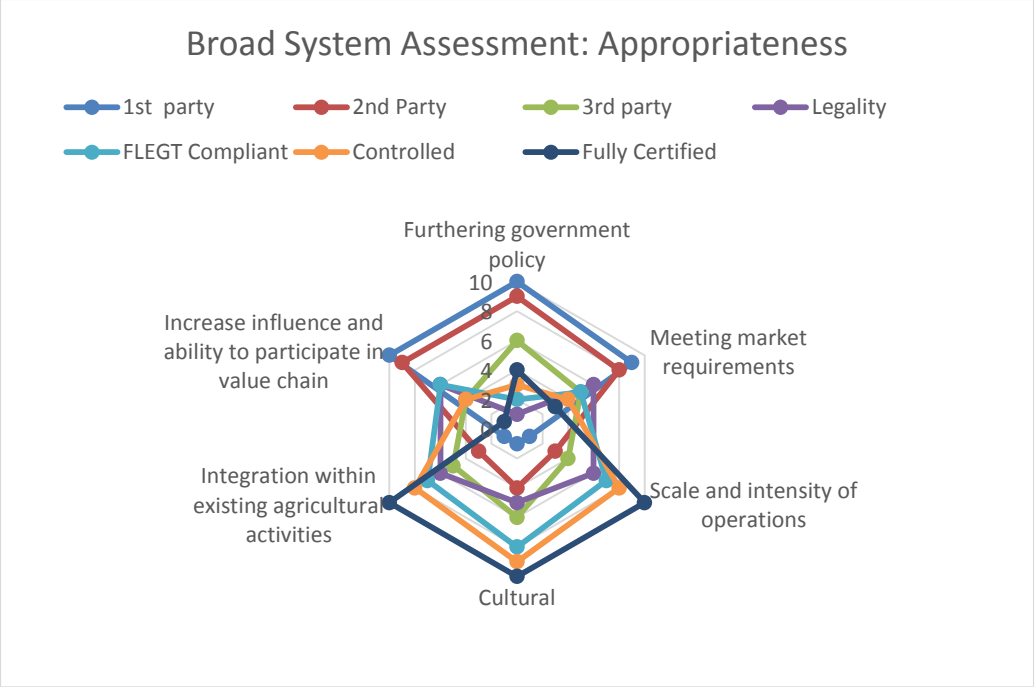

Figure 15. Assessment of the Appropriateness of the broad systems

10.2 Strategic Assessment of identified systems for potential adoption by small plantation growers in Lao PDR

An assessment of the cost-effectiveness, appropriateness and practicality of all identified systems for smallholder plantation certification in Lao PDR was undertaken to determine the potential for adoption of each system. It is on the basis of this assessment that those systems with potential are assessed in further detail in the context of plantation smallholders in Lao PDR, as discussed in section 10.4.

Table 24: assessment of the cost-effectiveness, appropriateness and practicality of all systems identified for smallholder plantation certification

System Assessed	Cost effectiveness	Practicality	Appropriateness	Potential for adoption
FSC Forest Management	If there is a group with enough volume and members to pay certification. Donors may prefer FSC	As system is established, it can be refined. Group has been established and adding members is not difficult.	LPTP, Burapha and Oji plantations as well as the natural forests and rattan.	Potential: If the certified areas are at a large enough scale by which income can pay for the certification. However, to date this has proven to be problematic with relatively limited uptake under the LPTP initiative.
FSC CoC Certification	If there is a group the certificate very cost effective. Mandatory if only FSC wood is available	Requires group manager If businesses are willing then very possible	If FSC production is available.	Potential: Existing certificate holders and FM groups to consider a group CoC.
PEFC Forest Certification	Large amount of set up costs, but the system is more locally run (local auditors)	Need to develop a national governing body then just a standard for plantations.	Locally adapted standard and local certification system could be more sustainable	Some Potential: If plantations companies and PEFC will support standard development. LPTP and smallholders could be a pilot project as PEFC standards can be more readily adapted to reflect Lao PDR risk profiles for plantation timbers.
FSC Controlled wood	Requires similar control of the smallholders to FSC	Only if FSC is not possible		No Potential: For such effort, could become fully certified
PEFC CoC including Controlled sources	Groups possible. As it is part of a CoC certification very cost effective	FSC CoC certificates exist, only controlled sourcing system needs to be developed	For plantation wood with low risk and no marketable quantities for certified products, maybe an interim solution	Potential: If a company was undertaking a CoC audit, is should be easier to become dual certified with the controlled sourcing if wood
FSC Company Evaluated	Requires additional auditing for CoC audits.	Unclear as genetically modified products, HCV forests and	Appears FSC is not interested in giving more of these certificates in	Limited Potential: Not possible for Burapha in the past.

Controlled Wood		forest conversion risk is unspecified	high risk countries	
FLEGT/VPA	Time and money for government to government negotiations	Only in the long term - Government takes on risk. Appropriate to smallholders where risk is low.		Some Potential, especially where an appropriate verification system has been established, or where codes of practice exist. This could be considered under a pilot program that focuses on private, small plantation growers.
Legal compliance	Requires a local legality standard to be developed	Can vary locally, requiring broad consultation	Very much so if rigorous and transparent	Potential: Work with the government to make legality criteria
ISO Standards	Competitive auditing costs generally lower than other systems	Extensive frameworks exist and easily adapted to local requirements	Local service providers (Thai/Vietnamese)	Potential: WTO membership will drive adoption of ISO standards. Engagement with WTO and ISO is required
3rd party	To be credible requires membership with TFT/GFTN and GoL	Already exists, requires a move towards 3rd party accredited certification		Potential: LPTP to become a member of GFTN. Look at what a province can give as 3rd party legality statement
2nd Party				Limited Potential: Credible enough for non-discriminatory markets which only require proof of ownership and authority to sell.
1st Party				

10.3 Assessment of systems across the value chain

A value chain model was also used to assess the three principal criteria: cost-effectiveness (Table 25), appropriateness (Table 26) and practicality (Table 27) of all potential systems. This approach indicates which link in the value chain benefits most from a particular system, and where the burden of verification or compliance is highest. This is particularly important to private, small plantation growers who, as the primary resource providers, are more sensitive to direct (financial) and opportunity (administrative) costs.

In the tables the criteria are assessed as separate, independent influences. Each verification system is also assessed as independent (irrespective of potential links). For example, an assessment of CoC means only this system is considered, rather than looking at links to FSC or PEFC.

Excluding 1st and 2nd party systems, as these provide the most effective systems in that their benefits outweigh negatives, radar charts were generated for each system, using the average criteria value detailed in Table 23. These graphs are discussed below, after the assessment tables which provide explanatory notes explaining the basis for the rating score.

10.3.1 Analysis of the Cost Effectiveness

Analysis of the Cost Effectiveness of the identified approaches (Figure 16) indicates that in general there is a more even distribution of impacts along the supply chain, although both growers and processors bear the greater burden as system's complexities increase. The least impacted on are the end consumers, which again reflects the common position that price is the determining factor rather than verification or compliance.

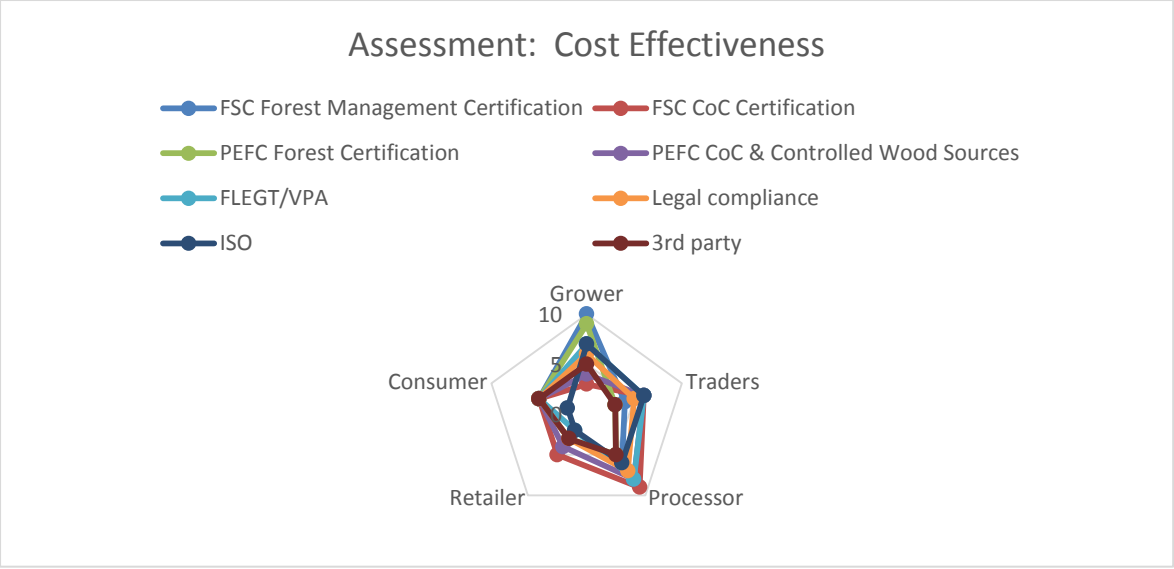

Figure 16: Assessment of Cost Effectiveness for verification and compliance systems

Table 25: Framework for assessing cost effectiveness pathways by discussion points and scoring (1=Good/low cost 10= poor/high cost)					
Cost Effectiveness	**Grower**	**Traders**	**Processor**	**Retailer**	**Consumer**
FSC Forest Management Certification	Complex compliance costs and auditing. Time and capacity for groups	Not required to be CoC certified but must have documentation	Requires CoC certification to sell wood from FM certificate	Not required for CoC but can label claims unless components	Unsure, but most like no need to pay extra for certification
	10	4	6	3	5
FSC CoC Certification	Minimal requirements for documentation	As above, but not able put a label on the wood	Maintain CoC system and pay Auditing costs. Benefits for stock control	No Claim unless from FSC wood (FM source)	As above, but no non-FSC claim for confidence
	3	6	9	5	5
PEFC Forest Certification	Local context compliance costs and auditing. Time and capacity for groups.	Not required to be certified but documentation	Requires CoC certification to sell wood from FM certificate	Not required for CoC but can label claims unless combining components	Unsure, but most like not need to pay extra for certification
	9	3	5	3	5
PEFC CoC & Controlled Wood Sources	Documentation and compliance with CoC sourcing requirements	Claim that can be transferred on invoices	CoC, Controlled wood sourcing compliance and auditing costs	Ability to show reduced risk for controlled sources	Can be assured controlled sources
	4	6	8	4	5
FLEGT/VPA	Compliance to requirements	Documentation requirements	New system, stock control and compliance costs.	Can be sure producer has complied with FLEGT requirements with minimum due diligence	
	7	6	8	2	5
Legal compliance	Documentation and compliance			Can be sure producer has complied with legality requirements with low levels of due diligence	
	6	5	7	3	5
ISO	Transferability of existing systems easy for adoption			Very low requirements for retailers. Consumers confident in the standard.	
	7	6	6	2	
3rd party	Local context compliance costs and checking	Minimum Documentation	Documentation and compliance	Low levels of due diligence	
	5	3	5	3	5

10.3.2 **Analysis of the Practicality**

Analysis of the Practicality of the identified approaches clearly indicate (Figure 17) that in general growers and processors are most influenced, with consumers and retailers indifferent to particular approaches. The issue of Legal Compliance and integration within existing systems is relatively simple. Impacts are evident mostly on the grower and processor, with traders showing a direct relationship between increased complexity (such as FSC and PEFC) and a decrease in practicality. The analysis demonstrates an obvious link between a system's practical application and simplicity, noting that practicality remains essentially an issue for growers and processors.

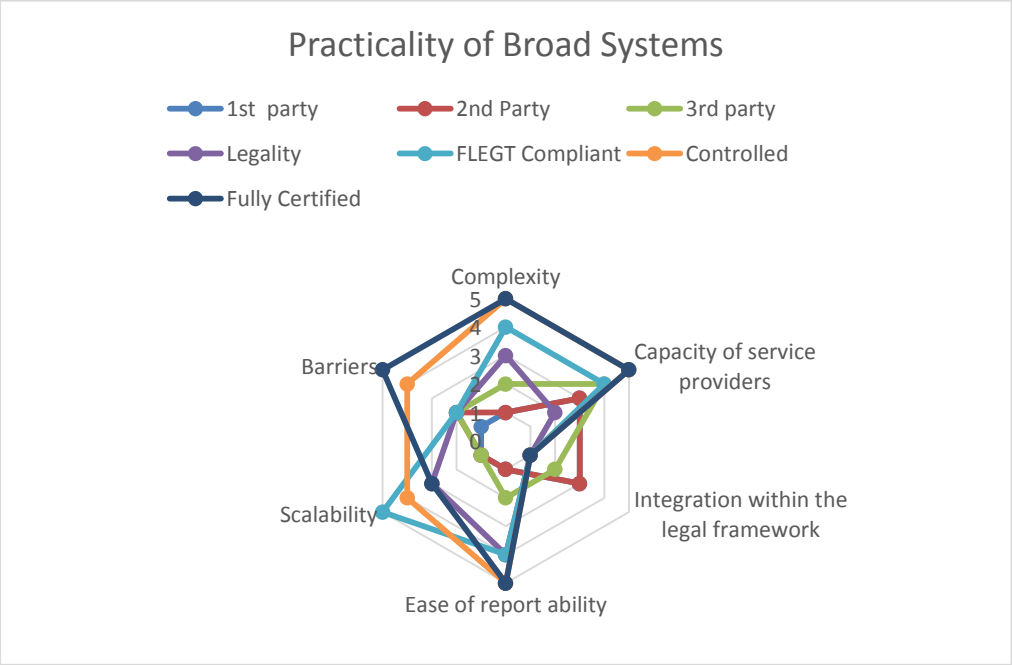

Figure 17: Assessment of Practicality of verification and compliance systems

Table 26: Framework for assessing practicality pathways by discussion points and scoring (1=Good/low cost, 10= poor/high cost)					
Practicality	**Grower**	**Traders**	**Processor**	**Retailer**	**Consumer**
FSC Forest Management Certification	Complex interpretation and implementation,	Time consuming measurement	Requires a CoC certificate	Provides a label for marketing	Ensures responsible production
	10	5	4	2	2
FSC CoC Certification	Minimal requirements for documentation	As above, but no claim possible	Maintain CoC system and pay Auditing costs	No Claim unless from FSC wood (FM source)	No assurance
	4	7	9	3	2
PEFC Forest Certification	Lack of existing local systems and providers to certify	Measurement and documentation	Requires CoC certification to sell wood from FM certificate	Provides a label for marketing	Ensures sustainability production
	9	4	4	2	2
PEFC CoC & Controlled Wood Sources	If working closely with processor and wood sourcing program	Measurement and documentation	CoC, Controlled wood sourcing complex, but scalable with no barriers	Ability to show reduced risk for controlled sources	Can be assured controlled sources
	3	4	4	3	2
FLEGT/VPA (est)	Part of mandatory legal compliance			Can be sure producer has complied with FLEGT requirements with minimum due diligence	
	4	2	5	5	2
Legal compliance	Documentation and compliance			Can be sure producer has complied with legality requirements with low levels of due diligence	
	7	3	6	3	2
ISO	Low local level ability			High recognition and trust/assurance	
	8	6	6	2	2
3rd party	Local context understood and service providers able to complete			Low levels of due diligence required	
	5	3	4	3	2

10.3.3 **Analysis of the Appropriateness**

Analysis of the Appropriateness of the identified approaches (Table 27) indicates that in general the market defines the level of appropriateness. The domestic or neighboring (China) market favours simplified systems such as 3rd Party, ISO and Legal Compliance. However, where the end market is usually in more mature markets (such as the EU or North America), there is an increased reliance within the supply chain on verification systems such as FSC or FLEGT/VPA. Overall, the end consumer is relatively indifferent to any particular system, and is less likely to support systems that impose a price premium (Figure 18).

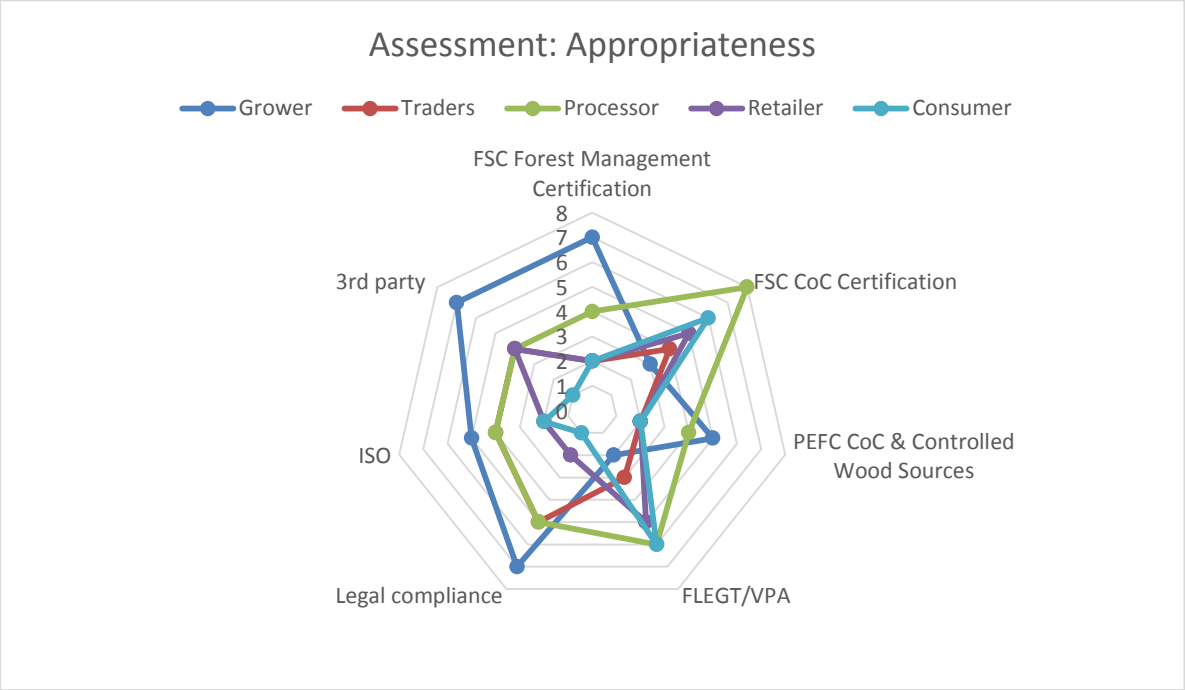

Figure 18: Assessment of Appropriateness for verification and compliance systems

Table 27: Framework for assessing appropriateness pathways by discussion points and scoring (1=Good/low cost, 10= poor/high cost)					
Appropriateness	**Grower**	**Traders**	**Processor**	**Retailer**	**Consumer**
FSC Forest Management Certification	Capacity building of smallholders, but documentation too complex	Transparency and traceability in the supply chain, ability to market FSC certified wood.		Provides a label for marketing	Ensures responsible production
	7	2	4	2	2
FSC CoC Certification	Not meeting market requirements without FM	As above, but no claim possible	Complex, but shows commitment to market requirements	No Claim unless from FSC wood (FM source)	No assurance
	3	4	8	5	6
PEFC Forest Certification	Same as FSC, but with more local systems and people	Transparency and traceability in the supply chain, ability to market FSC certified wood.		Provides a label for marketing	Ensures sustainability production
	5	2	4	2	2
PEFC CoC & Controlled Wood Sources	Enables processor to complete CoC controlled wood sourcing requirements		CoC, Controlled wood sourcing compliance and auditing costs	Ability to show reduced risk for controlled sources	Can be assured controlled sources
	2	3	6	5	6
FLEGT/VPA (est)	Part of mandatory legal compliance			Can be sure producer has complied with FLEGT requirements with minimum due diligence	
	7	5	5	2	1
Legal compliance	Documentation and compliance			Can be sure producer has complied with legality requirements with low levels of due diligence	
	5	4	4	2	2
ISO	Documentation and compliance			High recognition and trust/assurance	
	7	4	4	4	1
3rd party	Local context understood and service providers able to complete			Low levels of due diligence	
	3	4	5	4	8

10.4 Options for smallholders based on potential for adoption

The combined and summarised assessment for each potential system is presented in Table 28, which also identifies a number of potential actions necessary to achieve a suitable pathway for small growers as detailed under the three criteria: cost-effectiveness (Table 25), appropriateness (Table 26) and practicality (Table 27).

Note: not all actions may be practical or necessary under the ACIAR project, and they only represent initial analysis. Further consultation with key stakeholders is required before a final recommendation can be made.

A framework that has been developed for assessing the potential for adoption and details what actions are required in order to deliver value by providing a cost effective, appropriate and practical option for private, small plantation growers is provided in Table 28, and Annex 2 provides the full analysis used when developing the options. This includes the criteria and sub-elements used for determining an assessment score.

Table 28: Potential actions based on potential for adoption

Potential System	Potential for adoption	Potential actions to achieve adoption
FSC Forest Management	If the certified areas are at a scale by which income can pay for the certification.	• Streamline existing procedures of FSC in LPTP and Burapha • Assess the effectiveness of expansion of FSC for smallholders in Laos • Work with certification bodies to reduce complexity • Provide outreach to potential business to drive further expansion of the FSC certificates • Increase wood processing included in the FM certification so that value adding is possible without the costs of CoC • Work with certification bodies to have local auditors to reduce the costs and understand context of local certificates • Work with Burapha and Oji to lead inclusion of smallholders in their certificates • Support TNK to assist in the expansion of the LPTP certificate
FSC CoC Certification	Existing certificate holders and FM groups to consider a group CoC.	• Consult stakeholders through industry groups on their interest to pilot the establishment of group CoC certificate • Assess the market benefit of only been CoC certified: 1. Assisting in traceability and legality, 2. Marketability
PEFC Forest Certification	If plantations companies and PEFC will support standard development. LPTP and smallholders could be a pilot project	• Analyse the opportunities PEFC may provide • Make a roadmap and consult key stakeholders for PEFC development that can be used to raise interest and support. • Consult the ACIAR project partners and PEFC in their interest to develop pilot projects • Identify FLEGT or other standard setting body to become the governing body for PEFC Lao PDR.
PEFC CoC including Controlled	If a company was doing a CoC audit, easy to become dual certified with the controlled	• Analysis the functionality and marketability of PEFC controlled wood sources for Lao PDR smallholders. • Discuss with FSC CoC certificate holders to become dual

sources	standard. Develop controlled sourcing	certified • Assess LPTP FSC group certification documentation against the PEFC standard and make recommendations for implementation • Using examples from other countries business look at the complexity of controlled sourcing
FLEGT/VPA	Offer to be part of the pilot project to ensure smallholders are considered. Can put PEFC in the work plan to make standard/code of practice	• Apply to FLEGT focal point to be included in activities either as Civil Society (ACIAR project) or Private sector (LPTP farmer group) to represent smallholders. • Engage FLEGT to include the development of a National Planted Forest Code
Legal compliance	Work with the government to make a legality criteria	• Develop and test a checklist issued by the GoL for legality so Teak and other plantation wood it can demonstrate compliance when sold.
ISO	Potential: WTO membership will drive adoption of ISO standards. Consult WTO preparations	• Contact local service providers to scope potential • Assess the benefits of ISO for the forestry sector and use it as proposal for stakeholder consideration
3rd party	LPTP to become member of TFT/GFTN. Look at what a province can give as 3rd party legality statement	• Assess the costs/benefits and proof on concept for LPTP to use TFT/GFTN 3rd party support. • Develop the streamlined standalone LPTP verification system • Test the proposed LPTP system • Investigate benefits of World Vision to assess and support the Teak trade

10.5 Feasibility for further analysis

Annex 2 provides the detailed process used by the authors to assess the feasibility of actions that could deliver benefits to small plantation growers in Lao PDR through verification and compliance systems that operate in and across international wood supply chains.

As detailed under Table 20, Section 12, a 1-10 rating/score system was used, where 1 represented 'very positive' when assessed against specified criteria and sub-criteria, and 10 represented a 'very negative' assessment.

The three principal criteria detailed under Section 12 (Cost effectiveness, Practicality, and Appropriateness) were expanded and incorporated 24 sub-criteria under seven criteria (see Table 29), being:

- Costs;
- Cost effectiveness
- Time;
- Resources and capacity in Lao PDR;
- Sustainability;
- Relevance; and
- Market Opportunity.

This expansion allows for a broader assessment that identifies the potential to influence' change that would benefit small plantation growers by considering constraints that incorporate financial and market factors, as well as the capacity to be sustainable if implemented.

Table 32 provides a detailed assessment of scores against eight verification and compliance systems which incorporated 27 areas of potential action required by stakeholder. The rating scores were determined by the authors and checked by leading professionals who have detailed knowledge of forest plantation management, markets and international verification and compliance systems. Each sub-criterion rating score was combined and averaged under each criteria and summarised under *Table 30*, and represented in Figure 19: Analysis of Actions: an assessment of the potential for adoption of verification and compliance system.

Recognising that it is impractical to focus efforts on all 27 stakeholder actions, the authors developed a feasibility model which incorporated a Capacity-to-Complete (within an 18 month time frame) assessment that incorporated both project and partner capacity (see *Table 31: An assessment of the potential for ACIAR project to fully evaluate the potential of each system*

A feasibility score of 1.0 represents the most feasible option within an 18 month time frame. That is, the highest likelihood of influencing change that would benefit small plantation growers in Lao PDR. The feasibility ratio findings are represented in Figure 20, and highlight that there are limited options for actions (ratings close to 1.0) that have a capacity to influence change and deliver benefits.

11. Recommendations and options for future work

It is now apparent that in a competitive and dynamic market it is critical that forest management supports and promotes systems that demonstrate a commitment to legality and transparency, deliver tangible benefits to individuals, communities and the environment – and facilitates national policy initiatives (such as poverty alleviation).

There is a fundamental tension between sustainability and legality measures which can be both linked and disparate as a demonstration of sustainability is not required to access markets under WTO signatories nor where legislative frameworks exist in addition to WTO rules.. While the existence of different sustainability verification and legal compliance approaches raises tension, both approaches require a DoC to be exercised along supply chains to demonstrate legality as a principal criterion.

Thus, while there is an increased market commitment to adopt more sustainable practices, and identified local and national advantages in doing so, there is also increasingly a trend towards questioning whether the restrictive verification requirements based on sustainability principles, and the costs involved in certification, are warranted in all circumstances.

Within the Lao PDR context, there is a requirement for flexible approaches to certification if sustainable forest management outcomes are to be achieved. It is clear that improvements in returns, simplification of compliance, flexibility in approach and a reduction in costs are needed if FSC or other certification systems are to become the standard under which Teak forest management practices operate and sustainable forest management objectives are implemented. Importantly, changes must incorporate a reduction in complexity so that growers (and all actors in the supply chain) can understand and achieve their obligations.

When seeking to develop a suitable DoC framework for adoption by small plantation growers in Lao PDR, it is also desirable that the following objectives be incorporated: transparency and simplicity in

processes and costs; certainty and a streamlining in land tenure processes; clarity and certainty in regards to legality and compliance; and simplification of guidelines and costs for SFM or certification and/or CoC systems.

There is scope to look at approaches which mitigate the cost of certification, especially the initial set up cost. Simplified systems for use by low risk, small individual forest owners to achieve certification are needed and initiatives such as group certification or activity-based certification could be developed to promote and facilitate their adoption (as long as they meet the objectives of simplicity, transparency, legality etc.).

It is also critical that unrealistic economic expectations are not promoted because failure to realise these could potentially undermine other benefits such systems provide. Consequently, in the Lao PDR context, there is a requirement for flexible approaches to verification if sustainable forest management outcomes are to be achieved.

One approach to achieve savings could be to streamline approval processes and reduce regulatory costs where certification or approved forest management standards are implemented - a reduction in regulatory costs becomes an incentive for certification. Similar approaches, such as land tax exemptions have been used to promote plantation registration with varying degrees of success. The costs of certification or improved management outcomes would then be partially offset against other cost reductions and realised by growers and others in the supply chain.

The adopted framework could consider initiatives such as a private-government or grower-processor partnership approaches to reduce initial costs of SFM, certification or CoC processes. Such partnerships should incorporate clear and fair contractual arrangements, and provide certainty of land tenure to guarantee the collateral necessary to facilitate access to affordable finance. For example, where certification is adopted, land tenure registration costs or taxation rates could be reduced by GoL agencies, or a processing mill may develop suitable (2nd party) standards under which growers operate and a CoC system recognise.

Broadening of the DoF Group Certification support mechanisms for processors who adopt CoC systems could also be considered. This approach would retain the benefits of certification, by promoting CoC transparency and verification, prevent revenue leakage, and actively provide incentives for processors to adopt such systems. Other approaches to consider include:

1. Private sector implementing CoC and DoC systems through:
    a. Voluntary forest certification
    b. Voluntary verification of legality
    c. Voluntary Business to Business arrangements
2. GoL initiating national systems that are accepted by the market through:
    a. FLEGT VPA
    b. ISO
    c. Group Certification
    d. Other Improved transparent systems

However, it is not feasible or practical under ACIAR Project FST/2010/012 to fully consider all options. Consequently, to meet the criteria of net benefit, it is considered appropriate to undertake

further analysis of those systems (as detailed in Section 12.5 and Annex 2) that provide the highest level of opportunity to influence changes that improve the level of the appropriateness, practicality, and cost effectiveness of existing systems, through the following actions:

- Streamline the LPTP system, with emphasis on reducing Cost and Time requirements while maintaining a 3rd party marketing claim
- Develop and test a checklist issued by government for Legal compliance, with emphasis on reducing Cost and Time requirements
- Engage with FLEGT/VPA process to ensure the issue of impacts on small growers reflects associated risks (both legal and environmental)
- Assess the potential benefits that PEFC may provide, with emphasis on increasing its Cost Effectiveness, and decreasing the Cost and Time requirements. The adoption of PEFC by China may allow additional influence in the Lao-China trade supply chains.
- Work with Burapha and Oji to include small growers under their FSC licence, with emphasis on reducing Time, and increasing Relevance, requirements
- Further assess the effectiveness of expanding FSC, with emphasis on identifying market opportunities that provide financial premiums
- Streamline processes associated with FSC requirements in regards to LPTP and Burapha, with emphasis on reducing Cost and Time, and increasing the Cost Effectiveness and Relevance, requirements.

Regardless of the approach adopted, it is clear that political and trade relationships between trading partners will continue to have a dominant future influence on the level of success in developing and maintaining markets for forest products. This is because consumers are essentially indifferent to international initiatives designed to develop sustainability credentials. Initiatives such as the PEFC or the FSC cannot be relied upon to deliver these outcomes as timber traders and specifiers indicate that consumers continue to be influenced by price, rather than environmental concerns, and legislative market access requirements are now demanding DoC to demonstrate legality rather than sustainability. Funding provided under government sponsored initiatives (such as FLEGT/VPAs or REDD+) may influence which system is ultimately adopted, although the system must ultimately become self-funding and provide net benefits if it is to be maintained after initial (external) support ends. In conclusion, the Project should consider a broader range of verification options surrounding sustainable forest management for the development of the Teak resource in Lao PDR. These options must deliver value to growers and be robust enough to meet the DoC requirements necessary to access markets where legality is a legislative requirement in the consuming country. However, the issue of legality is not straight-forward and the complexities are many. As a general rule if all national approvals are obtained as the timber exits/enters national borders, then the DoC can be demonstrated as being met.

However, it is not clear whether this approach alone will provide the most benefit for smallholder plantation growers or other actors along the value chain, and it will be critical that issues such as transaction costs or the establishment of ‘grower groups’ is integrated within any final approach.

12. References

Barney, K. & Canby, K. 2011. *Baseline Study, LAO PDR: Overview of Forest Governance, Markets and Trade*. Forest Trends, July. Kuala Lumpur, Malaysia: EU FLEGT Facility/European Forest Institute-FLEGT Asia Regional Office.

Blaser, J., Sarre, A., Poore, D. & Johnson, S. 2011. *Status of Tropical Forest Management 2011*. ITTO Technical Series No 38. International Tropical Timber Organization, Yokohama, Japan.

Brack D. 2009. Combatting Illegal Logging: Interactions with WTO Rules. Chatham House Briefing Paper. The Royal Institute of International Affairs.

Brown, R., Zhang, D. 2005. T*he Sustainable Forestry Initiative's impact on stumpage markets in the US South*. Canadian Journal of Forest Research. 35:2056-2064.

Cashore, B. and Stone M. W. 2012. "Can legality verification rescue global forest governance?: analyzing the potential of public and private policy intersection to ameliorate forest challenges in Southeast Asia" in *Forest policy and economics*. 18: 13-22.

Cleetus, R. 2005. Lao PDR: Using Strategic Environmental Vulnerabilities Assessment (Seva) for Evaluating Threats to Forests. WWF–Macroeconomics Program Office. Vientiane, WWF-World Wide Fund for Nature.

Confidential. 2012. Unpublished reports provided by agencies and organisations, or personal comments provided 'in-confidence' to Aidan Flanagan. Vientiane, Laos PDR.

Cooney, R., von Meibom, S., and Chen Hin Keong. 2012. *Trading timbers: A comparison of import requirements under CITES, FLEGT and related EU legislation for timber species in trade*. WWF and TRAFFIC.

Cubbage, F., Moore, S., Cox, J., Jervis, L., Edeburn, J., Richter, D. Boyette, W., Thompson, M. and Chesnutt, M. 2003. *Forest certification of state and university lands in North Carolina: A comparison*. Journal of Forestry. 101 (8): 26-31.

Department of Agriculture, Fisheries and Forestry. 2012. *Australian Government's illegal logging policy.* Accessed from http://www.daff.gov.au/forestry/international/illegal-logging

EU ECP. 2006. *EC external cooperation programs: FLEGT-Asia*. Accessed October 20, 2012 from http://ec.europa.eu/europeaid/where/asia/regional-cooperation/index_en.htm

European Union Delegation to Indonesia, Republic of Indonesia Ministry of Forestry Centre for International Cooperation, & Director of Forest Product Processing & Marketing. (May 2011). *FLEGT Voluntary Partnership Agreement between Indonesia and the European Union*. Jakarta, Indonesia: European Commission.

Fisher, P. and Cleva, S. 2000. *Nation Marks Lacey Act Centennial, 100 Years of Federal Wildlife Law Enforcement*. U. S. F. W. S. Departments of the Interior. Portland, Oregon.

Flanagan A, Smith H, Turner R, and Midgley S. 2013. *A study to assess issues, challenges, and improvements to transparency and accountability relating to the use and trade in conversion-sourced timber, Lao PDR*. Forest Trends, Unpublished.

Food and Agriculture Organization of the United Nations. 2010. *Global Forest Resources Assessment 2010: Main Report*. FAO Forestry Paper 163. Rome, Italy: Food and Agriculture Organization.

Food and Agriculture Organization of the United Nations. 2012. *State of the World's Forests.* Rome, Italy: FAO.

Fraser, A. I. 2009. *Resource-use efficiency in the wood processing industry in Lao PDR for ADB*. Bangkok, Asian Development Bank, Institute for Global Environmental Strategies.

FSC. 2012. Forest Stewardship Council Website, Governance Section. FSC, Bonn. Available from URL: http://www.fsc.org/governance.html

Hansen, E. 1998. *Understanding Certification (Pacific Northwest)*. Oregon State University Extension Service. Available from: http://sfp.cas.psu.edu/pdfs/certsht.pdf

Hirsch, P, Jenson, K, Boer, B, Carrard, N, FitzGerald, S, and Lyster, R. 2006. *National Interests and Transboundary Water Governance in the Mekong*. Sydney University. Sourced: Sydney.edu.au/Mekong/documents/mekwatergov_mainreport.pdf.

Igoe J., Brockington D. *Neoliberal Conservation: A Brief Introduction*. Conservation Society [serial online] 2007 [cited 2014 Oct 12]; 5:432-49.
Available from: http://www.conservationandsociety.org/text.asp?2007/5/4/432/49249

Igoe J., Sullivan S. 2009. *Problematizing neoliberal biodiversity conservation: Displaced and disobedient knowledges.* London: International Institute for Environment and Development.

ITC. 2008. *Working draft of National Export Strategy for Lao PDR 2006-2008 Sectoral Strategy-Wood Sector*. Vientiane: Prepared for Ministry of Industry and Commerce in cooperation with ITC.

Khamphan, Manivong, et al. 2007. Status off Communiitty Based Forest Managementt iin Lao PDR. Status Report Bangkok, Thailand, The Regional Community Forestry Training Center for Asia and the Pacific (RECOFTC).

Kingsada, K. 1998. "Asia-Pacific Forestry Sector Outlook Study: Working Paper No: APFSOS/WP/38." Forestry Sector Outlook Studies - APFSOS/WP/38 from http://www.fao.org/docrep/W8190E/w8190e03.htm.

Knowles, T. 2011. *Financial Modelling and analysis of FSC certified rattan in Lao PDR*. Report prepared for the WWF Greater Mekong Lao PDR Program.

LaoPDR. 2005. Forestry Strategy 2020.

Manivong, K. 2005. Country Paper: Water Allocation and Water Right situation of Lao PDR. First NARBO Thematic Workshop on Water Allocation and Water Right, Hanoi, Vietnam.

Meyfroidt, P., T. K. Rudel, et al. 2010. "Forest transitions, trade, and the global displacement of land use." Proceedings of the National Academy of Sciences **107**(49): 20917-20922.

Midgley S. 2006. *Nam Theun 2 Project LTA Monitoring Mission (Forestry)*, Salwood Pty Ltd.

Midgley, S., Bennett, J. *et al*. 2011. *Scoping Study Payments for Environmental Services and Planted Log Value Chains in Lao PDR*. Canberra, ACT: Australian Centre for International Agricultural Research (ACIAR).

Midgley, S., Blyth, K. *et al*. 2007. *Towards improving profitability of Teak in integrated smallholder farming systems in northern Lao PDR*. Canberra, ACT: Australian Centre for International Agricultural Research (ACIAR).

Millennium Ecosystem Assessment Board. 2005. *Ecosystems and Human Well-being: A framework for Assessment*. Washington, DC: Island Press.

Mitchell, S. 2012. *Demonstrating legal wood products - Industry benchmarking*. Forest & Wood Products Australia. See http://www.fwpa.com.au/images/marketaccess/Report_PNA252-1112_IndustryBenchmarking_Part_I.pdf.

Mitchell, D and Ayrers, G. 2012. *Out of Crooked Timber: the Consistency of Australia's Illegal Logging Prohibition Bill with the WTO Agreement*. Environmental and Planning Law Journal 462.

Mohns, B. 2009. *Vientiane Wood Industry Cluster and Teak Plantation Timber Value Chain*. Initial findings and recommendations based on consultancy assignments between 03-06/2009. G. Consultants., German Agency for Technical Cooperation (GTZ).

NCBFAA. 2008. *Background Information: The Lacey Act Amendments in the Farm Bill*. Accessed October 20, 2012 from: http://www.ncbfaa.org/About/content.cfm?ItemNumber=6621.

Nussbaum, Ruth. 2013. *The Forest Certification Handbook.* UK: Earthscan.

PEMSEA. 2010. "Prime Minister Okays Decree on River Basin Committee." from http://www.pemsea.org/about-pemsea/pemsea-news/prime-minister-okays-decree-on-riverbasin-committee-interagency-coordination-seen-to-improve-water-resource-management-in-lao-pdr.

Prasetyo, A., Hewit, J., & Hin Keong, C. 2012. *Indonesia: Scoping Baseline Information for Forest Law Enforcement, Governance and Trade: Baseline Study 7*. Kuala Lumpur, Malaysia: EU FLEGT Facility/European Forest Institute- FLEGT Asia Regional Office.

Rosenbaum, K. 2003. *Defining Illegal Harvesting: What is it and what is being done about it?* Paper prepared for the 44th Session of the FAO Advisory Committee on Paper and Wood Products, Oaxaca, Mexico 8 - 9 May 2003 . Accessed from: http://www.fao.org/docrep/006/Y4829E/y4829e00.htm#TopOfPage.

Saltzman, R. 2010. 'Establishing a Due Care Standard under the *Lacey Act* Amendments of 2008' In *Michigan Law Review First Impressions,* 109:1.

Samonity X. 2012. *Direct Foreign Investment in Industrial Tree Plantation in Lao PDR.* Presentation to the Postgraduate Forestry Master's Program Students from the Australian National University. Xepon District, Savannakhet Province, Lao PDR.

Samonity, X. 2011. Direct Foreign Investment in Industrial Tree Plantation in Lao PDR. Presentation to the Australian Post Graduate Forestry Master's Program Students from Australian University. Xepon District, Savannakhet Province, Lao PDR.

Schonweger. 2014. *External Evaluation of TFT's Luang Prabang Teak Program*. Independent Consultants report prepared for Foundation Ensemble. May-June 2014.

Siphandone, K. 2003. *1991 Constitution of the Lao PDR (amended) 2003* P. o. t. L. P. s. D. Republic. Vientiane, Law Committee of the National Assembly of the Lao PDR **Amended 2003**.

Smith, H. F. 2014. *Smallholder Plantation Legality in Lao PDR: A study to assess the legal barriers to smallholder plantations and the associated timber value chain*. ACIAR Project on "Enhancing Key Elements of the Value Chains for Plantation-Grown Wood in Lao PDR" (Project FST/2012/012).

Smith, H. F. and Phengsopa, K. 2014. *Policy Brief on Legal barriers and legality issues for smallholder plantation owners and their woo*d (ACIAR Project FST/2012/012). English and Lao versions.

Spilsbury, M. J. 2005. *The sustainability of forest management: assessing the impact of CIFOR's Criteria and Indicators research*. Centre for International Forestry Research (CIFO). Indonesia: Bogor.

SUFORD. 2012. *Impact of New Regulation on Sharing of Timber Revenue*. SUFORD - workshop Vientiane.

Unasylva. 2001. *Unasylva - No. 206 - Global Conventions Related to Forests*. FAO. Accessed from: http://www.fao.org/docrep/003/y1237e/y1237e03.htm

Wattanakool, R. 2010. *Overview of Results: Value Chain Analysis, Sustained Wood Products from Lao PDR*. G. Consultants, German Agency for Technical Cooperation (GTZ).

World Bank. 2002. *Operational Policy 4.36 - Forests*. Washington, DC: W. B Group.

13. Glossary of Terms

Cost effectiveness	Ease of adoptability Complexity Financial Costs – establishment costs, maintenance and compliance costs Opportunity Cost Market willingness to pay/subsidise
Practicality	Complexity Capacity of service providers to implement Integration within the legal framework Ease of report ability Scalability Barriers
Appropriateness	Furthering government policy Meeting market requirements Scale and intensity of operations Cultural Integration within existing agricultural enterprise Increase influence and ability to participate in value chain
Certification	Includes all forms of enablers from 1st party, legal, verified, certified
Legality	The capacity to demonstrate full compliance with legal and regulatory requirements necessary to meet domestic and international standards.
Legal Compliance	The capacity to demonstrate minimal compliance with legal and regulatory requirements necessary to meet domestic and international standards. Minimal standards may range from proof of ownership and right to sell, through to payment of fees and charges, or phytosanitory and other management standards required under laws or regulations.
Duty of Care (DoC)	Includes due diligence. A term used to describe a process through which individuals or organisations identify, consider and address the potential for illegal or unregulated or unapproved timber or other forest products to enter the supply or value chain. These processes extend the principles detailed within international agreements by specifying prescriptive compliance measures. Initiatives include the United States *Lacey Act 1900*, the European Union's FLEGT Action Plan and Regional Programming for Asia (including Regulation No. 995/2010); and Australia's *Illegal Harvesting Prohibition Act (2012*).
Accreditation	A procedure by which an authoritative body gives formal recognition that a group or person is competent to carry out specific tasks.
Assessment	An independently verified individual or group that inspects management plans and implementation to determine if a landowner meets certification requirements. See also Inspection.
Chain of Custody	A process that enables products to be tracked from harvest to purchase by a consumer.
Group Certification	The option for a group of landowners to band together and go through the certification process as a whole. The certificate is held by a single entity. Inspection – Examination of a management plan and forest practices by an independently verified individual or group to ensure that the landowner conforms to certification requirements.

Management Plan	A working instrument that guides actions and changes in response to feedback and changed conditions, goals, objectives, and policies (SAF).
Sustainable Forest Management	The process of managing forest to achieve one or more clearly specified objectives of management with regard to the production of a continuous flow of desired forest products and services without undue reduction of its inherent values and future productivity and without undue undesirable effects on the physical and social environment." Source: ITTO, 2013, www.itto.int/sustainable_forest_management/
Sustainability	The capability of forests, ranging from stands to ecoregions, to maintain their health, productivity, diversity, and overall integrity in the long run, in the context of human activity (SAF).

14. Annex 1: Definitions of Legality

Appendix 1: Definitions of Legality	
Program/Mechanism	**Definition of Legality**
Agreement on Cooperation for the Sustainable Development of Mekong River Basin	None specified
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	Specimens are not in contravention of laws for the protection of fauna and flora, (CITES Article IV(2)(b)). It is not necessarily specified whether, laws for the protection of fauna and flora, encompass laws for the regulation of timber extraction and forest management.
FLEGT	The FLEGT Regulation makes it illegal to import certain types of timber and timber products into the EU from these so-called VPA partner countries unless that timber has been licenced by the exporting country as being legally harvested.
ASEAN Timber Legality	Legal material: wood materials satisfying the requirements of the ASEAN Criteria and Indicators for Legality of Timber.
World Trade Organisation	No specific definition relating to timber illegality
International Tropical Timber Organisation (ITTO)	Illegal harvesting refers to the removal of logs in a manner that is against the provisions of ? relevant laws of a particular country; ie national (or sub-national) laws. Illegal trade can be domestic or international, or both, and involves not only national forest laws but also other relevant national laws and international laws, including laws on corporations, trading, banking, auditing, customs, taxes, etc.
European Union, Regulation (EU) No 995/2	'Legally harvested' means harvested in accordance with the applicable legislation in the country of harvest. 'Illegally harvested' means harvested in contravention of the applicable legislation in the country of harvest. 'Applicable legislation' means the legislation in force in the country of harvest covering the following matters; • rights to harvest timber within legally gazetted boundaries; • payments for harvest rights and timber including duties related to timber harvesting; • timber harvesting, including environmental and forest legislation including forest management and biodiversity conservation, where directly related to timber harvesting; • third parties legal rights concerning use and tenure that are affected by

	timber harvesting; and • trade and customs, insofar as the forest sector is concerned.
United States, *Lacey Act 1900*	'Illegally sourced' is defined by the content of a sovereign nation's own laws. The law applies equally to plants taken, harvested, transported, or exported in violation of the relevant laws of any U.S. state, territory, or tribal government, as well.
Australia, *Illegal Harvesting Prohibition Act 2012*	'Illegally logged', in relation to timber, means harvested in contravention of laws in force in the place (whether or not in Australia) where the timber was harvested.
Forest Stewardship Council	Principle 1 of the FSC Principles and Criteria requires forest managers to comply with all applicable laws and regulations of the country, as well as international treaties.
Forest Legality Alliance	'Illegal harvesting' is the harvesting, transporting, processing, buying or selling of timber in violation of foreign, tribal, national or international laws. This definition also applies to harvesting wood from protected areas, exporting threatened plant/tree species, and falsifying official documents. 'Illegal wood' is timber that is harvested, transported, bought or sold in contravention of foreign, tribal, national or international laws. 'Legal wood' is timber that is harvested, transported, bought or sold in accordance with foreign, tribal, national or international laws.
Global Forest Trade Network (GTFN)	Legally harvested - timber that was harvested: • Pursuant to a legal right to harvest timber in the forest management unit in which the timber was grown; and • In compliance with national and subnational laws governing the management and harvesting of forest resources. Legally traded - timber, or products made from the timber, that was: • Exported in compliance with exporting country laws governing the export of timber and timber products, including payment of any export taxes, duties, or levies; • Imported in compliance with importing country laws governing the import of timber and timber products, including payment of any import taxes, duties, or levies or not in contravention of exporting country laws governing the export of timber and timber products, including payment of any export taxes, duties, or levies; and • Traded in compliance with legislation related to the convention on international trade in endangered species (CITES), where applicable. Legal right to harvest - authorization to harvest in the forest management unit • From the resource owner(s); and • Under a valid permit, licence, or similar instrument issued pursuant to the laws and regulations governing the management and harvesting of forest

	resources. Illegal harvesting - timber cut or removed without the required licence or in breach of a harvesting licence or law. This includes logs that are stolen. Illegal harvesting (and related trade and corruption) - harvesting or trading of in violation of relevant national or sub-national laws, or access to forest resources or trade in forest products that is authorized through corrupt practices. Illegal trading - timber, or a product containing timber, bought, sold, exported, or imported and processed in breach of the laws, including laws implemented under CITES.
Rainforest Alliance	Verification of Legal Compliance (VLC) ensures that the administrative requirements of permitting, planning, taxes or fees, and harvesting, as well as a broad range of applicable and relevant laws and regulations related to forestry, have been met. Legal origin verification signifies that a company has met the administrative requirements of permitting, planning, taxes or fees, and harvesting in defined areas only. Legal compliance encompasses a broad range of laws on environmental protection, wildlife, water and soil conservation, harvesting codes and practices, worker health and safety, and fairness to communities.

15. Annex 2. Feasibility Framework

Table 29 provides the criteria and associated elements used to assess a system's potential for adoption specifically in regards to private, small plantation growers in Lao PDR. These have been applied in Table 30, and used to develop Table 28.

Table 29: Detailed criteria when determining the suitability of different actions to maximise the potential for adoption.

Criteria	Sub Criteria
Cost	Establishment Maintenance & compliance Opportunity Costs Market/Financial Net costs vs benefits
Cost effectiveness	Scale for self sufficiency Income Generation Local enterprise
Time	Achieve goal Farmer Audit/checking
Resources and capacity in Lao PDR	Existing programs Capacity to implement Government support
Sustainability	Beneficiaries Risks Scalability Complimentary products
Relevance	Cultural acceptance Government Policy
Market opportunity	Local Market Current export markets Future export market Increase value chain share

Table 30: An assessment of the potential for adoption of verification and compliance systems for private, small plantation growers in Lao PDR.

Potential System	Potential stakeholders responses	cost	cost effectiveness	time	Resources/ capacity in Lao PDR	Sustain-ability	Relevance	Market opportunity	Average
FSC Forest Management	FSC FM - 1: Streamline existing procedures of FSC in LPTP and Burapha	4.2	5.0	5.3	2.3	1.8	4.0	2.0	3.5
	FSC FM - 2: Assess the effectiveness of expansion of FSC for smallholders in Laos	2.4	3.0	5.0	4.3	4.0	3.0	9.3	4.4
	FSC FM - 3: Work with certification bodies to reduce complexity	9.4	7.3	8.0	6.3	7.3	10.0	5.0	7.6
	FSC FM - 4: Provide outreach to potential business to drive further expansion of the FSC certificates	9.8	9.0	9.0	7.3	8.0	9.0	5.3	8.2
	FSC FM - 5: Increase wood processing included in the FM certification so that value adding is possible without the costs of CoC	6.6	4.0	4.3	5.7	7.3	8.0	4.0	5.7
	FSC FM - 6: Work with certification bodies to have local auditors to reduce the costs and understand context of local certificates	4.4	4.0	6.0	5.3	3.8	4.0	5.5	4.7
	FSC FM - 7: Work with Burapha and Oji to lead inclusion of smallholders in their certificates	2.6	1.0	5.7	2.7	2.5	5.0	2.0	3.1
	FSC FM - 8: Support TNK to assist in the expansion of the LPTP certificate	6.8	4.0	8.0	7.0	5.3	4.0	2.5	5.4
FSC CoC Certification	FSC CoC - 1: Consult stakeholders through industry groups on their interest to pilot the establishment of group CoC certificate	3.2	3.0	1.7	3.0	3.3	5.0	2.3	3.1
	FSC CoC - 2: Assess the market benefit of only been CoC certified: 1. Assisting in traceability and legality, 2. Marketability	3.2	5.7	1.7	3.0	4.3	5.0	4.3	3.9
PEFC Forest Certification	PEFC FM - 1: Analysis the opportunities PEFC may provide	1.6	4.7	1.7	2.3	3.5	5.0	4.0	3.3
	PEFC FM - 2: Make a roadmap and consult key stakeholders for PEFC development that	2.8	4.7	4.0	3.0	2.8	6.0	4.5	4.0

	can be used to raise interest and support.								
	PEFC FM - 3: Consult the ACIAR project partners and PEFC in their interest to develop pilot projects	1.8	2.7	2.0	2.0	3.8	7.0	4.5	3.4
	PEFC FM - 4: Identify FLEGT or other standard setting body to become the governing body for PEFC Lao PDR.	6.0	5.0	4.7	3.3	5.5	5.0	4.8	4.9
PEFC CoC including Controlled sources	PEFC CoC -1: Analysis the functionality and marketability of PEFC controlled wood sources for Lao PDR smallholders.	3.8	4.0	4.3	5.0	4.0	8.0	3.8	4.7
	PEFC CoC -2: Discuss with FSC CoC certificate holders to become dual certified	7.8	4.7	3.0	3.7	4.0	5.0	3.5	4.5
	PEFC CoC -3: Assess LPTP FSC group certification documentation against the PEFC standard and make recommendations for implementation	3.2	4.3	4.0	3.0	4.3	5.0	5.0	4.1
	PEFC CoC -4: Using examples from other countries business look at the complexity of controlled sourcing	3.2	5.0	2.0	3.3	4.8	3.0	2.8	3.4
FLEGT	FLEGT - 1: Apply to FLEGT focal point to be included in the FLEGT activities either as Civil Society (ACIAR project) or Private sector (LPTP farmer group) to represent smallholders.	4.4	5.7	5.7	2.0	4.3	7.0	4.0	4.7
	FLEGT - 2: Engage FLEGT to include the development of a National Planted Forest Code	4.2	7.7	6.0	3.0	3.5	4.0	3.0	4.5
Legality	LEGAL - 1: Develop and test a checklist issued by government for legality of Teakwood so that it can be used to show compliance of wood sales.	5.0	2.7	6.7	3.3	4.3	1.0	1.5	3.5
ISO	ISO - 1: Contact local service providers to scope potential	2.0	8.3	2.7	4.0	4.8	6.0	3.5	4.5

	ISO - 2: Assess the benefits of ISO for the forestry sector and use it as proposal for stakeholder consideration	3.6	8.0	3.7	4.3	4.5	6.0	4.5	4.9
3rd party	3rd Party - 1: Assess the costs/benefits and proof on concept for LPTP to use TFT/GFTN 3rd party support.	2.0	1.3	2.0	1.3	1.8	3.0	3.3	2.1
	3rd Party - 2: Develop the streamlined standalone LPTP verification system	4.0	1.7	6.3	1.0	3.0	4.0	2.8	3.3
	3rd Party - 3: Test the proposed LPTP system	3.8	1.0	5.3	2.7	2.0	2.0	2.8	2.8
	3rd Party - 4: Investigate benefits of World Vision to assess and support the Teak trade	4.4	9.0	2.7	7.7	5.5	7.0	6.0	6.0

Table 30 demonstrates that there are complex relationships that influence the net benefits associated with a particular system or approach. These interactions and levels of influence are represented in Figure 19, whose cumulative scores can be used to identify which systems are able to be influenced through work undertaken by the ACIAR project.

As a basis for identifying appropriate systems, the authors consider that a rating of 20 or less indicates the overall suitability of a system across a supply chain. As indicated in **Error! Reference ource not found.**, there are only two 3rd Party approaches that met this criterion. All other systems do not provide an overall net benefit to the grower, or significant benefits along the supply chain.

However, the bar chart illustrates which areas have the greatest influence on net benefits. That is, the longer the bar chart, the lower the benefit. This was then used to assess the capacity of the ACIAR project to complete an analysis of a specific system or components of those systems for private, small plantation growers in Lao PDR.

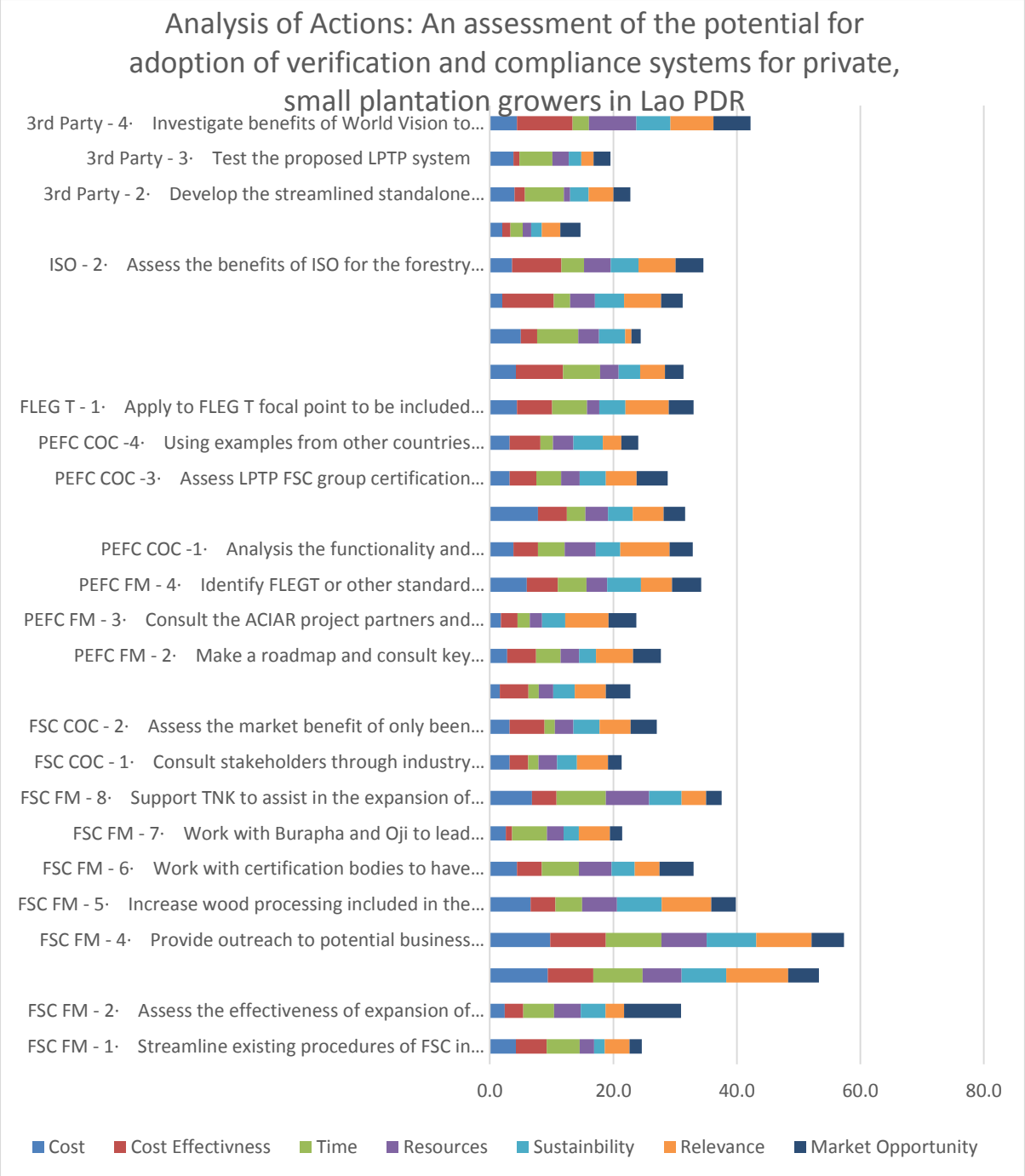

Figure 19: Analysis of Actions: an assessment of the potential for adoption of verification and compliance system

By comparing the Average Assessment Score (AAS) against the Average Capacity to Complete Score (the ACCS is detailed under Table 33), we can develop a Feasibility Ratio (FR, where FR = ACCS*(ACCS/AAS)). This then allows us to identify which system is better suited to reflect the risk associated with private, small plantation owners and the capacity to 'test' their application under the ACIAR project: the lower the FR, the more achievable an analysis is. For example, testing the proposed third party LPTP system (FR of 0.8), is easier to achieve within the project's timeframes and resources capacity than working with FSC certification bodies to reduce complexity (FR of 7.4).

Table 31: An assessment of the potential for ACIAR project to fully evaluate the potential of each system

Potential System	**Potential stakeholders responses**	**Average Assessment Score (AAS)**	**Considerations**		**Capacity to complete under ACIAR Project (ACCS)**					**Feasibility ratio**
			Positive	Negative	Project Capacity	Cross Project impacts	Partner Capacity	Partner Interest	Average capacity score	
FSC Forest Management	FSC FM - 1: Streamline existing procedures of FSC in LPTP and Burapha	3.5	LPTP completed first phase Burapha has used similar structure to LPTP ACIAR project sub-components interested to use Standardised Documents	Time consuming for editing and graphics, in particular Lao translation Expensive printing and training in new procedures Development of systems needs experts	2	3	2	2	2.3	1.4
	FSC FM - 2: Assess the effectiveness of expansion of FSC for smallholders in Laos	4.4	Simple desktop study	Report may not be used	1	2	8	2	3.3	2.4
	FSC FM - 3: Work	7.6	Potential to reduce	CB's not interested as	7	9	10	4	7.5	7.4

	with certification bodies to reduce complexity		audit costs and complexity of the verifier required	geared towards profit Expensive to get them engaged.						
	FSC FM - 4: Provide outreach to potential business to drive further expansion of the FSC certificates	8.2	WWF GFTN attempted for many years, may be active in the future SUFORD SU continuing to expand natural forests	Business not getting tangible benefits from their CoC. Limited forest managers interested	10	7	10	10	9.3	10.4
	FSC FM - 5: Increase wood processing included in the FM certification so that value adding is possible without the costs of CoC	5.7	Possible to put local processors into the FM certificate so no additional costs for CoC required	CBs may not interpret it. Only primary processors are allowed to be included	10	10	9	9	9.5	15.9
	FSC FM - 6: Work with certification bodies to have local auditors to reduce the costs and understand context of local certificates	4.7	Can be used for other verification systems CB's have existing programs	Requires expertise and time of local auditors	9	8	3	4	6	7.6
	FSC FM - 7: Work with Burapha and Oji to lead inclusion of smallholders in their certificates	3.1	Existing new FSC certificate holders Companies may fund part of it	Companies not interested in working together	10	4	1	3	4.5	6.6
	FSC FM - 8: Support TNK to assist in the	5.4	TNK attempted for	Farmers not interested	5	4	7	4	5	4.7

	expansion of the LPTP certificate		many years Can prove a business lead model	in selling						
FSC CoC Certification	FSC CoC - 1: Consult stakeholders through industry groups on their interest to pilot the establishment of group CoC certificate	3.1	Can be used to implement other industry cluster work Can be used for other verification systems	Business may not be interested to cooperate Group Entity may not be interested	2	1	1	4	2	1.3
	FSC CoC - 2: Assess the market benefit of only been CoC certified: 1. Assisting in traceability and legality, 2. Marketability	3.9	Document indirectt benefits of FSC CoC		1	3	7	6	4.3	4.7
PEFC Forest Certification	PEFC FM - 1: Analysis the opportunities PEFC may provide	3.3	PEFC launching into SE Asia		1	3	3	5	3	2.8
	PEFC FM - 2: Make a roadmap and consult key stakeholders for PEFC development that can be used to raise interest and support.	4.0	As above	May not be supported by existing FSC certificate holders	2	5	5	5	4.3	4.6
	PEFC FM - 3: Consult the ACIAR project partners and PEFC in their interest to develop pilot projects	3.4	PEFC looking for Pilot projects funded by their partners and need		1	5	4	2	3	2.7

			proposals							
	PEFC FM - 4: Identify FLEGT or other standard setting body to become the governing body for PEFC Lao PDR.	4.9	Establishing responsibilities for developing a system may provide the foundation for other interventions in smallholder value chain	Government may require lengthy timeline to officially designate responsibility	6	5	5	5	5.3	5.6
PEFC CoC including Controlled sources	PEFC CoC -1: Analysis of the functionality and marketability of PEFC controlled wood sources for Lao PDR smallholders.	4.7	Provide an option for sawmills unsatisfied with their FSC certification	Business may not be interested in cooperating	1	3	3	2	2.3	1.1
	PEFC CoC -2: Discuss with FSC CoC certificate holders to become dual certified	4.5	Support existing FSC certified mills	As Above	3	5	5	5	4.5	4.5
	PEFC CoC -3: Assess LPTP FSC group certification documentation against the PEFC standard and make recommendations for implementation	4.1	Get PEFC group ready for Laos	Market may not be interested	1	6	2	4	3.3	2.6
	PEFC CoC -4: Using examples from other countries business look at the complexity of	3.4	Examples from China and Indonesia provide examples for Lao wood		2	2	2	3	2.5	1.5

	controlled sourcing		processors							
FLEGT	FLEGT - 1: Apply to FLEGT T focal point to be included in the FLEGT activities either as Civil Society (ACIAR project) or Private sector (LPTP farmer group) to represent smallholders.	4.7	Ability to get smallholders in FLEGT development including ACIAR interventions	FLEGT may not be ready	1	2	1	3	1.8	0.6
	FLEGT - 2: Engage FLEGT to include the development of a National Planted Forest Code	4.5	Get the Code of Practice up and running again	FLEGT may not be ready Process stalled twice already	2	2	2	5	2.8	1.7
Legality	LEGAL - 1: Develop and test a checklist issued by government for legality of Teakwood so that it can be used to show compliance of wood sales.	3.5	Internal Teak legality checklist with streamlined implementation of the laws	May be very complex to get government approval	1	3	3	5	3	2.6
ISO	ISO - 1: Contact local service providers to scope potential	4.5	Learn about ISO activities in Vietnam/Thailand		2	6	6	5	4.8	5.1
	ISO - 2: Assess the benefits of ISO for the forestry sector and use it as proposal	4.9	as above		2	6	5	5	4.5	4.1

	for stakeholder consideration									
3rd party	3rd Party - 1: Assess the costs/benefits and proof on concept for LPTP to use TFT/GFTN 3rd party support.	2.1	Get LPTP strategy inline		2	3	2	1	2	1.9
	3rd Party - 2: Develop the streamlined standalone LPTP verification system	3.3	Get LPTP's new strategy implemented		3	2	4	2	2.8	2.3
	3rd Party - 3: Test the proposed LPTP system	2.8	Evaluate the new system	LPTP does not have any money	2	1	2	1	1.5	0.8
	3rd Party - 4: Investigate benefits of World Vision to assess and support the Teak trade	6.0	Good for future funding of LPTP	May not be useful for current situation as already have WWF/TFT/JICA/ACIAR as 3rd parties	5	7	5	4	5.3	4.6

Table 30 is summarised in Figure 20 which represents the level of feasibility (feasibility ratio) for the ACIAR projects to undertake further analysis and testing options that reduce complexity and costs, and enhance the net benefits of such systems to private, small plantation growers in Lao PDR. Figure 20 represents the scale of feasibility, where values closes to 1.0 represent the highest potential to influence.

It is clear that each system varies in regards to the area of influence that could be achieved. For example, 3rd Party-2 indicates that if LPTP was engaged (as a system partner) and was able to reduce its Time costs by 50% (see Figure 19), then it would both reduce its Analysis of Actions rating to less than 20, and provide a net benefit (through engagement with ACIAR project) of less than 10: therefore meeting the two criteria that indicate a net benefit of adoption.

Alternatively, if the project engages with either FSC or PEFC (as system partners) to address Time costs, and these were reduced by 50%, neither system would fall below the threshold that indicates a net benefit to growers.

Consequently, to meet the authors' criteria of net benefit, it is considered feasible to undertake further consultation with system partners to test the appropriateness, practicality, and cost effectiveness of the following systems:

- Streamline the LPTY system, with emphasis on reducing Cost and Time requirements
- Develop and test a checklist issued by government for Legal compliance, with emphasis on reducing Cost and Time requirements
- Engage with FLERFT/VPA process to ensure the issue of impacts on small growers reflects associated risks (both legal and environmental)
- Assess the potential benefits that PEFC may provide, with emphasis on increasing its Cost Effectiveness, and decreasing the Cost and Time requirements
- Work with Burapha and Oji to include small growers under their FSC licence, with emphasis on reducing Time, and increasing Relevance, requirements
- Further assess the effectiveness of expanding FSC, with emphasis on identifying market opportunities that provide financial premiums
- Streamline processes associated with FSC requirements in regards to LPTP and Burapha, with emphasis on reducing Cost and Time, and increasing the Cost Effectiveness and Relevance, requirements.

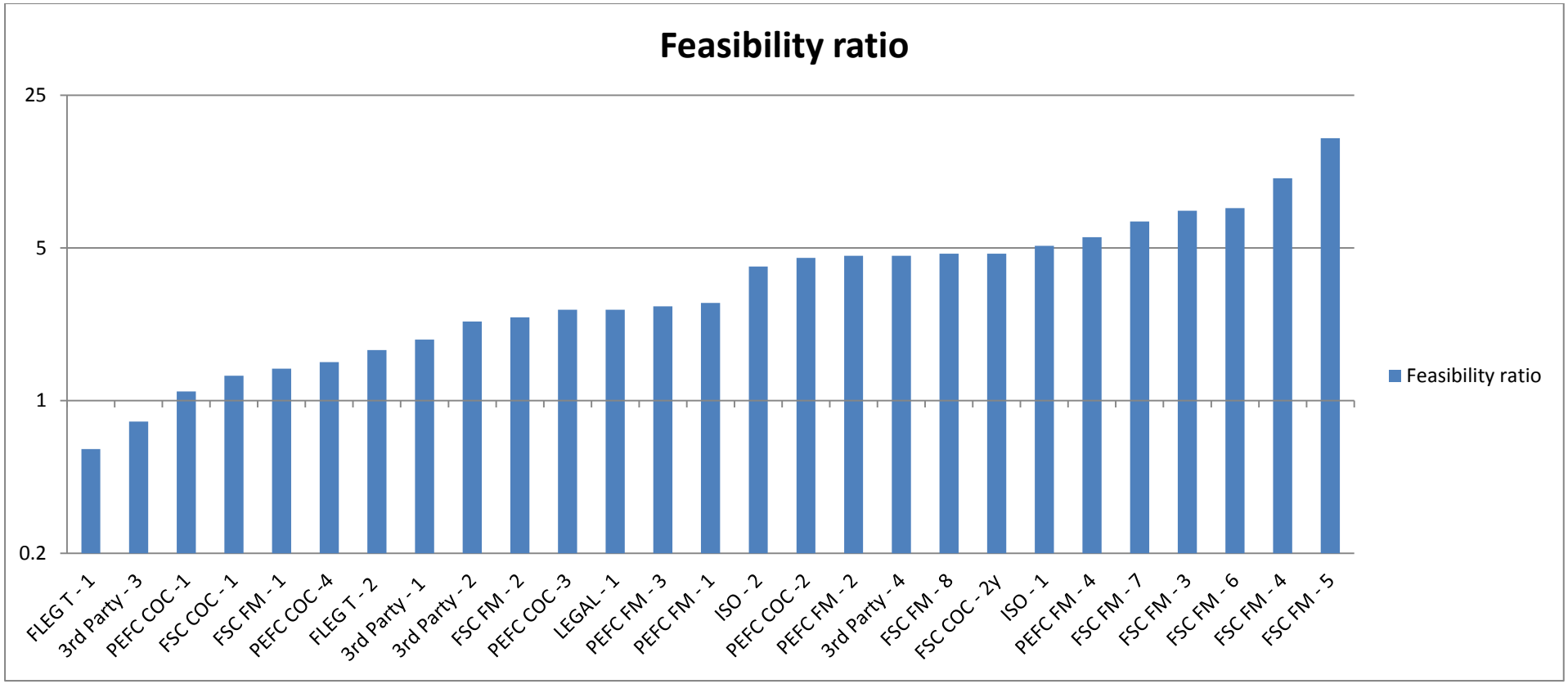

Figure 20: Feasibility (feasibility ratio) for the ACIAR projects to undertake further analysis and testing options that reduce complexity and costs, and enhance the net benefits of such system. A ratio closer to 1.0 represents the most feasible option.

Table 32. Assessment of potential actions to influence positive change

Assessment Criteria & sub Criteria# / Potential actions to achieve pathway	Cost						Cost effectiveness				Time				Resources & capacity in Lao PDR				Sustainability					Relevance			Market opportunity				
	Establishment	Maintenance &compliance	Opportunity Costs	Market/Financial Support	Net costs vs benefits	**Average Score**	Scale for self sufficiency	Income Generation	Local enterprise	**Average Score**	Achieve goal	Farmer	Audit/checking	**Subtotal**	Existing programs	Capacity to implement	Government support	**Average Score**	Beneficiaries	Risks	Scalability	Complimentary products	**Average Score**	Cultural acceptance	Government Policy	**Average Score**	Local Market	Current export markets	Future export market	Increase value chain share	**Average Score**
FSC FM - 1: Streamline existing procedures of FSC in LPTP and Burapha	**7**	**2**	**1**	**5**	**6**	**4**	**1**	**8**	**6**	**5**	**10**	**2**	**4**	**5**	**1**	**2**	**4**	**2**	**2**	**3**	**1**	**1**	**2**	**4**	**3**	**4**	**4**	**2**	**1**	**1**	**2**
FSC FM - 2: Assess the effectiveness of expansion of FSC for smallholders in Laos	**3**	2	1	2	4	**2**	2	5	2	**3**	1	9	5	**5**	2	4	7	**4**	7	5	2	2	**4**	3	2	**3**	10	10	10	7	**9**
FSC FM - 3: Work with certification bodies to reduce complexity	**9**	10	10	10	8	**9**	5	10	7	**7**	10	5	9	**8**	8	10	1	**6**	10	9	5	5	**7**	10	10	**10**	9	3	3	5	**5**
FSC FM - 4: Provide outreach to potential business to drive further expansion of the FSC certificates	**10**	10	10	10	9	**10**	7	10	10	**9**	10	7	10	**9**	5	10	7	**7**	9	10	7	6	**8**	9	3	**6**	10	5	3	3	**5**
FSC FM - 5: Increase wood processing included in the FM certification so that value adding is possible without the costs of CoC	**7**	5	9	6	6	**7**	8	3	1	**4**	2	7	4	**4**	3	7	7	**6**	8	10	4	7	**7**	8	6	**7**	7	5	3	1	**4**
FSC FM - 6: Work with certification bodies to have local auditors to reduce the costs and understand context of local certificates	**9**	4	1	7	1	**4**	3	7	2	**4**	9	2	7	**6**	5	7	4	**5**	2	8	3	2	**4**	4	3	**4**	6	4	2	10	**6**

FSC FM - 7: Work with Burapha and Oji to lead inclusion of smallholders in their certificates	**2**	5	4	1	1	**3**	1	1	1	**1**	5	4	8	**6**	1	1	6	**3**	3	3	2	2	**3**	5	7	**6**	3	2	1	2	**2**
FSC FM - 8: Support TNK to assist in the expansion of the LPTP certificate	**8**	9	8	5	4	**7**	4	6	2	**4**	9	5	10	**8**	4	7	10	**7**	7	8	3	3	**5**	4	7	**6**	1	2	2	5	**3**
FSC CoC - 1: Consult stakeholders through industry groups on their interest to pilot the establishment of group CoC certificate	**3**	4	3	2	4	**3**	3	5	1	**3**	3	1	1	**2**	4	2	3	**3**	6	5	1	1	**3**	5	5	**5**	4	3	1	1	**2**
FSC CoC - 2: Assess the market benefit of only been CoC certified: 1. Assisting in traceability and legality, 2. Marketability	**3**	2	2	5	4	**3**	4	8	5	**6**	3	1	1	**2**	4	1	4	**3**	6	1	5	5	**4**	5	5	**5**	4	3	2	8	**4**
PEFC FM - 1: Analysis the opportunities PEFC may provide	**3**	1	2	1	1	**2**	2	8	4	**5**	1	1	3	**2**	1	1	5	**2**	6	1	3	4	**4**	5	5	**5**	8	4	2	2	**4**
PEFC FM - 2: Make a roadmap and consult key stakeholders for PEFC development that can be used to raise interest and support.	**6**	1	5	1	1	**3**	1	8	5	**5**	5	2	5	**4**	1	3	5	**3**	6	1	1	3	**3**	6	5	**6**	7	5	2	4	**5**
PEFC FM - 3: Consult the ACIAR project partners and PEFC in their interest to develop pilot projects	**2**	2	3	1	1	**2**	1	4	3	**3**	2	1	3	**2**	1	1	4	**2**	2	3	5	5	**4**	7	5	**6**	7	5	3	3	**5**
PEFC FM - 4: Identify FLEGT or other standard setting body to become the governing body for PEFC Lao PDR.	**7**	2	8	5	8	**6**	5	5	5	**5**	10	1	3	**5**	3	2	5	**3**	6	8	4	4	**6**	5	2	**4**	7	5	2	5	**5**
PEFC CoC -1: Analysis the functionality and marketability	**5**	2	3	4	5	**4**	2	6	4	**4**	5	1	7	**4**	3	5	7	**5**	4	2	3	7	**4**	8	5	**7**	6	4	2	3	**4**

of PEFC controlled wood sources for Lao PDR smallholders.																															
PEFC CoC -2: Discuss with FSC CoC certificate holders to become dual certified	**8**	7	8	8	8	**8**	3	7	4	**5**	5	1	3	**3**	4	2	5	**4**	1	6	4	5	**4**	5	5	**5**	6	3	2	3	**4**
PEFC CoC -3: Assess LPTP FSC group certification documentation against the PEFC standard and make recommendations for implementation	**4**	1	4	4	3	**3**	2	7	4	**4**	2	2	8	**4**	4	1	4	**3**	3	6	3	5	**4**	5	5	**5**	8	6	3	3	**5**
PEFC CoC -4: Using examples from other countries business look at the complexity of controlled sourcing	**2**	2	4	3	5	**3**	6	6	3	**5**	2	1	3	**2**	2	3	5	**3**	5	6	4	4	**5**	3	5	**4**	5	2	1	3	**3**
FLEGT - 1: Apply to FLEGT focal point to be included in the FLEGT activities either as Civil Society (ACIAR project) or Private sector (LPTP farmer group) to represent smallholders.	**4**	6	2	7	3	**4**	5	7	5	**6**	7	5	5	**6**	2	1	3	**2**	5	3	5	4	**4**	7	4	**6**	5	3	2	6	**4**
FLEGT - 2: Engage to include the development of a National Planted Forest Code	**7**	6	2	4	2	**4**	7	8	8	**8**	9	1	8	**6**	2	5	2	**3**	2	10	1	1	**4**	4	1	**3**	6	2	1	3	**3**
LEGAL - 1: Develop and test a checklist issued by government for legality of Teakwood so that it can be used to show compliance of wood sales.	**6**	5	4	7	3	**5**	2	3	3	**3**	10	4	6	**7**	3	6	1	**3**	1	10	1	5	**4**	1	1	**1**	1	1	1	3	**2**
ISO - 1: Contact local service providers to scope potential	**1**	2	4	2	1	**2**	8	9	8	**8**	5	2	1	**3**	5	2	5	**4**	6	7	3	3	**5**	6	3	**5**	3	4	4	3	**4**
ISO - 2: Assess the benefits of ISO for the forestry sector and	**3**	5	4	3	3	**4**	7	9	8	**8**	4	1	6	**4**	5	2	6	**4**	5	6	4	3	**5**	6	5	**6**	6	4	3	5	**5**

use it as proposal for stakeholder consideration																															
3rd Party - 1: Assess the costs/benefits and proof on concept for LPTP to use TFT/GFTN 3rd party support.	**3**	3	2	1	1	**2**	1	2	1	**1**	1	4	1	**2**	1	2	1	**1**	2	1	2	2	**2**	3	1	**2**	5	2	4	2	**3**
3rd Party - 2: Develop the streamlined standalone LPTP verification system	**7**	6	3	2	2	**4**	1	3	1	**2**	8	4	7	**6**	1	1	1	**1**	1	6	1	4	**3**	4	1	**3**	6	3	1	1	**3**
3rd Party - 3: Test the proposed LPTP system	**8**	6	1	3	1	**4**	1	1	1	**1**	7	1	8	**5**	2	3	3	**3**	2	4	1	1	**2**	2	1	**2**	5	3	2	1	**3**
3rd Party - 4: Investigate benefits of World Vision to assess and support the Teak trade	**6**	2	4	4	6	**4**	9	8	10	**9**	4	2	2	**3**	7	8	8	**8**	9	4	6	3	**6**	7	8	**8**	6	7	6	5	**6**