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Sciences and Policy of Central European University in  
part fulfilment of the Degree of Master of Science**

**Improving government regulation  
and key impacts of rubber  
concessions in Lao PDR**

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**August 2013**

**Vientiane**

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A handwritten signature in black ink, consisting of a large, stylized initial 'N' followed by a series of loops and a long horizontal stroke extending to the right.

Nikolai BERESNEV

## CENTRAL EUROPEAN UNIVERSITY

**ABSTRACT OF THESIS** submitted by:

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for the degree of Master of Science and entitled: Improving government regulation and key impacts of rubber concessions in Lao PDR.

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Over the last 10 years, Lao PDR has experienced a significant expansion of large-scale rubber concessions, primarily through foreign direct investment from Vietnam, China and Thailand. Despite the area allocated to rubber concessions reaching 200,000 ha in 2012, their socio-economic and environmental impacts are largely undocumented. Using a range of research methods (including a field-level examination of five rubber concessions), this study seeks to identify key impacts of rubber concessions in Laos, recognise their causes and provide recommendations on how they can be improved. The findings show that the loss of agricultural land is the biggest source of concern for local communities, whilst employment and income provided by the concessions are the biggest benefits. Unfortunately, most environmental and social impacts are difficult to ascertain because government monitoring of concessions is virtually non-existent.

Negative impacts of rubber concessions stem largely from the lack of secure land tenure for nearby communities, and inadequate concession approval and monitoring processes. The responsibility for improving the performance of the industry thus lies largely with the Government of Lao PDR. The nationwide land titling process should be completed as soon as possible, and checks and balances should be put in place to ensure compliance with the concession approval process. Regular and extensive monitoring, and improved collaboration and data sharing among relevant government authorities are also essential.

**Keywords:** natural rubber, Lao PDR, concessions, environmental impact, socio-economic impact, approval, monitoring.

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## List of Abbreviations

ASEAN	Association of Southeast Asian Nations
°C	degrees Celsius
C&I	criteria and indicators
CDE	Centre for Development and Environment
CIP	Committee on Investment Promotion
CLPDR	Constitution of Lao People’s Democratic Republic
DAF	Department of Agriculture and Forestry (provincial level)
DEIA	Decree on Environmental Impact Assessment
DIPL	Decree on the Implementation of the Investment Promotion Law
DoL	Department of Labour (provincial level)
DoNRE	Department of Natural Resources and Environment (provincial level)
DPI	Department of Planning and Investment (provincial level)
DSLCC	Decree on State Land Lease or Concession
EIA	Environmental Impact Assessment
EMMP	Environmental Management and Monitoring Plan
ESIA	Environmental and Social Impact Assessment
FAO	Food and Agriculture Organization of the United Nations
g	gram
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GoL	Government of Laos
GPS	Global Positioning System
ha	hectare
IEE	Initial Environmental Evaluation
IMD	Investment Monitoring Database
IUCN	International Union for Conservation of Nature
kg	kilogram
LAK	Lao kip (currency)
Lao PDR	Lao People’s Democratic Republic
LFA	Land and Forest Allocation
MAF	Ministry of Agriculture and Forestry (central level)
mm	millimetre
MOL	Ministry of Labour and Social Welfare (central level)
MoNRE	Ministry of Natural Resources and Environment (central level)
MoU	Memorandum of Understanding
MPI	Ministry of Planning and Investment (central level)



NERI	National Economic Research Institute
NLMA	National Land Management Authority
NREIC	Natural Resources and Environment Information Centre
OAF	Office of Agriculture and Forestry (district level)
OP	Office of Planning (district level)
PEI	Poverty-Environment Initiative
SMMP	Social Management and Monitoring Plan
TABI	The Agrobiodiversity Initiative
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
USD	United States dollar (currency)
USDS	United States Department of State
VC	village committee
VIETRADE	Vietnam Trade Promotion Agency

## Introduction

Since 2004, Lao People's Democratic Republic (Lao PDR) has experienced a significant expansion of large-scale rubber concessions, primarily through foreign direct investment from Vietnam, China and Thailand. This expansion is driven by increased regional demand for natural rubber, improved market access, and promotion of integrated cropping systems by the Government of Lao PDR (GoL) in an attempt to eradicate shifting cultivation. GoL has identified agriculture as 1 of 4 priority sectors for investment and industrialization, and the Lao National Forest Strategy to the Year 2020 envisages 500,000 hectares (ha) of land to become commercial tree plantations (FS 2020).

Access to agricultural land by foreign investors – via long-term leases or purchases – is a hotly debated topic worldwide. Over the last 10 years, millions of ha of land in Africa and Asia have been leased to foreign investors for production of food and biofuels (UNDP-UNEP PEI 2011; Smaller and Mann 2009; Cotula *et al.* 2009). Large-scale agricultural concessions can deliver multiple socio-economic benefits, including incomes for rural households, government revenue and rural infrastructure. However, they can also cause forest and biodiversity loss, pollution of water sources and loss of land previously used for subsistence farming (PEI 2010). Currently, there is a knowledge gap on the overall socio-economic and environmental impacts of large-scale rubber concessions in Lao PDR.

The aim of this study was to identify and seek ways to improve the socio-economic and environmental performance of rubber concessions in Lao PDR. Specifically, the study sought to achieve 3 outcomes:

*Outcome 1: Evaluate the implementation of the regulatory framework for rubber concessions*

*Outcome 2: Identify key socio-economic and environmental impacts of rubber concessions and their causes*

*Outcome 3: Using findings from Outcomes 1 and 2, develop recommendations on how concession approval and monitoring by GoL should be altered to improve the impacts of rubber concessions*

The study used a range of research methods, including a desk review of existing literature and legislation, interviews with GoL officials, analysis of GoL databases and a field-level examination of 5 rubber concessions. The study was funded by the UNDP-UNEP Poverty-Environment Initiative (PEI) and implemented with support from the National Economic Research Institute (NERI), a division within Lao PDR's Ministry of Planning and Investment (MPI).

MPI is a key agency in concession approval and monitoring, and it is envisaged that recommendations will be integrated into MPI's processes. The study also sheds additional light on GoL's regulation of the agriculture sector, and contributes to the existing literature on the impacts of rubber concessions (both in Lao PDR and in general).

Chapter 1 provides a brief review of the natural rubber industry. Chapter 2 discusses the history and structure of the rubber industry in Lao PDR. The legal framework for rubber concessions is explained in Chapter 3, and the existing knowledge of their socio-economic and environmental impacts is summarised in Chapter 4. Chapter 5 explains the methodology of the study, with results provided in Chapter 6. The summary of findings and recommendations to GoL are provided in Chapters 7 and 8, respectively. Conceptual findings are presented in the conclusion.

## Chapter 1. Review of the natural rubber industry

### 1. Cultivation, production and processing

Natural rubber is produced from latex of several rubber-yielding trees. Almost all commercial natural rubber is produced from *Hevea brasiliensis*, commonly known as ‘a rubber tree’. Cultivation entails planting 360-450 tree seedlings per ha, with collection of latex (‘tapping’) commencing after 5-7 years. The productive life of a rubber tree is 25-30 years, after which trees are replanted (UNCTAD 2007; FAO 1977; FAO 2001).

Tapping is done manually, using a tapping knife and a collection cup (Figure 1). It takes place every 2-3 days, with yields of around 50 g of latex per tree. On average, 1 person can tap 200-300 trees in 3-4 hours; the same person then collects the latex 4 hours later. Tapping is usually done at night or early in the morning, when latex coagulation is minimised by low air temperature (UNCTAD 2007; Nong Song Hong Yai Village, pers. comm.; FAO 1977; Alton *et al.* 2005).



Fig. 1. Rubber tapping and an industrial rubber plantation, Nong Song Hong Yai Village, Saravan Province

Rubber cultivation can take place in large industrial plantations (Figure 1), managed by rubber companies which employ local people as labourers. Such plantations tend to utilise modern planting techniques, including the use of pesticide, fertilizer, and machinery for land clearance. Alternatively, rubber is cultivated in small plots maintained by local farmers under contract with a rubber company ('contract farming') or independently ('smallholders') (UNCTAD 2007).

As indicated above, rubber cultivation is a labour-intensive process. Employment is highest during the initial land clearance and planting. It is reduced significantly during the tree-maturing phase, when work is limited to weeding and application of pesticide and fertilizer (if used). Once fully productive, a 1,000 ha plantation employs around 500 workers.<sup>1</sup>

Latex coagulates within a few hours of tapping; this can be prevented by adding chemicals such as ammonia. Rubber can be sold as uncoagulated latex or as processed dry rubber sheets, crepes or blocks. Processing of latex into dry rubber takes place in large processing plants or in small field units, with 1 kg of latex generating 300-350 g of dry rubber (Kumara 2006). Large quantities of water are required during rubber processing, mainly for washing, churning and dilution. The resultant effluent contains rubber particles and other substances which can pollute nearby water sources if discharged without treatment (UNCTAD 2007).

## 2. Usage

Tires and tire tubes account for over half of global natural rubber consumption. Because of its superior tear strength and resistance to heat up compared to synthetic rubber, natural rubber is better suited for high-performance tires (UNCTAD 2007). Other products include transmission and elevator belts, hoses, sport goods, footwear, condoms and gloves (Figure 2).

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<sup>1</sup> Estimates of labour requirements for tapping vary and depend on tree density, worker skill and tapping frequency (Hicks *et al.* 2009; Yao Tien and DakLak, pers. comm.).

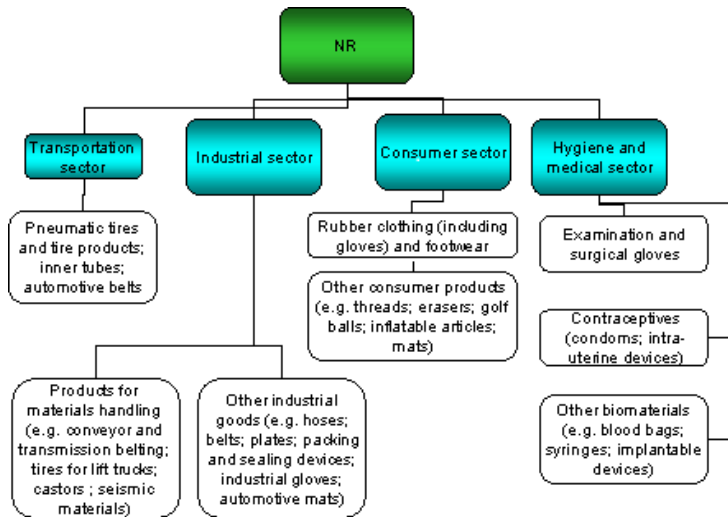


Fig.2. Uses of natural rubber

Source: UNCTAD 2007

### 3. Global production and consumption patterns

Global production of natural rubber has grown significantly in the last 50 years, both in terms of harvested area and quantities produced (Figure 3).

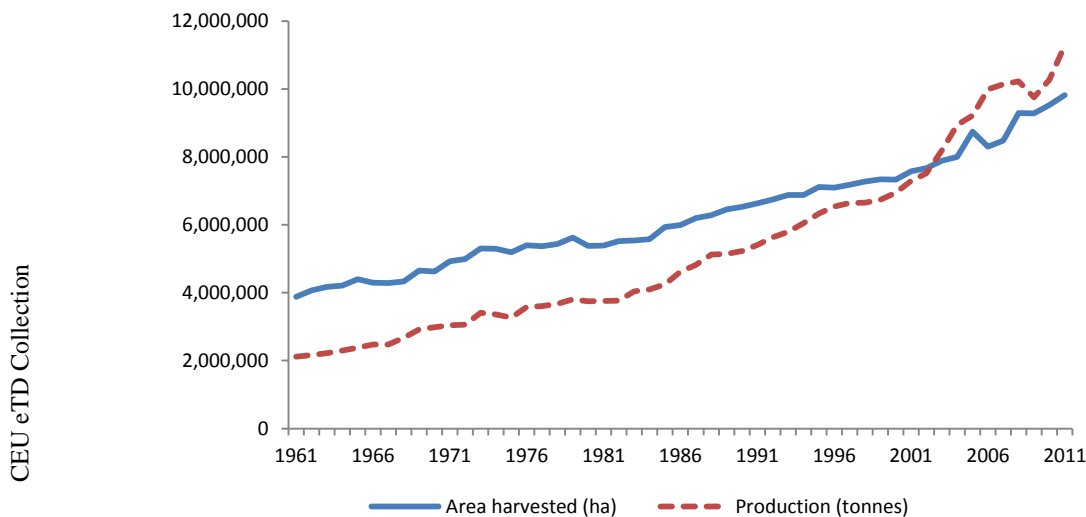
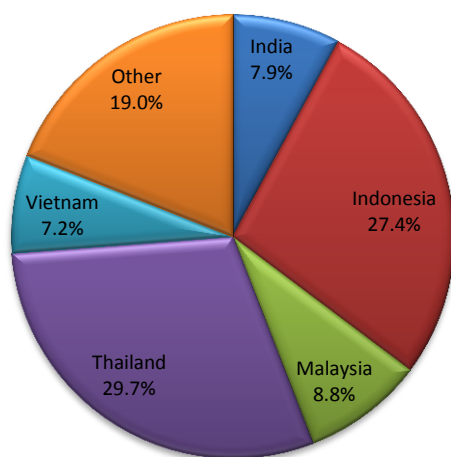


Fig. 3. Global natural rubber production and area harvested, 1961-2011

Data source: FAOSTAT 2013

The optimum temperature for rubber cultivation is 25-28°C; higher or lower temperatures retard tree growth. Rubber tree also requires an annual rainfall of 2,000-4,000 mm, evenly spread throughout the year. Because such conditions are found at a latitudinal range of 15°N and 15°S, cultivation is generally limited to tropical countries. Asia accounts for over 90% of global natural rubber production, with Thailand, Indonesia and Malaysia the biggest producers (Figure 4). China, United States and Japan are the biggest consumers of natural rubber, primarily due to their demand for motor vehicles (UNCTAD 2007; Alton *et al.* 2005).



**Fig. 4. Global production of natural rubber, by country, 2011**

Data source: FAOSTAT 2013

## Chapter 2. Rubber industry in Lao PDR

### 1. History of the industry

First rubber plantations were established in Lao PDR in mid-1990s. In 2004, northern Lao PDR experienced a strong inflow of investment from Chinese rubber companies, with an equivalent interest from Vietnamese and Thai companies in the southern provinces (Hicks *et al.* 2009).

Fuelled by foreign investment, the area allocated to rubber cultivation has since expanded dramatically, from 11,800 ha in 2006 to over 200,000 ha today (UNCTAD 2010; MoNRE 2013; Agricultural Census Office 2012). The primary cause of the expansion is the growing demand for natural rubber in neighbouring China, with consumption outpacing production (Hicks *et al.* 2009). Other contributing factors include:

- high availability of plantable land compared to neighbouring countries, particularly China, Vietnam and Thailand;
- low cost of labour;<sup>2</sup>
- low transportation costs due to proximity to China and improving roads;
- improved market access through regional economic integration, including Lao PDR joining the Association of Southeast Asian Nations (ASEAN) in 1997;

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<sup>2</sup> Lao PDR's national minimum wage is LAK 625,000 per month. This equates to USD 80.5 (USD 1 = LAK 7,763). In comparison, minimum monthly rural wages are USD 66-73 in Vietnam, USD 174-240 in Thailand and USD 122-261 in China (USDS 2012; XE Currency Converter 2013).



- generous tax exemptions and low concession fees provided by GoL, which promotes rubber cultivation to reduce poverty and eradicate shifting agriculture and opium cultivation; and
- low import duties on Lao PDR's rubber exports due to its status as a least-developed country (Hicks *et al.* 2009; UNCTAD 2010; PEI 2010; Alton *et al.* 2005).



Fig. 5. Provinces of Lao PDR

Source: Emapsworld.com 2013 (with amendments)

## 2. Industry size and structure

According to the latest GoL data, 165,168 ha<sup>3</sup> are allocated to rubber concessions (MoNRE 2013)<sup>4</sup>, with an additional 66,500 ha managed by contract farmers and smallholders (Agricultural

<sup>3</sup> This figure refers to area allocated rather than planted. It includes concessions and land leases; the latter tend to be much smaller in size and constitute less than 1.0% of total leased area. This study uses a collective term ‘concessions’ for both categories.

<sup>4</sup> MoNRE 2013 is unofficial concession data collected by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and the National Land Management Authority (NLMA, now a Land

Census Office 2012). The total area allocated to rubber (231,668 ha) thus constitutes only 1.0% of Lao PDR's land area. However, the figure is substantial given that most of Lao PDR is mountainous and 68% is forested, with consequent limits on land suitable for agriculture (FAO 2010).

Smallholder production is generally limited to Luang Namtha Province (Figure 5). In this model, individual farmers use their own land and capital to establish and manage plantations. Farmers are responsible for all activities, including land clearing, procuring seedlings, planting, harvesting and sales. The obvious advantage of the model is that farmers keep all profit. The main obstacle to smallholder expansion in Lao PDR is the inadequate access to credit, which prevents farmers from launching their own ventures. Due to delayed economic returns, rubber cultivation requires a large initial capital outlay, and inadequate financial infrastructure in Lao PDR creates a dependence on foreign capital (Hicks *et al.* 2009; Thongmanivong *et al.* 2009a; PEI 2010).

Contract farming is popular with the Chinese investors in northern provinces, particularly in Phongsaly, Oudomxai and Luang Namtha (Figure 5). The investing company signs agreements with farmers who then undertake rubber cultivation on their own land. In the '2+3' model, the company supplies capital, technology and the market, while the farmers provide land and labour. Cultivation and harvesting are supervised by technical staff provided by the company, and rubber yields are shared between the company and farmers at a 30:70 ratio. The company is responsible for rubber processing and export (Hicks *et al.* 2009; Thongmanivong *et al.* 2009a; PEI 2010).

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Management Department within MoNRE) during 2007-2012. The data is managed by the Natural Resource and Environment Information Centre (NREIC) of MoNRE and is currently being updated. The data will become official once the update process is complete (NREIC, per. comm.).

Contract farming is preferred by GoL because it avoids allocation of land to companies. However, the ‘2+3’ model often proves unstable due to a lack of income for farmers for the first 5-10 years of operations (whilst trees are maturing). Consequently, an alternative ‘1+4’ model has emerged, where farmers provide the land and work as wage labourers, whilst still retaining a small share of the rubber yield (Hicks *et al.* 2009; Thongmanivong *et al.* 2009a; PEI 2010).

The concession model is preferred by Vietnamese and Thai investors in southern provinces, particularly in Champasack, Saravan and Savannakhet (Figure 5). The model entails a long-term lease (15-70 years) of large areas of land to a company, which is responsible for capital, technology, planting material, sourcing labour, rubber processing and marketing. Local populations are hired as wage labourers to undertake planting, tree maintenance and rubber harvesting. For the investor, the key advantage of the model is the high degree of autonomy in managing the plantation (Hicks *et al.* 2009). The rest of this report will focus on rubber concessions, as reliable data on smallholders and contract farming in Lao PDR is limited.

Out of 281 approved rubber concessions in Lao PDR, 98 are allocated to Lao companies, 86 to Chinese, 61 to Vietnamese and 12 to Thai. However, Vietnamese and Chinese concessions tend to be larger and thus account for over 75% land allocated for rubber concession (Table 1).<sup>5</sup>

**Table 1. Approved rubber concessions in Lao PDR, 2013**

Investor origin	Approved concessions	Total concession area (ha)	Average concession area (ha)	Share of total concession area (%)
Lao PDR	98	30,020	306	18.2%
Vietnam	61	85,595	1,403	51.8%
China	86	39,217	456	23.7%

<sup>5</sup> According to Hicks *et al.* 2009, it is also common for Lao companies to be unofficially funded with Chinese capital. This means that the significance of foreign capital is greater than suggested by government figures.

Thailand	12	3,423	285	2.1%
Other	24	6,913	288	4.2%
<b>Total</b>	<b>281</b>	<b>165,168</b>	<b>588</b>	<b>100.0%</b>

Data source: MoNRE 2013

Over 90% of rubber concessions in Lao PDR were approved within the last 10 years (MoNRE 2013). Consequently, most plantations have not reached the tapping phase. National-level data of rubber production and export could not be obtained, but it appears that most of the exports are headed for China.<sup>6</sup> Thus China plays a key role in the industry, acting both as a major source of capital and as a primary market.

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<sup>6</sup> Vietnam Trade Promotion Agency states that 57% of Vietnam's rubber production is exported to China (VIETRADE 2013).

## Chapter 3. Legal framework for rubber concessions in Lao PDR

Legislation related to the approval, operation and monitoring of rubber concessions in Lao PDR includes:

- Environmental Protection Law (1999);
- Land Law (2003);
- Labour Law (2006);
- Forestry Law (2007);
- Law on Investment Promotion (2009);
- Decree on State Land Lease or Concession (DSLCC 2009);
- Decree on the Implementation of the Investment Promotion Law (DIIPL 2010);
- Decree on Environmental Impact Assessment (DEIA 2010); and
- Agreement on List of Investment Projects subject to IEE [Initial Environmental Evaluation] and EIA [Environmental Impact Assessment] (2010).

Key ministries include MPI, the Ministry of Natural Resources and Environment (MoNRE), the Ministry of Agriculture and Forestry (MAF) and the Ministry of Labour and Social Welfare (MoL) (Figure 6). Each ministry has a corresponding department at the provincial level and an office at the district level, e.g. Department of Planning and Investment (DPI), Savannakhet Province and Office of Planning (OP), Xepon District. Departments and offices are administrative branches of the ministry.

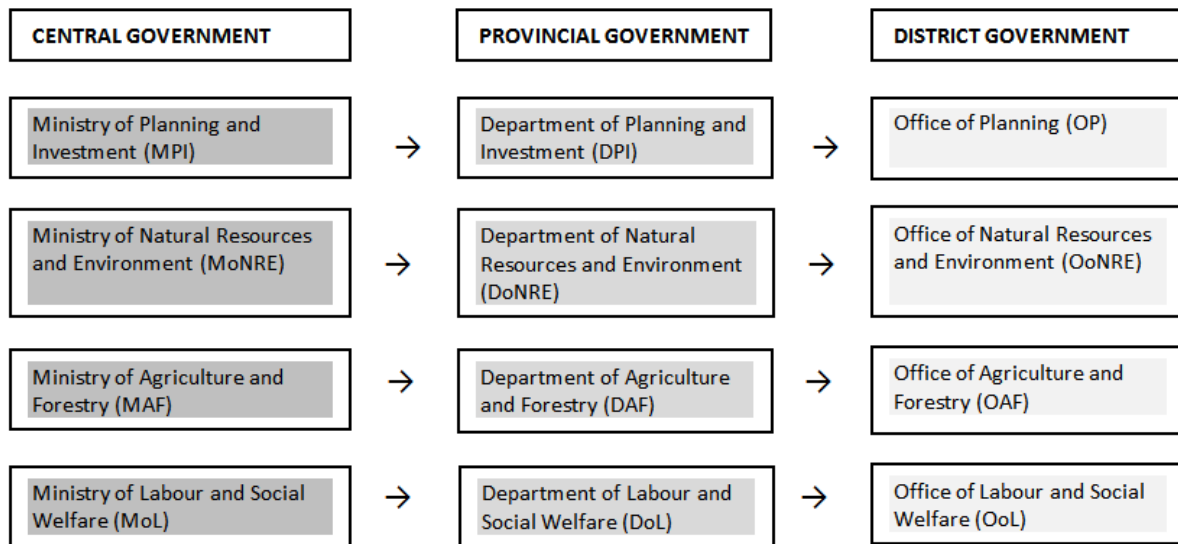


Fig. 6. Administrative divisions of ministries overseeing the rubber industry

## 1. Land tenure

Article 13 of the Constitution of Lao PDR stipulates that all land is controlled by the state (CLPDR 2003). Under the Land Law 2003 (Articles 3 and 71), the state can allocate land use rights to Lao households and organizations, and allocate concessions to foreign or domestic investors. The state reserves the right to appropriate the allocated land “for public purposes”; in such instances, the state must pay “appropriate compensation” to affected land users.

Prior to 1990s, formal land use rights were virtually non-existent in upland rural Lao PDR. Village boundaries were recognised primarily via natural landmarks, and forest use for swidden agriculture and hunting was open-source to all villages. Consequently, agriculture and exploitation of forest resources was limited only by the villagers’ ability to mobilize labour and capital (Fujita and Phanvilay 2008).

In the early 1990s, GoL commenced a land use planning and land allocation process, commonly referred to as Land and Forest Allocation (LFA). LFA sought to delineate forest areas and agricultural land, and allocate formal land use rights to communities and individual households.

The overall objective was to promote integrated cropping systems in an attempt to eradicate shifting cultivation, which was considered a primary cause of deforestation (Thongmanivong *et al.* 2009b).

Coordinated by provincial Departments of Agriculture and Forestry (DAFs) and district Offices of Agriculture and Forestry (OAFs), LFA consisted of:

1. DAFs and OAFs drawing exclusive village boundaries throughout the country;
2. DAFs and OAFs distinguishing resource boundaries within each village (conservation forest, protection forest, agricultural land, residential area, etc.), in consultation with the village committee (VC);
3. OAF and the VC drawing up a management plan for community land and forestland;
4. OAF transferring management responsibilities of these resources to the VC, which became responsible for their sustainable management;
5. OAF allocating agricultural land and degraded forestland to individual households via temporary land use certificates, with maximum of 15 ha per worker per family (depending on intended land use); and
6. If the allocated land was used appropriately for 3 years, households could then apply to provincial authorities for permanent land titles (Fujita and Phanvilay 2008; Land Law 2003).

However, the process appears to have suffered from a lack a standardised methodology, as well as insufficient resources and staff capacity in district authorities. The budget for LFA declined after 2000, which discouraged OAFs from further implementation and monitoring. By 2006, LFA coverage extended to fewer than half of total target villages in Lao PDR (Fujita and Phanvilay 2008; Manivong and Sophathilath 2009).

A number of externally funded land allocation initiatives have emerged in recent years, including the Rural Development in Poverty Regions project and the Land Management and Economic Development in Rural Areas project run by GIZ, and The Agrobiodiversity Initiative (TABI) (GIZ 2013a, 2013b; TABI 2013). Simultaneously, GoL is pushing on with its own land allocation process, now implemented by MoNRE.<sup>7</sup> Nonetheless, there is still a lack of clear village boundaries and land titles throughout the country, and a centralised land registry is yet to be developed. Consequently, villagers are often unable to prove their legal rights to customarily occupied land, and there are incidents where the same plot of land is allocated to 2 different users (UNDP-UNEP PEI 2011; Hicks *et al.* 2009).

## 2. Concession approval and management

GoL enters into concession agreements with individual investors. Under the Law on Investment Promotion 2009, MPI is responsible for coordinating the approval process and issuing concession licences. Notably, the Land Law 2003 (Article 10) contradicts the Law on Investment Promotion 2009 by putting the NLMA in charge of concession approval.<sup>8</sup> Investigating this legal contradiction is outside the scope of this study.

### Prescribed approval process

According to the Environmental Protection Law 1999, the Law on Investment Promotion 2009, DSLLC 2009 and DEIA 2010, the approval process for rubber concessions consists is as follows:

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<sup>7</sup> These initiatives often overlap, resulting in multiple land use plans issued for the same village (CDE, pers. comm.).

<sup>8</sup> Originally an independent authority, NLMA became a Land Management Department within MoNRE in November 2011 (Schönweger *et al.* 2012).



1. Investor submits an application form – known as the ‘investment proposal’ – to the MPI or to the provincial DPI, depending on the size of the concession (discussed below).
2. MPI/DPI makes a decision-in-principle whether or not the concession should go ahead and notifies the investor by signing a Memorandum of Understanding (MoU), also known as the ‘investment agreement’. The MoU allows the company to investigate land availability and formulate a project proposal.
3. The investor must then prepare and submit the following application documents to MPI/IPD:
  - a feasibility study, covering economic and technical feasibility of the project;
  - a proposed business plan;
  - an environmental and social impact assessment (ESIA);<sup>9</sup> and
  - a memorandum on initial field data collection, including a land survey.<sup>10</sup>
4. MPI/DPI sends the submitted documents to relevant ministries – MoNRE, MAF and MoL – which have 25 days to provide their comments.
5. If documents are in order, MPI/DPI sends the investor an approval notification.
6. MPI/DPI negotiates with the investor and drafts the concession agreement, also known as the ‘project agreement’. The agreement must include project objectives, duration, conditions, and fees and taxes to be paid.
7. MPI/DPI presents the concession agreement to the Committee on Investment Promotion (CIP) for review and signing.<sup>11</sup>

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<sup>9</sup> Slightly different terms for this requirement are used in different laws, including “environmental assessment report” (Environmental Protection Law 1999), “report on the assessment of the environmental and social impacts” (Law on Investment Promotion 2009), “environmental impact assessment” (DEIA 2010) and “report on the social and environmental impact assessment” (DSLIC 2009). Given that each legislation clearly specifies a study of potential environmental and social impacts, a collective term ‘ESIA’ will be used throughout this report.

<sup>10</sup> The purpose of the land survey is to determine the availability and suitability of the land amount specified in the MoU. The survey is usually conducted by the investor in cooperation with provincial DAF and DoNRE officials (Thongmanivong *et al.* 2009a).

8. The investor deposits a project guaranty fund in the account of the National Treasury.
9. MPI/DPI issues a concession licence to the investor.
10. The investor can commence with operations (Investment Promotion Law 2009; DIPL 2010; DSLLC 2009; Hicks *et al.* 2009; Thongmanivong *et al.* 2009a).

### Land selection

Forestry Law 2007 states that industrial tree concessions can only be granted on barren forestland and degraded forestland which cannot regenerate naturally (Article 74).<sup>12</sup> This condition is re-stated in DSLLC 2009, which also prohibits conversion of rice paddy land (Article 26 and 43). Concessions up to 150 ha for degraded forestland and 500 ha for barren land can be approved at the provincial level; larger concessions must be approved at the central level (DSLDC 2009, Article 29).

### Compensation for local land users

DSLDC 2009 states that if the concession area overlaps with “land of the people who have a legitimate land use right”, the investor is responsible for concluding compensation agreements with such “land owners” (Article 6 and Article 43). It is not clear whether or not this is a reference to villagers with temporary land use certifications and/or land titles. According to the decree, compensation rates are calculated based on the value of production of existing land use

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<sup>11</sup> At the central level, the CIP members include the Minister of Planning and Investment, the Deputy Minister of Planning and Investment, and selected officials from relevant ministries. At the provincial level, the CIP consists of the provincial Governor, provincial Vice-Governor, and selected officials from relevant departments (DIPL 2010, Article 23).

<sup>12</sup> Forestry Law 2007 stipulate 3 categories of forest use (protection forest, conservation forest and production forests) and 4 types of ‘forest areas’ (dense forest, degraded forest, bare forestland and village use forest). However, the terminology is ambiguous, with terms such as ‘barren forestland’, ‘bare forestland’, ‘degraded natural forest’, ‘degraded forest’ and ‘degraded forestland’ used throughout the law.

(e.g. rice cultivation, orchard tree plantation, livestock grazing). Negotiations and calculation of compensation must include participation of government officials, the village chief and relevant villagers, with a written memo to be signed by all participants (Articles 6 and 43). The decree does not stipulate at which stage of concession approval these agreements must be concluded and does not address situations where an agreement cannot be reached.

### **Environmental and social impact assessment (ESIA)**

The Environmental Protection Law 1999 (Article 8) and DEIA 2010 (Article 2) require an ESIA for projects with potentially significant environmental impacts, but do not contain any criteria for identifying such projects. However, DSLLC 2009 (Article 27) and the Law on Investment Promotion 2009 (Article 23) stipulate that an ESIA is mandatory for all agricultural and forestry concessions, while the 2010 Agreement on List of Investment Projects subject to IEE and EIA states that all agricultural plantations over 500 ha – whether concessions or not – require an ESIA.

DEIA 2010 stipulates that all projects requiring an ESIA must also develop and implement an Environmental Management and Monitoring Plan (EMMP) and a Social Management and Monitoring Plan (SMMP), and must provide a budget for environmental monitoring (Articles 20 and 24).

### **Fees, taxes and foreign labour**

DSLDC 2009 states that the investor must pay land concession fees and all relevant fees and taxes (Article 4). Concession fees must be paid from the date of starting harvesting and must be increased by at least 5% every 5 years (Article 28).

Under the Investment Promotion Law 2009, companies operating in isolated areas can receive profit tax exemptions of up to 10 years from the day of business operations (Article 51). The Labour Law 2006 stipulates that foreign employees must not exceed 10% of manual labour and 20% of technical labour, unless permission from the government is granted (Article 25).

### 3. Concession monitoring

There is legal ambiguity regarding monitoring responsibilities of GoL in regards to concessions. Under the Land Law 2003 (Article 10) and the DSLLC 2009 (Article 47), NLMA (i.e. MoNRE) is responsible for management and monitoring of concessions, and the actual monitoring is delegated to the provincial Departments of Natural Resources and Environment and district Offices of Natural Resources and Environment. DIIPL 2010, on the other hand, stipulates that concession monitoring is to be conducted by the CIP (Article 23).

Furthermore, other ministries are responsible for monitoring compliance with their overarching laws, e.g. MoL is responsible for monitoring compliance with the Labour Law 2006, while MAF is responsible for compliance with the Forestry Law 2007. Each of these ministries has provincial departments and district offices to which monitoring can be delegated. Consequently, no single government body is responsible for monitoring rubber concessions.

Under the Law on Investment Promotion 2009 (Articles 92-95), monitoring (‘inspection’) entails checking compliance with the concession agreement, the feasibility study, the ESIA, relevant laws and regulations and labour safety measures. The inspecting organization must conduct regular and surprise inspections (with regular inspections performed at least twice in a year), and can make recommendations on dealing with identified problems and violations.

Under the DSLLC 2009 (Article 37), the investor must provide regular implementation reports to MoNRE and other relevant ministries. DIIPL 2010 states that the investor must report to the MPI on their implementation status biannually and annually.

#### **4. Current moratorium on new concessions**

On 11 June 2012, the Prime Minister of Lao PDR issued a Notification PM/13 (often referred to as ‘Order 13’). Citing severe environmental and social impacts, shortage of workforce and a lack of effective land planning, Order 13 prohibits central and provincial authorities from approving new concessions for mining, rubber and eucalyptus plantations. The moratorium is in place from 11 June 2012 until 31 December 2015. During this period, an *ad hoc* committee consisting of MPI, MAF, MoNRE, Ministry of Finance and provincial authorities must evaluate existing concessions and reassess current approaches for concessions approval and management (Schönweger *et al.* 2012).

## Chapter 4. Socio-economic and environmental impacts of rubber concessions in Lao PDR

The expansion of rubber plantations is only a part of the general growth of land concessions in Lao PDR over the last 15 years. The study by Schönweger *et al.* (2012) was the first comprehensive attempt to document the extent of land concessions in Lao PDR. The study showed that almost 1.1 million ha of land have been allocated to investors by 2012, which accounts for almost 5% of Lao PDR's land area. Mining, forestry and agricultural concessions are predominant, with foreign investors accounting for 72% of total allocated area (Table 2).

**Table 2. Approved land concessions in Lao PDR, by sector, 2012**

Sector	Total area (ha)	Average area (ha)	Concessions approved	Key investors (by area)
Mining (exploitation)	548,756	1,155	564	Lao PDR (65%), foreign (21%), joint (15%)
Forestry (including rubber)*	306,234	885	367	Foreign (59%), Lao PDR (35%), joint (6%)
Agriculture	140,015	453	360	Thailand (40%), Lao PDR (20%), South Korea (16%)
Other	104,529	77	1,351	-
<b>Total</b>	<b>1,099,534</b>	<b>467</b>	<b>2,642</b>	<b>Foreign (72%), domestic (17%), joint (11%)</b>

\* This source considered rubber to be a part of the forestry sector. GoL lists rubber cultivation as an agricultural activity.

Data source: Schönweger *et al.* 2012

Given that 2012 was the first time the area of concessions was estimated, it is not surprising that industry-level data on their socio-economic and environmental impacts is absent. To date, the assessments of rubber concessions have been limited to case studies, focusing on impacts of specific companies in their area of operation. Conducted by a wide range of actors – including

academia, government agencies, non-governmental organizations and donor agencies – these case studies identify a myriad of impacts, including changes in levels of income and infrastructure for local villagers, loss of agricultural land, contamination of local water sources and deforestation<sup>13</sup>. Concerns have also been raised on the overall implications of large-scale land transfers on food security, traditional livelihoods, forest-dependent communities and national sovereignty (Schönweger *et al.* 2012).

However, the key limitation of the case study approach is the uncertainty as to what extent these impacts apply to the whole industry. Furthermore, the reasons behind the impacts are rarely assessed, particularly the extent to which legal provisions for concession approval, operation and monitoring have been followed. This study sought to address these shortcomings, as described in the methodology chapter below.

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<sup>13</sup> See, for example, IUCN and NERI 2011a; NLMA *et al.* 2009; Global Witness 2013; Thongmanivong *et al.* 2009a.

## Chapter 5. Methodology

This study sought to achieve the following outcomes:

1. Evaluate the implementation of the regulatory framework for rubber concessions
2. Identify key socio-economic and environmental impacts of rubber concessions and their causes
3. Using findings from Outcomes 1 and 2, recommend how concession approval and monitoring by GoL should be altered to improve impacts of rubber concessions

The visual presentation of these outcomes and relevant activities is provided in Figure 7.

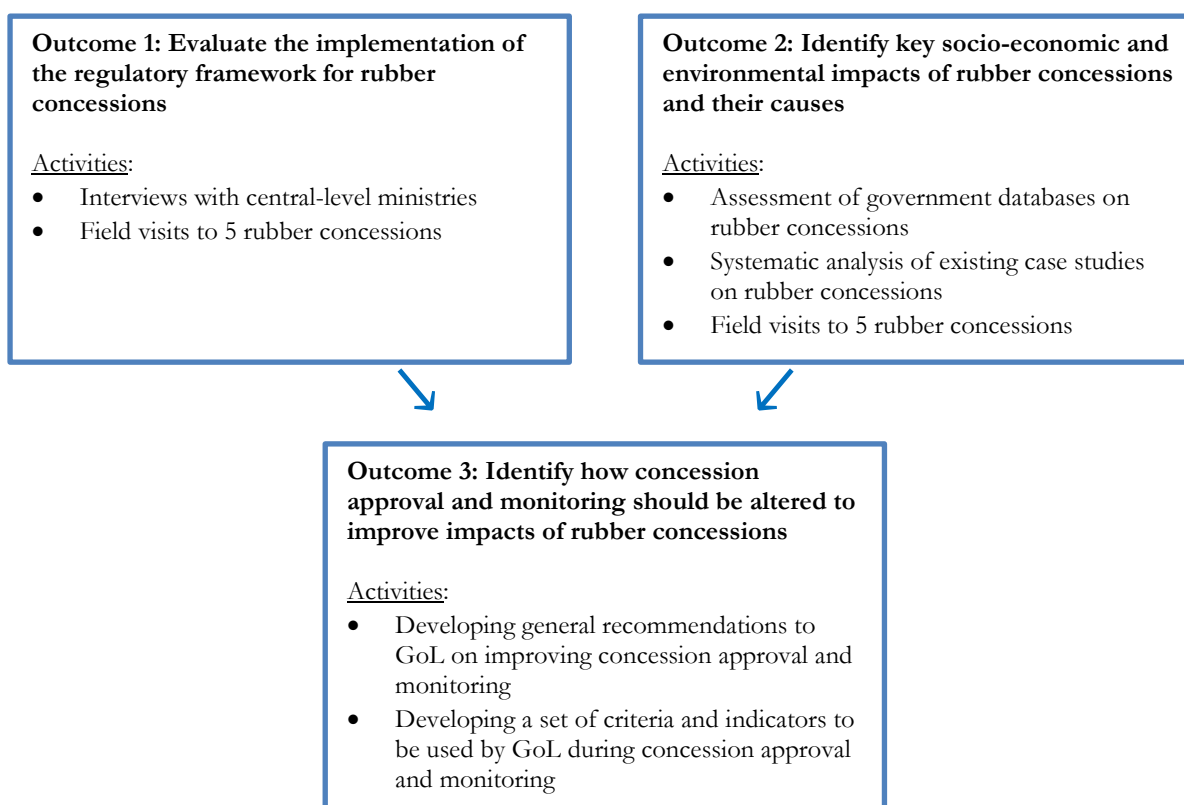


Fig. 7. Outcomes and activities of the study



Given the lack of quantitative data, the study generally relied on qualitative assessments. Further detail on the activities is provided described below (following their chronological order).

### **1. Interviews with central-level ministries**

In pursuit of Outcome 1, interviews were conducted with officials from relevant ministries – MPI, MoNRE, MAF and MoL – at the central level. Officials were queried on the monitoring and data collection duties of their ministries with respect to rubber concessions. Copies of monitoring reports and concession data (if available) were collected and analysed. A list of interviews is presented in the list of personal communications.

### **2. Assessment of government databases**

In pursuit of Outcome 2, two government databases containing information on rubber concessions were accessed: MPI's Investment Monitoring Database (IMD) (MPI 2013) and MoNRE's unofficial electronic database on land concessions (MoNRE 2013). The databases were analysed in an attempt to identify common and frequently mentioned impacts.

### **3. Systematic analysis of existing case studies**

In pursuit of Outcome 2, a systematic review of 27 existing case studies on rubber concessions was conducted to identify which impacts they mention most frequently. Only field-level studies were reviewed, with secondary sources excluded. Impacts were grouped into 3 categories: socio-economic, environmental and procedural. A list of reviewed case studies is found in Appendix I.

#### 4. Field visits to 5 rubber concessions

Outcomes 1 and 2 were pursued via field visits to 5 rubber concessions in 3 provinces, undertaken on 17 June – 5 July 2013. The research team consisted of the author and 4 NERI staff. Further information on the assessed concessions is provided in Table 2; a detailed schedule of the field visits is provided in the list of personal communications.

**Table 2. Rubber concessions assessed in the study<sup>14</sup>**

Company	Ownership	Approved concession area (ha)	Location (district, province)	Village interviewed
Guangda Lao Company Limited	100% Chinese; private	1,041	Xepon, Savannakhet	Saved
Lao Thai Hua Rubber Company Limited	60% Thai, 40% Lao; private	2,610	Outhoumphone, Savannakhet	Napho
Siphansalika Rubber Development Company Limited	66.7% Chinese, 33.3% Lao; private	860	Beng, Oudomxai	Mang
DakLak Rubber Company Limited	100% Vietnamese; public	3,700	Laongam, Saravan	Nong Song Hong Yai
Yao Tien Rubber Company Limited	100% Vietnamese; public	6,173	Laongam and Lakhonpeng, Saravan	Kuangsi Noi

The 5 concessions were selected for the following reasons:

- the sample size was limited to 5 due to budget and time constraints;
- only large concessions were selected due to the presumption that a larger area entails more significant socio-economic and environmental impacts;
- concessions at different stages at development were chosen, with 3 out of 5 concessions not yet tapping; the intent was to assess the impacts throughout the life of the concession;

<sup>14</sup> The team originally planned to assess 6 concessions. However, during the field visit to Oudomxay Province it was discovered that one of the companies (Jianfong Rubber Company Limited) was a 100% contract farming project, despite being listed as a concession in the IMD. The company was consequently excluded from the analysis. Siphansalika and DakLak operate concessions whilst also undertaking contract farming, while Yao Tien and Guangda Lao are concessions only.

- the concessions are geographically spread out (Oudomxai Province in northern Lao PDR, Savannakhet Province in the centre and Saravan Province in the south); the intent was to investigate whether impacts vary among different regions; and
- concessions of various origins (China, Vietnam, Thailand and Lao PDR) and ownership structures (foreign, joint, public and private) were selected, to identify if these factors had any impacts on operations.

Field visits consisted of semi-structured interviews with company representatives, 1 nearby village, and district and provincial officials of MPI, MAF, MoNRE and MoL. Key impacts identified via Activities 2 and 3 were used as a basis for a questionnaire, designed to assess the extent and the causes of these impacts in the concessions (thus contributing to Outcome 2). Slightly different versions of the questionnaire were used for the company, villagers and officials.

Interviews included collecting responses to the questionnaire and more general discussions. Interviewed company representatives were high-level staff, including general managers, operations managers and human resource managers. Interviews with government officials also included investigating their monitoring and data collection activities, thus contributing to Outcome 1.

For each village, a group discussion with 7-30 villagers (including the village chief) was held. Each discussion included men and women, both employed and not employed at the concession. No single party was allowed to dominate the discussion. Government officials and company representatives were excluded from village interviews to allow villagers to speak freely.

Copies of all available documents related to the concession were collected, translated and analysed. The list of documents is provided in Appendix IV.

## 5. Developing recommendations on improving concession approval and monitoring

Using findings from the above activities, recommendations on how to improve the socio-economic and environmental impacts of rubber concessions were developed. Recommendations focus on concession approval and monitoring processes, and are thus aimed at GoL. In addition, a set of criteria and indicators to be used during concession approval and monitoring was developed.

## 6. Research limitations

Interviews with central-level ministries were conducted with the use of translators, which inevitably resulted in a degree of misinterpretation and information loss.

Systematic of case studies suffered from a number of methodological limitations:

- only 27 relevant case studies were identified, a small sample considering the overall number of rubber concessions (281);
- the reviewed case studies used different methodologies, which made the simple adding of identified impacts questionable;<sup>15</sup> and
- a number of studies pursued particular research questions (e.g. loss of agricultural land for nearby villages), rather than looking at overall impacts.

Nonetheless, certain impacts emerged as clearly predominant, suggesting that these limitations did not affect the findings.

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<sup>15</sup> For example, some studies did not interview companies or government officials, relying solely on information provided by local villagers.

Likewise, the field visits of 5 concessions had a number of shortcomings:

- There was no guarantee that the chosen sample of companies was representative of Lao PDR's rubber industry as a whole. However, as mentioned above, all possible efforts were made to make the sample as diverse as possible.
- Due to time and human resource constraints, the research team did not conduct physical inspections of concessions or nearby villages and thus had to rely solely on information provided by interviewed parties. To reduce the impact of dishonesty and human error, the majority of questions were posed to all 3 parties (company representatives, villagers and government officials), and conflicting answers were followed up. Supporting documentation was obtained where feasible.
- Much of the collected documentation (including concession agreements and monitoring reports) is not open to the public. Efforts were made to convey the information as accurately as possible without disclosing sensitive data.
- Interviews with companies often involved the use of 3 languages (English, Lao and Chinese / Vietnamese / Thai), which increased the chance of miscommunication. Two NERI staff acted as Lao-English translators, with additional translators provided by the companies. Translation of Lao documents was undertaken by the 2 NERI staff.

## Chapter 6. Results

### 1. Implementation of the regulatory framework for rubber concessions

#### Concession approval and management

Interviews held and documents gathered confirmed that MPI – rather than MoNRE – was the coordinating agency for concession approval. MPI involved MoNRE, MAF and MoL in concession approval by circulating the submitted application documents – feasibility study, proposed business plan, etc. – for review (Department of Planning and Cooperation, pers. comm.). Provincial and district officials of MAF and MoNRE were present on the ground during the land survey and negotiations with local villagers.

Unfortunately, non-compliance with the prescribed concession approval process appeared to be widespread:

- judging by their estimates of when tapping began or is set to begin, all 5 assessed companies commenced operations before concession agreements were signed;
- only 4 of the assessed companies could produce copies of their ESIA's; only 2 of the ESIA's were conducted before the concession agreement was signed;
- for all 5 companies, provincial and district authorities asserted that a land survey was conducted prior to operations commencing. However, no such documents could be found; conversely, surveys completed after the signing of the concession agreement were available for 4 companies;

- according to DAFs and OAFs, land surveys generally cover only 5% of total concession area due to a lack of staff; and
- according to officials from MAF and DAFs, there have been instances where concession agreements were signed without necessary documents being submitted, particularly the feasibility study or the ESIA.

For all 5 companies, areas specified in MoUs were significantly larger than those stipulated in concession agreements. This is due to MoUs for large concessions being approved at the central level, with little knowledge of actual land availability. Provincial authorities were then tasked to identify the ‘available’ land for the concession, which tended to be much smaller than area stipulated in the MoUs.

Nonetheless, the MoUs appeared to be in force even after the signing of the concession agreements. The implementation reports of 2 companies contained requests for MoUs to be honoured. Furthermore, the same 2 companies had conducted land surveys long after commencing operations, an indication of expansion into new areas not covered by concession agreements. This state of affairs was confirmed in the literature, and was a source of confusion among GoL authorities regarding the amount of land each investor was entitled to.<sup>16</sup>

### Concession monitoring

As mentioned in Chapter 3, GoL regulations state that companies must submit regular implementation reports to government. This requirement was also stipulated in accessed concession agreements. However, only 2 out of 5 assessed companies were able to demonstrate

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<sup>16</sup> A 2009 study in Oudomxai Province found that while “it has been difficult for the investors to secure the 34,000 ha proposed for development in the contracts... the province still has to continue looking for land for the investment projects that have already been approved... officials and project management remain committed to finding land for these projects” (Thongmanivong *et al.* 2009a).

such reports, and none of the provincial and district authorities could confirm that the information was verified by the government. According to central and provincial MAF officials, submission of implementation reports by the agricultural investors (including rubber companies) was a prerequisite for an annual renewal of their agricultural licence. However, while only around half of companies provided such reports, all licences were renewed because of the perceived importance of investment (Department of Planning and Cooperation, and DPI Savannakhet, pers. comm.).

There was a lack of clarity over the frequency of monitoring visits conducted by GoL. Each ministry at central and provincial level stated that they conducted monitoring visits at least once a year for 'large' companies, and that additional visits were conducted in emergency situation (e.g. conflicts between villagers and the company). According to the companies, monitoring visits occurred twice a year. However, only 1 company-level monitoring report was obtained, conducted by provincial CIP. No emergency reports were found.

There was a general lack of awareness among officials about the monitoring activities within their own ministry. For example, central MoNRE officials stated their provincial and district counterparts conducted monitoring 4 times per year and 12 months per year, respectively; in reality, provincial monitoring occurred twice a year, whilst district MoNRE officials did not conduct any monitoring of their own (joining provincial visits instead). Similarly, MoL officials stated that provincial DoLs collected company-level information on labour composition, wages, social security, disputes and accidents; however, no such reports could be found.

According to central and provincial MAF and MoNRE officials, only large companies which provided monitoring budgets were monitored regularly. The remaining companies were inspected by authorities only if disputes or non-compliance with the concession agreement were



brought to their attention by local villagers, in which case authorities paid for monitoring out of their own budgets. According to MAF and MoNRE, non-payment of monitoring budget was a frequent occurrence. Three out of 5 assessed investors provided an environmental budget of USD 2,000-2,800 per annum.

The collected monitoring reports did not cover environmental or social impacts, focusing strictly on investor's compliance with the planting schedule and payment of fees and taxes. While officials claimed that monitoring visits included discussions with villagers and monitoring of pesticide use, no reports containing such information could be located. The companies' EMMPs and SMMPs were not mentioned in the reports.

Provincial and district officials stated that key obstacles to more frequent and extensive monitoring were a lack of staff and inadequate budget. Many concessions are located in isolated areas, with travel to the site taking up to a day (Investment Promotion Department and Labour Management Department, pers. comm.). Recent emergence of MoNRE as the key agency responsible for monitoring also appears to have hindered monitoring.<sup>17</sup>

### Data collection, sharing and storage

Due to the narrow scope of monitoring, databases of provincial authorities contained only basic information on company operations and did not cover socio-economic and environmental impacts. Typically, stored information included project name; project type (domestic, foreign or joint); concession duration; levels of registered and investment capital; concession area

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<sup>17</sup> According to the interviews, MAF was the key agency in monitoring of agricultural and forestry projects prior to the emergence of MoNRE. MoNRE is now the recipient of the companies' monitoring budget; however, being a relatively new agency, it lacks technical staff, particularly at the district level (18-30 staff at assessed districts, compared to 46-56 for MAF). MAF appears to be unwilling to 'share' its staff with MoNRE, resulting in a lack of monitoring activities. This situation is confirmed in the literature (Hicks *et al.* 2009).

requested, approved, cleared and planted; presence of project proposal, MoU and concession agreement; and the level at which the project was approved (central or provincial).

There was a lack of vertical information-sharing within ministries. Documents and data prepared at the district level often did not get forwarded to provincial authorities; the same applied to provincial-central communication.<sup>18</sup> Consequently, project documents and monitoring data were spread throughout the ministerial ladder, and central authorities only had very general data, i.e. project name, project type, date of project approval, concession duration and levels of capital. Annual reports by the central authorities to the GoL aggregated this data even further.<sup>19</sup>

There was also a lack of horizontal information-sharing, i.e. among different ministries and among different divisions within the same ministry. Each authority maintained its own database; consequently, officials from different ministries often quoted starkly different statistics on company operations, including planted area and staff levels.<sup>20</sup> At the central level, MPI's IMD and MoNRE's unofficial database were maintained separately, with officials prohibited from sharing the information; furthermore, MoNRE's database could not be shared with other divisions within MoNRE. In another example, the Centre of Project Environmental Monitoring recently replaced the Centre for Agriculture and Forestry as the key MoNRE division for monitoring agriculture and forestry projects; however, this restructuring did not include a document transfer, meaning that old and new monitoring reports were stored separately.

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<sup>18</sup> For example, concession agreements are stored at the central and provincial levels, while land surveys and company-village agreements are stored at the district level. DPIs collect company-level information on the planted area, while DoLs collects figures on the number of foreign workers; however, this data does not get forwarded to the central level.

<sup>19</sup> According to the MoL, an annual report to the government is roughly 10 pages long and covers overall employment levels and labour composition for each province (Labour Management Department, pers. comm.).

<sup>20</sup> For example, estimates of area planted by one of the companies varied between 858 ha (quoted by provincial CIP), 1,907 ha (quoted by district authorities) and 2,811 ha (quoted by the company).

Concession agreements were not available to the public but could be shared among ministries. However, only MPI, DPIs and investors tended to have copies of agreements. This created uncertainty and confusion among other government agencies and villagers about investor operations, rights and responsibilities. During the interviews, disagreements regarding the duration of the concession, the approved area and tax exemptions were encountered. The confusion was exacerbated by the fact that MoUs and concession agreements often followed the same format, and were thus difficult to distinguish.

Lastly, data storage methods were rudimentary. All documents related to concession approval and monitoring (e.g. concession agreements, land surveys, company-village agreements, ESIA's and monitoring reports) were stored only in hard copies. Villagers often lacked any project documentation due to documents being lost.

## **2. Impacts documented in government data and case studies**

### **Assessing existing government data**

MPI's IMD (MPI 2013) and MoNRE's unofficial database (MoNRE 2013) were assessed in an attempt to identify common and frequently mentioned impacts of rubber concessions.

The IMD was a Microsoft Office database designed with assistance from UNDP-UNEP Poverty Environment Initiative (PEI). Maintained by MPI's Investment Promotion Division, it contained 2 sections. The first section provided basic information on all concessions approved by MPI, including investor's contact details, concession period, and levels of registered and investment capital. Unfortunately, a lack of data on project impacts made this section of little use to this study.

The second section contained more in-depth information on a number of concessions operating in 5 pilot PEI provinces (Oudomxai, Phongsaly, Salavan, Savannakhet and Xekong). The information was collected by OPs and DPIs between May 2010 and November 2011. The questionnaire used to collect the information was extensive, covering procedural compliance, status of operations, and impacts on land, water, employment and infrastructure. Unfortunately, over half of the questions were left unanswered, with environmental and social impact data particularly scarce.<sup>21</sup> This made the second section of IMD of little use to this study.

In MoNRE's unofficial database (managed by NREIC), much of the stored information was similar to that of IMD, e.g. name of the investor, investment type, location and lease period. However, the database also contained data on concession area, compiled using provincial and district data and GPS measurements at project sites (Schönweger *et al.* 2012). While important in understanding the overall scale of rubber investments, the database did not provide information on their socio-economic or environmental impacts.

Overall, neither database contained information on impacts of rubber concessions, apart from their location, area and financial investments.<sup>22</sup> Nonetheless, the databases were used in selecting the concessions for the field study (see Table 2).

### Assessing existing case studies

A systematic review of 27 existing case studies on rubber concessions was conducted in order to identify key socio-economic and environmental impacts, as well as procedural irregularities. The

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<sup>21</sup> According to the MPI, this was caused by a poor understanding of the questionnaire by the OPs, DPIs and investors, the lack of cooperation from investors, and insufficient incentives for OP and DPI officials to be thorough during the surveying (Investment Promotion Department, pers. comm.).

<sup>22</sup> This situation might change in the near future, as MoNRE and the Centre for Development and Environment (CDE) are in the process of adding socio-economic and environmental indicators to MoNRE's unofficial concession database. These indicators are expected to be piloted in Luang Prabang Province by the end of 2013 (CDE, pers. comm.).

most-mentioned impacts and their frequency are provided in Table 3. The complete results of the review are provided in Appendix II.

**Table 3. Key impacts of rubber concessions mentioned in reviewed case studies**

<b>Impact</b>	<b>Frequency</b>	<b>Impact</b>	<b>Frequency</b>
<b>Socio-economic impact</b>		<b>Environmental impact</b>	
Encroachment on productive village land	24	Encroachment on natural forest or protected area	22
Jobs and wages for local communities	15	Investor clearing outside permitted land	10
Inadequate compensation to villagers for lost land	11	Potential erosion via planting on steep slopes	7
Loss of timber and forest products for villagers	11	Planting near or within watersheds	7
Improved infrastructure in villages	10	Use of chemicals threatening water sources	7
Low wages	9	Increased sedimentation of water sources	6
Lack of employment for villagers	8	Plantations causing lower water levels	4
Late payment of wages	7		
Intercropping allowed by the company	6	<b>Procedural irregularity</b>	
Lack of community involvement in project approval	6	Lack of land survey prior to clearance	14
Failure to provide promised infrastructure	4	Lack of ESIA or feasibility studies	14
Lack of training and technology transfer for villagers	4	Lack of worker contracts	5
Contribution to the village development fund	3	Authorities acting outside their jurisdiction	4
Labour shortages	3	Investor obligations not specified in the contract	4
Low government revenue	3	Investor engaging in non-permitted activities	3
Health impact on workers from chemical use	3	Investor launching operations before official approval	3
Harsh or unsafe working conditions	3		

Data sources: see Appendix I.

These findings were used to develop questionnaires for investors, government authorities and villagers, in order to assess the extent and the causes of these impacts in the 5 assessed concessions. The questionnaires are provided in Appendix III.

### 3. The extent and causes of key impacts in 5 sample concessions

#### Negotiations with affected villages

Due to time and resource constraints, the research team did not investigate the relationship between land allocations under the LFA and land allocated to the assessed concessions. According to all parties interviewed, the transferred village land was used for shifting agriculture or not used at all. In most cases, the transferred land was not covered by land use certificates or land titles; companies were also reluctant to accept land tax receipts from villages as evidence of land use rights.<sup>23</sup> Provincial authorities noted that once villagers realised that village land might be used for concession, they often tried to claim ownership by putting up signs or planting crops (DPI Savannakhet, pers. comm.).

Company-village negotiations took place in 4 out of 5 concessions.<sup>24</sup> For these concessions, companies were able to produce copies of agreements with villagers, co-signed by district officials. Such agreements were concluded during the land survey, and thus formed a part of the survey document. Agreements usually stipulated the amount of land to be transferred, and levels of financial and in-kind compensation to be provided by the company (if any). Notably, all 5 villages lost their copies of the agreement, and only 3 district authorities had copies.

It was unclear what occurred in cases where certain households were firmly against the concession being established. Some government officials stated that consensus was achieved from all households; according to another official, “you can't please everyone” (DPI

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<sup>23</sup> This appears to be a common problem: according to Thongmanivong *et al.* (2009a), villagers often believe that when they have land tax declarations for land which they cultivate, they own the land. However, under the Land Law 2003, only land use certificates and land titles can be used to claim land use rights.

<sup>24</sup> The remaining company claimed that it left the negotiation up to provincial and district officials.

Savannakhet, pers. comm.). A number of villagers stated that they opposed the investment but felt powerless because the MoU between the investor and GoL had already been signed.

### Compensation paid to local villages

None of the sighted company-village agreements stipulated financial compensation. Nonetheless, the interviews confirmed that compensation for non-titled land was provided in 3 concessions.

The methods and levels of compensation varied, including:

- compensation for land which contained crops at the time of the agreement, with one-off payments of LAK 500,000k per ha for rice fields and LAK 1,500,000 for coffee fields;
- compensation for both planted and unplanted land, with one-off payments of LAK 2,300,000-2,800,000 per ha; and
- ongoing payments of LAK 1,200,000 per month per village.

Only 1 concession involved a transfer of land covered by land titles. In this case, the company signed 35-year agreements with 25 households, stipulating compensation of USD 8 per ha per year. According to villagers, the compensation was paid at the beginning of each year.

### Compliance with concession boundaries

Four incidents of land clearance by the investor outside the designated area were documented during the interviews.

The first case appeared to be a small accidental clearance of rice fields by investor's contractor, due to poor knowledge of concession boundaries. The investor and district officials asserted that

the incident was resolved by the company compensating the 3 affected households with LAK 800,000 per ha lost.

In the second case, 78 ha of protected forest were accidentally cleared by the company's contractor. According to district officials and the investor, the cleared area has since been planted with rubber trees, which will be turned over to provincial authorities once tapping begins.

The third case had conflicting accounts by district officials and the company. The officials accused the company of intentionally clearing outside its concession area in an attempt to connect multiple concession plots. The company, on the other hand, claimed that land clearance complied with concession boundaries and accused villagers of trying to make land claims long after rubber trees were planted. No supporting documentation was found.

The fourth case entailed the investor intentionally logging protected forest outside its concession long after the initial land clearance. The claim was made by district authorities, but the incident was denied by the company. The authorities could not explain when and why forest clearance ceased. No supporting documentation was found.

### **Agricultural land availability and food security**

In all 5 concessions, villagers reported that the establishment of rubber concessions resulted in losses of agricultural land, primarily used for shifting cultivation of rice, corn or bananas. This



information was generally confirmed by investors and officials. None of the villages could report the exact amount of land lost.<sup>25</sup>

All 5 companies permitted villagers to plant other crops among rubber trees (known as ‘intercropping’), thus improving food availability and allowing villagers to earn extra income. One of the companies supported intercropping by providing seeds and offering to buy the product at market price; these activities were stipulated in its concession agreement. Intercropping took place at all 5 sites, with corn, rice and peanuts as preferred crops. However, intercropping was only viable for the first 3-4 years of planting, as the canopy of mature rubber trees prevented sufficient sunlight from reaching the crops.

Three out of 5 interviewed villages stated that food availability has decreased since the establishment of plantations. The other villages stated that there was enough unoccupied plantable land in the area to make food security a non-issue. None of the villages complained of significant food shortages.

### **Government revenue**

Consistent with DSLCC 2009, all 5 companies were exempt from paying profit tax at least until they start tapping. For 4 companies, this exemption extended for up to 7 years after tapping starts. When payment commences, the profit tax rate is 10-20%. Companies also had to pay income tax (5% for domestic workers and 10% for foreign workers), which was collected from workers’ salaries.

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<sup>25</sup> Villagers tended to use physical landmarks rather than measurement units when referring to village areas.

All 5 concessions were subject to concession fees; 3 of them obtained exemptions until tapping. Only 2 companies were paying concession fees at the time of the research, whilst another had apparently failed to pay since 2007. Concession fees varied substantially (USD 2–40 per ha per year); notably, the later entrants tended to pay higher fees. The research team did not investigate to what extent the concession fees were actually collected by GoL authorities.

## Employment and income

### Employment opportunities

For all 5 concession companies, all manual labour (planting, weeding and tapping) was undertaken by Lao nationals, who were hired as daily labourers. The number of daily employees depended on the scale and status of operations, ranging between 250 and 1,013. All companies appeared to be in compliance with the legal requirement of foreign workers not exceeding 10% of the manual labour force.

One company stated its preference for workers aged between 18 and 40 years, citing learning difficulties – and consequent lower productivity – for other age groups. According to villages, companies did not discriminate between male and female workers.

The managerial and technical work (including tapping training) was undertaken primarily by foreign labour, hired on permanent basis. Labour was sourced from the country of company's origin, and levels of employment varied between 10 and 161 workers per company. Foreign labour was a sensitive topic, with companies and officials often quoting drastically different employment figures, and 1 company being accused of failing to register some of their foreign workers. Four companies appeared to be exceeding the permitted share of foreign non-manual

labour stipulated in the Labour Law 2006 (20%); their concession agreements did not stipulate exemptions from this requirement, and thus the companies appeared to be breaking the law.

The findings regarding labour supply and demand were mixed. Three interviewed villages complained of insufficient work opportunities. Simultaneously, 2 companies reported insufficient (willing) local labour, with 1 company resorting to bringing 50-60 workers from other districts.

Only 868 ha were tapped at the time of the research, representing 6% of the area allocated to the 5 companies. Assuming all 5 concessions are fully planted, they will require up to 7,000 workers once all trees reach the tapping phase. Two companies stated that they might have to bring workers from other districts, but the logistics were yet to be worked out.

## **Wages**

For planting and weeding, workers were paid a daily wage of LAK 25,000–40,000, which was slightly above the minimum wage.<sup>26</sup> All 5 companies also tried to introduce incentive schemes to improve worker effort during planting and weeding, but their success was not investigated.<sup>27</sup>

For tapping, workers were paid according to the quality and quantity of latex delivered, and the market price of dry rubber. The quality of latex was inversely related to its water content; the latter was determined by weather conditions (e.g. rain) and the tapping technique. The price of rubber was announced to the workers by the company at the start of each month (DakLak, pers. comm.). The resultant income equated to LAK 1,000,000-2,000,000 per month. Salaries for managerial and technical staff varied between LAK 750,000 and LAK 3,000,000 per month.

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<sup>26</sup> As mentioned above, the legal minimum wage in Lao PDR is LAK 625,000 per month (USDS 2012). Using a 6-day working week stipulated in the Labour Law 2006, this equates to LAK 25,000 per day.

<sup>27</sup> This includes paying by performance (e.g. LAK 1,000 per weeded tree) or providing bonuses to regular and punctual workers (e.g. working 25 days per month).

Villagers generally considered the daily wage for planting and weeding to be too low, and 1 village unsuccessfully tried to negotiate an increase with the company. There were no reported incidents of companies failing to pay workers or being late with payments. Three out of 5 companies had written contracts with their workers; the remaining companies relied on verbal agreements.

### **Overall impact on living standards**

The reported impacts on living standards tended to vary among individual villagers, with land ownership and willingness to work for the company as the key determinants. Generally, villagers who had no cultivation land prior to the concession and were willing to work reported higher incomes, while villagers who lost significant proportions of their cultivation land and were reluctant to work stated that they were worse-off.

Nonetheless, all villages indicated that employment and consequent income were definitely the biggest benefits of rubber companies. Income levels appeared to be at their lowest during years 4-7, when intercropping was no longer possible and employment opportunities were still limited.

### **Training**

Workers in all 5 companies were provided with training on planting, weeding and the use of pesticides. Tapping training was provided when tapping was close to commencing. Workers were also provided with a working suit and 2 tapping knives per year, free of charge.

Training was usually provided by foreign employees. While 2 concession agreements stipulated that the company must 'train local trainers', this was proving difficult due to insufficient

enthusiasm of local staff and incidents of trained local staff leaving the company to seek employment elsewhere (DPI Savannakhet, pers. comm.). This created incentives for companies to continue relying on foreign labour.

## Local infrastructure and services

### Infrastructure obligations

All 5 concession agreements contained general statements that investors should promote socio-economic development in surrounding area, with no mentioning of specific deliverables. Investors' obligations to deliver specific infrastructure were usually listed in land surveys, which stipulated the land to be transferred to the company and what villages were to receive in return. Written obligations to deliver infrastructure (signed by companies, village chiefs and district officials) were obtained for 3 of the 5 assessed companies. Promised infrastructure included irrigation, conference centres, offices, electricity, medical centre, schools and water pumps. Notably, none of the documents specified timelines for infrastructure delivery.

The remaining 2 companies stated that infrastructure delivery was not included in their negotiations with villagers, but that they provided certain services out of free will. However, interviewed villagers (and sometimes government officials) complained that companies made verbal promises that were not honoured, including construction of conference halls, bridges dams and school roofing. These claims were disputed by the companies.

Provincial officials stated that while they preferred stronger infrastructure clauses in concession agreements, securing foreign investments was a higher priority at the time of negotiation. This was particularly the case for earlier entrants such as DakLak (DPI Saravan, pers. comm.).

## Infrastructure delivery and maintenance

According to company implementation reports, infrastructure and service delivery to local villages included:

- electricity installation;
- house roofing;
- healthcare facilities and staff;
- schools and school equipment;
- water infrastructure, including fish ponds, dams, bridges and aqueducts;
- road construction and improvement; and
- student scholarships to study in Vietnam.

In contrast to company reports, most villages complained that companies delivered nothing or very little. Four out of 5 interviewed villages rated their satisfaction with delivered infrastructure as low.

Infrastructure delivery was not monitored by GoL officials and could not be verified by the project team without a physical inspection of each village (which was beyond the available resources). However, instances of company reports providing inaccurate information on planting levels were observed, meaning that company claims should not be taken for granted.<sup>28</sup>

None of the companies conducted regular maintenance of the delivered infrastructure, apart from roads used during operations. Maintenance was not mentioned in any of the 3 written agreements, and was perceived to be the responsibility of villages. The project team did not have

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<sup>28</sup> A 2013 implementation report by one of the companies stipulated a planted area of 2,010.66 ha, while a 2013 monitoring report by the provincial CIP stated that the planted area was only 850 ha.

the necessary time or resources to investigate the condition of the infrastructure, but encountered 1 reported incident of an investor-provided dam going into disrepair.

## Environmental impacts

### Environmental and social impact statements (ESIAs)

As mentioned above, only 4 assessed companies conducted ESIs.<sup>29</sup> Admittedly, all 5 MoUs were signed before the regulations specifying the criteria for projects requiring an ESIA were issued. However, 2 of the MoU specifically mentioned the need for an ESIA prior to concession agreement being signed. This indicates that an ESIA was a common requirement for rubber concessions even prior to the guidance being issued.

Provincial authorities in Savannakhet and Oudomxai stated that before the emergence of MoNRE most rubber projects were approved without an ESIA. Under current regulations, all 5 concessions would clearly require an ESIA before being issued a concession licence.

### Forest cover, biodiversity and erosion

As mentioned above, Forestry Law 2007 states that concessions for industrial tree plantations can only be granted on degraded forestland and barren forestland. While definitions of these terms are ambiguous, MAF's Department of Forests has maps of protection forest and conservation forest areas (CDE, pers. comm.).

For all 5 concessions, district and provincial officials stated that MAF (and sometimes MoNRE) officials were present during the land survey and ensured that protection and conservation

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<sup>29</sup> Notably, provincial authorities were unaware of 2 of these ESIs (DoNRE Saravan and DoNRE Savannakhet, pers. comm.).

forests were excluded from concession land. According to officials and villagers, cleared forest was usually “bamboo forest”, “degraded forest” or “forest fallow”. However, 2 incidents of protected forest clearance allegedly took place (discussed above).

Three out of 5 surveyed villages reported a decrease in nearby wild pig and deer populations since concession establishment. Erosion due to forest clearance was not mentioned as an issue by villagers or authorities. Field inspections were not conducted by the research team due to time and resource constraints.

### **Water availability**

According to the investors, water for irrigation of plantations was taken from nearby rivers or streams. None of the assessed companies monitored or measured their water consumption, nor was it monitored by GoL. There were mixed reports from investors, government officials and villagers regarding the impacts of the concession on water availability for other users. None of the villages reported negative impacts on water available for agriculture because rainwater was the primary means of crop irrigation. Three companies also provided villages with water-related infrastructure, including pumps and aqueducts.

### **Water quality**

According to DoNRE officials in Savannakhet (pers. comm.), planting within 30 metres of streams and 50 metres of large rivers is prohibited by law.<sup>30</sup> All companies stated that they complied with these requirements; however, 1 incident of planting close to watersheds was mentioned by district authorities. One village also reported increased water sedimentation due to tree removal by the investor.

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<sup>30</sup> The research team could not locate the relevant legislation.



One village claimed that, in the past, pesticide used by the company polluted nearby rivers, with consequent reduction in fish stocks, and incidents of livestock death and skin infections for villagers. Four out of 5 assessed companies acknowledged using pesticide but claimed that it was used sparingly (only in cases where manual weeding was too difficult and only in the first year of planting when rubber trees were most vulnerable). There was some monitoring of pesticide use by provincial authorities: in 1 province, both companies claimed that they required a permission from DoNRE each time pesticide was used, while in another, DAF displayed a list of permitted and prohibited pesticides.

For drinking water, villagers tended to use wells and mountain water transported via aqueducts, rather than rivers or streams. Consequently, rubber plantations generally did not reduce the availability of drinking water. Only 1 out of 5 villages reported reduced drinking water availability, having to switch from river to a well.

None of the obtained monitoring reports mentioned the impacts of plantations on nearby water quality. Such impacts thus appeared to be not monitored, making it impossible for the research team to verify the validity of the above claims.

### **Rubber processing plants**

A requirement to construct a rubber processing plant was included in concession agreements for 3 out of 5 assessed companies. Each company stated that it planned to build a processing plant, but no processing plants had been built to date. Two companies that were already tapping were using rubber-processing plants located in other districts.

As mentioned above, rubber processing requires large quantities of water and produces effluent which should be treated to avoid pollution of nearby water sources. Two companies stated their plans to use biological pond water treatment facilities to remove organic matter from the effluent. Such facilities are popular in the industry due to their lowest operation and construction costs (Nguyen and Luong 2012). The other 3 companies were yet to complete their designs.

## Chapter 7. Summary of findings

### 1. Concession approval and monitoring

**The stipulated concession approval process was rarely followed in its entirety or in the correct order.** Non-compliances included companies launching operations before being issued a concession licence, and concession agreements being signed without necessary documents being submitted (including ESIA and land surveys). The key cause appeared to be an unspoken consensus among government officials that securing investments was more important than following correct approval procedures. While corruption was a potential contributing factor, it was not investigated in this study.

**The uncertain legal status of MoUs created confusion regarding investors' land entitlements.** There was evidence of companies surveying new land long after launching operations, in an attempt to gain all of the land 'promised' in MoUs. These new areas appeared not to be covered by concession agreements, making their legality uncertain; nor were they subject to an ESIA process.

**ESIA requirements were loosely enforced.** Because results of an ESIA are meant to inform the government decision of whether or not the project should be implemented, it is essential that ESIA are conducted prior to project approval. This is the only way to prevent projects with potential disastrous environmental and social impacts from going ahead. Unfortunately, GoL approval of rubber concessions without an ESIA appeared to be a common practice, potentially due to environmental considerations not being a high priority for GoL.

**The company-village negotiation process was largely meaningless due to a lack of land titles.** Given that villagers generally did not have titles to the transferred land, they were arguably not in a position to refuse the investment. In this light, it could be argued that negotiations with villagers were effectively ‘notifications’. This issue will persist until the land titling process is completed by GoL. Furthermore, the negotiation process and consequent compensation appeared to depend more on the bargaining power and skills of the involved parties rather than legal guidance, resulting in low compensation rates (e.g. USD 8 ha per year).

**Investors’ compliance with concession boundaries should be monitored more closely, but was generally good.** Provincial authorities asserted that district MoNRE and MAF officials were responsible for monitoring the initial land clearance and subsequent investor operations to ensure that concession boundaries were respected (DoNRE Savannakhet, pers. comm.). However, the 4 alleged incidents of inappropriate land clearance indicated that this was not always the case. Where conflicting accounts existed, a lack of documentation (e.g. government investigative reports) made it difficult to assert who was telling the truth. Overall, however, there did not appear to be any rampant ‘land grabbing’ by investors.

**Monitoring of socio-economic and environmental impacts was inadequate.** GoL inspections checked only companies’ compliance with planting schedules and payment of fees and taxes. While company implementation reports contained more detail (including infrastructure provision and wages paid), their accuracy was not verified by officials. Monitoring of compliance with EMMPs and SMMPs appeared to be non-existent.

The reasons behind inadequate monitoring were numerous. Firstly, non-payment of monitoring budgets by rubber companies was tolerated, creating a perverse incentive for companies not to pay for monitoring in order to avoid scrutiny. Secondly, there was insufficient capacity of

government staff to collect and assess socio-economic and environmental data, particularly at the district level; this situation was exacerbated by the poor working relationship between MoNRE and MAF. Finally, there appeared to be little incentive for provincial and district officials to be more thorough with monitoring because central authorities did not request such information.

**Data collection, sharing and storage could be improved.** Due to the narrow scope of monitoring, there was very little data on socio-economic and environmental impacts of concessions. The little data that did exist (including planted areas, employment figures and infrastructure contributions) generally did not get transmitted to the central level. This lack of vertical information-sharing appeared to be largely due to indifference of central-level authorities, with payments of fees and taxes their primary concern. Inadequate equipment at provincial and district levels (including computers and scanners) further limited information sharing, potentially facilitating uninformed decision-making at the central level.

The lack of horizontal information-sharing (including sharing of concession agreements) appeared to be caused by competition for budget allocation between and within ministries, with officials discouraged to collaborate and share data.<sup>31</sup> Consequently, each agency appeared to have an incomplete knowledge of the industry, further contributing to uninformed decision-making. The classified nature of concession agreements prevented public scrutiny of deals which were potentially damaging to the public interest.

## 2. Socio-economic impacts

**Loss of land for shifting cultivation (without adequate compensation) and job opportunities were the key impacts identified by villages.** In comparison, the loss of timber

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<sup>31</sup> Ministries and departments with existing sets of data are more likely to receive financing for projects and monitoring activities.

and forest products, the lack of technology transfer, and environmental impacts of concessions were rarely mentioned.

**Food security was a likely concern for villagers not willing to work on plantations.** The reported decline in local food production was not surprising: concessions replaced shifting cultivation lifestyles with that of wage labourers, and consequently increased reliance on food purchases. None of the plantations had yet fully matured and thus the current employment was limited. Consequently, it is expected that the villager incomes will increase significantly in the future (particularly if labour shortages drive up wages), thus reducing food security concerns.

For villagers willing to work as wage labourers, food security was most likely to be an issue during years 4-7, i.e. once intercropping stops and before tapping starts. For villagers not willing to work on plantations, food security might become an issue from year 4 onwards, particularly if there is little plantable land in the area.

**Government revenue was low but should increase in the future.** Due to generous tax exemptions and low concession fees, the current contribution of assessed companies to government revenue appeared to be insignificant. However, profit and income tax revenues should increase significantly once tapping starts and exemption periods expire. It is estimated that profit tax revenue alone could reach USD 5.5 million once all of the current allocated area is being tapped.<sup>32</sup> Four out of 5 assessed companies had already planted much of the area allocated to them, and all 5 companies should be tapping by 2016.<sup>33</sup>

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<sup>32</sup> The following assumptions were used in the calculation: 1) 90% of allocated 165,168 ha is planted (with the other 10% not performing due to fire and disease); 2) a yield of 1 tonne of latex per ha and a 30% latex-rubber conversion rate (a conservative estimate); 3) the price of dry rubber to remain at USD 2.44 per kg (IndexMundi 2013); 4) profits are 50% of the revenue; and 5) a profit tax of 10%.

<sup>33</sup> One company appears to have failed to keep up with the planting schedule stipulated in its initial concession agreement. Consequently, in 2009 a new concession agreement was signed, with the size of the concession significantly reduced.

**Concessions provided abundant low-skill employment opportunities, but possible shortages of labour are a concern.** Overall, wage employment at the concession was available for those willing to work. One point of concern was the alleged practice of hiring only 18-40 year-old workers. This practice can reduce earning opportunities for the young and the elderly, with consequent reduction in food security (particularly if agricultural opportunities in the nearby areas are limited). The extent to which this is a common practice in the industry is unclear.

Concessions required primarily low-skilled labour; given the generally low level of education in rural Lao PDR, this is an advantage rather than a cause for concern.<sup>34</sup> The lack of enthusiasm of certain villagers towards wage labour appeared to be primarily caused by low wages and the work ethic of particular ethnic groups.<sup>35</sup> Some villagers were also not willing to move away from subsistence lifestyles, where work hours are irregular; arguably, this is a transitional issue which is difficult to avoid. Unfortunately, it is also a key obstacle to local people taking up higher-paid managerial and technical work at the concession.

How companies will deal with likely future labour shortages remains to be seen. Large influx of outside labour tends to be associated with both positive and negative impacts, including higher demand for local goods and services, higher land prices and growth of the local sex industry.

**Overall impact on village income was uncertain.** Prior to the establishment of concessions, all interviewed villages were subsistence-oriented, engaging with the market only to sell rice surpluses and small quantities of corn, fruits and vegetables. This made the impacts of

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<sup>34</sup> The national adult literacy rate is 72.7%, with the average length of schooling at 4.6 years (UNDP 2013).

<sup>35</sup> This appears to be an issue outside Lao PDR as well: Alton *et al.* (2005) attributes the success of rubber production in B Hat Nyao village (China) to the work ethic of Hmong people, and suggests that it will be difficult to duplicate with other ethnic groups.

concessions on local incomes difficult to measure, as monetary earnings were limited in the past. During the interviews, it was hoped that villagers would provide a clear indication of the impact of concession on their living standards, but the responses were mixed and lacked consistency. This topic should therefore be the subject of future quantitative studies.

**Future economic benefits (government revenue, employment and wages) depend on favourable market conditions for natural rubber.** A point of concern is the significant decrease in rubber prices over the last 3 years, following 3 years of strong growth (Figure 8). Low prices result in lower profitability, leading to lower tax revenues. Furthermore, if the rubber price drops below a certain level, operations can become unprofitable. The investor is then likely to halt tapping until market conditions improve, with consequent ceasing of employment.

Hypothetically, halting of operations would equate to a breach of a concession agreement, giving GoL the right to repossess the concession. However, given the large area dedicated to rubber concessions, the substantial capital inputs to date and the questionable ability of GoL to manage rubber plantations, such outcome would be unfortunate for all parties involved.

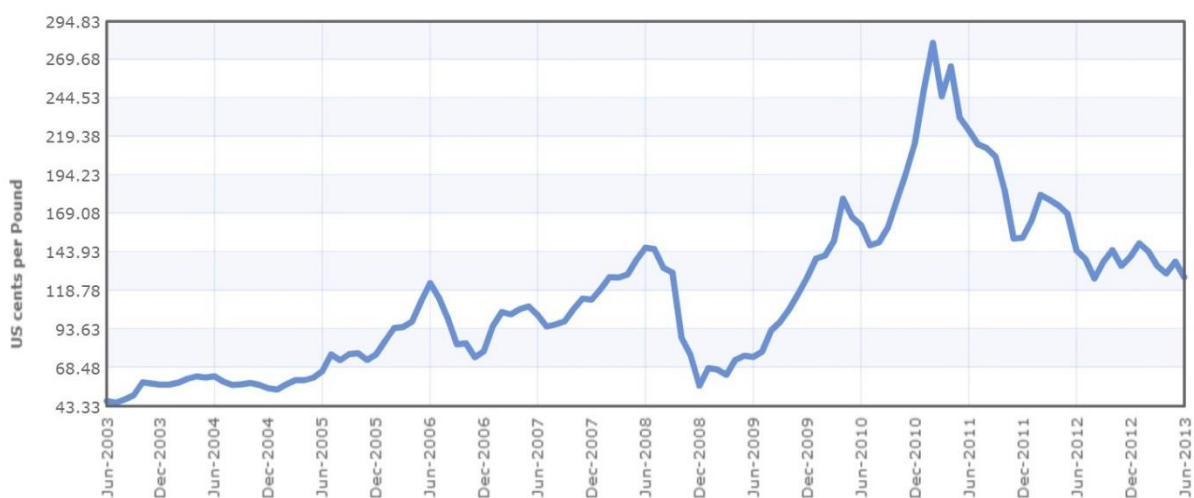


Fig. 8. Price of natural rubber (smoked sheet), Singapore Commodity Exchange

Source: IndexMundi 2013.



**Infrastructure and services delivered were substantial but inconsistent.** Similar to financial compensation, it appeared difficult for villagers to make strong demands for infrastructure – including demands for written commitments from investors – because they had no legal claims over the transferred land. This issue will persist until the land titling process is completed across the country. The alleged verbal promises were a source of tension between companies and villagers, and should be avoided as much as possible.

Nonetheless, infrastructure and service delivery to local villages appeared to be substantial, albeit poorly monitored by the government. The lack of maintenance of infrastructure by companies is a concern, as the ability of villagers to maintain complex equipment and services (e.g. electricity networks and healthcare centres) is questionable.

**There were no noticeable differences in the socio-economic impacts of concessions based on their geographic location, origin or ownership structure.** The impacts and topics of concern were similar across all provinces and companies. Admittedly, the small sample size prevents any definitive conclusions on this subject for the industry as a whole.

### 3. Environmental impacts

**Encroachment on protected forests is potentially a problem that should be investigated further.** All interviewed parties claimed that protected forests were excluded from concession land. Due to the lack of time and resources, the research team did not investigate which maps were used during the land survey and whether or not forest boundaries were complied with during planting. However, 2 incidents of protected forest clearance (1 confirmed and 1 alleged)

are a cause for alarm, particularly given that, according to Schönweger *et al.* (2012), conversion of protected forests to rubber plantation is a widespread practice in Lao PDR.<sup>36</sup>

**Impacts biodiversity and erosion were unclear and should be investigated further.** The reported decrease of nearby animal populations was not surprising given that degraded forestland is likely to have higher biodiversity levels than monoculture plantations. The extent of this decrease and its impact on local living standards should be investigated in future studies, as should the extent of erosion caused by land clearance.

**Impacts on water availability and quality were uncertain due to a lack of government monitoring.** Different parties reported drastically different impacts on water levels and quality. Rubber companies appeared to reduce local water availability via pesticide use, irrigation of plantations and (future) rubber processing. Simultaneously, they increased water availability by constructing wells, dams, pumps and aqueducts. Without regular long-term scientific monitoring by GoL, the overall impact is impossible to estimate. Unfortunately, such monitoring is not taking place.

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<sup>36</sup> Schönweger *et al.* (2012) maintains that 24% of rubber concessions in Lao PDR are located within protection or conservation forests.

## Chapter 8. Recommendations

The majority of negative socio-economic and environmental impacts of rubber concessions stem from GoL's concession approval and monitoring procedures. General suggestions on how these procedures can be improved are provided below. It is recommended that these suggestions are taken into consideration before the expiry of the current moratorium on new rubber concessions (December 2015).

### 1. Concession approval

- 1) The ambiguity over which government agency is responsible for coordinating the investment approval process – MPI or MoNRE – should be clarified via a separate decree.
- 2) Checks and balances must be put in place to ensure that the concession approval process is followed in its entirety, and in the correct order. In particular, GoL should ensure that ESIA's are prepared before concession agreements are signed and before companies commence operations. The findings of the ESIA should be taken into account during project approval.
- 3) The nationwide land titling process should be completed as soon as possible to ensure sufficient bargaining power for rural people when dealing with potential investors (including the right to refuse investments). Until this process is complete, the state should negotiate with investors on behalf of the villages, and should monitor compliance with compensation and infrastructure commitments.

- 4) The company-village negotiation process should be standardised – including rates of compensation paid for land – to ensure consistent outcomes and avoid abuses of power. The requirement for company-village negotiations to be completed before the signing of the concession agreement should be incorporated into the Law on Investment Promotion 2009.
- 5) All infrastructure commitments should be included in the company-village agreements, along with stipulated dates of delivery and company commitment to maintain the infrastructure (or to train local people to do so). The delivery of infrastructure should be monitored by the district government, with penalties for late delivery. More guidance is provided in Table 4.
- 6) MoUs should clearly state that the stipulated allocated area is subject to land availability, and that the area stipulated in the concession agreement is final. MoUs should be clearly distinguishable from concession agreements. A standardised MoU format is preferable.
- 7) To prevent discrimination against workers outside the 18-40 age bracket, concession agreements should specify that investors are obliged to hire workers based on their performance in the tapping exam, rather than their age (within the legal limit).<sup>37</sup>
- 8) Concession agreements that stipulate a construction of a rubber processing plant should include a requirement for a water treatment facility.

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<sup>37</sup> At least one of the assessed companies already utilises the tapping exam. The minimum legal working age in Lao PDR is 14 (Labour Law 2006).

- 9) Concession agreement should stipulate mandatory written employment contracts with all permanent and daily staff.
- 10) Concession agreements should be made available to the general public.

## 2. Concession monitoring

- 1) GoL should penalise investors for non-payment of environmental budgets and failures to submit biannual and annual implementation reports.
- 2) Monitoring responsibilities of each ministry at the central, provincial and district levels should be clarified and communicated to the investor. Ideally, inspections should consist of visits by a multi-ministerial team every 6 months (plus occasional surprise visits), and should include:
  - monitoring of socio-economic and environmental impacts (discussed in detail in Table 4);
  - discussions with affected villages, including written minutes of discussions;
  - documentation of any conflicts or legal non-compliance (e.g. land clearing outside project boundaries), including proposed remedies and penalties;
  - checking the accuracy of company's implementation reports; and
  - checking that measures proposed in previous monitoring reports are being implemented

Monitoring reports should be distributed to the investor and all relevant agencies (MPI, MoNRE, MAF and MoL) at district, provincial and central levels.

- 3) GoL officials should be present during the initial land clearing to ensure compliance with concession boundaries.
- 4) As more concessions reach tapping phase, GoL should pay particular attention to the inflow of outside workers (both foreign and Lao) and monitor consequent impact on local communities.
- 5) Budgets of district and provincial authorities should be reviewed to identify whether or not there is sufficient funding for monitoring activities. If not, GoL should ensure that investor's environmental monitoring budget (currently collected by MoNRE) is shared appropriately among monitoring agencies. The human resources of MAF at the district level should be fully utilised.
- 6) All documents related to project approval and operation should be held by all relevant ministries at central, provincial and district levels (preferably in digital form). These include:
  - MoUs;
  - feasibility studies;
  - land surveys;
  - ESIA's;
  - concession agreements;
  - company-village agreements (including infrastructure commitments);
  - implementation reports provided by the companies; and
  - government monitoring reports.

- 7) All existing monitoring databases should be updated and synchronised, both horizontally and vertically. The use of online databases should be trialled.

### 3. Criteria and indicators for approval and monitoring of rubber concessions

In addition to general guidance, a set of criteria and indicators (C&I) for approval and monitoring of rubber concessions was developed. Presented in a checklist, these C&I seek to improve the socio-economic and environmental performance of current and future concessions. The checklist is provided in Table 4. Section 1 should be used by MPI during project approval; sections 2-5 should be used during monitoring.

**Table 4. Criteria and indicators for approval and monitoring of rubber concessions**

	Criteria and indicators	Guidance
<b>1.</b>	<b>Project approval process</b>	
1.1	Memorandum of Understanding (MoU)	<ul style="list-style-type: none"> <li>signed at the appropriate government level, given the concession area</li> </ul>
1.2	Feasibility study	<ul style="list-style-type: none"> <li>conducted before the concession agreement is signed</li> </ul>
1.3	Environmental and social impact assessment (ESIA)	<ul style="list-style-type: none"> <li>conducted before the concession agreement is signed</li> <li>includes EMMP, SMMP and a monitoring budget</li> </ul>
1.4	Land survey	<ul style="list-style-type: none"> <li>conducted before the concession agreement is signed</li> <li>covers all of the allocated area</li> <li>includes identification and avoidance of protected forests and rice paddy</li> <li>includes details on land use certificates or land titles held by villagers covering the transferred land</li> </ul>
1.5	Company-village agreements with all impacted villages	<ul style="list-style-type: none"> <li>conducted and signed before concession agreement is signed</li> <li>signed by the company, village authorities and district or provincial governments</li> <li>contains details of the amount of land to be transferred to the company, including the type of land (e.g. barren forestland, agricultural land, degraded forestland)</li> <li>contains details of financial compensation to be provided by the company (if any), including amounts, recipients, dates of payment, method of payment, and punishment for non-compliance</li> <li>contains details on infrastructure to be provided by the company (if any), including timelines for implementation, maintenance responsibilities and punishment for non-delivery</li> <li>contains permission for villagers to engage in intercropping for at</li> </ul>

		<p>least the initial 3 years of planting</p> <ul style="list-style-type: none"> <li>• copies of the agreement must be held by villagers</li> </ul>
1.6	Concession agreement	<ul style="list-style-type: none"> <li>• signed by the company and the government before operations commence</li> </ul>
<b>2.</b>	<b>Compliance with the concession agreement</b>	
2.1	Cleared area corresponds to the land survey	<ul style="list-style-type: none"> <li>• field-level inspection of plantation boundaries</li> <li>• there should be no reported incidents of forest or agricultural land clearance outside concession boundaries</li> </ul>
2.2	Planted area corresponds with the planting schedule	<ul style="list-style-type: none"> <li>• field-level inspection of plantations</li> </ul>
2.3	Tapped area corresponds with planting schedule	<ul style="list-style-type: none"> <li>• tapping should commence 8 years after planting (at the latest)</li> </ul>
2.4	Latex yields of least 1 tonne of latex per ha per year, equating to 300 kg of dry rubber	<ul style="list-style-type: none"> <li>• checked either at the plantation or at the rubber processing plant</li> </ul>
2.5	Monitoring budget paid annually and on time	<ul style="list-style-type: none"> <li>• monitoring budget should be at least USD 2,000</li> <li>• evidence of payment must be produced, e.g. receipts</li> </ul>
2.6	Company implementation reports produced biannually and annually	<p>Implementation reports must contain the following information:</p> <ul style="list-style-type: none"> <li>• concession area approved, planted and tapped</li> <li>• rubber output for the last quarter and during the last financial year</li> <li>• concession fees and taxes paid in the last quarter and during the last financial year</li> <li>• number of foreign and local workers employed, by category (permanent vs. daily, physical vs. technical vs. management)</li> <li>• wages paid (per worker and total)</li> <li>• compensation and infrastructure provided to date</li> <li>• company must have copies of reports available</li> </ul>
2.7	Concession fees paid in full and on time	<ul style="list-style-type: none"> <li>• must correspond to the concession agreement</li> <li>• evidence of payment must be produced, e.g. receipts</li> </ul>
2.8	Relevant taxes paid in full and on time	<ul style="list-style-type: none"> <li>• must correspond to the concession agreement</li> <li>• includes profit tax and salary tax</li> <li>• evidence of payment must be produced, e.g. receipts</li> </ul>
<b>3.</b>	<b>Socio-economic impacts</b>	
3.1	Written contracts with permanent and daily staff	<ul style="list-style-type: none"> <li>• must describe conditions of employment (wages, work to be completed, duration of employment)</li> </ul>
3.2	The share of foreign workers does not exceed the legal limit	<ul style="list-style-type: none"> <li>• 10% for physical labour and 20% for technical labour (Labour Law 2006)</li> </ul>
3.3	Wages are above the minimum level and paid on time	<ul style="list-style-type: none"> <li>• wages must be above LAK 625,000 per month</li> <li>• no complaints of late payment from workers</li> </ul>
3.4	Clear and transparent method for salary calculation	<ul style="list-style-type: none"> <li>• rubber price announced to tapping workers at the beginning of the month</li> </ul>



		<ul style="list-style-type: none"> <li>• rubber content of collected latex announced to the workers on daily basis</li> </ul>
3.5	Relevant worker training provided by company	<ul style="list-style-type: none"> <li>• training must include planting, weeding, pesticide and fertilizer use (if used) and tapping</li> </ul>
3.6	Compensation for land paid in full and on time	<ul style="list-style-type: none"> <li>• payment should correspond to the company-village agreements</li> <li>• evidence of compensation paid, e.g. receipts</li> <li>• complaints of late payment from villagers must be investigated</li> </ul>
3.7	Infrastructure delivered in full and on time	<ul style="list-style-type: none"> <li>• delivery should correspond to the company-village agreements</li> <li>• evidence of infrastructure delivery, e.g. photos, site visits</li> <li>• complaints of late delivery from villagers must be investigated</li> </ul>
<b>4.</b>	<b>Environmental impacts</b>	
4.1	Company measures its water consumption (in m <sup>3</sup> )	<ul style="list-style-type: none"> <li>• water consumption to be measured and documented</li> </ul>
4.2	Plantations are at least 50 metres away from nearby water sources	<ul style="list-style-type: none"> <li>• physical inspection of plantations</li> </ul>
4.3	Impacts on water availability and quality are minimal	<ul style="list-style-type: none"> <li>• physical assessment of water sources (canals, streams, rivers and lakes) within 100 m of plantation and rubber procession facilities</li> <li>• water levels, degree of sedimentation and degree of contamination (colour / foaming / smell) must be inspected</li> <li>• company must have a written permission from district official for pesticides used</li> <li>• inspection results must be compared with results of a previous monitoring report to ensure situation is not worsening</li> </ul>
4.4	No forest clearance outside plantation boundaries	<ul style="list-style-type: none"> <li>• physical assessment of forest cover within 100 m of plantation</li> <li>• local villagers should be questioned on the issue</li> <li>• there should be no evidence of forest clearance taking place</li> </ul>
4.5	Compliance with EMMP and SMMP	

## Conclusion

From a conceptual standpoint, the study shows that the impacts of investment in large-scale agricultural plantations – and investment in general – largely depend on the regulatory environment in the host country. Disputes are likely to emerge if land tenure is unclear, or if existing forms of land use are not properly protected via formal land titles. Negative socio-economic and environmental impacts are likely if formal investment approval procedures are disregarded and government monitoring is non-existent. Furthermore, the host governments are unlikely to develop sound investment strategies if essential data on the impacts is not collected or fails to travel to decision-making circles. Lastly, if the above-mentioned deficiencies are in place, identification of their causes (e.g. lack of human or financial resources, confusing or conflicting regulations, or lack of incentives for government officials to perform their duties) is essential to finding solutions.

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## Personal communication

<b>PARTY INTERVIEWED</b>	<b>DATE</b>
<b>Vientiane, Vientiane Prefecture, Lao PDR</b>	
Investment Promotion Department, Ministry of Planning and Investment (MPI)	2 May 2013
National Economic Research Institute (NERI), MPI	3 May 2013
Department of Planning and Cooperation, Ministry of Agriculture and Forestry (MAF)	7 May 2013
Centre for Development and Environment (CDE), University of Bern	10 May 2013; 19 July 2013
Natural Resources and Environment Information Centre (NREIC), Ministry of Natural Resources and Environment (MoNRE)	13 May 2013
Labour Management Department, Ministry of Labour and Social Welfare (MoL)	17 May 2013
Centre of Project Environmental Monitoring, MoNRE	23 May 2013
Centre for Agriculture and Forestry, MoNRE	29 May 2013
<b>Savannakhet Province, Lao PDR</b>	
Department of Planning and Investment (DPI)	17 June 2013
Department of Agriculture and Forestry (DAF)	17 June 2013
Department of Natural Resources and Environment (DoNRE)	17 June 2013
District officials (MPI, MAF and MoNRE), Xepon District	19 June 2013
Saved Village, Xepon District	19 June 2013
Guangda Lao Company Limited	19 June 2013
District officials (MPI, MAF and MoNRE), Outhoumphone District	20 June 2013
Napho Village, Outhoumphone District	20 June 2013
Lao Thai Hua Rubber Company Limited	20 June 2013
<b>Oudomxai Province, Lao PDR</b>	
Department of Planning and Investment (DPI)	25 June 2013
Department of Agriculture and Forestry (DAF)	25 June 2013
Department of Natural Resources and Environment (DoNRE)	25 June 2013
Department of Labour and Social Welfare (DoL)	25 June 2013
District officials (MPI, MAF, MoNRE and MoL), Beng District	26 June 2013
Mang Village, Beng District	26 June 2013
Siphansalika Rubber Development Company Limited	27 June 2013



District officials (MPI, MAF, MoNRE and MoL), Houn District	27 June 2013
Hoai Pa Village, Houn District	27 June 2013
Jianfong Rubber Company Limited	27 June 2013
<b>Saravan Province, Lao PDR</b>	
Department of Planning and Investment (DPI)	2 July 2013
Department of Natural Resources and Environment (DoNRE)	2 July 2013
Department of Agriculture and Forestry (DAF)	2 July 2013
Department of Labour and Social Welfare (DoL)	2 July 2013
District officials (MPI, MAF, MoNRE and MoL), Laongam District	3 July 2013
Nong Song Hong Yai Village, Laongam District	3 July 2013
Kuangsi Noi Village, Laongam District	3 July 2013
Yao Tien Rubber Company Limited	5 July 2013
DakLak Rubber Company Limited	5 July 2013

## Appendix I. Reviewed case studies

1. Department of Planning and Investment, Attapeu Province. 2012. Report: monitoring of investment projects. August 2012.
2. Earth Systems Laos. 2007. *Assessment of the environmental and social impacts created by the VLRC Industrial Rubber Plantation and proposed environmental and social plans.*
3. Global Witness. 2013. *Rubber barons – how Vietnamese companies and international financiers are driving a land grabbing crisis in Cambodia and Laos.*
4. Hicks, C., Voladeth, S., Shi, W., Guifeng, Z., Lei, S., Tu, P.Q. and Kalina, M. 2009. *Rubber investments and market linkages in Lao PDR: approaches for sustainability.*
5. International Cooperation for Development and Solidarity (CIDSE-Laos). 2009. *Land Concession Induced Livelihood Changes: Research on land and livelihood impacts from land concession from mono-culture tree plantation.*
6. International Union for Conservation of Nature (IUCN) and the National Economic Research Institute (NERI). 2011a. *Assessment of economic, social and environmental costs and benefits of Dak Lak rubber plantations: case study in Saravan Province.*
7. \_\_\_\_\_ 2011b. *Report on Economic, Social and Environmental Costs and Benefits of Investments in Savannakhet Province.*
8. Kenney-Lazar, M. 2010, *Land Concessions, Land Tenure, and Livelihood Change: Plantation Development in Attapeu Province, Southern Laos.*
9. National Land Management Authority, Lao PDR (NLMA), Chiang Mai University and Foundation for Ecological Recovery. 2009. *Research evaluation of economic, social, and ecological implications of the programme for commercial tree plantations: case study of rubber in the south of Lao PDR.* Summary report.
- 10-23. National Land Management Authority, Lao PDR (NLMA). 2009. *Findings of state land leases and concessions inventory project.* Individual reports for Xayabouli, Vientiane, Sekong, Savannakhet, Saravan, Phongsaly, Oudomxai, Luang Prabang, Luang Namtha, Khammouan, Champasak, Bolihamxai, Bokeo and Attapeu provinces.
24. Pommier, L. (2009). *Management of investment in natural resources in the provinces and operational linkages between the Poverty Environment Initiative (UNDP/MPI) and the Sustainable Natural Resource Management and Productivity Enhancement Project (IFAD/ADB).*
25. Shi, W. 2008. *Rubber boom in Luang Namtha – a Transnational Perspective.*
26. Sustainable Mekong Research Network. 2009. *Rubber: Costs or Benefits to the Lao PDR?*
27. Thongmanivong, S., Phengsopha, K., Chantavong, H., Dwyer, M. and Oberndorf, R. 2009a. *Concession or Cooperation? Impacts of Recent Rubber Investment on Land Tenure and Livelihoods: a Case Study from Oudomxai Province, Lao PDR.*

## Appendix II. Impacts mentioned in 27 reviewed case studies, by province

	Attapeu	Bokeo	Bolihamxai	Champassak	Khammouan	Luang Namtha	Luang Prabang	Oudomxai	Pongsaly	Saravan	Savannakhet	Sekong	Vientiane	Xayabouli	Total
<b>ECONOMIC</b>															
Encroachment on village productive land	4	1	1	6		2	1	2	1	2	1	1	1	1	24
Jobs and wages for local communities	2			4	1	2	1	1		2	2				15
Inadequate compensation to villagers for lost land	4			2				1		2		2			11
Loss of access to timber and NTFPs for villagers	2			4						2	2	1			11
Improved infrastructure in villages	2			2		2	1			3					10
Low wages	3			2						3		1			9
Lack of employment for villagers	2			2						3		1			8
Late payment of wages	2			3						2					7
Intercropping allowed by the company				3						3					6
Lack of community involvement in project approval				3						1	1	1			6
Failure to provide promised infrastructure	1	1				1							1		4
Lack of training and technology transfer for villagers				1		2				1					4
Contribution to the village development fund							1			2					3
Labour shortages				2						1					3
Health impact on workers from improper chemical use				1						2					3
Harsh or unsafe working conditions	2											1			3
Low government revenue				1			1			1					3
Increase in village trade					1					1					2
Training and technology transfer for villagers				1						1					2
Lack of technical employment for villagers				1						1					2
Lack of sick leave or annual leave	1														1
Contribution to corruption				1											1
Occurrence of fires in plantations										1					1
Increased labour migration from neighbouring countries				1											1
<b>ENVIRONMENTAL</b>															
<u>Water</u>															
Planting near or within watersheds	1	1				1	1	2						1	7
Use of chemicals threatening water sources	1			1		1		1		2		1			7
Increased sedimentation of water sources				3						1	2				6
Plantations causing lower water levels				1						2	1				4
<u>Land and forests</u>															

Encroachment on natural forest or protected area	4			4	1	1	1	2	1	3	1	2	1	1	22
Investor clearing more than / outside permitted land	2			2		1	1			1	1	1	1		10
Potential erosion via planting on steep slopes				1		1	1	1	1	1				1	7
Planting on too high altitude (>700m)		1				1									2
Loss of biodiversity due to land clearance				1											1
Inappropriate waste management (burning)				1											1
Inappropriate storage of chemicals				1											1
<b>PROCEDURAL</b>															
Lack of land survey prior to clearance	2	1	1	1		1	1	1	1	1	1	1	1	1	14
Lack of ESIA's or feasibility studies	2	1	1	3	1	1			1	3				1	14
Lack of worker contracts	1			2						1		1			5
Authorities acting outside their jurisdiction						2						2			4
Investor commitments not specified in the contract		1		1		1				1					4
Investor engaging in non-permitted activities	1							1						1	3
Investor launches operations before official approval				1		2									3
Project delay												1	1		2

## Appendix III. Questionnaires used during field visits

### Questionnaire for the company

#### 1. Company details

1.1. Company name: \_\_\_\_\_

1.2. Type of investment (domestic / foreign / joint): \_\_\_\_\_

1.3. Country of origin: \_\_\_\_\_

1.4. Main investment activities: \_\_\_\_\_

1.5. Lease start and end dates: \_\_\_\_\_

1.6. A copy of the concession agreement (please provide): \_\_\_\_\_

#### 2. Compliance with project boundaries

2.1. Project area specified under the concession agreement (ha): \_\_\_\_\_

2.2. Project area specified in the land survey (ha): \_\_\_\_\_

2.3. Current planted area: (ha) \_\_\_\_\_

2.4. Current tapped area: (ha) \_\_\_\_\_

2.5. Is there any evidence of concession boundary encroachment? \_\_\_\_\_

2.6. If so, what is the reason for the encroachment? \_\_\_\_\_

2.7. Additional comments on investor compliance with project boundaries: \_\_\_\_\_

#### 3. Impact on productive land and food security

3.1. Land survey conducted by the company prior to planting taking place?

yes  no

3.2. Loss of productive land (for agriculture or animal grazing) for nearby villages due to the concession?

yes  no  If yes, area of productive land lost (ha) \_\_\_\_\_

3.3. Were the villagers consulted by the company about loss of productive land? Is there evidence of consultations taking place, informed consent and negotiated agreements, e.g. minutes of meetings?

\_\_\_\_\_

3.4. How much compensation was provided by the company? \_\_\_\_\_

3.5. How was the compensation distributed to the villagers? \_\_\_\_\_

3.6. Does intercropping take place within concession boundaries?

yes  no  If no, why not? \_\_\_\_\_

3.7. Additional comments on productive land and food security: \_\_\_\_\_

#### 4. Impact on government revenue, employment and income

4.1. Total rubber output for the last fiscal year (kg): \_\_\_\_\_

4.2. Collected yield (kg per ha per year): \_\_\_\_\_

4.3. Profit and income tax paid by the company last fiscal year:

profit tax (USD): \_\_\_\_\_ income tax (USD): \_\_\_\_\_

4.4. Average annual employment levels provided by the company:

permanent staff \_\_\_\_\_ daily staff \_\_\_\_\_ seasonal staff \_\_\_\_\_

4.5. Share of local employees (%):

permanent staff \_\_\_\_\_ daily staff \_\_\_\_\_ seasonal staff \_\_\_\_\_

4.6. Minimum wages provided by the company (LAK per day):

permanent staff \_\_\_\_\_ daily staff \_\_\_\_\_ seasonal staff \_\_\_\_\_

4.7. Average wages provided by the company (LAK per day):

permanent staff \_\_\_\_\_ daily staff \_\_\_\_\_ seasonal staff \_\_\_\_\_

4.8. Additional comments on employment provided by the

company: \_\_\_\_\_

#### 5. Impact on local infrastructure

5.1. Infrastructure to be delivered by the company as part of the project (indicate number):

roads \_\_\_\_\_ schools \_\_\_\_\_ medical facilities \_\_\_\_\_ electricity \_\_\_\_\_ other (please describe) \_\_\_\_\_

5.2. Evidence of a company promise to deliver the infrastructure, e.g. a written agreement: \_\_\_\_\_

5.3. Infrastructure delivered to date (indicate number):

roads \_\_\_\_\_ schools \_\_\_\_\_ medical facilities \_\_\_\_\_ electricity \_\_\_\_\_ other (please describe) \_\_\_\_\_

5.4. Does the company regularly monitor and maintain the condition of the infrastructure?

yes  no  If no, why not? \_\_\_\_\_

5.5. Does the company plan to deliver the remaining infrastructure? If no, why not?

yes  no  If no, why not? \_\_\_\_\_

5.6. Additional comments on infrastructure delivery: \_\_\_\_\_

## 6. Impact on natural forests

6.1. ESIA (Environmental and Social Impact Assessment) conducted?

yes  no  Date: \_\_\_\_\_ Party conducting the assessment: \_\_\_\_\_

6.2. Conversion of natural forests by the company (ha):

conservation forest: \_\_\_\_\_ protection forest: \_\_\_\_\_ production forest: \_\_\_\_\_

6.3. Reason for the conversion of natural forests? \_\_\_\_\_

6.4. Additional comments on impacts on forests? \_\_\_\_\_

## 7. Impact on water resources

7.1. Does the company have a water management plan?

yes  no

7.2. Average annual water consumption by the company (m<sup>3</sup> per year): \_\_\_\_\_

7.3. Shortest distance between the concession and the nearby river or other water source, e.g. lake (m): \_\_\_\_\_

7.4. How does the company treat and dispose of wastewater? \_\_\_\_\_

7.5. Is untreated wastewater disposed to water bodies?

yes  no

7.6. Impacts on nearby water sources since the establishment of the concession:

- lower water levels yes  no
- increased sedimentation yes  no
- increased contamination (colour / foaming / smell) yes  no

7.7. Additional comments on impacts on local water sources? \_\_\_\_\_

## Questionnaire for district and provincial authorities (MPI, MoNRE, MAF and MoL)

### 1. Company details

- 1.1. Company name: \_\_\_\_\_
- 1.2. Type of investment (domestic / foreign / joint): \_\_\_\_\_
- 1.3. Country of origin: \_\_\_\_\_
- 1.4. Main investment activities: \_\_\_\_\_
- 1.5. Lease start and end dates: \_\_\_\_\_
- 1.6. A copy of the concession agreement (please provide): \_\_\_\_\_

### 2. Compliance with project boundaries

- 2.1. Project area specified under the Concession Agreement (ha): \_\_\_\_\_
- 2.2. Project area specified in the land survey (ha): \_\_\_\_\_
- 2.3. Current planted area: (ha) \_\_\_\_\_
- 2.4. Current tapped area: (ha) \_\_\_\_\_
- 2.5. Is there any evidence of concession boundary encroachment? \_\_\_\_\_
- 2.6. If so, what is the reason for the encroachment? \_\_\_\_\_
- 2.7. Additional comments on investor compliance with project boundaries: \_\_\_\_\_

### 3. Impact on productive land and food security

- 3.1. Land survey conducted by the company prior to planting taking place?  
yes  no
- 3.2. Loss of productive land (for agriculture or animal grazing) for nearby villages due to the concession?  
yes  no  If yes, area of productive land lost (ha): \_\_\_\_\_
- 3.3. Were the villagers consulted by the company about loss of productive land? Is there evidence of consultations taking place, informed consent and negotiated agreements, e.g. minutes of meetings?  
\_\_\_\_\_
- 3.4. How much compensation was provided by the company? \_\_\_\_\_
- 3.5. How was the compensation distributed to the villagers? \_\_\_\_\_
- 3.6. Additional comments on productive land and food security \_\_\_\_\_



**4. Impact on government revenue, employment and income**

- 4.1. Total rubber output for the last fiscal year (kg): \_\_\_\_\_
- 4.2. Collected yield (kg per ha per year): \_\_\_\_\_
- 4.3. Profit and income tax paid by the company last fiscal year:  
profit tax (USD): \_\_\_\_\_ income tax (USD): \_\_\_\_\_
- 4.4. Average annual employment levels provided by the company:  
permanent staff \_\_\_\_\_ daily staff \_\_\_\_\_ seasonal staff \_\_\_\_\_
- 4.5. Share of local employees (%):  
permanent staff \_\_\_\_\_ daily staff \_\_\_\_\_ seasonal staff \_\_\_\_\_
- 4.6. Minimum wages provided by the company (LAK per day):  
permanent staff \_\_\_\_\_ daily staff \_\_\_\_\_ seasonal staff \_\_\_\_\_
- 4.7. Average wages provided by the company (LAK per day):  
permanent staff \_\_\_\_\_ daily staff \_\_\_\_\_ seasonal staff \_\_\_\_\_
- 4.8. Additional comments on employment provided by the company: \_\_\_\_\_

**5. Impact on local infrastructure**

- 5.1. Infrastructure to be delivered by the company as part of the project (indicate number):  
roads \_\_\_\_\_ schools \_\_\_\_\_ medical facilities \_\_\_\_\_ electricity \_\_\_\_\_ other (please describe) \_\_\_\_\_
- 5.2. Evidence of a company promise to deliver the infrastructure, e.g. a written agreement: \_\_\_\_\_
- 5.3. Infrastructure delivered to date (indicate number):  
roads \_\_\_\_\_ schools \_\_\_\_\_ medical facilities \_\_\_\_\_ electricity \_\_\_\_\_ other (please describe) \_\_\_\_\_
- 5.4. Does the company regularly monitor and maintain the condition of the infrastructure?  
yes  no  If no, why not? \_\_\_\_\_
- 5.5. Does the company plan to deliver the remaining infrastructure?  
yes  no  If no, why not? \_\_\_\_\_
- 5.6. Additional comments on infrastructure delivery: \_\_\_\_\_

**6. Impact on natural forests**

- 6.1. ESIA (Environmental and Social Impact Assessment) conducted?  
yes  no  Date: \_\_\_\_\_ Party conducting the assessment: \_\_\_\_\_
- 6.2. Conversion of natural forests by the company (ha): \_\_\_\_\_



## Questionnaire for a local village

### 1. Village details

1.1. Village name: \_\_\_\_\_

1.2. Village population: \_\_\_\_\_

1.3. Number of villagers present at the meeting: \_\_\_\_\_

### 2. Compliance with project boundaries

2.1. Is there any evidence of concession boundary encroachment? \_\_\_\_\_

2.2. If so, what is the reason for the encroachment? \_\_\_\_\_

2.3. Additional comments on investor compliance with project boundaries: \_\_\_\_\_

### 3. Impact on productive land and food security

3.1. Loss of productive land (for agriculture or animal grazing) for nearby villages due to the concession?

yes       no       If yes, area of productive land lost (ha): \_\_\_\_\_

3.2. If yes, how was the land used prior to the concession? \_\_\_\_\_

3.3. Were the villagers consulted by the company about loss of productive land? Is there evidence of consultations taking place, informed consent and negotiated agreements, e.g. minutes of meetings?  
\_\_\_\_\_

3.4. How much compensation was provided by the company? \_\_\_\_\_

3.5. How was the compensation distributed to the villagers? \_\_\_\_\_

3.6. Does intercropping take place within concession boundaries?

yes       no       If no, why not? \_\_\_\_\_

3.7. Food availability compared to before concession was established:

better       same       worse

3.8. Additional comments on productive land and food security \_\_\_\_\_

### 4. Impact on employment and income

4.1. Average annual employment levels provided by the company:

permanent staff \_\_\_\_\_      daily staff \_\_\_\_\_      seasonal staff \_\_\_\_\_

4.2. Minimum wages provided by the company (LAK per day):

permanent staff\_\_\_\_\_ daily staff\_\_\_\_\_ seasonal staff\_\_\_\_\_

4.3. Average wages provided by the company (LAK per day):

permanent staff\_\_\_\_\_ daily staff\_\_\_\_\_ seasonal staff\_\_\_\_\_

4.4. Overall, how do the villagers rate their income compared to before concession was established?

better  same  worse

4.5. Additional comments on employment provided by the company: \_\_\_\_\_

## 5. Impact on local infrastructure

5.1. Infrastructure to be delivered by the company as part of the project (indicate number):

roads\_\_\_\_\_ schools\_\_\_\_\_ medical facilities\_\_\_\_\_ electricity\_\_\_\_\_ other (please describe)\_\_\_\_\_

5.2. Evidence of a company promise to deliver the infrastructure, e.g. a written agreement: \_\_\_\_\_

5.3. Infrastructure delivered to date (indicate number):

roads\_\_\_\_\_ schools\_\_\_\_\_ medical facilities\_\_\_\_\_ electricity\_\_\_\_\_ other (please describe) \_\_\_\_\_

5.4. Does the company regularly monitor and maintain the condition of the infrastructure?

yes  no  If no, why not? \_\_\_\_\_

5.5. Does the company plan to deliver the remaining infrastructure? If no, why not?

yes  no  If no, why not? \_\_\_\_\_

5.6. Overall, how do the villagers rate their satisfaction with the infrastructure delivered by the company?

satisfied  neutral  dissatisfied

5.7. Additional comments on infrastructure delivery: \_\_\_\_\_

## 6. Impact on natural forests

6.1. Conversion of natural forests by the company (ha):

conservation forest: \_\_\_\_\_ protection forest: \_\_\_\_\_ production forest: \_\_\_\_\_

6.2. Reason for the conversion of natural forests? \_\_\_\_\_

6.3. Overall, how does the community rate the level of biodiversity in the nearby area since the establishment of the concession?

higher  same  lower

6.4. Additional comments on impacts on forests? \_\_\_\_\_



## Appendix IV. Documents collected during field visits

### Oudomxai Province

Bang District, Oudomxai Province. 2005. Contract between district authorities and Siphansalika company on rubber investment, 24 August 2005. Internal document, unofficial translation. Available from Siphansalika Rubber Development Company Limited, Oudomxai Province.

Department of Labour, Oudomxai Province. 2013. Registered foreign workers in Siphansalika and Jianfong companies, 27 June 2013. Internal document, unofficial translation. Available from Department of Labour, Oudomxai Province.

Department of Planning and Investment, Oudomxai Province. 2013. List of rubber companies in Oudomxai province. Internal document, unofficial translation. Available from Department of Labour, Oudomxai Province.

Department of Planning and Investment, Oudomxai Province. 2013. Report of monitoring and evaluation of mining, rubber and eucalyptus projects, Oudomxay Province, 13-25 March 2013. Internal document, unofficial translation. Available from Department of Planning and Investment, Oudomxai Province.

Provincial Agriculture and Forestry Office, Oudomxai Province. 2013. Total domestic and foreign rubber investment in Oudomxai Province, 20 May 2013. Internal document, unofficial translation. Available from Provincial Agriculture and Forestry Office, Oudomxai Province.

Provincial Land Management Office, Oudomxai Province. 2009. Contract on rubber concession for Siphansalika Company, between provincial LMO and Salika Company, 20 April 2009. Internal document, unofficial translation. Available from Siphansalika Rubber Development Company Limited, Oudomxai Province.

Siphansalika Rubber Development Company Limited. 2013. Report to the provincial Department of Planning and Investment, 22 June 2013. Internal document, unofficial translation. Available from Department of Planning and Investment, Oudomxai Province.

### Saravan Province

DakLak Rubber Company Limited. 2004. Contract on rubber plantation development and industrial plantations in 4 southern provinces in Lao PDR, between Lao PDR and Gaushu Daklak company (Daklak Province, Vietnam), 19 Nov 2004. Internal document, unofficial translation. Available from DakLak Rubber Company Limited.

DakLak Rubber Company Limited. 2009. Rubber concession contract regarding industrial crops between Champasak and Salavan provincial governments, National Land Management Office and DakLak Company, 31 August 2009, Ho Chi Minh City. Internal document, unofficial translation. Available from DakLak Rubber Company Limited.

DakLak Rubber Company Limited. 2013. Progress of implementation report on rubber plantation in Saravan province, 10 June 2013. Internal document, unofficial translation. Available from the Department of Planning and Investment, Saravan Province.

Department of Labour and Social Welfare, Saravan Province. 2013. Report on rubber concessions in Saravan Province, 1 July 2013. Internal document, unofficial translation. Available from Department of Labour and Social Welfare, Saravan Province.

District Land Office, Laongam District, Saravan Province. 2007. Map and information about rubber land survey in Savan Village, 6-17 September 2007. Internal document, unofficial translation. Available from District Land Office, Laongam District, Saravan Province.

District Land Office, Saravan Province. 2009. Information about land survey in Nyang Village by DakLak Rubber Company, 12 May 2009. Internal document, unofficial translation. Available from District Land Office, Saravan Province.

Provincial Agriculture and Forestry Office, Saravan Province. 2009. Report on land surveys in 7 villages in Nakhonpeng District for Yao Tien Rubber Company, 11 March 2009. Internal document, unofficial translation. Available from Provincial Agriculture and Forestry Office, Saravan Province.

Provincial Agriculture and Forestry Office, Saravan Province. 2013. Summary of Yao Tien and DakLak rubber plantations, 2 July 2013. Internal document, unofficial translation. Available from Provincial Agriculture and Forestry Office, Saravan Province.

Provincial Agriculture and Forestry Office, Saravan Province. 2013. Summary of domestic and foreign investment in agriculture and forest sectors, Saravan Province, 29 June 2013. Internal document, unofficial translation. Available from Provincial Agriculture and Forestry Office, Saravan Province.

Provincial Land Office, Saravan Province. 2008. Land survey for DakLak rubber company in Saravan Province, 24 November 2008. Internal document, unofficial translation. Available from Provincial Land Office, Saravan Province.

Provincial Land Office, Saravan Province. 2008. Land survey for industrial plantations in four villages in Laongnam District for Yao Tien Company. Internal document, unofficial translation. Available from Provincial Land Office, Saravan Province.

Provincial Land Office, Saravan Province. 2010. Land survey of Wanke and Na-om villages, Yao Tien Company, Laongam district, 2010. Internal document, unofficial translation. Available from Provincial Land Office, Saravan Province.

Provincial Land Office, Saravan Province. 2011. Land Survey of Daklak Company in Laongam District, Saravan Province, September 2011. Internal document, unofficial translation. Available from Provincial Land Office, Saravan Province.

Yao Tien Rubber Company Limited. 2008. Contract between Yao Tien Company and Guangsi Noi Village, 14 October 2008. Internal document, unofficial translation. Available from Yao Tien Rubber Company Limited.

Yao Tien Rubber Company Limited. 2008. Project proposal for rubber development in 10,000 ha in Saravan Province, Yao Tien Rubber Company, 30 June 2008. Internal document, unofficial translation. Available from Yao Tien Rubber Company Limited.

Yao Tien Rubber Company Limited. 2009. Contract for rubber plantation and processing in Champasak Province between Lao PDR and Yao Tien Company, 15 October 2009. Internal document, unofficial translation. Available from Yao Tien Rubber Company Limited.

Yao Tien Rubber Company Limited. 2011. Rubber concession contract between Ministry of Natural Resources and Environment and Yao Thien Viet-Lao Development Joint Venture, 30 December 2011. Internal document, unofficial translation. Available from Yao Tien Rubber Company Limited.

Yao Tien Rubber Company Limited. 2013. Report of the second quarter of 2013, project implementation by Yaotien in Lao PDR, 5 April 2013. Internal document, unofficial translation. Available from Yao Tien Rubber Company Limited.

Yao Tien Rubber Company Limited. 2013. Report on second quarter of 2013, project implementation by Yaotien in Lao PDR, 3 July 2013. Internal document, unofficial translation. Available from Yao Tien Rubber Company Limited.

### **Savannakhet Province**

Chareun Associates Company Limited. 2010. Environmental Impact Assessment of Guangda Lao Company Limited, August 2010. Internal document, unofficial translation. Available from Guangda Lao Company Limited.

Guangda Lao Company Limited. 2009. Report on feasibility study of a rubber plantation, Guangda Lao Company, Xepon District, Savannakhet Province, May 2009. Internal document, unofficial translation. Available from Department of Planning and Investment, Savannakhet Province.

Guangda Lao Company Limited. 2011. Rubber plantation and processing contract in Savannakhet Province between Lao PDR and Guangda Lao Company Limited, Vientiane Capital, 21 June 2011. Internal document, unofficial translation. Available from Ministry of Planning and Investment, Vientiane.

Lao Thai Hua Rubber Company Limited. 2006. Agreement on project development, project promotion and rubber processing plant in Savannakhet Province between Lao PDR, Thai Hua Rubber Company and NCX Holding Co Ltd, Vientiane, 28 November 2006. Internal document, unofficial translation. Available from Lao Thai Hua Rubber Company Limited, Vientiane.

Provincial Agriculture and Forestry Office, Savannakhet Province. 2013. Domestic and foreign investment in agriculture and forests for 2012-2013. Internal document, unofficial translation. Available from Provincial Agriculture and Forestry Office, Savannakhet Province.

Provincial Land Office, Savannakhet Province. 2009. Land use certificate, Outhomphone District, Nakhu village, 87 ha for rubber planting to Lao Thai Hua Rubber Company, 14 May 2009. Internal document, unofficial translation. Available from Lao Thai Hua Rubber Company Limited, Vientiane.



Provincial Land Office, Savannakhet Province. 2009. Land use certificates for 14 plots of land, covering 2,369 ha, issued to Lao Thai Hua Rubber Company, 8 October 2009. Internal document, unofficial translation. Available from Lao Thai Hua Rubber Company Limited, Vientiane.

Provincial Land Office, Savannakhet Province. Land use certificate, Saved village, Xepon District, Savannakhet Province, 46 ha area for planting rubber issued to Guangda Lao Company Limited, 14 March 2011. Internal document, unofficial translation. Available from Guangda Lao Company Limited.

SSAFE Consult Sole Co. Ltd. 2012. Environmental Impact Assessment, Lao Thai Hua Rubber Company, Savannkhet Province, 16 October 2012. Internal document, unofficial translation. Available from Lao Thai Hua Rubber Company Limited, Vientiane.

SSAFE Consult Sole Co. Ltd. 2013. Environmental Impact Assessment, Lao Thai Hua Rubber Company, Savannkhet Province, February 2013. Internal document, unofficial translation. Available from Lao Thai Hua Rubber Company Limited, Vientiane.