

# TOWARDS SUSTAINABLE FOREST MANAGEMENT: AN INDUSTRY PERSPECTIVE

Prepared by Earth Systems in consultation with the Lao Eucalypt Sector Stakeholders  
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# FOREWORD

## **A sustainable plantation forestry sector can drive socio-economic development in Lao PDR**

Planted forests are an important source of wood and fibre, making up seven percent of global forest area and with the potential to contribute an estimated two-thirds of the current round wood market internationally. Global consumption of wood products continues to rise and planted forest areas are expected to double across Asia over the next four (4) decades. Some regions like the European Union are actively promoting a transition to a 'bio-based economy' which is anticipated to create further growth opportunities as new technology is developed and the reliance on fossil-based resources is reduced.

Lao PDR has the potential to develop its expanding *Eucalyptus* (eucalypt) sector and capture the potential benefits of this global demand.

If well managed, a sustainable Eucalypt Sector in Lao PDR has significant potential to:

- Increase foreign investment and attract investors with high environmental and social standards;
- Utilise marginal land and contribute to rehabilitation of UXO affected areas;
- Generate jobs and the development of local economies in poor, rural areas;
- Produce a sustainable supply of wood and wood fibre for use domestically and for export;
- Generate opportunities for processing and value-adding products; and
- Reduce logging pressure on natural forests and contribute to watershed management.

In order to capture these opportunities, the sector acknowledges the need to overcome the legacy of past investments, which have not always reached their potential and in some cases have resulted in negative environmental and social outcomes. A key challenge is the development of stronger relationships between companies, government and communities to ensure transparent and fair land acquisition and beneficial outcomes for local communities. The establishment of a Eucalypt Developers working group will assist in building these relationships and facilitate the collaborative action required to achieve the above mentioned potential.

We thank MRLG for the opportunity to present an industry perspective to these current challenges and look forward to continued collaboration with all stakeholders towards the development of a sustainable Lao Eucalypt Sector in the years to come.

Regards,

The Eucalypt Developers

# 1 INTRODUCTION

Global demand for wood and fibre resources has increased substantially in recent years, in-line with the rapid economic expansion of emerging economies. Even the most conservative demand projections point to sustained industry growth over the next four decades. Planted forests and their contribution to the supply of wood and fibre products continues to increase as the role and contribution of native forests declines.

The Eucalypt Sector in Lao PDR, consisting of several large Eucalypt developers and a growing small-holder base, is well-placed to develop a thriving and sustainable industry capitalising on the growing demand for wood and wood fibre products from regional and global markets.

This Discussion Paper has been prepared by Earth Systems in consultation with the major eucalypt plantation developers including Birla Lao Limited, Burapha Agro-forestry Company Limited, Lao Plantation and Forestry Limited, Stora Enso Lao Limited and Sun Paper Holding Co. Limited; and a range of other government and civil society stakeholders.

The aim of the Paper is to articulate the key challenges facing the Lao Eucalypt Sector and present industry perspectives on how to address key challenges and promote the sustainable development of the sector going forward.

## **Specific objectives include:**

- Assessing the status, key challenges and opportunities for the sector;
- Outlining an industry commitment for sustainable development of the sector; and
- Promoting industry-led collaborative action with other sector stakeholders including government, communities and development partners for a sustainable sector.



## 2 THE GLOBAL PLANTATION SECTOR

### 2.1 Sector Profile

#### 2.1.1 Planted Forests

Planted forests consisting of both native and exotic species are currently estimated at 264 million hectares or approximately seven (7) percent of the 4,000 million hectares of global forest area.<sup>1</sup> This area has increased by 105 million hectares since the early 1990s with an average increase of 3.3 million hectares per year between 2010 and 2015. By contrast, natural forest areas are in steady decline with an average annual loss of 6.5 million hectares over the same period.<sup>2</sup>

Asia and Latin America account for the largest areas of plantation forestry. Both are projected to be key regions for further growth to 2050 (Figure 2-1). Eucalyptus plantations accounted for 26% of global industrial plantations in 2012 (Figure 2-2).

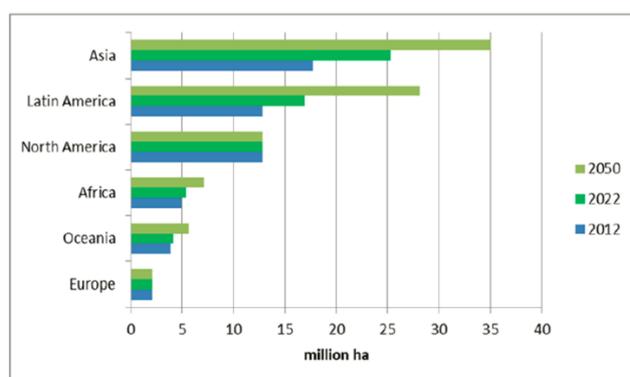


Figure 2-1 Global plantation area in 2012 and forecast for 2022 and 2050.

Source: Indufor 2012

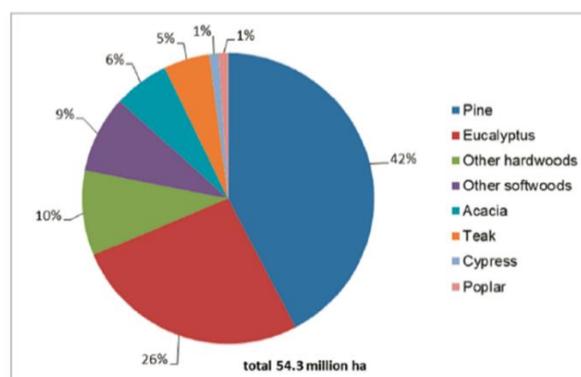


Figure 2-2 Industrial forest plantations by species 2012

Source: Indufor 2012

#### 2.1.2 Production and Trade

Annual global production of wood products in 2014 was greater than five (5) billion m<sup>3</sup> with annual growth in industrial roundwood (2.3%), sawnwood (4%), wood based panels (5%) and pulp and paper (1%).<sup>1</sup> Conservative estimates based on population growth alone expect an increase in global wood consumption of 23% by 2028.<sup>2</sup>

Global industrial round wood production was 1,837 million m<sup>3</sup> and global trade 143 million m<sup>3</sup> in 2014. Current planted forest areas have the potential to provide two thirds of the global industrial round-wood demand at current production levels and as much as 80% of harvested wood by 2030 as plantation area and yield increases.<sup>3</sup>

North America, Europe, and China are currently the key export markets for wood products. China is the fastest growing market in most wood product categories and is experiencing a growing wood deficit. Wood imports to China reached 200 million m<sup>3</sup> (logs equivalent) in 2014 and the historic growth rate of imports to the country has been 12% per annum.<sup>1,2,4</sup>

## 2.2 Sustainable Development of the Sector

A global push towards sustainable forest management was initiated at the Earth Summit in Rio De Janeiro in 1992. The outcome of this summit included a non-binding treaty on sustainable development of all types of forest. The role of planted forests in supporting sustainable development was acknowledged:

*The role of planted forests and permanent agriculture crops as sustainable and environmentally sound resources of renewable energy and industrial raw material should be recognised, enhanced and promoted. Their contribution to the maintenance of ecological processes, to offsetting pressure on primary / old growth forests, and to providing regional employment and development with adequate involvement of local inhabitants should be recognised and enhanced (Agenda 21, UNCED 1992).*

The summit led to the development of a number of initiatives, which have helped steer the sector towards sustainability over the last 25 years.

### 2.2.1 Certification

One of the most significant developments has been the growth of certified sustainably managed forests.

The two most common forms of certification include:

- Forest management – ensuring forest operations are managed sustainably
- Chain of custody – tracking certified material from forest to final product

Once a forestry operation has received certification, they are bound by the standards of the certifying organisation. Key standards for certification include are outlined in Table 2-1.

Certification was initiated through the creation of the Forest Stewardship Council (FSC) in 1993 after the Rio Earth Summit. Since then other certification initiatives have also emerged such as the Program for the Endorsement of Forest Certification – an umbrella organisation endorsing domestic forest certification systems across the globe. Together these bodies have close to 484 million ha of certified forests of which a large and growing percentage is planted forests <sup>9,10</sup>.

**Table 2-1 Leading Certification Standards for the Forest Plantation Industry**

| Standards for Certification   |
|---|
| Forest Stewardship Council (FSC) Principles and Criteria for Forest Stewardship, 2015                                   |
| Programme for Endorsement of Forest Certification (PEFC) International Standard for Sustainable Forest Management, 2010 |

Source: Richard Laity 2016

### 2.2.2 Sustainable Forestry Guidance

In addition to certification, a number of international bodies have been working to guide sustainable development of the forest (and planted forest) sector globally. These include the Food and Agricultural Organisation (FAO); the United Nations Forum on Forests (UNFF) and an array of regional and domestic organisations. In their efforts to promote SFM, these organisations have developed non-binding standards and guidance material (see Table 2-2).

**Table 2-2 Standards and guidelines used in the Forest Plantation Industry**

| Guidelines   |
|--|
| CIFOR Criteria & Indicators for Sustainable Development of Industrial Tropical Tree Plantations 2001   |
| FAO Voluntary Guidelines for Responsible Management of Planted Forests 2006 / Planted Forests in Sustainable Forest Management: A Statement of Principles 2010 |
| ITTO Guidelines for the establishment and sustainable management of planted tropical forests 1993  |

Source: Masiero, M, Secco, L, Pettenella, D and Brotto, L 2015, Standards and guidelines for forest plantation management: A global comparative study, Forest Policy and Economics, Vol.53, pp. 29-44

One of the most relevant guidelines for the planted forest sector is FAO's Voluntary Guidelines for Responsible Management of Planted Forests (2006). In 2010 these guidelines were distilled into 10 key principles for responsible management of planted forests (see Table 2-3).

**Table 2-3 Principles for a Sustainable Sector**

| Guidelines  | Description  |
|---|--|
| <b>Institutional Principles</b>                               |  |
| Good Governance   | This principle considers the time frame and risks in establishing and managing planted forests, as well as their use, marketing and trade. Governments should facilitate an environment of stable economic, legal and institutional conditions to encourage long-term investment, sustainable land-use practices and socio-economic stability.   |
| Integrated Decision-Making and Multi-Stakeholder Approaches   | This principle considers multifaceted interfaces of planted forests with communities, agriculture, animal husbandry, naturally regenerating forests and agroforestry land uses. Policy-makers should encourage integrated decision-making by stakeholders in planning, managing and utilizing planted forests.   |
| Effective Organisational Capacity                             | Governmental, private-sector and other organizations require the capacities and capabilities to deliver knowledge, technology and other support services for sound planted forest management – at all levels.  |
| <b>Economic Principles</b>                                    |  |
| Recognition of the Value of Goods and Services                | Planted forests should be recognized for their provision of both market and non-market benefits, including wood and non-wood forest products and social, cultural and environmental services.  |
| Enabling Environment for Investment                           | Governments should create the enabling conditions to encourage corporate, medium- and small-scale investors to make long-term investments in planted forests and to yield a favourable return on investment.   |
| Recognition of the Role of the Market                         | Investors in planted forests should respond to signals from international and national markets to improve the probability of achieving acceptable returns on investment. Establishment and management of planted forests should be market rather than production-driven, unless established for environmental, protective or civic reasons.  |
| <b>Social and Cultural Principles</b>                         |  |
| Recognition and Maintenance of Social and Cultural Values     | Social and cultural values should be taken into consideration in planning, managing and using planted forests, including the welfare and empowerment of adjacent communities, workers and other stakeholders. The balancing of competing objectives in planted forest investment causes social and cultural changes. Thus it is necessary to adopt planning, management, utilization and monitoring mechanisms to avoid adverse impacts.   |
| <b>Environmental Principles</b>                               |  |
| Maintenance of Environmental Sustainability and Forest Health | Planted forest management will impact the provision of ecosystem services. Thus planning, management, utilization and monitoring mechanisms should be adopted in planted forests to minimize impacts and promote positive outcomes, as well as to maintain or enhance the conservation of environmental services. Arrangements are needed at national, subnational and forest management unit levels to ensure that planted forests maintain and improve forest health and productivity and reduce the impact of abiotic and biotic damaging agents. |
| Conservation of Biological Diversity                          | Planners and managers should incorporate the conservation of biological diversity at stand, forest and landscape levels.   |
| Management of Landscapes                                      | As planted forests interact with and impact local land uses, livelihoods and the environment, integrated planning and management approaches should be adopted within a landscape or watershed to ensure that potential upstream and downstream impacts are understood, managed and monitored within acceptable social, economic and environmental standards.   |

Source: FAO 2010, *Planted Forest in Sustainable Forest Management: A Statement of Principles*, FAO, Rome.

### 2.3 Towards a Bio-based Economy

The movement towards a bio-based economy is being promoted by organisations such as the Organisation for Economic Co-operation and Development (OECD) the European Commission and a number of national governments such as the United States of America that have developed bio-economy policies (see Table 2-4)

Sustainable forest management is intrinsically linked to the development of a bio-based economy which ensures more innovative and efficient management and use of renewable resources whilst ensuring environment protection.

The emergence of new technologies has provided scope to expand the range of wood based products and allow the sector to play an increasing role in the bio-based economy. These include renewable and green energy solutions, carbon-positive housing and furnishings and replacement of petroleum-based plastics. Wood products may also contribute to clean water technologies, novel medicines and healthy food ingredients as well as environmentally friendly wood based alternatives to synthetic fibres, and cotton for the production of textiles.<sup>5</sup>

*"The development of a bio-based economy will result in a growing importance of biomass resources, whilst the role of fossil resources is reduced. A bio-based society will emerge that will embrace sustainability, a clean environment and low carbon solutions".*

*(Vision 2030, The European Forest-based Sector Technology Platform)*

**Table 2-4 Key Policies Promoting Bio-based Economies**

| Policy Documents   |
|--|
| The Bioeconomy to 2030: Designing a Policy Agenda, OECD 2012                         |
| Innovating for Sustainable Growth: A Bioeconomy for Europe European Commission, 2012 |
| National Bioeconomy Blueprint, for the United States of America, White House, 2012   |

Source: Earth Systems 2016

## 3 THE LAO EUCALYPTUS SECTOR

### 3.1 Sector Overview

Eucalyptus plantations were first introduced to Lao PDR through the Lao-Australian Reforestation Project in the early 1970's which led to the establishment of a number of small operations. The Asian Development Bank (ADB) Tree Plantation for Livelihood Improvement Project stimulated large-scale fast growing eucalypt plantations in the early 2000's, encouraging a number of large forestry investors to establish operations in the country.

While the establishment of eucalypt plantations has stalled in recent years due to moratoriums on land concessions in 2007 and 2012, the government is now working on policy to promote sustainable plantation forestry and some of the large Eucalypt developers are planning for expansions of their operations.

Industry figures point to the significant potential contribution to the Lao economy from a profitable Eucalyptus plantation sector. Allocation of 200,000 ha (2%) of the country's degraded forest land for industrial wood plantations could support two pulp industries with a total investment of \$2-3 billion USD. It is estimated that these industries could create between 20,000 – 30,000 new direct and indirect jobs, increase tax income and GDP by approximately 10%, and generate export income of \$0.4 – 1.0 billion USD per annum<sup>11</sup>.

#### 3.1.1 Plantation Sector Players

Recent Ministry of Agriculture and Forestry (MAF) statistics identify 13 eucalypt plantation investment projects currently operating in Lao PDR. This includes five (5) major Eucalypt developers: Birla Lao Pulp and Paper Co. Ltd; Burapha Agroforestry Co. Ltd; Oji Lao Plantation Forestry Co. Ltd; Stora Enso Lao Co. Ltd and Sun Paper Holding Lao Co. Ltd and a range of smaller regional and local companies. Smallholder farmers are also playing a significant role in the sector. According to MAF figures, approximately 13% of land developed for eucalypt plantations is held by smallholder farmers.

#### 3.1.2 Plantation Resource

There are currently approximately 446,000 ha of industrial plantations in Lao PDR, the majority of which is planted with rubber (Figure 3-1). Eucalyptus (and Acacia) plantations account for approximately 66,000 ha (15%). A number of Eucalypt developers are planning significant expansion of their current operations in the years to come.

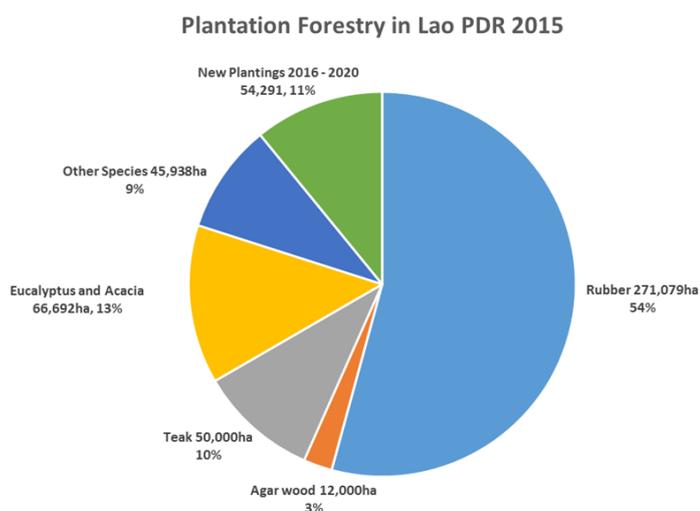


Figure 3-1 Plantation forestry statistics for Lao PDR 2015 (DOF 2016)

## 3.2 Land Acquisition and Plantation Models

### 3.2.1 Land identification and acquisition

In the 2000s, a number of Eucalypt developers signed concession agreements with the central government. These agreements placed the responsibility for land identification and acquisition with the government. Land acquisition involved provincial and district governments engaging a large number of villages to identify the required quantity of 'degraded land' considered suitable for plantation establishment. Local governments then worked with companies and communities to facilitate agreements between investors and land-owners and formal transfer of land to the investors.

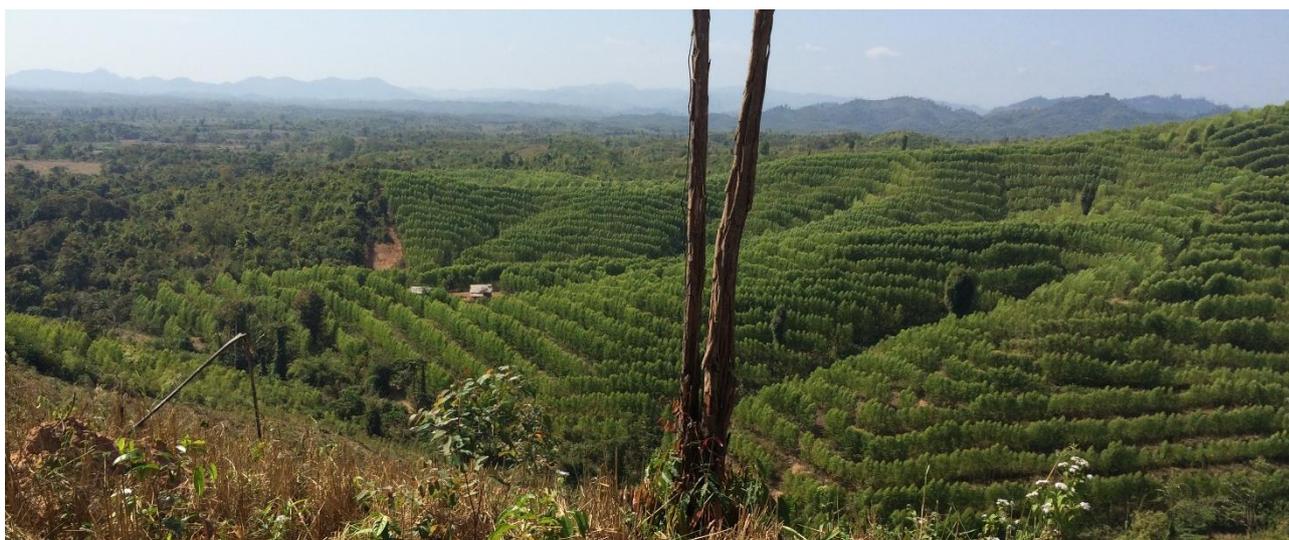
Since 2006, some plantation developers have been using a 'bottom up' approach to acquire land. This has involved companies engaging directly with local communities to identify and acquire land, with the support of district government.

### 3.2.2 Ownership models

The three main ownership / investment arrangements utilised in the sector are concession agreements, individual household plantations and contract farming. Concession agreements include those for State land, perpetual user rights for land owned by Lao shareholders, and land lease agreements for village communal lands. Individual household arrangements refer to household plantations established using either their own capital or with government assistance. Contract farming arrangements refer to verbal or written agreements between farmers and investors for production of trees for agreed future prices. Contract farming can be undertaken utilising a range of models, the most common of which is 2 + 3. In the 2 + 3 model, the farmer contributes land and labour (2) and the company/investor supply technology, finance and markets (3).

### 3.2.3 Planting models

Planting models include traditional forestry models and agro-forestry models. Previous government policies promoted reforestation by offering land tax exemptions for individuals and organisations whose land was used for tree planting provided that minimum stocking rates of 1,100 stems/ha (3m x 3m spacing) were met. An agro-forestry model designed to mimic shifting cultivation cycles is also being employed in some areas. The agro-forestry model involves planting of crops (rice, cassava etc.) between widely spaced plantation trees in years 1 and 2 of a 7-year rotation and growing pasture for cattle to graze in the plantations during years 3 to 7.



## 3.3 Markets and Value-adding

The wood processing industry in Lao PDR is moderately well established with wood processors using both native and exotic species for solid wood production. Though a number of mills dedicated to the processing of eucalypt have been

established, the market for the wood products is currently limited. One company is producing construction poles for the domestic market and customised furniture products for the domestic and niche markets in Asia, North America and Europe. Sticks trimmed from logs during processing have also proved popular for fences, screens and ornamental material for luxury resorts in Asia. Another company is currently exporting high quality wood logs through Vietnam for construction poles, chipping, pulp and MDF.

The development of pulp mills has stalled due to do challenges with establishing the planted area required to make these facilities economically viable. Plantation operators are now engaging the local wood processing sector to develop opportunities. Others have commenced plans for a staged approach to the development of processing facilities including veneer factories to supply markets in Thailand, Vietnam and China in the short term, followed by the development of larger bio-refineries after securing sustainable supply of the required raw materials.

## **3.4 Towards a Sustainable Forestry Sector**

### **3.4.1 Legal and Policy Settings**

The Ministry of Agriculture and Forestry (MAF), supported by the Department of Forestry and relevant Provincial and District authorities, is responsible for the management of the planted forest sector.

The development of the Eucalypt sector is guided by the Forestry Strategy to 2020 (refer to Section 3.1.2) and the National Policy on Forest Plantation Promotion. This policy promotes the reforestation of seven (7) million ha including the establishment of 500,000 ha of planted forests across the country. However, in recent years the GOL has placed moratoriums on land concessions for plantation (and mining) projects in 2007 (extended in 2012 and again in 2015) due to environmental and social issues related to large-scale projects.

A number of policy and legislative documents are being revised/ developed to address these issues including:

- Draft National Policy on Forest Plantation Promotion to 2025 and Vision to 2030;
- Decree on Commercialization of forest plantation and environmental protection, No. 96/PM (2003);
- MAF Instruction No. 1849/MAF (1999) on Forest Plantation Registration Procedures;
- Guidelines on Establishment of Plantation Nursery;
- Guidelines on Forest Rehabilitation / Reforestation; and
- Guidelines on Verification Process for Plantation Timber.

In terms of wood production and trade, the recently released National Socio-Economic Development Plan (NSED) 2016 – 2020 places an emphasis on the promotion of processing industries to realise high value wood products and furniture production. In May 2016, the Prime Minister issued Prime Ministerial Order No.15 (PMO 15) banning the export of unfinished products made from wood harvested from natural forests. PMO 15 created a temporary export ban on Eucalyptus and Acacias but an exemption was passed in September 2016 for logs of both species with trunks 12cm diameter or less as well as processed products. The government is currently working with other stakeholders to create a concrete definition of 'legal timber' in order to ensure good forest governance and support for a competitive timber industry.

### **3.4.2 Industry Commitments**

All of the major Eucalypt Developers (and their parent companies) have made commitments to managing their operations in accordance with sustainable forest management principles.

A number of Eucalypt Developers have also committed to forest management certification and/or chain of custody certification for operational supply chains and are actively working to meet the certification requirements. To date, only one company holds forest management certification - for a parcel of its planted area. Another obtained and then lost its forest management certification and is now working to implement corrective actions to regain this.

### 3.5 Organisation in the Sector

There are currently several working groups and associations related to the Lao Forestry Sector such as the Lao Furniture Association, Lao Wood Processing Industry Association and Forestry Sub-Sector Working Group. There is currently no industry group representing the Lao Eucalypt developers.

### 3.6 Development Initiatives

There are a number of current initiatives that are either directly or indirectly relevant to the Lao Eucalypt Sector. Some of the key initiatives are presented in Table 3-1.

**Table 3-1 Lao Eucalypt Sector Development Initiatives**

| Project   | Lead Implementing Partners  |
|---|---|
| Lao Forestry Investment Program. Current projects include:<br>IFC / Stora Enso Project to Strengthen Stakeholder Engagement<br>IFC / PFIPD Project on development of the new Plantation Investment Promotion Law<br>IFC / Stora Enso / Burapha Outgorwer Pilot Project            | IFC; World Bank Group, Asian Development Bank (ADB), MAF, Stora Enso  |
| Project to Improve policies for forest plantations to balance smallholder, industry and environmental needs in Lao PDR and Vietnam  | ACIAR, MAF, NUOL, Hue University of Agriculture and Forestry, Vietnam Academy of Forest Sciences, VNForest University of Melbourne, ANU, USQ, NAFRI, IPSARD, Stora Enso   |
| VALTIP / VALTIP 2 (VALTIP 3 coming soon). Current VALTIP 2 project aim is 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. | ACIAR, MOIC, MAF, Northern Agriculture and Forestry Research Centre, NUOL (and other Lao research institutions) Lao Furniture and Wood Industry Associations, Luang Prabang Teak Program (LPTP), QLD Department of Agriculture, Fisheries and Forestry (DAFF), University of Melbourne, ANU |
| Earth Systems / Mekong Region Land Governance Quick Disbursement Fund Project: Facilitating private sector leadership to address land governance issues in the eucalypt and tea plantation sectors  | Earth Systems, Mekong Region Land Governance Project, industry stakeholders   |
| Village Focus International / Stora Enso Project: Improving Land Acquisition Processes through Community Consultation Tools   | Village Focus International, Stora Enso   |
| World Wildlife Fund New Generation Plantations Platform   | WWF, Industry partners  |

Source: Earth Systems 2016

## 4 CHALLENGES AND OPPORTUNITIES FOR A SUSTAINABLE EUCALYPT SECTOR

The Lao Eucalypt Sector has the potential to make a significant contribution to local and national socio-economic development by addressing current sustainability challenges and capturing future opportunities. Key challenges and opportunities identified by Lao Eucalypt Sector stakeholders are explored here using the FAO Voluntary Guidelines for Responsible Management of Planted Forests as a framework.

**Table 4-1 Challenges facing the Lao Eucalypt Sector categorised by the FAO framework**

| Thematic Area               | Challenges facing the Lao Eucalypt Sector   |
|-----------------------------|---|
| Economic aspects            | <ul style="list-style-type: none"> <li>• Economic benefits of the sector</li> <li>• Stable investment environment</li> <li>• Markets and value adding</li> </ul>  |
| Social and cultural aspects | <ul style="list-style-type: none"> <li>• Land tenure and acquisition practices</li> <li>• Social impacts and benefits</li> </ul>  |
| Environmental aspects       | <ul style="list-style-type: none"> <li>• Protection of natural forests</li> <li>• Rehabilitation verses conversion of degraded forests</li> <li>• Forest health and vitality</li> <li>• Landscape Management</li> </ul> |
| Governance aspects          | <ul style="list-style-type: none"> <li>• Supportive policy and legislative framework</li> <li>• Capacity of industry and government</li> </ul>  |

Source: Earth Systems 2016

### 4.1 Economic Aspects

#### 4.1.1 Economic Benefits of the Eucalypt Sector

The Eucalypt Sector and other planted forest sectors in Lao PDR can make an important economic contribution including foreign investment, employment, and small business development in rural areas. To reach their full economic potential, plantations require responsible and sustainable management driven by proper valuation of resources and the development of value adding industries.

##### Current status:

- The success of current plantation operations has been hampered in part, by the lack of adequate markets and value-adding opportunities (refer to Section 4.1.3). This has led to concerns amongst some stakeholders that Eucalypt plantations have limited potential for generating economic benefits for local economies and communities.
- There are approximately 66,000 ha of eucalypt (and acacia) plantations across the country and plans to significantly expand this area in the near future. If achieved, this will create a significant source of renewable wood / fibre resources. There are also plans to invest in value adding opportunities such as veneer / plywood processing facilities and bio-refineries in the longer-term, which would provide a significant contribution to local and national economies (refer to Section 3.1.5).

- The contribution to commercial wood flows from smallholder farmers needs to be further recognised and supported as a vital component of the sustainable forest management investment mix.

#### **4.1.2 Stable Investment Environment**

The sustainable development of the Eucalypt Sector requires a stable investment environment that encourages and promotes long-term investment by companies with strong plantation management and sustainability credentials.

##### **Current status:**

- Recent policies such as the moratorium and the export ban on unfinished products (refer to Section 3.1.6) have affected investment in the industry and highlighted the need to develop long-term policy incentives that reward 'quality' investments.
- Government administrative costs throughout the project cycle do not currently reflect the requirements of a high volume low cost raw material. One example of this is export costs at the border where eucalypt wood products are charged at the same rate as higher value species.
- Uncertainties over land titling and usage rights a key risk for investors that require security of raw materials supply to make significant investment decisions. Tenure security for smallholders is also a key step to ensure that they have strong incentives to develop their assets and participate in the marketplace (refer to Section 4.2.1).

#### **4.1.3 Markets and Value Adding**

A market-driven Eucalypt Sector is essential for achieving acceptable economic returns / benefits for investors, local communities and the wider economy. The development of new markets and value-adding products in developing countries like Lao PDR is essential for attracting new investment and growth in the sector.

##### **Current status:**

- The wood processing industry in Lao PDR is moderately well established. The sector, which has traditionally focused on processing high value natural timber resources for the domestic and regional market, is facing challenges due to diminishing resources. In response, the government is working with development partners and a number of local firms to pilot the use of utilising lesser known natural timber species and exotic species; and develop new products and markets.
- In the past, a number of eucalypt projects in Lao PDR secured large land concessions to support the establishment of pulp mills. These projects have experienced a number of challenges in establishing sufficient planted areas to support the threshold raw material requirement and the pulp mills have not been constructed. As a result, plantations are not being harvested as proposed and both investors and communities are yet to see returns. This has led to concerns regarding the economic value and benefit of these plantations – especially in communities and particularly amongst smallholders involved in outgrower schemes.
- A number of eucalypt projects are now implementing a more staged approach to the establishment of plantations and the development of value adding industries. This involves the establishment of plantations, at appropriate sizes, within a realistic time to meet the supply requirements of first a veneer / plywood processing plant; then at a later stage larger bio-refineries.

## **4.2 Social and Cultural Aspects**

### **4.2.1 Land Tenure and Acquisition Practices**

Poor land acquisition processes and the resulting impacts for communities remain one of the key issues for all land-based development in Lao PDR. As a result, the government has placed a moratorium on large concessions until better policies and practices are developed. Eucalypt plantation investors recognise this as a key challenge to the legitimacy of the sector and are committed to working with government and communities to promote best practice land tenure and acquisition practices.

#### Current status:

- The drivers for the eucalypt plantation sector to address poor acquisition practices are clear. In the past, poor practice has led to the identification of unsuitable land (unfertile; rocky or flood prone); community conflict (including threats to plantation resources) and negative attitudes (and policy) towards plantation investment.
- Older models of land identification and acquisition in the sector relied heavily on district government who often lacked expertise and were ill equipped to conduct this process. Companies also lacked appropriate capacity to support the government.
- Weak land tenure for local communities and individuals has led to land acquisition issues. Degraded village forests, zoned as communal areas through the government's land and forest allocation program were often targeted for development without appropriate consideration of the current uses and importance to local communities (i.e. NTFP resource; swidden agriculture, or agricultural expansion areas for individual households). Compensation offered to villagers in the form of land rents and community development initiatives have often not been implemented properly and / or met expectations.
- More recently, Eucalypt developers have been working to improve their land acquisition processes and their relationship with district government. A number of companies are working with potential investors and civil society to better understand and improve community engagement and land acquisition processes. This includes the development of more robust community engagement models incorporating free, prior and informed consent; and the establishment of more effective grievance mechanisms.
- Government authorities are currently exploring future land tenure arrangements for plantation projects that can optimise benefits for local communities including pilots with development partners through the Forest Investment Program (PIP) and consideration of community forestry ownership models employed in Vietnam and Thailand.



#### 4.2.2 Social Impacts and Benefits

The eucalypt plantation sector has the potential to contribute to the development of strong local economies providing employment, improved road infrastructure, local agricultural development and local business opportunities. UXO clearance is also a significant aspect for some areas. At the same time, plantations, if managed poorly, have the potential to negatively affect communities including the loss of land and natural resources and associated livelihood and food security issues. These potential impacts and opportunities need to be properly understood and managed for the sector to continue to grow and prosper in Lao PDR.

#### Current status:

- There have been mixed levels of assessment and management of social impacts and benefits of eucalypt plantations in Lao PDR. Many of the older plantation operations were developed before the regulatory framework for environmental and social assessment and management of plantations was strengthened. Financiers of these projects typically did not require detailed assessment. Without regulatory and investment drivers, operations were developed without a sound understanding of the issues and opportunities; and with limited processes, tools and capacity to manage them. In recent years a number of companies have moved to address this gap in response to strengthened internal policies and commitments (i.e. FSC / PEFC certification and/or in response to new investor requirements).
- A key challenge for the sector is ensuring that the benefits of plantations are maximised and lead to a net gain for local communities. Some Eucalypt developers have struggled to develop and implement attractive employment policies with competitive wages and fair / safe working conditions and robust community development initiatives. Support for the development of small-holder out grower schemes has also been problematic (refer to below).
- In an attempt to address potential livelihood impacts associated with the loss of productive land, a number of companies have been piloting agroforestry models which include integration of agricultural cropping and grazing within plantations throughout the forestry rotation cycle. These models have demonstrated good potential however require consideration of the constraints in the latter years of the plantation cycle and the need for appropriate sized land parcels to provide a viable alternative to shifting cultivation cycles.
- There have been only modest investments in out-grower schemes to date. Those that have been developed have experienced poor timber volumes. Key issues have included complex legal and policy framework for smallholder plantations (see Section 4.4); lack of engagement with outgrowers; a lack of ongoing technical support for the management of outgrower plantations; and more recently a lack of a market for this timber (refer to Section 4.1.3). However, as the competition for land intensifies in Lao PDR, many companies are recognising the importance of out-grower schemes and allocating more resources to the development of effective models.



## 4.3 Environmental Aspects

### 4.3.1 Protection of Natural Forests

Planted forests can play a significant role in relieving pressure on natural forests through the provision of sustainably grown resources. However, low conservation value land is often important for livelihoods and food security and conversion of this land, without adequate consideration of these potential impacts can increase the pressure on remaining forests (i.e. increased TFP and NTFP collection). The establishment of planted forests requires consideration of these impacts and the opportunities to play a direct role in protecting and enhancing natural forests.

#### Current status:

- Due to problems acquiring adequate land for operations, operators have in some cases used what is available (according to GOL and villagers). In some cases, plantations have been established within protected or

conservation areas and natural forests have been converted, hindering operators' social license to operate. Issues include:

- » The significant competition for land and pressure on companies to establish economically viable plantations;
  - » Poorly demarcated protected and conservation forest areas. Many of these areas are also poorly managed and forest resources have been significantly degraded (leading to plantation establishment);
  - » Ambiguity concerning the definition of natural forest versus degraded forest and legal provisions for the conversion of degraded forests in these areas (refer to Section 4.3.2); and
  - » Plantation operators have lacked of robust tools for determining and protecting natural / HCV forests and managing clearance activities.
- The majority of Eucalypt developers in Lao PDR are seeking to attain certification including FSC / PEFC and IFC, both of which have specific requirements relating to land acquisition and the protection of high conservation value areas. The practice of natural forest preservation and regeneration of natural forests as riparian strips and corridors (refer to Section 4.3.2) has increased in recent years. There is an opportunity for these 'best practices' to be adopted industry-wide to provide for natural forest regeneration and increase to diversity of resources within forest management units.

#### 4.3.2 Rehabilitation versus Conversion of Degraded Forests

Eucalypt plantation operations have the potential to contribute to both the rehabilitation of native forests and conversion of degraded land for beneficial uses. Operators are increasingly recognising that an integrative landscape approach to plantation establishment (refer to Section 4.3.4) is required to maximise the environmental and social contribution of plantations and other forest areas.



##### Current status:

- All Eucalypt developers have committed to establishing plantations only in degraded forest / low value habitat areas. While government policy allows for the conversion of degraded forest land to plantations within protected and conservation forest areas in certain circumstances, most companies have policies to avoid or limit plantation establishment in these areas.
- Eucalypt developers are increasingly recognising that there is potential to rehabilitate degraded 'natural forests' in key areas of the forest management unit (i.e. protected area buffers; riparian zones; wildlife corridors). These natural forest regeneration areas provide a number of ecological outcomes as well as benefits for the plantations including fire buffers (i.e. native stands are less susceptible to wildfire), erosion control and integrative pest management (refer to Section 4.3.3).

### 4.3.3 Forest Health and Vitality

Eucalypt plantations can contribute to forest health and vitality and the provision of environmental services (e.g. climate regulation, watershed protection and buffer zones). However, single-species plantations will impact ecological function unless carefully managed for diversity. Diligent planning is required to ensure that only degraded forests are converted and that the loss of existing environmental functions is adequately understood and mitigated.

#### Current status:

- The GOL has recognised the potential for plantations to contribute to watershed protection, acknowledging their potential for protecting topsoils from erosion and sediment transport, nutrient cycling, etc. The Eucalypt Sector can play a role in watershed protection through achieving net gains in forest cover throughout the country by replacing swidden agricultural areas (which are similarly prone to erosion following site preparation).
- The landscape approach (implementing plantations across the FMU in smaller non-contiguous parcels) and utilising native vegetation buffers along watercourses reduces the chance for significant spread of pests / diseases.
- Eucalyptus species burn hot and even aged stands are particularly susceptible to wildfire. Fire represents a significant economic risk for operators, safety risk for the workforce and people living in proximity to plantations, and environmental risk (e.g. impacts associated with vegetation clearing) and may spread to native forests. However, native forests of Lao are much less prone to wildfire. The use of retention areas in riparian zones / road buffers, etc. minimises the risk of fire spread beyond the localised ignition point.

### 4.3.4 Landscape Management

An integrated approach to resource management (plantations and native vegetative communities) is required to protect natural resources while providing for the emerging plantation forestry sector.

#### Current status:

- The concept of integrated resource management has been addressed by the GOL through the establishment of protection and conservation forests and land allocation at the village level. These initiatives seek to maximise the productivity of landscapes for environmental and social functions.
- Delineation of village land into land use categories has favoured the implementation of plantations in a mosaic approach. By converting village utilisation forests and agricultural land (and retaining higher value forest / agricultural land), key environmental values and social resources are retained, with linkages between natural systems provided by riparian or other corridor retention areas (refer to Section 4.3.2). Adherence to the policies and principles of conservation, protection, utilisation forest area as well as upland / lowland agricultural areas, etc. has the potential to maintain ecosystems for wildlife, forests for TFP and NTFP production, and adequate area for farming.
- The enforcement of village level land use designations is not strong. Protection and conservation forest areas in many cases have been degraded by development activities or by local villagers for upland agriculture. The eucalypt plantation sector has the opportunity to play an important role in promoting the value of adherence to GOL land use zoning by avoiding protection and conservation forests, regardless of the level of degradation within these areas.

## 4.4 Governance Aspects

### 4.4.1 Supportive Policy and Legislative Framework

The sustainable development of the Eucalypt Sector in Lao PDR requires the government to develop and implement a robust policy and legal framework for land use, land tenure, forestry, forest industries and timber markets which considers the timeframe and risks in establishing and managing planted forests. At the same time, Eucalypt developers have the opportunity to contribute to and support this framework through the adoption of international standards and best management practices for plantation forests.

#### Current status:

- The Government is in the process of revising and strengthening policy and legislative frameworks relevant to the sector (refer to Section 3.1.5). The legal framework for smallholder plantations and timber production in Lao PDR is still extensive and complex and simplifying these processes can help smallholders to increase market participation.
- Some Eucalypt developers have corporate policies consistent with SFM and have sought, or are actively seeking, financing and / or certification that requires observance of international environmental and social safeguards. There is an opportunity to develop a national certification system / standards / guidelines or a code of practice for the management of planted forests to support government development plans and provide confidence among stakeholders that will help to drive industry expansion.

#### **4.4.2 Capacity**

Strong organizational and personal capabilities to deliver knowledge, technology, techniques and other support services for sound planted forest management are required for sustainable forest management.

##### **Current status:**

- Much work is being done among and between Lao Eucalypt Sector stakeholders to build capacity in the industry. Eucalypt developers are developing human resources as their operations progress and government authorities are working closely with development partners (and companies) on a range of initiatives (refer to Section 3.2). However, as the industry matures there will be a growing need for greater industry investment into advanced research facilities, learning resources and research skills and expertise.
- There is currently no working group or association that provides direct representation for industry stakeholders. Establishment of an industry working group can provide a platform for sharing cutting edge industry practice, sector specific data and research and development efforts in order to build industry capacity. A working group can also address new challenges as they emerge, provide advocacy on important industry issues and assist with the development of long term plans for the provision of human resources and extension programs to meet industry needs.

# 5 INDUSTRY COMMITMENT TOWARDS SUSTAINABLE DEVELOPMENT OF THE EUCALYPT SECTOR IN LAO PDR

## 5.1 Industry Commitment

Eucalypt plantation developers are committed to adopting sustainable forest management practices and working together, and with government, communities and civil society to ensuring the sustainable development of the Eucalypt Sector in Lao PDR. This includes supporting the development of local communities; contributing to the protection of natural resources; and contributing to the country's socio-economic development and poverty alleviation goals.

## 5.2 Establishment of an Industry Working Group

To underpin this industry commitment, Eucalypt plantation developers are seeking to establish a Eucalypt Developers Working Group (EDWG) with the support of the Lao National Chamber of Commerce and Industry (LNCCI) and the International Finance Corporation.

### 5.2.1 Aims and Objectives

The aim of the EDWG is establish a platform to promote industry leadership alongside the efforts of government and civil society for the sustainable development of the Lao Eucalypt Sector.

Key objectives of the EDWG are to:

1. Identify, share knowledge and collaborate on areas critical to the sustainable development of the sector;
2. Influence and support government legislation and policies to promote sustainable forest management practices; and
3. Raise the profile and link the sector with regional and global sustainable forest management initiatives.



## 5.2.2 Expected Outcomes

The establishment of the EDWG is expected to lead to the following outcomes:

1. Increased dialogue and collaboration between stakeholders and the strengthening of industry organisation and capacity to engage;
2. Increased recognition of the shared challenges facing the sector and the benefits of collaboratively moving towards a sustainable sector;
3. Development of more effective policy and models for the implementation of sustainable forest management practices in Lao PDR; and
4. Development of value-adding products and market opportunities for plantation wood and fibre resources.

## 5.2.3 Working Group Membership

The EDWG will initially be established as a working group consisting of Eucalypt developers (domestic and foreign owned) operating in Lao PDR and expert advisors working directly in the industry. The Working Group will be supported by the LNCCI, IFC and a working group secretariat. The Working Group will maintain dialogue with the government through the LNCCI and Lao Business Forum and with civil society through engagement with relevant sector working groups.

## 5.2.4 Working Group Activities

### *Establishment*

Activities to establish the working group will include:

- Development of a working group terms of reference;
- Establishment of a working group secretariat;
- Development of a financing model for the operation of the working group;
- Identification of priority work areas and development of a work program for the initial two (2) years of operation; and
- Development of an industry code of practice.

### *Operation*

The EDWG will meet quarterly to coordinate the implementation of an agreed work program.

Core activities will include:

- Conduct of workshops / seminars to promote SFM in the plantation forestry sector;
- Review and preparation of submissions on proposed government legislation;
- Collaborative research and piloting of new approaches and models for SFM; and
- Engagement with regional and international bodies.

Priority work areas of the EDWG will be decided by members in consultation with key government, community and civil society stakeholders and will seek to address the key challenges outlined in Section 4 of this paper.

Indicative priority work areas include:

- Research into the direct and indirect contribution of the Eucalypt sector to the Lao economy;
- Industry inputs into the development of the Draft National Policy on Forest Plantation Promotion to 2025 and Vision to 2030;
- Development of a shared legal and other requirements repository for the Sector;
- Collaboration on the developing and piloting of better approaches to community engagement, land acquisition, and benefit sharing; and

- Engagement with the GOL to develop an industry standard for the protection of natural vegetation.

## 5.2.5 Collaborative Opportunities

There are a number of on-going programs and initiatives being implemented to achieve better outcomes from plantation forestry investment in Lao PDR and across the region. Consultations have been conducted with lead implementers of these initiatives to identify collaborative opportunities with the EDWG (refer to Table 5-1).

**Table 5-1 Ongoing Projects and Collaborative Opportunities**

| Project / Initiative   | Lead Implementing Partners  | Opportunities  |
|--|---|--|
| Lao Forestry Investment Program. Current projects include:<br><br>IFC / Stora Enso Project to Strengthen Stakeholder Engagement<br><br>IFC / PFIPD Project on development of the new Plantation Investment Promotion Law | International Finance Corporation; World Bank Group, Asian Development Bank, Ministry of Agriculture and Forestry, Stora Enso   | <ul style="list-style-type: none"> <li>• Support for establishment of the EDWG.</li> <li>• Support for TA to improve smallholder productivity</li> <li>• Support for company, community engagement and partnerships</li> <li>• Contributing to forestry sector policy reform</li> </ul>  |
| Project to Improve policies for forest plantations to balance smallholder, industry and environmental needs in Lao PDR and Vietnam   | ACIAR, MAF, NUOL, Hue University of Agriculture and Forestry, Vietnam Academy of Forest Sciences, VNForest University of Melbourne, ANU, USQ, NAFRI, IPSARD, Stora Enso   | <ul style="list-style-type: none"> <li>• Provision of host sites for project research</li> <li>• Communication / stakeholder engagement with plantation communities about the project</li> <li>• Collaboration on policy development</li> <li>• Participation in training / capacity development activities</li> </ul>   |
| VALTIP / VALTIP 2 (VALTIP 3 coming soon)   | ACIAR, MOIC, MAF, Northern Agriculture and Forestry Research Centre, NUOL (and other Lao research institutions) Lao Furniture and Wood Industry Associations, Luang Prabang Teak Program (LPTP), QLD Department of Agriculture, Fisheries and Forestry (DAFF), University of Melbourne, ANU | <ul style="list-style-type: none"> <li>• Opportunities for collaboration on the development of value added wood products for domestic and export markets</li> <li>• Potential collaboration on TA / enhanced value chains for smallholders (ie. 'Stepping stones to standards', verification processes for smallholders etc)</li> <li>• Support for capacity building / skills development activities to support the sector</li> </ul> |
| Village Focus International / Stora Enso Project: Improving Land Acquisition Processes through Community Consultation Tools  | Village Focus International, Stora Enso   | <ul style="list-style-type: none"> <li>• Working to standardise company - community consultation tools and procedures during the land identification and acquisition process</li> <li>• Assess opportunities for scale up</li> </ul>   |
| World Wildlife Fund New Generation Plantations Platform  | WWF, Industry partners  | <ul style="list-style-type: none"> <li>• Collaborating on plantation study tours</li> <li>• Contribute to the NGP knowledge base</li> <li>• Commitment to working toward the NGP vision</li> </ul>   |

| Project / Initiative   | Lead Implementing Partners  | Opportunities  |
|--|---|--|
| Working Groups<br>(ie. Forestry Sub-Sector Working Group, Land Issues Working Group) | Various stakeholders from public sector, private sector and development partners  | <ul style="list-style-type: none"> <li>• Work to address common issues</li> <li>• Contribute to on the ground research</li> <li>• Develop opportunities for collaboration</li> </ul>   |
| Business Associations  | LNCCI, ECCIL, Lao Furniture Association, Lao Timber Processing Industry Association   | <ul style="list-style-type: none"> <li>• Cross sectoral promotion</li> <li>• Market development</li> <li>• Market information dissemination</li> <li>• Capacity building activities</li> </ul>                                 |
| Regional / international associations and initiatives                                | Regional national associations, ASEAN Working Groups (ie. ASEAN Social Forestry Network, Federation of ASEAN pulp and paper Industries, ASEAN Experts Group on International Forest Policy Processes, ASEAN Experts Group on R&D for Forest Products), UN Forum on Forests, IUFRO etc | <ul style="list-style-type: none"> <li>• Contribute to regional / international knowledge base and research opportunities</li> <li>• Develop opportunities for future collaboration on Forestry related initiatives</li> </ul> |

Source: Earth Systems 2016

# 6 CONCLUSION

Lao PDR has significant potential to develop its burgeoning Eucalypt Sector and position the country as a leading supplier of sustainable wood / fibre resources in the region. Key sustainability challenges and opportunities will need to be addressed in order to realise this potential including:

- Responsible and sustainable management driven by proper valuation of wood resources, the development of value adding industries, and better recognition and enhancement of the contribution of planted forests to environmental services;
- A stable investment environment that encourages and promotes long-term investment by companies with strong plantation management and sustainability credentials;
- Further collaboration with government and other stakeholders to address issues concerning land tenure security for local communities and land acquisition processes;
- The development of better approaches for addressing potential social impacts and maximising benefits of eucalypt plantations for local communities – including the development of viable out grower schemes;
- Protection of natural forests and enhancing the role eucalypt forests can play in the provision of environmental services;
- Development and implementation a robust government policy and legislation for land use, land tenure, forestry, forest industries and timber markets which supports sustainable plantation forest management;
- Commitment and action from eucalypt plantation developers for the adoption of international standards and best management practices for the management of plantation forests;
- Ongoing support for long-term capacity building programs across the sector to meet current and future human resource needs.

## 6.1 Recommendations and Next Steps

It is recommended that Eucalypt developers in Lao PDR establish an industry body in collaboration with LNCCI and IFC, to promote the sustainable development of the sector, and through this body:

1. Conduct engagement and consultation activities to promote sustainable forest management in the sector;
2. Actively engage the government and contribute to the development of legislation and policy relevant to the sustainable development of the sector;
3. Collaborate with government, communities and civil society on research, development and piloting of new approaches to SFM in Lao PDR; and
4. Engage with regional and international bodies to raise the profile of the Lao Eucalypt Sector and ensure market access for all stakeholders on its journey towards sustainable development.

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