LAND LEASES AND CONCESSIONS IN THE LAO PDR

A CHARACTERIZATION OF INVESTMENTS IN LAND AND THEIR IMPACTS

Based on field data of 2014-2017

Cornelia Hett, Vong Nanhthavong, Savanh Hanephom, Anongsone Phommachanh, Boungnong Sidavong, Ketkeo Phouangphet, Juliet Lu, Annie Shattuck, Micah Ingalls, Rasso Bernhard, Souphaphone Phathitmixay, Chanthavone Phomphakdy, Andreas Heinimann, Michael Epprecht

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Technical contributors: Soukphalak Lorkhamthy, Bouasone Houngnapha, Lae Khendmany, Vilaiphone Lorbunkham, Vannasone Inthavong, Bungon Keonakone, Sounakhen Phasith, Viengsamay Vorasan, Mathmano Viphakeo, Inpong Homsombath, Baimoua, Vilamonh Phonthongsy, Beexiong Faiyia, Vong Keopatchai, Soukanh Lathsavong, Nicholas Bosoni, Khanithxai Miphimvong, Robert Cole.

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Contact: Centre for Development and Environment (CDE), University of Bern, Mittelstrasse 43,
CH-3012 Bern, Switzerland.
www.cde.unibe.ch
Email: publications@cde.unibe.ch

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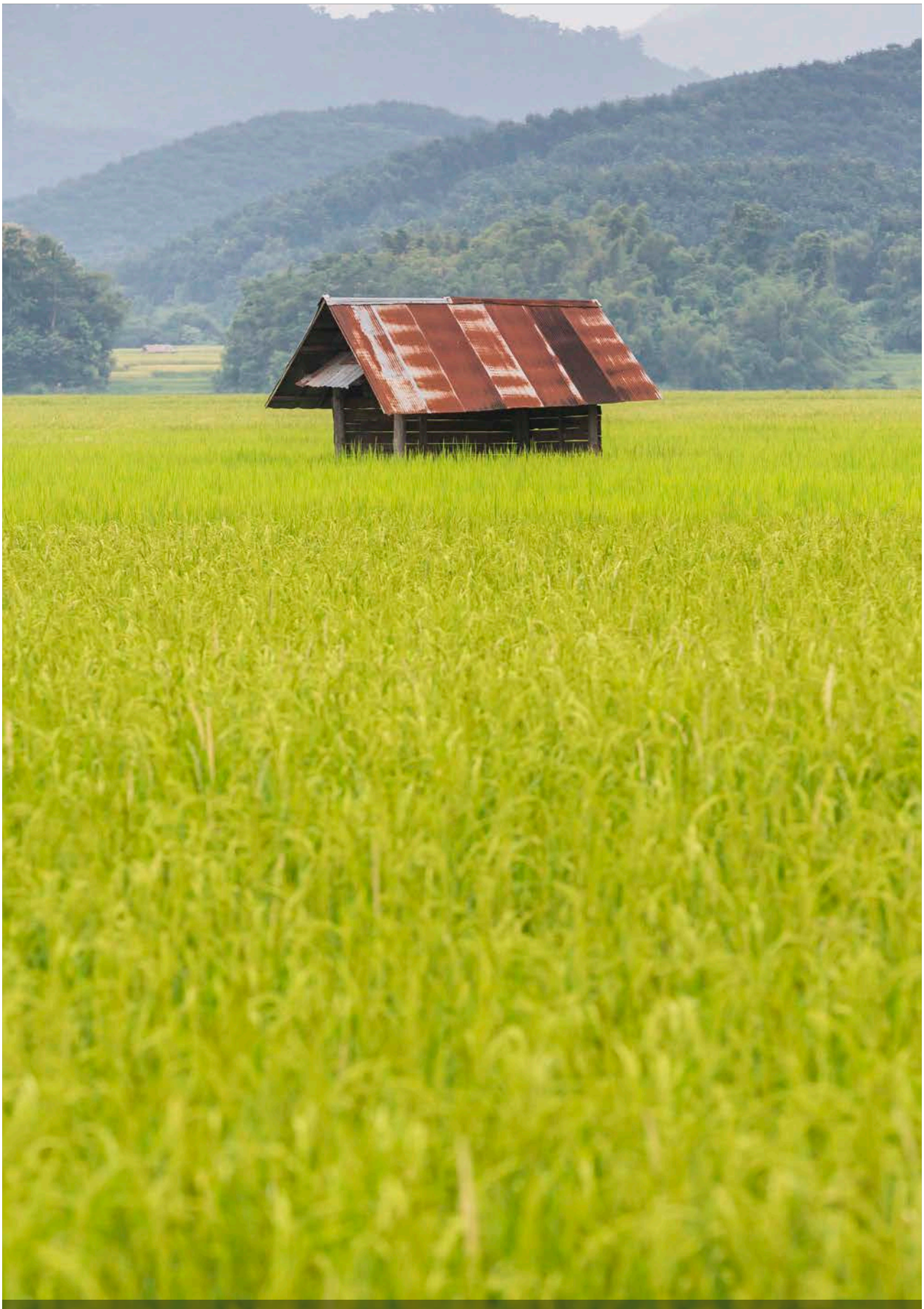


Rice almost ready for harvest in northern province of Luang Namtha. The fertile valley surrounding the provincial capital is carpeted with rice fields. © Mick Shippen, 2019.

Abbreviations

CDE	Centre for Development and Environment
DALAM	Department of Agricultural Land Management and Development
DGM	Department of Geology and Minerals
DLSW	District Office of Labour and Social Welfare
DOF	Department of Forestry
DoF	District Office of Finance
DoL	Department of Land
DoM	Department of Mines
DoNRE	District Office of Natural Resources and Environment
DPI	Department of Planning and Investment
e-Gov	Lao e-Government Centre
EIA	Environmental Impact Assessment
EMMP	Environmental Management and Monitoring Plan
FAO	Food and Agriculture Organization
FPIC	Free, prior, and informed consent
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GoL	Gouvernement of the Lao PDR
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit
ha	hectare(s)
IPD	Investment Promotion Department
IQI	Index for Quality of Investment
Lao PDR	Lao People's Democratic Republic
MAF	Ministry of Agriculture and Forestry
masl	metres above sea level
MEM	Ministry of Energy and Mines
MoIC	Ministry of Industry and Commerce
MoF	Ministry of Finance
MoNRE	Ministry of Natural Resources and Environment
MoU	Memorandum of Understanding
MPI	Ministry of Planning and Investment
MPT	Ministry of Post and Telecommunications
NTFPs	Non-timber forest products
PCO	District Planning and Cooperation Office
PDA	Project Development Agreement
PM	Prime Minister
PoNRE	Provincial Office of Natural Resources and Environment
SDC	Swiss Agency for Development and Cooperation
SMMP	Social Management and Monitoring Plan
SRTM	Shuttle Radar Topography Mission
TABI	The Agro-Biodiversity Initiative
TLIC	Turning Land into Capital
VGs	Voluntary Guidelines to support the progressive realization of the right to adequate food in the context of national food security

Foreword

The Lao PDR's development challenges and opportunities are complex, involving an ever-growing diversity of stakeholders at local, national, and international levels. The great richness of the Lao PDR in a variety of natural resources is sought by a wide range of such stakeholders from traditional local farmers to international corporations. The sustainable management of the country's natural resources represents therefore both an opportunity as well as a great challenge for the country and its government.

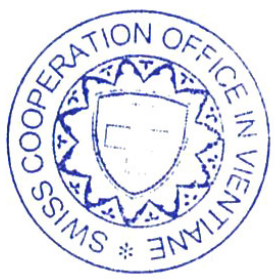
Land - one of the key natural resources that the Lao PDR possesses – is increasingly sought by larger commercial entities, competing with the needs of local communities for land. The government recognizes the importance of securing the livelihoods of its rural farmer communities through formalizing land use rights at local levels. At the same time, granting land use rights to large-scale commercial investors has been regarded by the country's leadership as a main way for the country to achieve rapid economic growth. Indeed, the economic boom observed in the Lao PDR over the past decades has been predominantly driven by the vastly increased commercial use of natural resources, to which a significantamount of land has been devoted.

The Government of the Lao PDR has recognized this necessity for improving sustainable governance of the country's land. An understanding of the complex effects of actions and decisions regarding land use rights made at various levels is essential for the effective governance of natural resources. Fully aware that knowledge in this respect needed to be improved, the Government has decided to collect information on larger commercial investors, their activities on the ground, and the respective effects and impacts on the local and national economy, the environment, and local livelihoods.

Large areas of land can be granted by a variety of sectoral institutions for commercial investments (depending on the nature of planned activities), and at a range of administrative levels (depending on the size of a proposed investment). A mechanism to share and integrate information on such concessions across thematic sectors and administrative levels is currently non-existent, and urgently needed. This new and very comprehensive national inventory of all land concessions is an important step in the right direction. The inventory includes information on all concessions across the country, compiled from all relevant sectors and administrative levels, and complemented with data on the current extent of each concession's implementation area. Thus, it provides the most comprehensive baseline of information to date on the extent and nature of land concessions in the Lao PDR.

Combined with socio-economic and environmental data, this inventory allows for gaining essential new insights into the contexts of land concessions. Furthermore, the corresponding assessment ofaspects of investment quality provides a differentiated picture of how individual land deals perform in terms of their economic, social, and environmental impacts, as well as their legal compliance with national rules and regulations.

This wealth of new information represents an important foundation for well-informed development planning and national decision-making towards the governance of land in the Lao PDR that enables smallholder farmers to improve and secure their livelihoods, while at the same time providing space for both environmental conservation and economic growth through commercial land investments.



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Regional Director of Cooperation
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Executive summary

An inter-ministerial collaboration to provide evidence on land deals

The management of land concessions and leases in the agriculture, tree plantation, hydropower and mining subsectors (referred to as land deals henceforth) is a crosscutting topic and involves a wide range of agencies of the Government of the Lao PDR (GoL) at various administrative levels, from the granting stage to the supervision and monitoring of progress and compliance. To date, government activities related to the granting and management of land deals have sometimes not been well coordinated, and there is at times a lack of clarity of mandates, leading to inefficient management of data on deals. In consequence, GoL ministries face challenges in timely retrieval of integrated information for well-informed planning and monitoring. The Prime Ministerial Order, issued on 11 June in 2012 (PM/13), called for collaboration between GoL ministries for providing evidence on the status and quality of land deals. Against this backdrop, an inter-ministerial collaboration of four ministries – the Ministry of Natural Resources and Environment (MoNRE), the Ministry of Agriculture and Forestry (MAF), the Ministry of Energy and Mines (MEM), and the Ministry of Planning and Investment (MPI) was initiated through the Lao DECIDE info project. The Lao DECIDE info project was technically support by the Centre for Development and Environment (CDE) of the University of Bern, and was financially supported by the Swiss Agency for Development and Cooperation (SDC). The purpose of this collaboration was to develop methodologies for monitoring and assessing land deals, jointly collecting field data on them, and analysing the data to track their key aspects and indicators.

Two new comprehensive datasets for land deals

The report at hand summarizes key findings on the current situation of land concessions and leases in the Lao PDR. It draws on two new datasets created within the scope of the presented work. First, a nation-wide land deal inventory with key information on deals in the agriculture, tree plantation, and mining (including prospecting and exploration) subsectors, documents a total of 1,758 land deals for which a total area of 11,754,417 ha, or roughly 50% of Lao PDR's territory, was granted. However, 91% (10,735,077 ha granted for 237 deals) of these areas are still under mineral prospecting and exploration. The land granted for development account for 1,521 deals covering 1,008,884 ha (4% of Lao PDR's territory). Only 54% or 549,248 ha of total areas granted for development were implemented up to the time when the inventory was conducted. Second, a comprehensive assessment of quality of investment was carried out for 296 land deals in nine provinces. It is based on interviews with government representatives, company representatives, and people affected by the deals assessed. The measures of quality assessed include legal compliance, and environmental, economic, and social impacts. An Index for Quality of Investment (IQI) is proposed based on the quality of investment questionnaires and land deals were rated for their overall quality using this index.

Dominance of foreign investments despite increasing domestic investment

Foreign investment accounts for 61% of the total area granted for land deals. Investors from Asia dominate, with China leading (30% of the total area granted), followed by Vietnam and Thailand (14% and 6% of the total area granted, respectively). Domestic investments constitute only 29% of the total area granted, but they make up the largest share of all deals documented by the inventory (60%) and there was a significant rise in domestic projects over the past decade. Still, the average area granted per deal to foreign investors is measurably larger than to domestic investors.

The area granted for land deals greatly exceeds the area developed so far

Of the 1,008,884 ha granted for deals in the primary sector, only 539,622 ha or 62% has currently been developed by investors. The proportion of areas granted which are actually developed varies widely between products: under rubber and gold deals, the two most common products in terms of area granted, over 70% and 48% of the area granted has been developed so far, whereas for sugarcane and cassava, only 29% and 11% of the total area granted has been developed, respectively. The proportion of granted and developed areas also varies significantly across provinces: Savannakhet has the largest area granted (228,568 ha), yet only 33% of this has been developed so far. Other provinces with a low proportion of granted area developed include Xiengkhouang (20%) and Khammouan (24%).

The number of new deals granted per year has steadily increased since 2000, but a slow-down in new areas granted was documented after 2009. While 48% of all deals included in the inventory were granted between 2009 and 2016, these deals only constitute 14% of the total area granted.

Over half of all deals are operational, but some have failed

Most deals are currently being actively implemented (54% of all deals are operational, 12% are in the start-up phase), however, many deals have failed. Some were abandoned by investors (4%), others concluded operations early (10%). The total area granted to failed deals but which remains undeveloped amounts to nearly 160,000 ha and raises questions with respect to the future management and ownership of these lands. Redistributing such land to other purposes is one option to be considered. At the same time, the state of the land at hand needs to be carefully examined for degradation and contamination, and measures for mitigation defined and implemented. Furthermore, 13% of all deals never started operations, of which 151 deals can be labelled deals on paper: no activities occurred within three or more years after contract signing, which puts them in breach of the Prime Ministers Decree 135 (PM/135).

Gold, rubber, eucalyptus, gravel and limestone are the most common products

A total of 133 different products across the three subsectors are documented in the inventory, of which gold (235,206 ha, or 25% of all area granted), rubber (217,125 ha, 23%) and eucalyptus (100,394 ha, 10%) are the most significant in terms of total area granted. Chinese and domestic investors account for 53% and 46% respectively of the total area granted for gold mining, while rubber deals are largely under foreign investment with Vietnamese investments accounting for 53%, and Chinese investment for 37% of the total area granted for rubber.

In terms of number of deals, rubber, gravel, and limestone are by far the most common products. Together they constitute nearly half (43%) of all projects, accounting for 17%, 14%, and 12% of all deals granted.

Land deals are located more in accessible, better-off, low altitude areas, less in remote uplands or the poorest areas of the Lao PDR as policymakers originally intended

Approximately two-thirds of the deals are located in the Mekong plains and below 500 masl, while less than one-fifth of deals are located in the highlands. A large share of deals (62%) are located in the areas surrounding provincial capitals, or within two hours travel time. At the same time, land deals are predominantly located near villages categorized as better-off (56% of all villages with land deals). The fact that land deals tend to be in better-off areas means that the poorest areas of the Lao PDR do not have as much opportunity to benefit from the potential of improved infrastructure and employment opportunities that might come with the development of land deals.

Land deals show low compliance with Lao legal obligations

Legal compliance, measured by the existence of key legal documents, is very low. Project Development Agreements (PDAs) or concession contracts are available for less than half of all land deals in the inventory. Environmental Impact Assessments (EIAs) are only available for 2% of all investigated deals. Foreign investments have higher compliance rates, measured by the presence of mandatory legal documents for a land deal. This is possibly thanks to adequate oversight of legal requirements at the place of origin of investment. Domestic land deals more often lack mandatory key legal documents.

Land deals create significant new job opportunities but primarily in short-term employment

The 296 land deals documented by the quality of investment assessment have created nearly 40,000 new jobs. Most of these jobs (85%), however, are seasonal and only 5% involve fixed term contracts or monthly salaries. Planting and weeding are the most common seasonal jobs offered by land deals. A great fluctuation in jobs over the progression of deal implementation is also documented. The jobs available depend on the stage of deal development, on individual product production cycles, and on seasonality. For example, 34% of all jobs are only available during the start-up phase of a project. In general, land deals provide year-round, long term positions for a small share of the total required work-force. Long term positions are generally limited to jobs requiring specific skill sets which are most frequently possessed by foreign workers.

The quality of investment assessment reveals that the share of foreign workers is often higher than the maximum share set by the GoL[1]. In the absence of skilled domestic labourers, investors largely bring in foreign workers, as opposed to providing training for Lao workers.

Furthermore, workers are often treated poorly and issues regarding wages (delayed payment, violations of payment agreements, and complete failure to pay for labour) are reported in 33% of all villages affected by land deals.

Land deals can create in some cases a series of adverse impacts on local livelihoods and the environment

The quality of investment assessment makes it possible to go beyond anecdotes or single case study knowledge on impacts of land deals on the environment and local livelihoods by providing insights into these impacts based on a sample of 296 land deals. While in about 75% of all sampled villages affected by land deals no decrease in food availability was mentioned, one quarter of the sampled affected villages did report on a loss of food availability. The loss of areas for non-timber forest products (NTFP) collection is a major reason attributed to land deals for this reported decrease in food availability for affected villagers. In 38% of all cases, the amount of NTFPs collected is reported to have decreased by more than 50% due to the development of the land deal. The allocation of land to investors has, in general, not caused major reductions in the income affected villagers obtain from this land. Still, affected villagers do report major losses of products crucial for their subsistence-oriented livelihoods, such as firewood, construction materials, and NTFPs.

A perception of improper use of agrichemicals is also reported for selected land deals by district GoL representatives. Excessive use, the use of chemicals under the wrong conditions, and inadequate safety measures are mainly reported for large-scale deals growing sugarcane, rubber, bananas, livestock and eucalyptus.

Land deals contribute to deforestation and impact on environmental protection

The land concession inventory reveals that a total of 240 deals (covering 137,332 ha) from the inventory were developed in areas classified as national forest areas by the GoL. Of these, approximately 11,000 ha of land (55 deals) has been developed within national conservation forest areas, which are designated for the protection of the natural environment and biodiversity.

Secondary forest and primary forest are the most common land use types allocated to the deals assessed for quality of investment, which implies that significant amounts of deforestation and forest degradation are caused by land deal development. These findings therefore provide evidence that the development of land deals quite often entails major trade-offs with long term environmental and national goals such as the achievement of 70% forest cover by 2020.

Land deals show overall mediocre quality of investment when rated with the Index for Quality of Investment (IQI) and high variability concerning the score contributions

For 279 of the 296 land deals of the quality of investment assessment the IQI could be calculated. The IQI scores for most land deals are not high. Agriculture deals have an average score of 53 out of 100, while tree plantation and mining deals averaged 48 and 55 respectively. The highest scores are for a large-scale potassium deal (score of 74), a large-scale eucalyptus deal (score of 73), and a small limestone deal (score of 73). There is significant variability in IQI scores across subsectors, products, administrative level of granting, provinces, land deal size categories, and country of investor.

There is great potential to raise the quality of land deals in the Lao PDR. However, in the absence of clear patterns, investment quality needs to be addressed on a case-by-case basis for every land deal. As a first step for raising the quality of land deals, a focus on the largest deals by subsector is recommended. Such immediate action could have positive effects for a large share of the total area granted to land deals and the vast majority of affected villagers would benefit from improvement measures. This immediate follow-up by the GoL should include the 16 largest agricultural deals (which account for 73.4% of the total area granted in this subsector), the 42 largest tree plantations (83.7% of the area granted in this subsector), and the nine largest mining deals (67% of the area granted in this subsector).

Land deals affect nearly a quarter of all villages in the Lao PDR and require well-coordinated and effective management by the GoL

Land deals currently affect 23% of all villages in the Lao PDR. However, land deals have so far not lived up to the expectations of the GoL that they would serve as a tool for development in rural areas. Most investments are located in lowland and otherwise more accessible areas, instead of in the remote uplands of the Lao PDR which the GoL has categorized as priorities for development. Deals contribute less to infrastructure in remote areas and the provision of employment opportunities for affected communities than anticipated and the majority of land deals perform only moderately well with respect to investment quality.

The contribution of land deals to rural development could be raised by improving processes for land deal granting and management, as well as by monitoring the investment quality of existing, operating deals. Strong efforts by the GoL are hence needed (1) for the improvement of the implementation of land deals, (2)

[1] The maximum share for technical experts per deal is 25%, and 15% for manual labour.

for the restitution of land from terminated land deals back to the government, and (3) for the mitigation and prevention of negative environmental impacts. To achieve these efforts, cross-sector coordination and exchange is necessary. GoL mandates for granting and oversight of land deals have to be further clarified and the administrative process of land granting and management needs to be vertically integrated.

The data from this land deal inventory and the quality of investment assessment, the developed methodology for measuring quality of land deals in multiple dimensions (used to determine the IQI), and the initiated cross-ministerial collaboration, form the basis for continued evaluation and monitoring of land deals. The recent Notifications from the Prime Minister's Office (No. 2179 [2] and 386 [3]) issued on the 24 December 2018 and the 6 March 2019 requires multiple ministries to collaborate in enhancing investment quality is a timely move to institutionalize work towards encouraging more responsible investment practices in order to share the prosperity they generate amongst the Lao people.

Coordination and exchange is key to a successful evaluation of land deals. Provincial coordination workshop in Khammouan Province. © Field team, 2016

[2] The Prime Minister's Office Notification No. 2179/PMO, dated 24 December 2018 on the Overview of Nationwide State Land Leases and Concessions.
[3] The Prime Minister's Office Notification No. 386/PMO, dated 6 March 2019 on Directive for Results from Inspection of Nationwide State Land Leases and Concessions.

Infrastructure development is a key driver for the skyrocketing of number of mining deals. © Mick Shippen, 2018

Plastic wrapping pollutes the environment in a banana plantation in Oudomxay Province, northern Lao PDR. © Mick Shippen, 2019

CHAPTER 1: Introduction

Background

For more than a decade, two mutually reinforcing processes have stimulated a renewed interest in land and natural resources in the Lao PDR. Firstly, the growing demand for land on a global level in the last decade has intensified competition over land and other natural resources. This global phenomenon was driven by increased demand for food, population growth and an increasingly affluent population, as well as intensification in the use of land for non-food purposes, such as biofuels, rubber, and pulp and paper (Deininger, Byerlee 2011). In the context of this global demand for land, land investments have occurred in the Lao PDR, too, largely through the promotion by the Government of the Lao PDR (GoL) of land leases and concessions.

The second process is the ongoing agrarian transition of the Lao PDR, which is linked to the country's integration into regional and global markets, and the GoL push to develop rural areas and alleviate poverty. With the primary goal of generating economic value from the commercialization of land, the "turning land into capital" (TLIC) (CPI 2006) was proposed to facilitate local economic development and supplement state spending on infrastructure (Kenney-Lazar et al. 2018) and has dominated rural development efforts for the past ten years. One of the promoted elements for this policy is the granting of land leases and concessions. According to article 17 of the national constitution of the Lao PDR, the GoL is charged with the centralized management of land throughout the country. It is responsible for the allocation of land to individuals, families, and economic organisations for use, lease, or concession. In concessions and leases, the GoL thus grants land that belongs to the government to domestic and foreign investors for an agreed period of time (GoL 2015). Although increased revenues for the state and direct job creation are the intended immediate benefits arising from such land deals [4], they are also ideally meant to contribute to the development of rural areas through the transfer of knowledge and technology, and to act as a driving force for the establishment of new markets and infrastructure.

The combination of the processes described above has led to an increase in granted land deals in the Lao PDR, and consequently, growing demand for land and other natural resources. To keep track of land deals in the Lao PDR is a true challenge because there are many sectors across administrative levels that have the mandate to grant and monitor a land deal. Granting and monitoring land deals is challenging, especially since governing land cuts across many state jurisdictions. Input and approval from different ministries at different administrative levels is needed for the approval and issuance of a series of documents during the project planning phase, and later for the monitoring of projects. Data collection on land deals in the Lao PDR takes place in a decentralized manner, which poses notable challenges for creating an accurate and fine-grained national dataset. Agencies collecting data on land deals at various points in the approval process typically keep the data within their offices rather than having it centrally compiled. To address this, the first compilation and analysis of data on land concessions and leases was conducted in 2012 (Schönweger et al. 2012). This was instrumental in providing initial insights into the total number of deals and area granted to them, and provided a baseline which the GoL could reference to understand the broad characteristics and contexts of land deals. A key finding of that 2012 report was that almost one million ha of land had already been granted to investors.

After an initial boom phase where land deals were granted to investors in large numbers and at tremendous speed, media and other forms of reporting began to raise widespread concern about the potential adverse consequences of land deals. Most prominent among these potential negative effects are the inappropriate use and disposal of agrichemicals, as well as villagers' loss of access to land and forests. This can lead to an ensuing loss of livelihoods and food security, insufficient job opportunities generated, inadequate wages, and poor labour conditions. The significant area of land granted, combined with doubts regarding the extent to which land deals would result in desired benefits to affected communities, led to a series of moratoria issued by the GoL first in 2007, then successively in 2009, 2012 and 2018. which limited or banned land deals of specific types from being newly granted or further developed (Hett et al. 2015). Most prominently, PM/13, the moratorium issued in June 2012 by the Prime Minister, prohibited the development of new deals in mining and rubber and eucalyptus plantations. In addition, it instructed several ministries to jointly conduct a review of all land deals (GoL 2012).

Against this backdrop, the GoL and the Swiss Government, represented by the Swiss Agency for Development and Cooperation (SDC), jointly agreed upon and initiated an update and enhancement of the existing inventory on state land deals. These partners established a centrally managed information system on land deals to be shared and managed by the involved ministries and departments under the third phase of the Lao DECIDE info project which ran from 2014 to 2018. In a project component focusing on land deals (see Box 1), the inventory was updated and enhanced for deals in the primary sector of the economy including agriculture, tree plantation, and mining investments. Additionally, selected aspects of hydropower deals were assessed. Existing data were checked and enhanced through the addition of missing key variables, such as the area currently developed by land deals. At

[4] "Land deal" or "deal" are used here as summary terms for land leases and concessions.

the same time, new land deals were registered in the database through a nation-wide data collection campaign conducted down to the district level. As a new component of the inventory update, participatory mapping of developed land for land deals was carried out at the district level in conjunction with state agents from different ministries and different administrative levels (Hett et al. 2018). Finally, to address the key questions of how deals are actually implemented and what impacts they have at the local level, an assessment of the quality of land deals was designed and carried out. This included the creation of a novel Index for Quality of Investment (IQI), which allows for rating land deals based on indicators of their legal compliance and impacts on local livelihoods and the environment.

Scope of this report

The report at hand provides a detailed account of the current state, trends, as well as impacts of agriculture, tree plantation, and mining deals, and selected aspects of hydropower deals. Its aim is to (1) present the key attributes of land deals in the Lao PDR, including the products produced, investor countries of origin, stages of project development, total area granted, and total area developed to date for these land deals; (2) providing insights into the geographical and legal contexts in which these land deals are developed; (3) evaluating selected social, economic and environmental impacts that these land deals have had, and (4) rating and comparing land deals with regard to impacts and aspects of compliance. The work conducted for this report represents a direct response to the PM/13 for inter-ministerial collaboration in data collection, management, and analysis.

We hope that the processes and systems put in place, along with the data and analyses provided by this project will serve to improve the management of land deals in the Lao PDR. The goal is ultimately that these tools might foster the development of land deals whose benefits in terms of economic, social, and environmental performance are maximized, while their costs are limited, so that they contribute in an optimal manner to the sustainable development of the Lao PDR.

Overview of chapters

This report draws on analyses of two new datasets: (1) a new land deal inventory, and (2) a comprehensive dataset on varied aspects of investment quality. These datasets are combined with available auxiliary spatial data in order to give a rich picture of the characteristics of land deals, the contexts in which they are developed, as well as the impacts they have on local livelihoods and the environment. The report is structured in the following manner:

Chapter 2 provides details on the data and methods used in this report. This includes an in-depth description of the data collection and the key features of the two new datasets, as well as details on the metric designed to assess the quality of investment of land deals with respect to legal compliance, and environmental, economic, and social impacts (the IQI).

Chapter 3 is dedicated to providing an account of the contemporary situation with regard to land deals in the Lao PDR. An in-depth characterization of land deals is provided. The main focus of the analysis is on land deals in the primary sector, which includes the mining, agriculture, and tree plantation subsectors.

Chapter 4 provides insight into the geographic, environmental, and socio-economic settings which form the background for the development of land deals. These contexts influence the outcomes of land deals in terms of impacts and consequences, thus understanding them enables the evaluation of land deals in a more differentiated manner. Furthermore, Chapter 4 gives insights into the context of investments from the perspective of investors. Attending to both their characteristics as a group and to the experiences and challenges they have faced in doing business in the country may explain or affect the management of land deals and investment approaches in the Lao PDR.

Chapter 5 gives an account of the impacts that land deals have on the environment and the livelihoods of affected communities. Insights are provided into prominent discourses on land deals in the Lao PDR, including the impacts of land deals on rural employment, food availability for villagers, and herbicide and pesticide use.

In Chapter 6, the results from rating land deals in terms of their legal compliance, and environmental, social, and economic impacts, which were derived from the quality of investment assessment by using the designed multi-tiered Index for Quality of Investment (IQI) are presented. First, the overall deal scores ranging from 0 to 100 are presented, broken down and discussed by subsector, deal size, country of origin of investors, and other factors. Then, the scores of each of the four facets are closely examined and compared across subsectors, origin of investors, and level of approval of land deals. A more detailed examination of deal performance at the level of individual indicators, which together constitute each facet, follows. Finally, the IQI scores of selected products are compared and discussed.

In Chapter 7, the report concludes with a synthesis of the findings and gives recommendations based on the results presented in the chapters described above.

Updating and enhancing the data on land deals in the Lao PDR through an inter-ministerial collaboration

The management of land concessions and leases is a multifaceted task, as the topic touches on many different themes. Key attributes of land deals range from purely geographical information on the location and size of deals, to subsector- and product-specific information. Commonly, key data on land deals are collected and managed by a series of GoL ministries, but the coordination among ministries is not efficient. Under the Lao DECIDE info project, an inter-ministerial collaboration was put in place to collect, manage, and analyse data on land deals, as well as to design new methods of measuring the performance of land deals for legal compliance and environmental, social, and economic impacts. The collaboration of GoL agencies for this report included the following departments: [5]

- Department of Land (DoL), MoNRE
- Department of Geology and Minerals (DGM), MEM
- Investment Promotion Department (IPD), MPI
- Department of Planning and Finance (DoPF), MAF
- Department of Agricultural Land Management and Development (DALAM), MAF
- Department of Forestry (DoF), MAF
- Department of Mines (DoM), MEM
- Lao e-Government Centre, Ministry of Post and Telecommunications (MPT)

Lao DECIDE info – Contributing to sustainable development in the Lao PDR through enhancement and analysis of key national datasets

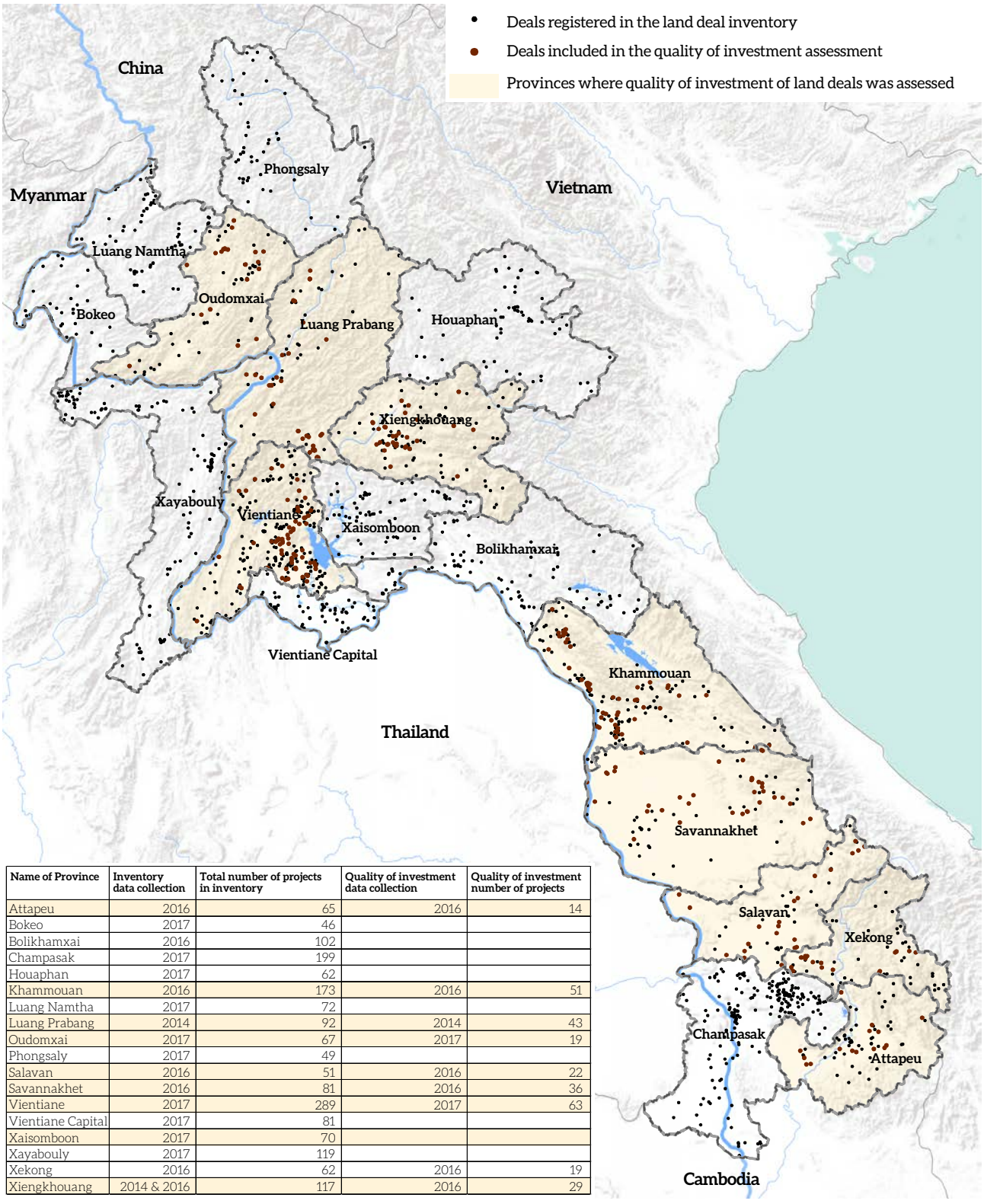
An initiative of the GoL, Lao DECIDE info strives to improve access to key data and information for development planning and decision-making. The project started in 2006 with a focus on the analysis of population census data. Later, the focus shifted to data storage and management as well as capacity building for the management of statistical data. An initiative to analyse existing data on land investments was then added, from which resulted the first nationwide overview of land deals (Schönweger et al. 2012). In its third phase (2014–2018), the Lao DECIDE info project widened its scope to include the enhancement of data, data analysis, and capacity building, to facilitate the use and management of a range of key GoL datasets, such as agricultural and population census data, data on foreign aid, and land deal data. The findings presented in this report are the results of two sub-projects of Lao DECIDE info III, which focused on updating and enhancing the national inventory of land deals, and on assessing the quality of land deals in the Lao PDR.

The project has received technical and conceptual support from the Centre for Development and Environment (CDE) of the University of Bern, Switzerland, and is funded by the Swiss Agency for Development and Cooperation (SDC).

[5] While collaboration on land deals formally included the departments stated above, other departments of the participating ministries were also consulted, provided inputs, or participated in the field work (e.g. the Department of Energy Policy and Planning (DEPP) and Department of Energy Business (DEB) of MEM).

Training provincial Government staff in mapping of areas developed by land deals. Phongsaly Province. © Vong Nanhthavong, 2017

CHAPTER 2: Datasets on land deals and methodology



Name of Province	Inventory data collection	Total number of projects in inventory	Quality of investment data collection	Quality of investment number of projects
Attapeu	2016	65	2016	14
Bokeo	2017	46		
Bolikhamxai	2016	102		
Champasak	2017	199		
Houaphan	2017	62		
Khammouan	2016	173	2016	51
Luang Namtha	2017	72		
Luang Prabang	2014	92	2014	43
Oudomxai	2017	67	2017	19
Phongsaly	2017	49		
Salavan	2016	51	2016	22
Savannakhet	2016	81	2016	36
Vientiane	2017	289	2017	63
Vientiane Capital	2017	81		
Xaisomboon	2017	70		
Xayabouly	2017	119		
Xekong	2016	62	2016	19
Xiengkhouang	2014 & 2016	117	2016	29

Figure 1: Data collected for the nationwide land deal inventory and the quality of investment assessment

In order to enhance knowledge on land deals in the Lao PDR, existing data on land deals was updated, and new data was collected through two separate but interlinked data campaigns. Firstly, a new, nation-wide inventory of all land deals in the primary sector was conducted[6]. Secondly, an assessment focusing on a wide range of quality aspects of land deals, which includes a selection of deals from the land deal inventory, was carried out. The following sections detail the data collection methods, the data used for different analyses, as well as the methodology for creating a metric to rate the quality of land deals.

A new inventory of land deals in the Lao PDR

The land deal inventory is the result of nationwide collection of data on land deals, and was focused on providing an update and enhancement to the first inventory of land concessions and leases in the Lao PDR[7], created in 2012 (Schönweger et al. 2012). The endeavour had two main goals: to develop a cross-ministerial collaboration for collecting, updating and evaluating data on land deals using a shared database; and to re-evaluate land deals according to key attributes.

The first inventory on land concessions and leases (Schönweger et al. 2012) revealed that deals in the primary sector (focused on natural resource use and extraction) constituted 91% of the total land area granted for investment in the Lao PDR. Hence, for the new inventory presented here, data collection and analysis is limited to the primary sector, comprised of three subsectors: agriculture, tree plantations, and mining. Data on land deals for the secondary and tertiary sectors of the economy (including land deals for infrastructure, manufacturing, and hospitality), as well as land deals in special economic zones are omitted. As the electricity market is soaring in the Lao PDR, the development of hydropower projects is a particular point of debate. In this inventory update, hydropower projects were included in the data collection so as to establish a foundation for further characterization and analysis of this subsector[8]. This report, however, largely focuses on deals in the agriculture, tree plantation, and mining subsectors.

For this inventory, key attributes were collected for each deal including location, product, stage of operation, and year of approval. These key attributes match those used in the first inventory. Beyond data on area granted, a new land deal inventory features data collected on the area developed under land deals. This was assessed primarily through participatory mapping of developed areas with stakeholders, and using high-resolution satellite imagery and aerial photos as a basis for digitization.

Data for the land deal inventory were collected by field teams consisting of representatives from the line agencies of MAF, MoNRE, MEM, and MPI (see Box entitled "Updating and enhancing the data on land deals in the Lao PDR through an inter-ministerial collaboration"). A core team from the central government took the lead and was joined by government staff at the province and district levels. The teams followed a standardised approach, which included the collection and comparison of official GoL documents from which the information of the selected key variables could be derived, and enquiries at the responsible GoL agencies for data which was otherwise not available. Data on land deals were obtained by comparing, cross-checking, and evaluating multiple sources: (1) databases of GoL agencies at the central level; (2) information obtained from GoL line agencies at central, province, and district levels; and (3) official documents for deals signed at any administrative level. Additionally, participatory mapping at the district level was conducted to capture the current extent of areas developed under land deals (see Hett et al. (2018) for more details related to the methodology of data collection).

In 2014, the data collection approach was piloted in Luang Prabang and Xiengkhouang Provinces, and the procedures in the field were optimized accordingly. The data from all other provinces were collected in 2016 and 2017. Hence, the inventory can be seen as representative of the situation regarding land deals granted as of 2016-17, with the exception of Luang Prabang and Xiengkhouang Provinces. Figure 1 gives an overview of the collected data and the time of collection in each province.

Selected key variables describing land deals used in this report

A series of key variables were collected for each identified land deal. An overview of the key variables included in the inventory database is provided in the Annex. The technical terms and selected variables used in this report are defined in the following sections.

Definition of a land deal in the database

A land deal is an activity involving resource extraction or use for the production of goods (agricultural or tree) for which an investing individual or enterprise has been granted land use rights through concessions or leases of state land. A project[9] is defined by an activity generating one or several products. In most cases, a project activity refers to the production of one product, e.g. raising pigs or planting rubber. In some cases, multiple products may be listed if, for example, a mining project extracts different types of mineral ore. A project

[6] Referred to as the land deal inventory, or the 2018 inventory, throughout this report
[7] Referred to as the first inventory, or the 2012 inventory, throughout this report.
[8] Data on hydropower deals were in part collected through the field data campaign, and were complemented by integrating data from an existing database from the DEPP and DEB under MEM.
[9] Throughout the report, the terms "project", "land deal", "deal", and "land investment" are used interchangeably.

may have one or many implementation sites. Projects are documented by a series of official GoL documents (i.e. concession agreement, Environmental Impact Assessment), although not all projects have had a full set of official documents filed for them. The most important documentation on land deals in the Lao PDR is the concession agreement or contract, as it specifies the location(s) and the maximum area that can be developed by an investor. However, in cases of projects without official documents, data on the area and location of the projects were assessed using other available documents, as well as expert knowledge from GoL representatives.

Reporting on area measurements

Accurately identifying the area of land deals in the Lao PDR is a challenging matter, and the 2018 inventory differentiates between multiple area types, or measures of area (see Table 1). Even once land deal agreements are approved between investors and responsible government agencies, the actual transfer of use rights and the conversion of land take place gradually and depend on a range of regulatory processes. To account for this, the new inventory goes beyond the degree of specificity found in most databases on land deals by differentiating between the area granted and the area currently developed. The "granted area" is that negotiated between investors and the GoL in the deal-planning phase, and thus gives an indication of the total potential area that can be accessed and developed by the investor. The "developed area" or the "area developed" on the other hand, refers to the area that has already been developed by a given deal for the purpose of producing the intended product at the time of assessment. Naturally, the extent of the area developed changes over time as the development of a land deal progresses. Here, the area developed specifies the area which has been used for a land deal up to the date of data collection. Hence, it also includes terrain that has not yet been fully developed, but which may serve for preliminary preparation of a land deal. In addition to "granted area" and "developed area," other measures of area are also relevant. The most important area types measured in the inventory and their definitions are given in Table 1.

Table 1: Area measures of the land deal inventory database

Area type	Description	Method of assessment	Spatial properties
Granted area	The area granted for the development of a land deal. Used in the project planning stage and negotiated between the investor and the GoL.	Review of official documents for a land deal, particularly the Project Development Agreement (PDA) or Concession Contract.	• Point data: The area granted for the development of a land deal was attributed to the main project site(s). • Polygon: Where available, polygon data was included in the database. This applies for large-scale deals particularly from the mining subsector, granted at central level.
Allocated area	The area that has been defined by the responsible government agency as suitable for the project to be developed. Applicable to agriculture and tree plantation projects only.	Review of the Field Study Report, in which a map details the potential area of project development; or from maps imported from government databases (PoNRE, DoNRE or DoL).	Polygon data, mostly, with very high spatial accuracy as it was assessed through land surveying.
Developed area	The area already developed by the project at the time of data collection. In the mining subsector, this is referred to as the excavation area.	Participatory mapping with GoL officials at district level; GoL report at local level, or report from investor.	Polygon data based on manual digitization on maps of scales between 1:10,000-1:15,000
Prospecting and exploration area	The area in which prospecting, exploration, and feasibility studies for a future mining deal may be conducted. Applicable to ore mining projects only.	Imported from MEM database on mining deals, or extracted from PDA of the land deal.	Polygon

Table 2: Stages of project development and their definitions

Stage of development	Description
Not yet started	The project obtained government approval but has not yet started its activities.
Never started	The project obtained government approval, but never started its activities and is not expected to do so.
Start-up/construction	The project has started activities but has not begun to deliver any product (e.g. a rubber plantation with trees already planted but not yet being tapped).
Operational	Project activities are ongoing and goods are being produced (e.g. oranges are being harvested from an orange plantation, or gold excavated from a gold mine).
Abandoned	The project obtained government approval and started its activities, but these activities are not progressing as planned according to project documents.
Ceased operations in contract period	Operations began and the deal still has a valid contract to operate, but the activities of a land deal have since stopped.
Contract finished and operation concluded	The project has stopped operations and the time period approved for project implementation has passed.

Spatial information on land deal locations

Each land deal in the inventory may have one or many sites. There is always one main site which is usually defined in the legal documents for a deal. The area granted for a deal is generally attributed in the analysis to the main project location. The spatial accuracy of the project location varies significantly across the land deals in the database and is dependent upon the implementation stage. In many cases, especially at the start of a project, only the district(s) is known, and the exact location is determined later. In other cases, the exact project location (sometimes down to village level) is stated in early documentation. For this database, in cases in which information on project location was missing, the site with the greatest area already developed was assigned as the main project site. The location data for all deals in the database (1,758) are at least accurate to the district level. If an exact location could not be determined, which is the case for 268 projects, the district capital is assigned as the main project site.

Table 3: Phases and stages of mining projects

Mineral cycle phase	Stage in mineral cycle
Preparation	Prospecting
	Exploration
	Initial feasibility study
	Detailed feasibility study
Mineral extraction (project implementation)	Not yet started
	Never started
	Start-up/construction
	Operational
	Abandoned
	Ceased operations in contract period
	Contract finished and operation concluded

In addition to the main project site, the land deal inventory database includes additional sites where a deal is being developed, referred to as sub-project locations. Knowledge of the number of sub-project locations is crucial for accurate accounting of total area granted by geographic unit (nationwide, province, or district). In project documents, both location and total area granted are stated. In case no details are given on the size of the main and sub-project sites, equal shares of the total area granted are assigned to every location on the list of project sites. For example, for a project with a total area granted of 100 ha and three stated districts for implementation, 33.3 ha are attributed to each of these three districts.

Stages of project development

The land deal inventory distinguishes between different stages of development for all deals which have had land officially granted to them[10]. Table 2 describes the stages in detail. The stages of project development were defined in consultation with GoL representatives at the province and district levels.

Mining project implementation cycles

The inventory includes two types of mining projects. Of primary interest for this report are mining deals that have been granted for project implementation, just as is done for deals in the agriculture and tree plantation subsectors. But the database also holds records of mining deals that are only in the preparatory stage. This means that an investor has been granted the right to conduct exploration and prospecting activities, or to carry out a feasibility study, but has not yet applied to engage in mineral extraction. Such projects are searching for and assessing the amount and quality of mineral potentially available in the area. Only after the prospecting, exploration, and feasibility study phases are completed will a new project be proposed for implementation (i.e. mineral extraction). Table 3 gives an overview of the different stages of mining projects.

A dataset for the assessment of the quality of land deal investments

Data collection method

The second data collection campaign focused on variables selected to assess the quality of investment of land deals, for which data collection was carried out using a standardised set of questionnaires for key stakeholder groups. The field teams interviewed state representatives from the different line agencies at province and district levels, company representatives, village authorities (including the village chief, village elders, village land unit, village foresters, and village women's union) in a single focus group interview per village, as well as impacted villagers, also by means of a focus group interview[11]. Indicators of legal compliance, as well as the economic, social, and environmental impacts of land deals, were assessed (for a detailed description of the methodology for the assessment of quality of investment of land deals see Hett et al. 2018[12]).

Selection of land deals investigated in the quality of investment assessment

The quality of investment assessment was carried out for a selection of deals registered in the land deal inventory. The assessment covered 9 provinces: Oudomxai, Luang Prabang, and Xiengkhouang in northern Lao PDR; Vientiane Province, Khammouan, and Savannakhet in central Lao PDR; and Salavan, Xekong, and Attapeu in southern Lao PDR (see Figure 1). These provinces are representative of the investment quality situation across the country with respect to location and project activities.

It was neither possible nor desirable to carry out this very time-intensive quality of investment assessment for deals at all stages of project implementation, in each of the selected provinces. Instead, only agriculture, tree plantation, and mining deals in the start-up or operational phases are included. From the full list of deals in the inventory, we selected a sub-set of deals with greater than 10 ha in agricultural and tree plantation projects and all mining deals with a granted area larger than 5 ha. To capture a wide variety of agriculture and tree plantation products, a select few projects with a granted area smaller than 10 ha are included. Additionally, projects with large ongoing operations, but where the planned project size was not known or recorded, are included. Land deals are then assessed on a province-by-province basis.

Units of analysis and characteristics of deals in the quality of investment dataset

Characteristics of deals included in the quality of investment dataset

The quality of investment sampled dataset includes a total of 296 deals. This includes 90 agricultural deals (49 deals for crop cultivation and 41 for livestock raising), 89 tree plantation deals, and 117 mining deals (43 deals for mineral ore extraction and 74 deals for rock and clay excavation). The most common products in the quality of investment dataset are rubber plantations (63 deals), limestone (40 deals), large livestock (36), gravel (22 deals), and eucalyptus (13 deals). In terms of project stage, 26% (78) of the included deals are in their start-up stage, and the rest (218 deals) are operational (see Table 4).

[10] In the mining sector, agreements are typically first struck between the GoL and the investor for prospecting and exploration (see next section for details specifically on mining project implementation cycles).
[11] The quality of investment assessment was piloted in Luang Prabang Province. In the pilot phase, village authorities and affected villagers were interviewed as one group. After the pilot in Luang Prabang, this group of stakeholders was divided and affected villagers were interviewed separately from village authorities.
[12] Accessible online at: http://www.decide.la/en/downloads/index/Methodology_Booklet_full.pdf

In terms of deal size, 32% of the deals assessed for investment quality have a granted area smaller than 50 ha. Most of the small project sizes in the quality of investment dataset are for mining deals (see Figure 2). In total, 73 mining projects (or 62% of all assessed mining projects) are smaller than 50 ha. Another 35% of all deals in the quality of investment dataset are between 100 and 500 ha in size. Most of the deals of this size are agricultural deals (49 deals, or 54% of all agricultural deals) and tree plantation deals (41 deals, or 46% of all tree plantation deals). Only 19% (55 deals) of deals in the quality of investment dataset are larger than 500 ha and thus fall into the category of "large-scale" land acquisitions[13]. This subset of data includes 8 agriculture, 37 tree plantation, and 24 mining deals.

Table 4: Number of projects by subsector and project stage in the quality of investment dataset

	Project stage	
Subsector	**Start-up**	**Operational**
Agriculture	37	53
Tree plantation	33	56
Mining	8	109
Total	78	218

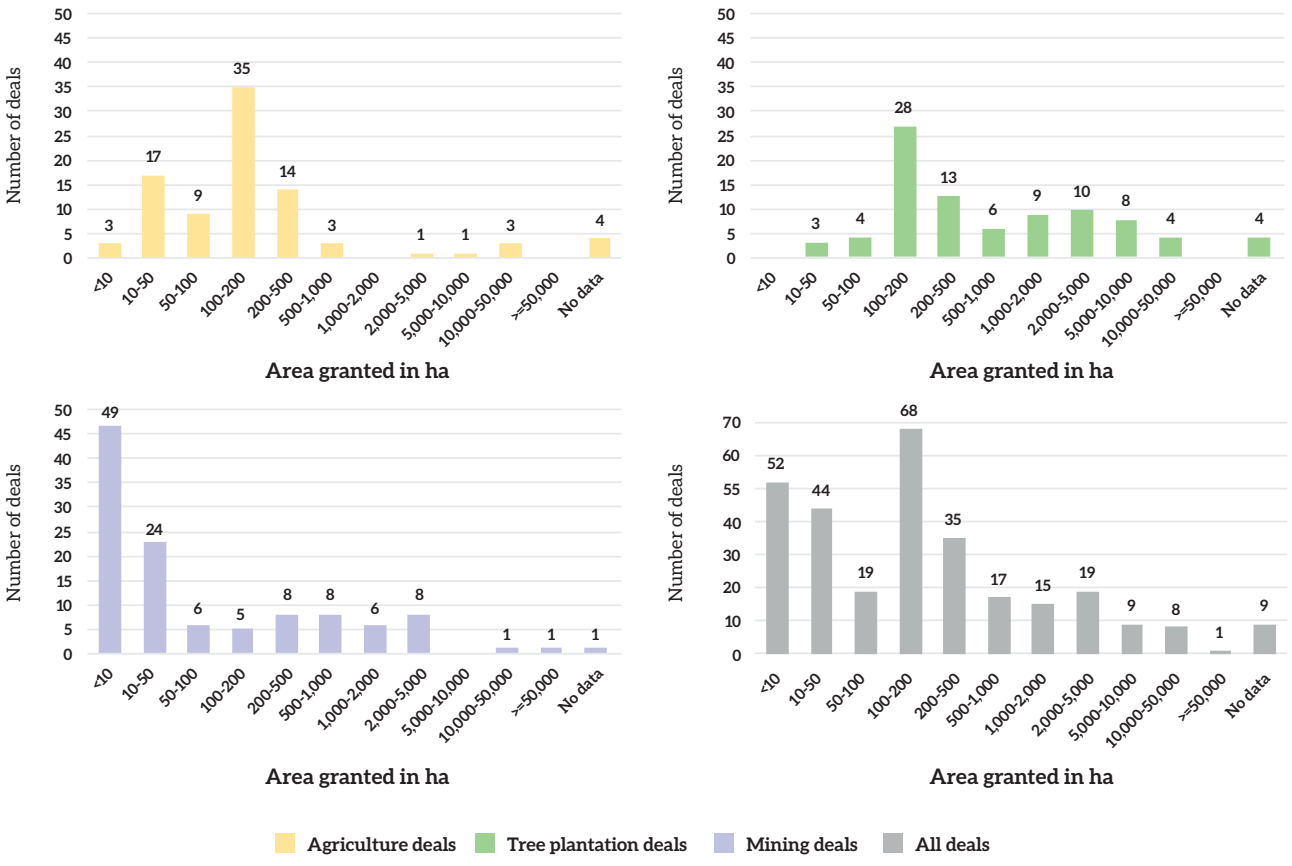


Figure 2: Deals included in the quality of investment assessment by size category (granted area) and subsector

[13] as defined by farmlandgrab.org

Quality of investment data obtained through stakeholder interviews

For every land deal, interviews were conducted with a series of stakeholders, including province and district GoL officials, company representatives, and representatives from impacted villages. For large-scale land deals affecting many villages, a series of interviews with village authorities and affected villagers was conducted, following the sampling framework provided in Hett et al. (2018). Interviewing all stakeholder groups for all deals was not always possible, which resulted in some gaps in the data. A full set of interviews exists only for 86 deals. In the majority of cases, one or several target groups could not be interviewed due to the lack of available representatives at the time of assessment. For the 296 investigated deals, the quality of investment dataset consists of a total of 202 interviews with company representatives (68 agriculture, 51 tree plantation, 83 mining deals), 441 interviews with village authorities (114 agriculture, 191 tree plantation, and 139 mining deals), and 436 interviews with impacted villagers (117 agriculture, 182 tree plantation, 137 mining deals), see Table 5.

The Index for Quality of Investment (IQI) - a metric for rating investment quality

By request of the GoL and in order to synthesize key insights generated from the data collected in the quality of investment assessment, a multi-tiered metric to rate and benchmark land deals, the Index for Quality of Investment (IQI), was developed based on a selection of variables assessed with the quality of investment questionnaires. This metric enables the review of the implementation of projects individually, as well as the comparison of their performance across different categories, such as products or subsectors. The IQI covers indicators for legal compliance and environmental, economic, and social impacts. The legal compliance facet includes whether or not each land deal followed Lao regulations in the approval process; whether agreements stated in the concession agreement were adhered to; whether international principles for good practices e.g. free, prior, and informed consent (FPIC) were applied during the land granting process; and whether the progress made by a land deal follows the project schedule (see Table 6 for a more detailed description). The environmental impact facet takes into account the types of land cleared for the land deal; whether and how impact assessment and monitoring were conducted for the land deal; what environmental pollution and contamination may have been caused; and the impact of the land deal on livestock numbers. The economic

Table 5: Number of quality of investment interviews conducted by stakeholder category

Stakeholders		Number of interviews conducted
Province authorities	PoNRE, PAFO, DPI, and PoEM	587
	DoT***	437
District authorities	DAFO*	200
	DoEM**	94
	DoNRE	265
	PCO	227
	DoF***	455
	DLSW***	401
Company	Company representatives	202
Impacted villages	Village authorities	441
	Impacted villagers	436

PoNRE: Provincial Department of Natural Resources and Environment; PAFO: Provincial Agriculture and Forestry Department; DPI: Provincial Department of Planning and Investment; PoEM: Provincial Department of Energy and Mines; DAFO: District Agriculture and Forestry Office; DoEM: District Office for Energy and Mines; DoF: District Office for Finance; DLSW: District Office of Labour and Social Welfare; DoNRE: District Office for Natural Resources and Environment; DoT: Provincial department of Taxes; PCO: District Planning and Cooperation Office.

* DAFO was only interviewed for agriculture and tree plantation deals
** DoEM was only interviewed for mining deals.
*** DoT, DoF, DLSW: for these GoL agencies, the district level offices were the primary target group, however, province level representatives of the respective line agencies were also interviewed in case the district authorities lacked the information regarding taxes, fees and labour aspects.

impact facet investigates impacts of the land deal on local resources such as farmland, timber, NTFPs, and water; the payment of revenues including concession fees, royalties, and taxes; contribution of a land deal to local infrastructure development; and impacts on local income and economy. Finally, the social impact facet looks mainly at employment opportunities offered to affected communities; impacts of a land deal on local food security and health; as well as the introduction of new skills and technology transferred to affected communities.

The IQI is a hierarchical index, which at its highest level (Tier-1) renders a score from 0 (lowest) to 100 (highest) for the quality performance of a land deal. The index can, however, be disaggregated and results can be analysed by each one of the four facets. The performance of a land deal with regard to each of the four facets is the focus of the Tier-2 analysis of the IQI. Here, every facet renders a score from 0 (lowest quality) to 25 (highest quality)[14], based on a series of indicators with which the quality of a particular aspect of the facet at hand is measured (e.g. the indicator "Adherence to concession boundary" pertains to the legal compliance facet; see Table 6). Tier-2 of the IQI serves to identify trends and trade-offs in quality at the facet level across subsectors, products, deal size, geographical regions, and administrative levels of land deal approval. Finally, Tier-3 of the hierarchical IQI constitutes the highest level of details, where the focus is on all chosen indictors within one facet. Here, trends in quality scores between indicators of one facet can be analysed. Further details on the design principles and the detailed methodology of the IQI are provided in Hett et al. (2018).

Every indicator used in the IQI consists of one or more key variables, which originate predominantly from the quality of investment assessment, but in certain cases from the land deal inventory database. From the quality of investment assessment, variables are derived from questionnaires given to impacted villagers, village authorities of impacted villages, government authorities (in seven different agencies), and company representatives. The specific data sources vary depending on indicator and project type. For the facets of legal compliance and environmental impacts, most variables are derived from quality of investment interviews with GoL representatives. For the indicators of the economic impacts for agriculture and tree plantation projects, variables are mainly derived from quality of investment interviews with impacted villagers and company representatives; for mining projects, variables are derived from interviews with affected villagers and government representatives. For the social impacts facet, variables are predominantly derived from quality of investment interviews with village authorities and impacted villagers.

Table 6: Structure of the Index for Quality of Investment (IQI) with its four facets - legal compliance, environmental, economic, and social impacts (see Annex 3 for a detailed list of variables for each individual indicator).

Facet	Indicator	Questions investigated
Legal compliance	Survey and approval process	Was a land survey conducted? Was potential concession land demarcated or mapped? Were investment and/or concession agreements signed prior to land clearance?
	Adherence to concession boundary	Was land cleared inside or outside of the allocated area?
	Adherence to contract and Lao Law	Were aspects of the contract violated? Were Lao Law or regulations violated (as reported by GoL authorities and villagers regarding breaking a condition in concession)?
	Village consultation	Were impacted communities consulted during land granting process? In what ways? To what degree were villagers included in the consultation process?
	Village consent & grievance mechanisms	Was free, prior, and informed consent solicited from impacted villagers prior to the land deal? Were villagers able to raise grievances with the company and/or a concerned government authority?
	Project progress	Did project development of the land deal adhere to the planned schedule at the time when assessment was conducted?
	Progress reporting	Are progress reports submitted regularly (as stated in the investment and/or concession agreement)?

[14] Each facet is given equal weight in the overall IQI, and scores for each facet range between 0 and 25. Scores are given either in absolute numbers, or as a percentage – e.g. a score of 14 out of the total 25 equals a facet percentage of 56%.

Environmental impacts	Types of forest cleared	What types of forestlands (including conservation, protection, and production forests) were cleared by the land deal?
	Environmental Impact Assessment (EIA)	Was the assessment of potential environment and social impacts conducted properly (e.g. by a third party) prior to land being cleared?
	Environmental reporting	Were the Environmental Management and Monitoring Plan (EMMP) and Social Management and Monitoring Plan (SMMP) produced by the company? Are environmental and social monitoring reports submitted regularly?
	Chemical use & management	Were chemicals used in project operation approved by the responsible government agency? Were there negative impacts in surrounding areas from chemical use?
	Pollution	Were there perceptions in surrounding areas of negative impacts from air and water pollution due to project operations?
	Livestock impacts	Were there reports of negative impacts on livestock production in surrounding areas?
Economic impacts	Amount of household land lost	How much household land was lost to the land deal?
	Importance of cleared land	Was land cleared by the land deal previously used for any local livelihoods activities (e.g. rice paddy, cash crop production, ritual forest, etc.)? Did villagers consider cleared land to be important for their livelihoods?
	Compensation	Were households who lost land compensated appropriately?
	Payment of fees	Were all required concession fees, loyalties, and taxes paid in full, unless in the exemption phase?
	Infrastructure development	Has all infrastructure and/or facilities promised to villages been delivered at the time of assessment?
	Income change	How was local income affected as a consequence of the land deal?
	Change in natural resources	How have natural resources (forest, NTFPs, timber, water, wildlife, etc.) in surrounding areas been affected as a consequence of the land deal?
	Impact on local economy	Does the investor initiate any out-grower schemes? (for agricultural and tree plantation deals) Does the investor use local suppliers, e.g. for seeds, fuel, and equipment? Was the product processed in the district or province where the deal is operating, or somewhere else in the Lao PDR before export?
Social impacts	Use of foreign labour	Do foreign workers comprise less than 15% of all manual labourers and less than 25% of technical experts?
	Age and gender of labourers	Were female and male labourers employed in equal proportions? Were workers from all age categories within the range of legal working ages employed?
	Wage rates	Were workers paid at least the Lao minimum wage?
	Labour practices	Did investors treat all workers well? Were there any reports of poor labour treatment (e.g. wage deduction)?
	Labour sourcing	What share of labourers come from impacted villages?
	Health & safety	Is adequate safety training provided? Is safety equipment provided to workers for jobs with potential risks (e.g. spraying herbicides, using a machinery, etc.)? Are there any reports of negative impacts on local health in surrounding areas
	Impact on food security	Has local food security been affected as a consequence of the land deal?
	Technology transfer & social development	Were useful skills or new technology (e.g. new cash crop, fertilizer, farming technique, etc.) introduced to impacted villagers?

In order to derive the numeric values for quality indicators, scores are assigned to each variable based on the number of variables in a given indicator. All indicators within a facet are attributed equal importance and hence are assigned the same maximum scores[15]. For example, the indicator "village consultation" in the legal compliance facet is based on two variables: the type of consultation and the degree of involvement of the affected community; hence, each of these variables accounts for half of the total score of the indicator. The two variables are assigned values based on data from the quality of investment assessment. Figure 3 provides an example for the calculation of the score of the indicator "village consultation."

For large land deals, several villages were sampled (see the sampling framework provided in Hett et al. 2018). For these deals, the score for each variable in the IQI is calculated using the unweighted average score from all the sampled villages. Furthermore, as elaborated in the previous section, multiple stakeholders were interviewed for a single deal, meaning that for some indicators, the same question was answered by multiple stakeholders. Naturally, responses from different stakeholders for the same question are often inconsistent. The score for the variable in the IQI is also calculated using the unweighted average score from all responses of relevant stakeholders. An overview of all variables used, their possible values and assigned scores is provided in Annex 3. Indicators and the variables

Village consultation		**Total possible score**	**3.57**
(1) Type of consultation		**Total possible score**	**1.785**
Question: Were villagers clearly informed and how many of the following aspects were they able to negotiate: (1) concession size, (2) land allocation, (3) land compensation, (4) benefits, (e.g. employment, cash, infrastructure, and facilities)?			
Options (one out of six)			**Scores**
A	Villagers were clearly informed and had the opportunity to negotiate on all four aspects		1.785
B	Villagers were clearly informed and had the opportunity to negotiate on three out of four aspects		1.428
C	Villagers were clearly informed and had the opportunity to negotiate on two out of four aspects		1.071
D	Villagers were clearly informed and had the opportunity to negotiate on one out of four aspects		0.714
E	Villagers were clearly informed but did not get the opportunity to negotiate any of the four aspects		0.357
F	Villagers were not informed well and were not able to negotiate on anything		0
(2) Degree of involvement of village		**Total possible score**	**1.785**
Question: Who in the community was involved in the consultation process?			
Options (one out of four)			**Scores**
A	Village authorities and the whole community		1.785
B	Village committees (e.g. village chiefs, village land unit, forester, women's union, etc.)		1.19
C	Village chief		0.59
D	No one – no consultation		0

Figure 3: Example of variables used for the indicator "Village Consultation" of the compliance facet of the IQI. Source: Hett et al. (2018)

[15] As there are different numbers of indicators for each of the four facets, the maximum attainable score for each indicator differs by facet. For example, the maximum score for an indicator in the compliance facet is 3.571 (total score = 25, 7 equally weighted indicators renders a score of 25/7 per each indicator), while it is 4.167 (or 25/6) for the environmental impacts facet, and 3.125 (or 25/8) for both the social and economic impacts facets.

therein were defined through consultation between the project partners (MAF, MoNRE, MEM and MPI at the central level, and CDE), and with external experts.

Methods and data used in the different chapters of the report

The two new datasets on land deals in the Lao PDR described above are used in this report along with auxiliary data to characterize land deals, provide details on the circumstances that form the context for land deals, and assess their impacts. For different chapters of the report, different sources of data are used and different methods applied for the analysis. These are described in detail and by subchapter in the sections below. Table 7 gives an overview of the spatial data used as background layers or auxiliary data in the maps throughout the report.

Data and methods used in Chapter 3

Chapter 3 provides in-depth analysis of the land deal inventory data. First, a brief overview of all data captured through inventory data collection activities and stored in the inventory database is given. Basic summary statistics performed on key variables from the land deal inventory are presented. Although general statistics on the total number of deals and areas granted and developed are presented to give a sense of the scale and extent of land deals in the Lao PDR, these figures need to be interpreted with great care as data gaps exist, particularly regarding the area granted and the area developed. Not all land deals for which the total area granted was known also had data available for the total area developed, and vice versa. In order to provide sound analytical results and consistency throughout the report, only deals with data on both granted and developed area measures were used for the analysis of data in the subsequent sections of Chapter 3.

The last section of Chapter 3 assesses the changes in land deals in recent years. For this purpose, a comparison is made between the first land deal inventory conducted between 2007-2010 (Schönweger et al. 2012), and the new dataset on land deals, dating from 2016-17. For comparison between the two inventories, the following sets of data are used: (1) For all number-based analyses (quantity of deals), all available data provided by the inventories are used, regardless of whether or not those deals include spatial data (location and extent); (2) for the area-based

Table 7: GIS auxiliary layers used for analyses and map creation

GIS layer Name	Source
Provincial capitals	National Geographic Department, Lao PDR, 2015, updated by The Agro-Biodiversity Initiative (TABI), 2018
District capitals	National Geographic Department, Lao PDR, 2015, updated by The Agro-Biodiversity Initiative (TABI), 2018
Province boundaries	National Geographic Department, Lao PDR, 2015
District boundaries	National Geographic Department, Lao PDR, 2015, updated by The Agro-Biodiversity Initiative (TABI), 2018
Southeast Asia country boundaries	Global data
Roads	Don Duvall 2011, updated by The Agro-Biodiversity Initiative (TABI), 2018
International, local and traditional border checkpoints of the Lao PDR	Various sources, compiled by CDE, 2018
Hydropower reservoirs	Various sources, compiled by CDE, 2018
Rivers and lakes	Natural Earth, 1:10m, 2018
Hillshade	World Terrain Base (ESRI, USGS, NOAA)
National Conservation Forests	Department of Forestry 2016, National conservation forest
National Protection Forests	Department of Forestry 2016, National protection forest
National Production Forests	Department of Forestry 2016, National protection forest
Digital Elevation Model (DEM) for Southeast Asia	SRTM 90m resolution, NASA, 2016

analyses, all land deals with a stated area granted are used. This selection of datasets makes a comparison between the reported results from the first and second inventory possible. However, as a consequence of using these sets of data, the summary statistics reported in the last section of Chapter 3 are not directly comparable to those of the previous sections of Chapter 3, for which only deals with area information are used, as stated above.

Data and methods used in Chapter 4

In Chapter 4, spatial analyses of the inventory data together with auxiliary spatial datasets provide nationwide overviews of the geographic, environmental, and socio-economic contexts where land deals are located. Furthermore, selected data from the quality of investment assessment are used to provide more detailed insights on land types allocated to land deals, livelihoods of villagers, the use of land where land deals were developed, land deal negotiation and granting processes, and the background of investors and their investments. Finally, in order to give insights into the legal contexts in which land deals are developed, an assessment of the degree to which land deals have been developed in compliance with applicable legislation is conducted using data from the land deal inventory. For this purpose, data available from the land deal inventory is used to analyse the presence of required legal documents.

Spatial overlays of land deal data with auxiliary GIS data

For the spatial analysis of the geographic and socio-economic contexts of land deals, the "analysis dataset" used only includes deals of the inventory with the implementation status, "not yet started," "start-up/construction," "operational," and "abandoned" (1,038 land deals in total).

To overlay inventory data with auxiliary datasets, the best available spatial data on extent provided in the inventory for every deal is used. Polygon data on the area developed is considered the best spatial data, followed by the area allocated, and finally resorting to the area granted when other measures are not available. For deals without polygon data readily available, it is approximated using the reported figure for area already developed, area granted, or area allocated (in descending order of priority). The approximation was conducted by creating buffers within GIS software around the known location of deals by a radius which renders the given area. This results in a circular polygon drawn around the main project site of a deal. This polygon data on the extent of a land deal is then overlaid with auxiliary spatial data for the analysis of different contexts[16]. The following auxiliary datasets are used:

- Elevation: Publicly available Shuttle Radar Topography Mission (SRTM) topographic information (Jarvis et al. 2008) was used for assessing the elevation of land deals. Elevation ranges were classified as lowlands (elevation under 500 meters above sea level (masl)), midlands (500 – 1,000 masl), and highlands (elevation higher than 1,000 masl). Then the mean elevation of a deal was calculated using the polygon dataset on the extent of a deal, as described above.

- Accessibility to Provincial capitals and border crossings: Mean travel time from a land deal to the nearest provincial capital and border crossing, including official international, local, and traditional border crossings, were calculated based on the fastest possible means of transport (e.g. car on road, motorbike on track). For this purpose, a dataset for accessibility to Provincial capitals was created using the approach detailed in Epprecht et al. (2008). Spatial data on border crossing check points were created by digitizing high resolution satellite imagery of road networks, village names where a border crossing is known to be located, and lists of international official border crossings provided online by the Department of Immigration of the Lao PDR, Ministry of Public Security[17], and the DoPF under MAF.

- National forest categories: The Lao Forestry Law (GoL 2007) specifies three forest categories: conservation forest, protection forest and production forest. These categories exist at the national, provincial, and district level. Data provided by the DOF under MAF dating from 2016 were used for the analysis. These data constitute the most recent and complete geospatial dataset of forest categories at all three administrative levels.

- Socio-economic context: The most recent village level polygon data, linked to the most recent village level statistics on population, ethnicity, and poverty (Epprecht et al. 2018), were used for the spatial overlays. Using the intersect-GIS function, two categories of villages were created: ones where land deals were developed are referred to as "land-deal villages" and villages without any spatial intersection with land deals are referred to as "non-land deal villages".

[16] For the analysis, a land deal was considered "inside" a particular geometry of an auxiliary dataset if the two polygons intersect.
[17] http://www.immigration.gov.la/checkpoints.html, retrieved March 15th, 2018

Table 8: Quality of investment data used to analyse contexts of land deals in Chapter 4

Section in Chapter 4	Subsection heading	Quality of investment questionnaire	Number of cases on which analyses are based*
Land allocated to land deals	Land use types allocated to deals	Village authorities	Village authorities of 328 impacted villages
	Uses of land allocated to deal prior to deal development	Village authorities	Village authorities of 416 impacted villages
Main livelihood activities in villages affected by land deals		Village authorities	Village authorities of 441 impacted villages
Compliance with international policy on inclusion of impacted communities in the contract granting process	Degree of consultation with affected communities	Village authorities	Village authorities of 420 impacted villages
	Type of consultation with villagers	Village authorities	Village authorities of 338 impacted villages, where respondents confirmed that the village community was consulted
	Level and type of consent	Village authorities	Village authorities of 281 impacted villages, where respondents confirmed that the village community was consulted and negotiations took place
Characteristics of investors	Investor characteristics	Company representatives	Company representatives of 179 deals
	Constraints experienced by Investors	Company representatives	Company representatives of 179 deals

* Not all quality of investment questions were answered in all cases. Response rates depended on the availability of respondents, their knowledge concerning a given topic and the concerned land deal, as well as the sensitivity of the question at hand. Here the number of cases refers to the number of responses used for the analysis.

Table 9: Quality of investment data used to analyse selected impacts of land deals in Chapter 5

Section in Chapter 5	Subsection heading	Quality of investment questionnaire	Number of cases on which analyses are based
Impacts on employment	Types and number of jobs offered by deals	Company representatives	202 land deals
	Foreign labour	Company representatives	202 land deals
	Employment opportunity and gender	Impacted villagers	436 villages (117 agriculture, 182 tree plantation, 138 mining deals)
	Beneficiaries of employment opportunities	Village authorities	492 villages (134 agriculture, 204 tree plantation, 154 mining)
	Job creation by subsector	Company representatives	202 land deals
	Wages offered by land deals	Impacted villagers	385 villages (117 agriculture, 182 tree plantation, 138 mining deals)
Impacts of use of agrichemicals	Pesticide and herbicide use	Company representatives	Herbicide use: 121 deals Pesticide use: 125 deals Received permission from DAFO or DoNRE: 86 deals[18]
	Permits for agrichemical use	Company representatives	86 deals
	Safety training	DLSW	13 deals answered this question
	Perception of environmental and health impacts of pesticide and herbicide use	DAFO and DoNRE	132 respondents for deals using pesticides; 134 respondents for deals using herbicides
		Village authorities	282 respondents of impacted villages for pesticide use; 283 respondents of impacted villages for herbicide use
Impacts on local food availability		Village authorities	429 interviewees from impacted villages

[18] For questions about perception of impacts of agrichemical use, the whole dataset of responses from different stakeholders is used in order to show how widespread such perceptions were in the places surveyed by the quality of investment assessment, rather than trying to decide which of the conflicting perceptions for a given project are accurate in which place. Consequently, the number of deals for some of the figures in the section entitled, "Impacts of use of agrichemicals," are higher than what is displayed here, and deals which are located across multiple districts or villages, for example, may be overrepresented.

Quality of investment data used for insights into aspects of compliance with international standard and the characteristics of investors

Selected questions from the quality of investment questionnaires are used to characterize the land allocated to deals, and to provide insights into their compliance with international policy in the contract granting process, as well as for the characteristics of investors. Table 8 provides an overview of the quality of investment questionnaires and the sample sizes used in each section of Chapter 4.

Data and methods used in Chapter 5

In Chapter 5, certain key impacts of land deals on the environment and livelihoods of affected communities are assessed using data from the inventory and from the quality of investment assessment. Selected questions from the quality of investment assessment are used to characterize impacts on (1) employment, (2) pesticide and herbicide application, and (3) local food availability. For each topic, the analysis of quality of investment data is based on a different set of interview respondents: GoL officials, village authorities, impacted villagers, or company representatives. Not all questions were answered by all stakeholders, thus the type of questionnaire used and the number of respondents per topic are listed in Table 9.

Method for converting reported wage figures into daily wages for comparability

In the section in Chapter 5 focusing on impacts on employment, wages of different types of jobs are compared across land deal subsectors and products, based on responses provided by impacted villagers and company representatives. As wages were reported either in terms of monthly or daily salaries, or based on productivity, a conversion into daily wages as a common unit for measurement was carried out as follows:[19] Monthly wages were converted into daily wages by dividing monthly salary by 21.75 working days. Productivity-based wages were converted into daily wages using the following assumptions: (1) Weeding: on average, 10 person-days are needed to clear vegetation for one ha of land. The number of person-days was calculated by dividing the area-based wage by the daily rate a worker is paid for performing the same type of job in a similar land deal that used a daily wage rate and within the same province. (2) Hole digging: For this activity, labour is often calculated based on how many holes are dug. The conversion to daily wages was based on the estimate that a worker on average can dig 150 holes per day. The assumption of 150 holes seems realistic and is close to the amount of a daily wage payment for a worker doing the same job in other projects that used a daily rate in the same province. The wage rate per hole was thus multiplied by 150 to generate the daily wage equivalent. This estimation is applied for any type of seed-based crop planting in the assessment at hand.

Data and methods used in Chapter 6

In Chapter 6, the IQI scores of land deals are presented. These scores form the basis for analyses of the performance of land deals with regard to the four facets: legal compliance, and environmental, social, and economic impacts. These are then analysed by subsector, stage of project development, project size, and level of granting of the deal. Furthermore, detailed insights into the scores of deals producing rubber and raising cattle or buffalo are provided. The IQI is calculated for a total of 296 land deals including 90 agriculture, 89 tree plantation, and 117 mining deals. For the majority of deals included in the quality of investment assessment, some data gaps occur, either due to the unavailability of interviewees (gaps at questionnaire level), or to a lack of sufficient knowledge to provide answers to a specific question (gaps at the question level). As a result, some indicators in the IQI remained incomplete, and hence the corresponding deals got low scores. In the analyses presented in Chapter 6, only land deals for which at least two-thirds of all indicators were complete were included, which constituted 279 land deals (86 agriculture, 84 tree plantation, and 109 mining deals).

[19] Jobs for which wages are paid monthly include management, technical, transport, and security positions. Soil preparation, planting, and weeding were reported based on productivity (per hole, seedling, or by area).

Data collection in Pakading District, Bolikhamxai Province. © Vong Nanhthavong, 2016.

Interviews with villagers affected by a land deal in Phin district, Savannakhet Province. © Miles Kenney-Lazar, 2014.

Rubber plantation in the mountainous Lao uplands along the Mekong river. © Field team, 2009

CHAPTER 3: Nationally inventoried land deals

Data collected for the land deal inventory

The land deal inventory contains 1,758 land deals and includes deals from the agriculture, tree plantation, mining and hydropower subsectors. The vast majority of these land deals (1,521 deals) were granted for project development and include 449 agriculture deals, 328 tree plantation deals, 622 mining deals, and 122 hydropower deals (see Table 10). For 1,360 of these deals (89%), information on granted area was documented. The total of area granted to land deals nationally was 1,019,340 ha (see Table 10), which is roughly the size of Salavan Province. The largest share of area was granted for mining exploitation (40.8%), followed by tree plantations (34.8%), agriculture (23.4%) and hydropower (1.0%).

Besides deals granted for project development, the inventory documents 237 mining deals granted for the purposes of prospecting and exploration (see Table 10)[20].

Table 10: Data in the land deal inventory

	Subsector	Deals in database	Deals with area granted available	Total area granted (ha)
Deals in development phase		1,521	1,360	1,019,340
Primary sector		1,399	1,297	1,008,884
	Agriculture	449	408	238,603
	Tree plantation	328	304	354,754
	Mining (exploitation)	622	585	415,527
Secondary sector		122	63	10,456
	Hydropower	122	63	10,456
Deals in preparation phase		237	227	10,735,077
	Mining (prospecting and exploration)	237	227	10,735,077

Xayabouly dam, Xayabouly Province. © Vong Nanhthavong, 2018

[20] For the analysis of data in the following sections of this report, mining deals in the exploration and prospecting phases are excluded, as their characteristics are very different from mining excavation deals and deals in other subsectors. A section later in Chapter 3 is dedicated to further characterization of these deals.

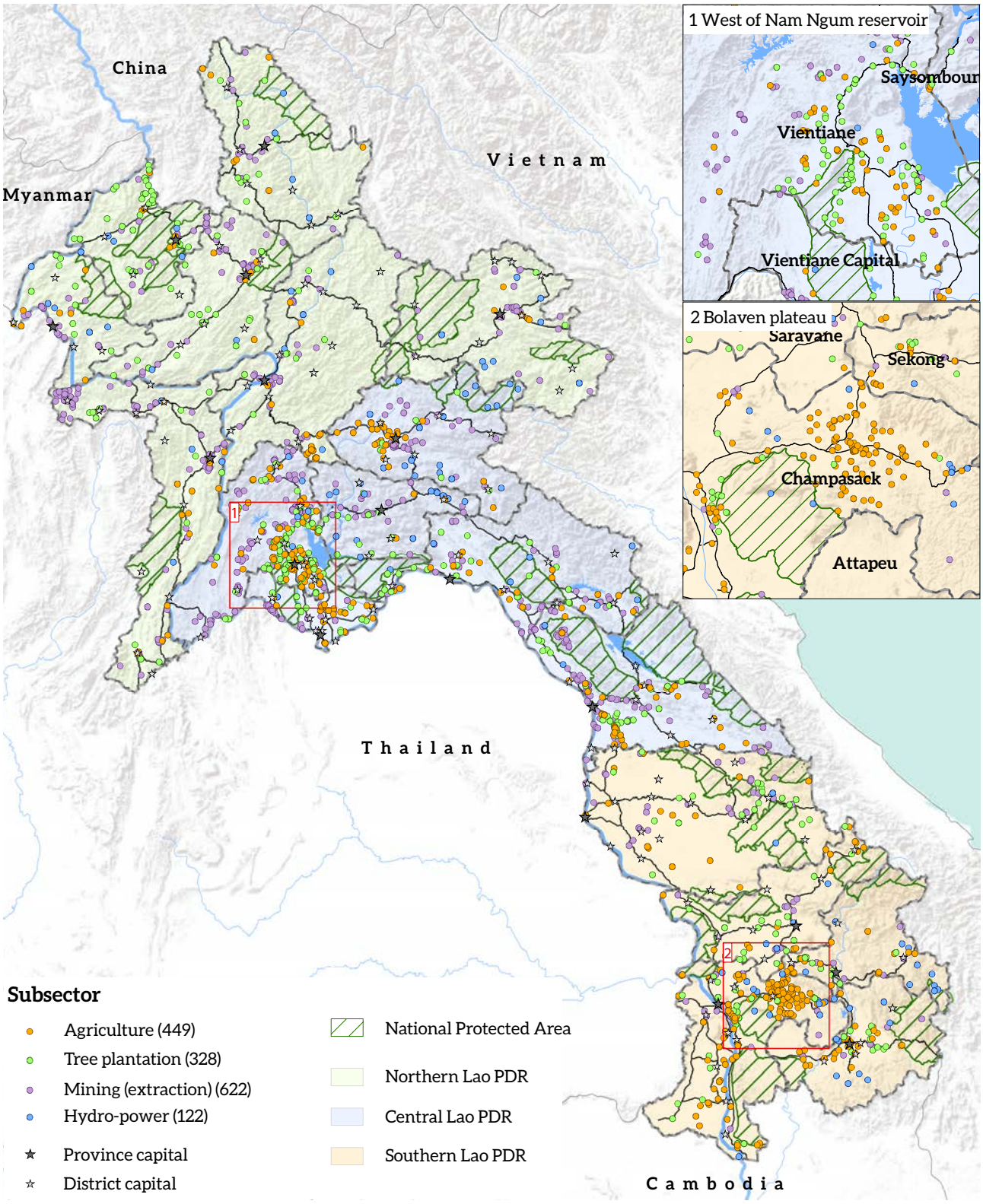


Figure 4: Inventoried land deals by subsector

The land deals documented in the inventory are distributed across the entire country (see Figure 4), with a higher density of deals near provincial and district capitals, as well as along major roads. The area between Vientiane Capital and the Nam Ngum reservoir, as well as on the Bolaven Plateau, have particularly high concentrations of deals.

As stated above, there are a total of 1,399 land deals in the agriculture, tree plantation, and mining subsectors in the inventory. Of these deals, we were able to assess the area that had been developed for 1,241 deals (88%) either through participatory mapping of these areas with stakeholders or based on available project documentation. At the time of assessment,

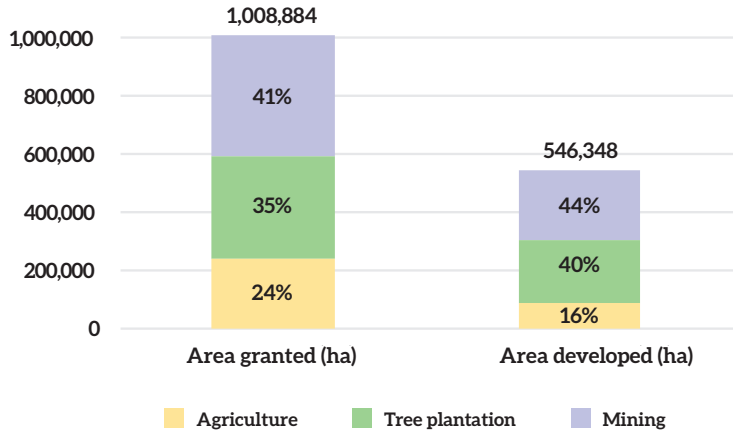


Figure 5: Total area granted (left) and total area developed (right) for agriculture, tree plantation, and mining deals

Table 11: Summary statistics of land deals for which both granted and developed area were inventoried

Subsector	Number of deals with area data available	Total area granted (ha)	Total area developed (ha)
Agriculture	361	223,617	81,412
Tree plantation	279	339,764	215,659
Mining	541	395,875	242,551
Total	**1,181**	**959,256**	**539,622**

546,348 ha of land had been developed across the Lao PDR (see Table 11). In total, 87,657 ha has been developed by agricultural deals, 216,125 ha by tree plantation deals, and 242,566 ha by mining deals. As shown in Figure 5, the proportion of the total area granted to each subsector of the total land granted differed slightly from the proportion of the total area developed by projects in the three subsectors.

Land deals with area granted and area developed in the agriculture, tree plantation, and mining subsectors

As stated in Chapter 2, only a subset of deals have both area granted and area developed documented, and this subset is what is used in the following sections of this chapter for in-depth analysis in order to provide consistency of analysis and reporting. As shown in Table 11, data on the area granted and area developed was assessed for a total of 1,181 deals in the primary

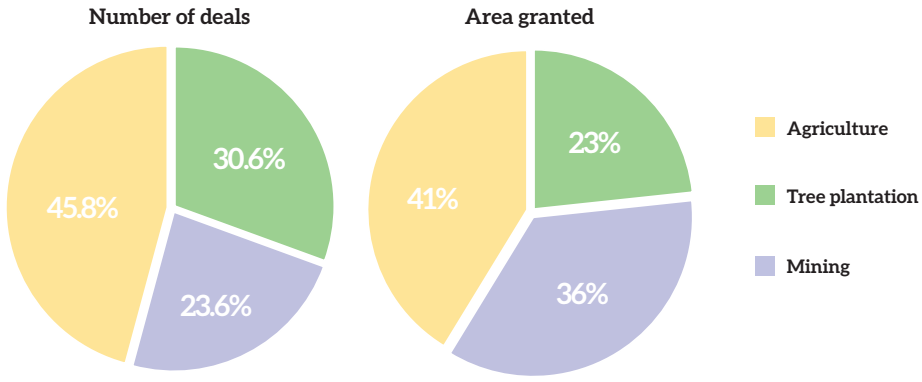


Figure 6: Dataset used for analysis in Chapter 3. (a) Share of total deals within the three examined subsectors; (b) Share of total area granted for the three examined subsectors

sector, which includes 361 agricultural deals, 279 tree plantation deals, and 541 mining deals.

Nearly half of the deals (46%) analysed are in the mining subsector, 30% in the agricultural subsector, and 24% in the tree plantation subsector. The total area granted across these three subsectors is 959,256 ha, of which 41% was granted to mining deals, 23% to and agricultural deals, and 36% to tree plantation deals (Figure 6).

Deals were excluded from analysis if they were missing either area granted or area developed. Notably, a mining deal located in Vientiane Province that had a large area granted of 1,100 ha, but no information on area developed was excluded. On the other hand, there were deals for which the area developed could be assessed, but no documentation of the area granted was available. This was the case for 41 deals in the agriculture and tree plantation subsectors, for which 6,711 ha have been developed, but no data on areas granted were available. This included a large palm oil plantation and a maize plantation of 5,168 ha and 652 ha respectively, both located in Attapeu Province and already developed at the time of assessment.

In total, this analysis includes 84% of all deals recorded in the inventory, and accounts for 95% of the total area granted to all deals in the inventory. The total area developed that is represented in this analysis (deals with area granted and area developed) amounts to 99% of the total area developed reported by all deals in the primary sector in the inventory.

Main characteristics of land deals

Area of land granted to agriculture, tree plantation, and mining deals

The majority of deals across the agriculture, tree plantation, and mining subsectors had very small granted areas (see Figure 7), especially considering that most global databases of land deals, for example the Land Matrix (Nolte et al. 2016), do not consider deals under 200 ha[21] and that 'large-scale land acquisitions' are typically defined as deals over 500 ha in size (GRAIN 2016). In the Lao PDR, 34% of all deals have 10 ha or less granted, 76.3% of all deals had less than 200 ha granted, and 86% had less than 500 ha granted. This means that in order to get a complete picture of concessions and leases in the Lao PDR, it is not sufficient to focus solely on large land deals, which make up only a small percentage of deals (14% are larger than 500 ha); rather, small deals should be included in the analysis.

In contrast, only 3.6% of all deals (43 deals in total) had 5,000 or more ha granted and the two largest deals in the Lao PDR, both in the mining subsector, had areas granted of 65,501 ha and 124,700 ha.

In terms of their combined area granted, in turn, this large number of small deals (less than 10 ha) and medium sized deals (10 – 500 ha) constitute a rather insignificant portion (only 7.5%) of total land granted. In contrast, 92.5% of the total area granted was allocated to projects greater than 500 ha (167 deals). The 83 largest deals, with sizes greater than 2,000 ha, accounted for nearly 85% of the total area granted.

As can be seen in Figure 7, the size of deals varied by subsector. Agriculture and tree plantation deals had the highest number of deals with areas granted between 100 and 200 ha (129 deals and 99 deals respectively). In the tree plantation subsector, larger deals were more common (35% of all tree plantation deals, or 98 deals with area granted between 200 and 5,000 ha). The average size of tree plantation deals was 1,218 ha. Tree plantation deals greater than 2,000 ha (38 deals) made up 83.7% of the total area granted.

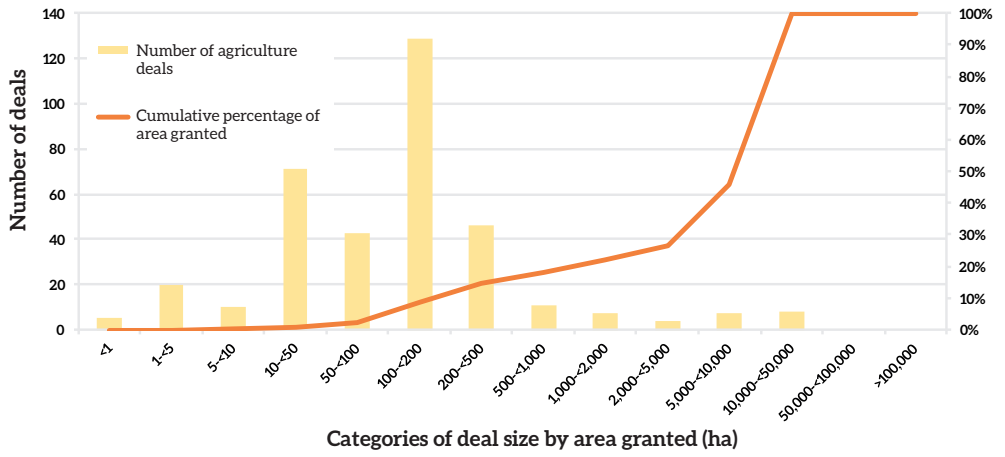
The average size of agricultural deals was 619 ha. The largest eight projects comprised 54% of the total area granted. However, only four of these were operational, while three never started project implementation and one ceased its operations during the contract period.

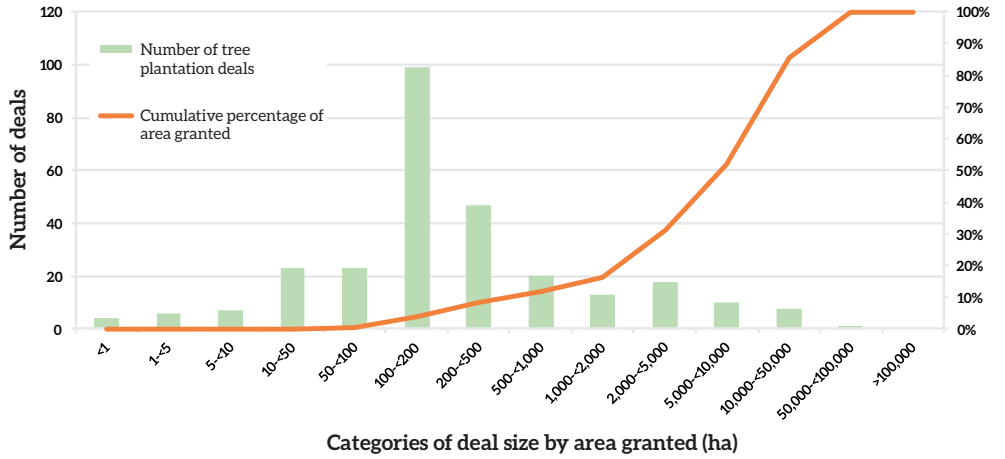
Most deals in the mining subsector were very small – the average deal size in the mining subsector was 732 ha. There were 72 deals with areas smaller than 1 ha, and 164 deals with areas between 1 and 5 ha. These were mostly mining deals for gravel, likely responding to high demand for gravel currently, related to growth in the construction sector in the Lao PDR. On the other hand, there were 51 large-scale projects, with areas between 500 ha and 5,000 ha, and 9 projects with more than 5,000 ha granted. These nine largest projects (in terms of area granted) accounted for three-quarters of the total area granted in this subsector. Eight of these large deals were operational, while one deal had been abandoned; two deals were joint ventures, two were domestic, and five were under foreign investment.

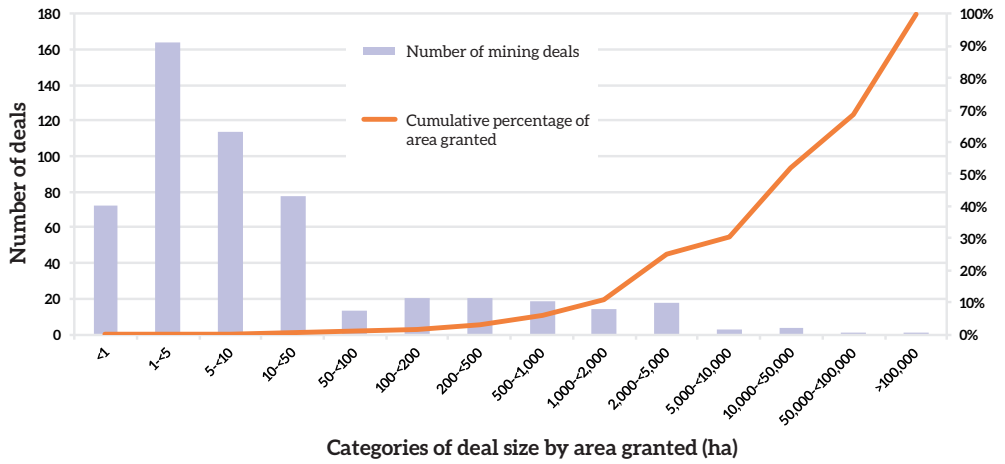
Common forms of contracts

The GoL grants state land to investors in the form of either a concession or a lease. Leases and concessions are similar, but they differ in terms of the type of activities (GoL 2009a). There are also differences regarding fees incurred: for concessions, the investor must pay a land concession fee, royalties, taxes, and customs fees; for leases, investors only need to pay rental fees for the land (Schönweger et al. 2012). The

[21] See online at: https://landmatrix.org/en/about/#what-is-a-land-deal







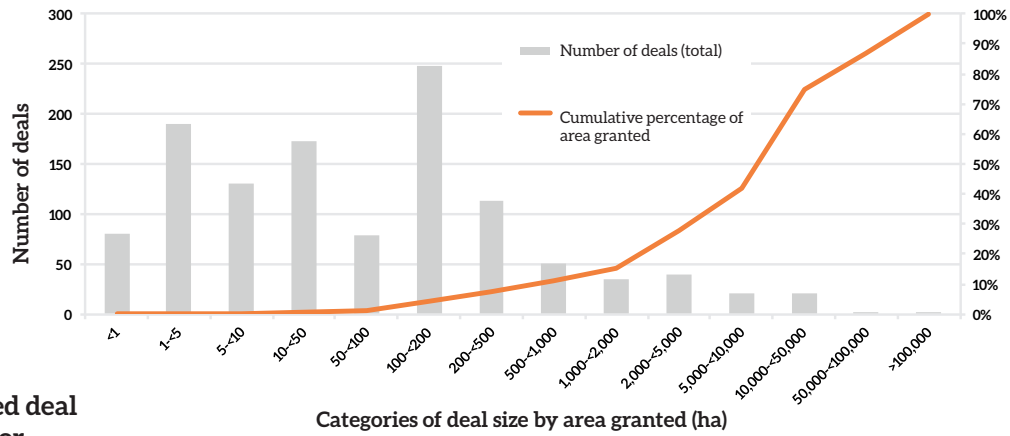


Figure 7: Granted deal sizes by subsector

inventory shows that concessions are much more commonly granted in the Lao PDR than leases. Across all four subsectors, concessions make up 92% of all deals, whereas only 7% are leases (see Table 12). Only 22 agricultural deals and 13 tree plantations were leases. The greater number of fees that can be collected from investors by the Lao government for concessions might be among the reasons for the propagation of this form of land deal. In the hydropower subsector, however, all deals are leases. The inventory also includes 16 tree plantation deals which were originally classified as concessions, but later on found to formally be contract farming 1+4 schemes. However due to their "concession-like" mode of operation it was decided to leave them in the database[22].

Table 12: Types of contract granted (Percentages indicate the share of total deals in the given subsector that are made under the specified contract type)

	Number of deals and shares of contact types per subsector				
Type of contract	**Agriculture**	**Tree plantation**	**Mining**	**Hydropower**	**Grand Total**
Concession	339 (94%)	250 (90%)	541 (100%)	0	1,130 (92%)
Contract farming 1+4 scheme	0	16 (6%)	n/a	n/a	16 (1%)
Lease	22 (6%)	13 (5%)	0	46 (100%)	81 (7%)
Grand Total	**361**	**279**	**541**	**46**	**1,227**

Sugarcane harvesting operations near Muang Sing, Luang Namtha Province. © Mick Shippen, 2019

[22] The "concession-like" mode of operation of 16 contract farming deals located in Luang Namtha included in the land deal inventory is based on initial partnerships for the production of rubber between the investor and villagers who started a rubber project together. They then split the developed area based on an agreed share of the area after trees had been planted. Thereafter, the investor and villagers managed their portions of the plantation separately. The trees and land that belong to the investor were thereafter considered concessions, and the investors paid fees and taxes to the GoL.

Origin of investors

An important aspect for differentiating between land deals is whether the investor or investing company is by ownership category: foreign, joint venture, or domestic. Attracting foreign direct investment (FDI) was a key goal in the GoL's "TLIC" policy, promoted in the 2000s as a strategy for driving economic development (CPI 2006). The GoL expected that FDI would bring benefits to the Lao PDR in the form of economic growth, modern technology, managerial knowledge, access to capital, and other spill-over benefits expected to flow from foreign-owned investors to domestic investors. However, there are also potential drawbacks to foreign land deals, and FDI has also been viewed as having more adverse impacts than domestic investments. These include generating more conflicts with affected communities due to their exclusion during the negotiation phase, from labour opportunities generated, and dispossession or contamination of their land.

Domestic investments are the most common type of investment (60% of all deals) followed by foreign deals (32%) and join-ventures (8%), see Figure 8. In terms of area granted, however, foreign deals comprise 61% of the total granted area, indicating that foreign deals are significantly larger than domestic deals. The average area granted to foreign investors is four times larger than the average area granted to domestic investments (1,493 ha as opposed to 379 ha).

There are significant differences across subsectors in terms of the proportion of domestic versus foreign investors. In the tree plantation subsector, the majority of deals are foreign investments (57%, or 158 deals, see Figure 8). In terms of area, the skew toward foreign investments in tree plantations is even more pronounced, with 75% of the area granted in this subsector going to foreign investors (Figure 8). In the agriculture subsector, however, domestic deals dominate both in number of projects granted (54%), and area granted (50%). In the mining subsector, only 15% (or 81 deals) are foreign investments but these deals account for 55% of the total area granted to mining deals.

No clear pattern was identified with regards to the spatial distribution of land deals by origin of investor (see Figure 9). However, there was a clustering of small domestic investments in Vientiane Province.

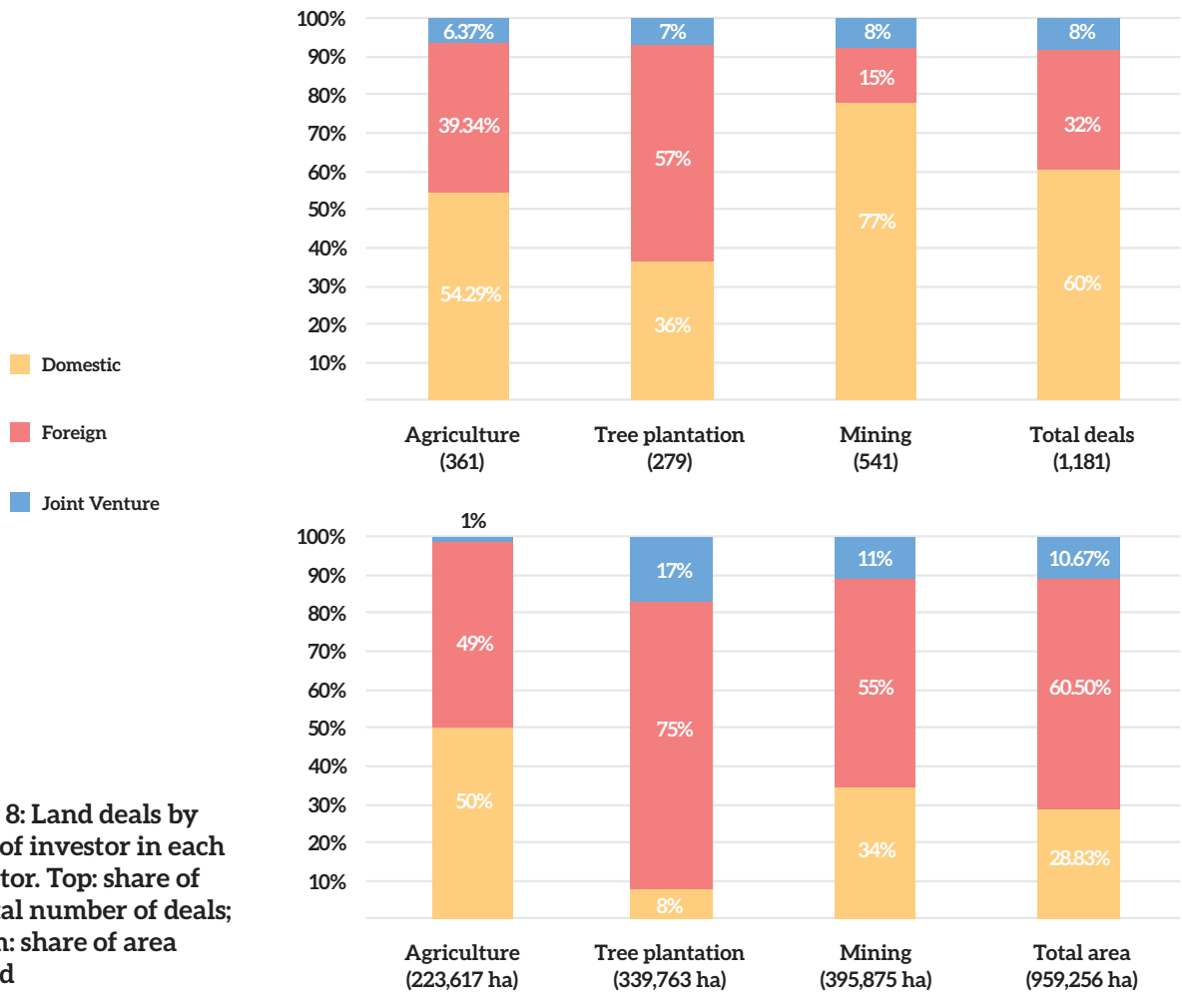


Figure 8: Land deals by origin of investor in each subsector. Top: share of the total number of deals; bottom: share of area granted

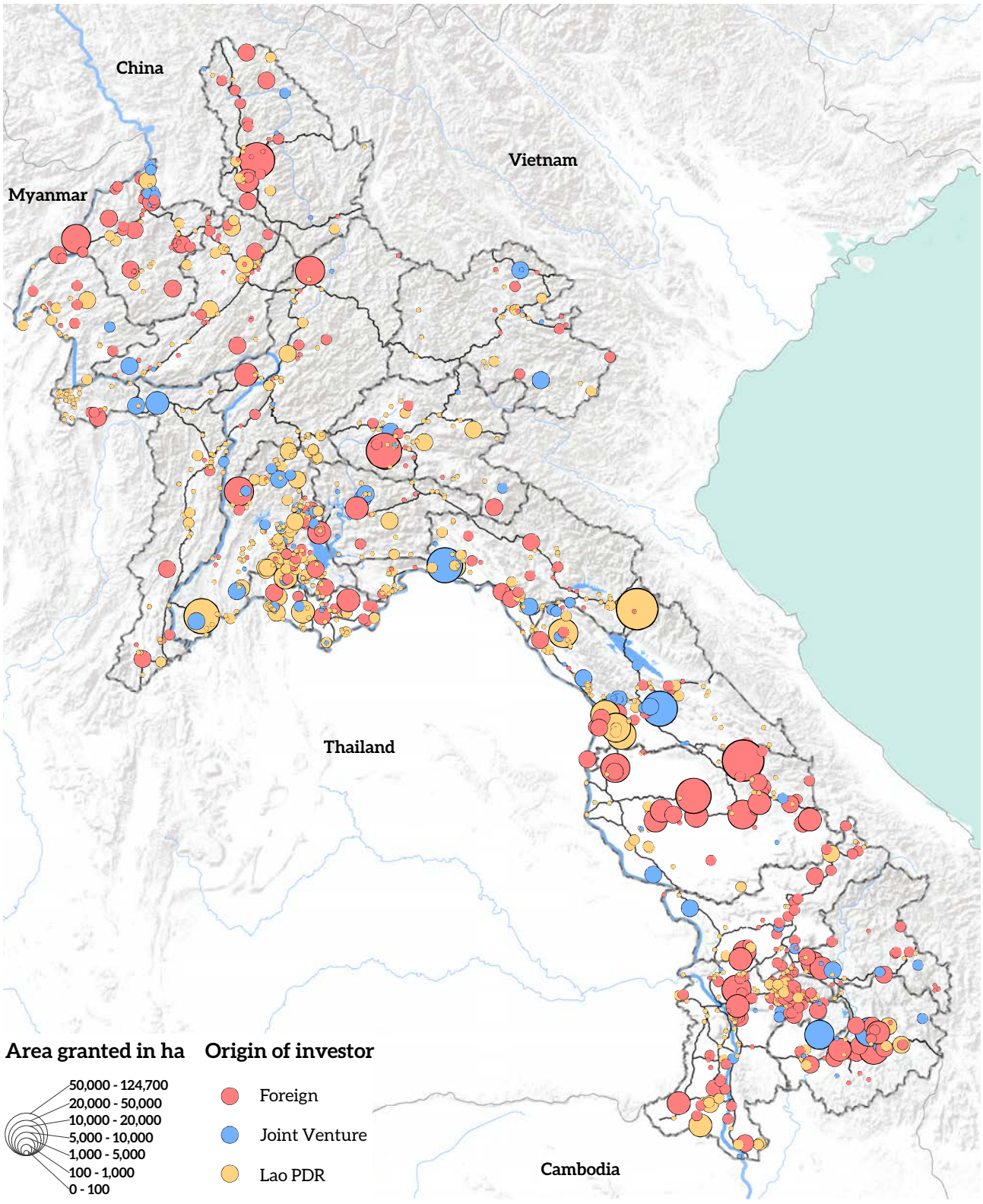


Figure 9: Location and size of land deals by origin of investor

Stages of land deal development

The inventory distinguishes between different stages of deal implementation and development (see Chapter 2 for the definitions of each stage). More than half (54%) of all deals were in the operational stage (see Figure 10) at the time of data collection. This means that they have so far developed a certain share of the total area granted to them, and they are producing the products for which the deal was registered. Additionally, 12% of all deals are still in the start-up/construction stage. In this stage, a project is in the process of establishing activities on the land granted. 10% of all deals ceased operations within the contract period, while 13% never even began operations. This raises many questions about why these deals are not operational. Did unfavourable or unstable economic and market factors make the production of the planned economic activity unprofitable? Was the area allocated for the deal unsuitable? Were there financial or other factors that led to a cease in operations? These questions are beyond the scope of this report but are clearly priorities for future research considering the portion of deals they correspond to.

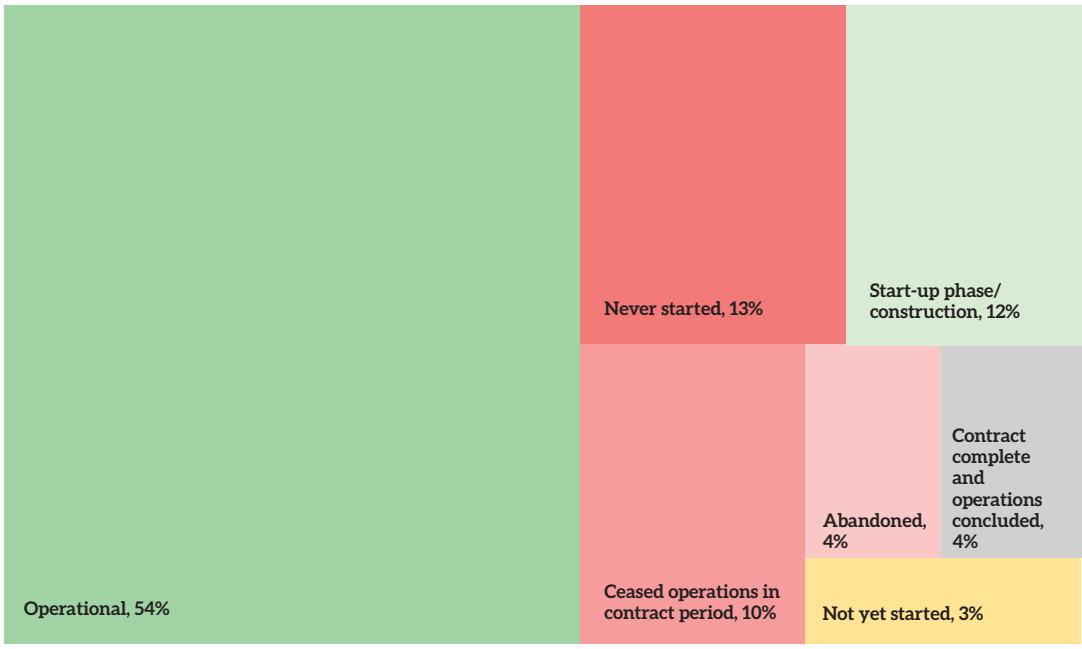


Figure 10: Shares of stages of land deal development for land deals in the agriculture, tree plantation, mining, and hydropower subsectors

For 4% of all deals, the operations have finished, and the contract period has also finished. For these deals, further investigations are required to assess what happened with the land granted and used for the deal after the project's end. Finally, it is striking that almost one-third of all deals (31%) have entered their active stages but since ceased operations (possibly temporarily), or were found to never have started project implementation at all.

Disaggregating the stage of deal development by subsector revealed significant differences across the three examined subsectors, especially concerning the "operational" and "start-up/construction" stages (see Figure 11). In the agriculture and tree plantation subsectors, almost half of the deals were operational (48% and 44% respectively), and a significant proportion of deals in these subsectors were in the start-up/construction stage (14%, 21%). In the mining subsector, almost two-thirds of deals were operational (63%) but very few were in the start-up/construction stage (1% or 5 deals). This could be due to a global slowdown in the mining sector or to reduced Chinese demand: 2015 was described as a "race to the bottom" during which the global mining sector witnessed a first ever collective net loss for the top 40 miners, and global market capitalisation of mining companies fell by 37% (PwC 2016). This may resulted in fewer new mining deals being granted in recent years in the Lao PDR, and investors who were already granted deals in the mining sector may have decided to delay the start of operations. Indeed, there were 26 mining deals (5% of all mining deals) in the "not yet started" stage. Another important factor could be the rapid life cycles

of mining deals in the Lao PDR, particularly small mining projects. Many deals with products such as gravel or limestone, which supply the domestic construction industry, have very rapid life cycles of only one to three years. They have short start-up stages and enter quickly into the operational stage. As a result, the land deal inventory did not capture many deals in the start-up phase for the mining subsector. Furthermore, their short life cycles pose challenges to keeping track of them and make it possible that some of their activities go unaccounted. This may have caused a great number of already finished deals to have escaped data collection activities for the land deal inventory. The life cycles for agricultural deals and tree plantation deals are longer and often take several years. The establishment of a rubber plantation, for example, requires land preparation followed by several years of planting and growing the trees before they are ready to be tapped, and thus the deal finally reaches operational mode.

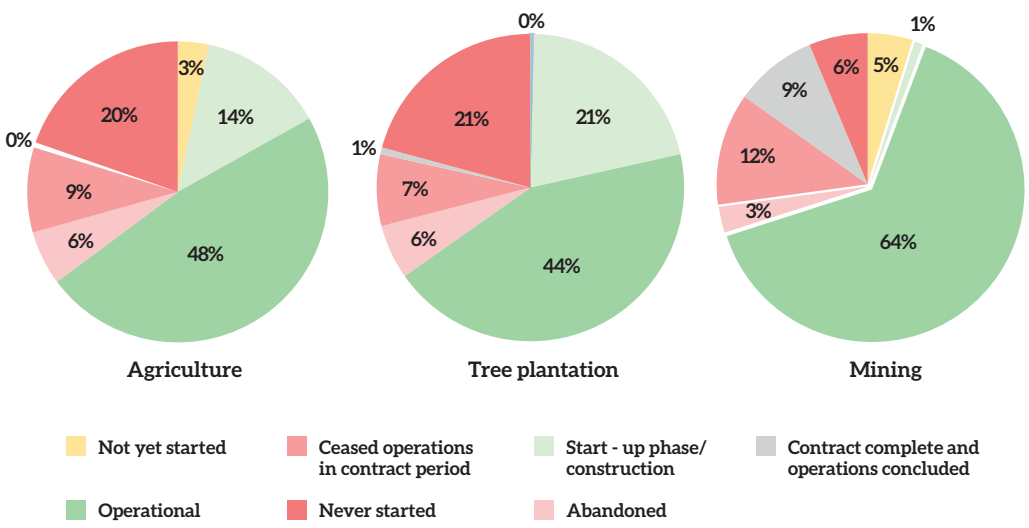


Figure 11: Shares of stages of land deal development by subsectors

Trends in approval of deals

Since the early 2000s, a constant increase in land deals in the primary sector has been witnessed in the Lao PDR (see Figure 13). The inventory shows a steep increase in the total number of deals granted between 2005 and 2009. The Lao PDR was thus a primary frontier in the global land investments, sparked primarily by a dramatic rise in global food and commodity prices, which contributed a rise in global land investments and gained widespread recognition around the year 2007. The period from 2009 to 2013 shows a decrease in the rate of deals granted each year. The causes of this decrease could include the global financial crisis and corresponding decreases in commodity prices. However, an upward trend in the rate of deals granted per year resumed in 2013.

A sharp and steady rise in the granting of land deals across all subsectors began in 2005, and while this upward trend continued in terms of number of deals granted, the cumulative area granted significantly levelled off after 2009 (see Figure 13). Although the total area granted still rose each year, the fast pace of granting between 2000 and 2006 slowed from 2006 to 2009 and even more from 2009 onwards. Therefore, although the cumulative area granted by 2016 more than quadrupled what it was in 2000, the cumulative area granted only increased 20% between 2009 and 2016.

Deals on paper subject to re-evaluation by the GoL

In 2009, the Prime Minister announced Decree No. 135 (PM/135, GoL 2009a), states rules regarding the maximum allowed duration for preparatory phases. Small deals[23], are to complete construction or preparatory works within six months to one year from the date of PDA signing. The preparatory phase is limited to two years for medium-sized deals and to three years for large-scale deals. If an investor is not able to conclude the preparatory tasks for a deal within the allotted time, the government authority in charge[24] may consider terminating the concession agreement.

In light of PM/135, deals of the 2018 inventory were examined regarding the validity of their project status. In order to comply with PM/135 no deal which has been granted more than three years ago from the time of field data collection should have the project status "never-started" or "not yet started"[25]. In all, 199 deals were analysed here.

The results of the analysis show that out of these 199 deals that have not yet initiated project development, only less than one-fourth (48 deals) were still within the three-year limit of the time between contract signing and the assessment of project status. Or in other words, the majority of these deals signed contracts more than three years prior to data collection but have in this timeframe not started to develop their project. For nearly half of the deals assessed (49%, or 98 deals), the time elapsed from granting to data collection was between four and nine years. However, in many cases (27%, or 53 deals), 10 or more years elapsed since the contract was signed. Nine of these deals had contracts older than fifteen years (see Figure 12).

The results suggest that it is necessary for the GoL to re-evaluate deals who have exceeded the allotted time to begin development. We refer to such deals without activities in the granted locations (construction or production) where more than three year have elapsed between contract signing and data collection as "deals on paper". Such deals are potentially of speculative nature, and until they enter into development they do not contribute to the development of the country and may confound the overall assessment with regard to total area granted for land deal development. It will also be important for the GoL to develop efficient processes to redistribute land back to the government.

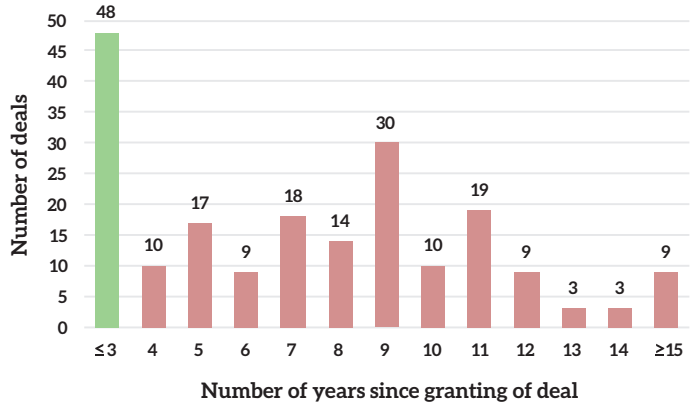
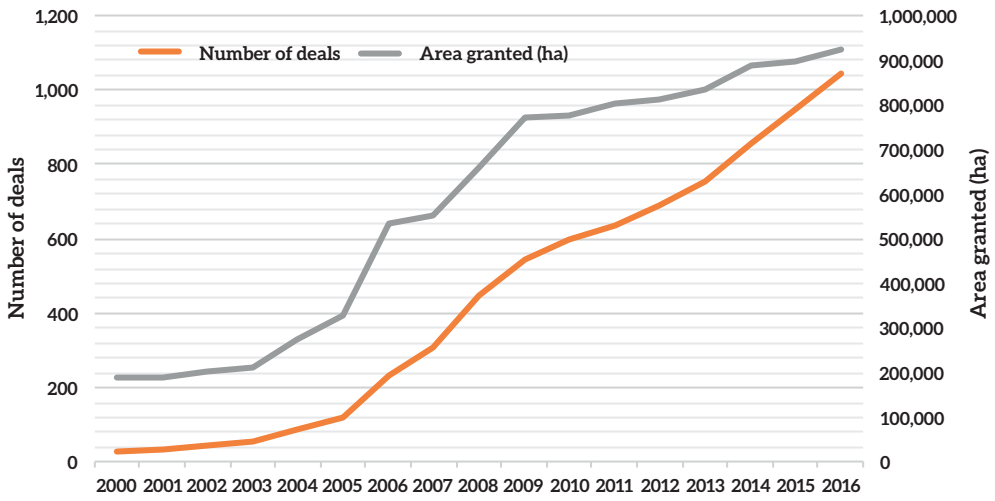


Figure 12: Number of years elapsed between deal approval and data collection for deals without activities related to the agreed purpose of the land deal on the ground

[23] In PM/135, small is not further defined and may be interpreted in different ways, but for the purposes of this report we assume it relates to the anticipated deal size given the area granted. Size may, however, also refer to quantity of goods produced, revenue, or anticipated capacity (e.g. hydropower).

[24] No GoL authority is further specified.

[25] See definition of stages in Chapter 2. As no further details on the definition deal size is given in PM/135, the maximum time period of three years (the longest permitted duration of project preparatory stages, designated for large projects) was used in this analysis for all projects, with the risk of underestimating the total number of projects which the governmental sectors should re-evaluate.



Remark: Data includes deals granted up to the year 2016 only. The data likely underestimates the number and area of deals granted during the period of field data collection (2016-2017). Data on approval years was only available for 944 deals.

Figure 13: Cumulative number of deals and cumulative area granted to land deals from 2000 to 2016

The overall slow-down in cumulative area granted after 2009 is attributed primarily to the tree plantation and mining subsectors (see Figure 14). The cumulative area granted to tree plantations decreased steadily beginning in 2006, but levelled off after 2009. The tree plantation subsector had a peak in annual deals granted in 2006 when 66 deals were granted, but granting was greatly reduced after 2008. This is a clear outcome of the 2007 moratorium on granting new deals for mining and tree plantations. The following year, only 43 tree plantation deals were granted and there were only 31 granted between 2009 and 2012 (most of which were likely already underway before the moratorium had been issued, and therefore were not affected). In the mining subsector, the number of deals granted peaked in 2008 and 2009, with 54 and 44 deals granted respectively. The mining subsector also experienced a decline in the number of deals granted between 2008 and 2011, but this number rose again after 2011. Finally, the agricultural subsector experienced an increase in deals granted per year between 2005 and 2009 and a decline between 2009 and 2013. The year 2014 was another peak year for the agriculture subsector, with 43 deals granted, as opposed to the previous year (16 deals granted) and the following year (22 deals).

Deals approved after the moratorium PM/13

The 2012 moratorium, PM/13, called for a halt in the approval of new deals for rubber and eucalyptus plantations and mineral prospecting and exploration.[26] While originally PM/13 was valid until the end of 2015, it was recently extended until the end of 2020 (GoL 2018a; GoL 2018b).

According to the land deal inventory, 55 deals for products listed in the moratorium had approval dates after the moratorium was put into place. These include five rubber plantations covering a total area granted of 8,520 ha, one eucalyptus plantation of 447 ha, and 49 mineral prospecting and exploration deals, which together amounted to 1,226,151 ha. Almost all of these deals were approved at central level, except for two rubber plantation deals approved at the provincial level. Although it is beyond the scope of this report to reflect conclusively on these deals, anecdotal evidence suggests they were likely officially approved before June 2012 even though the project approval date was listed afterwards.

[26] This included rubber and eucalyptus, as well as certain mineral prospecting and exploration including platinum, gold, silver, copper, iron, lead, zinc, aluminium, tin, antimony, barium, nickel, cobalt, sapphire, potassium, magnesium, and gypsum. Additionally, this moratorium also listed certain minerals that were still allowed for new deal approval, including coal, limestone, clay, and stone for construction and ornamental purposes (GoL 2012).

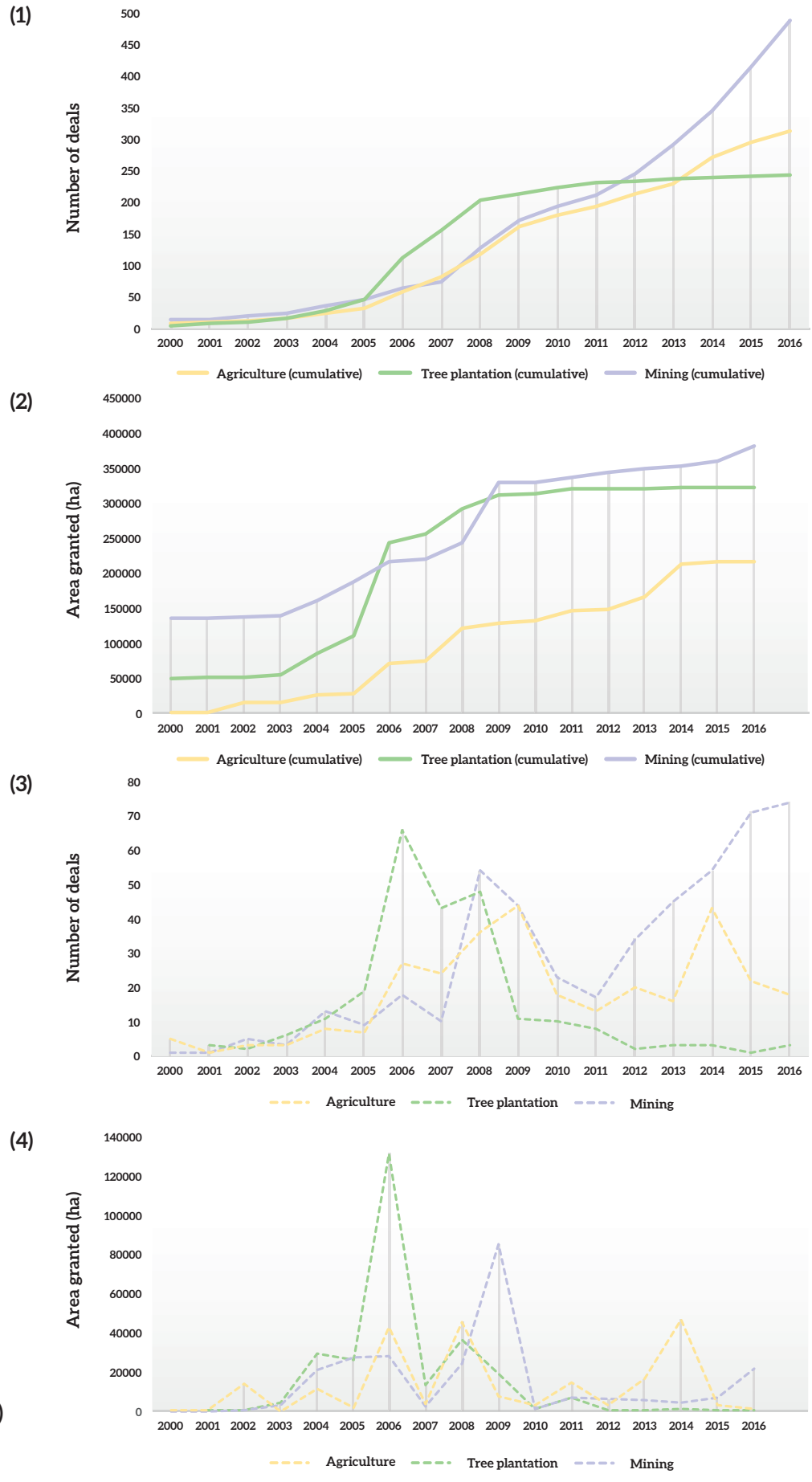
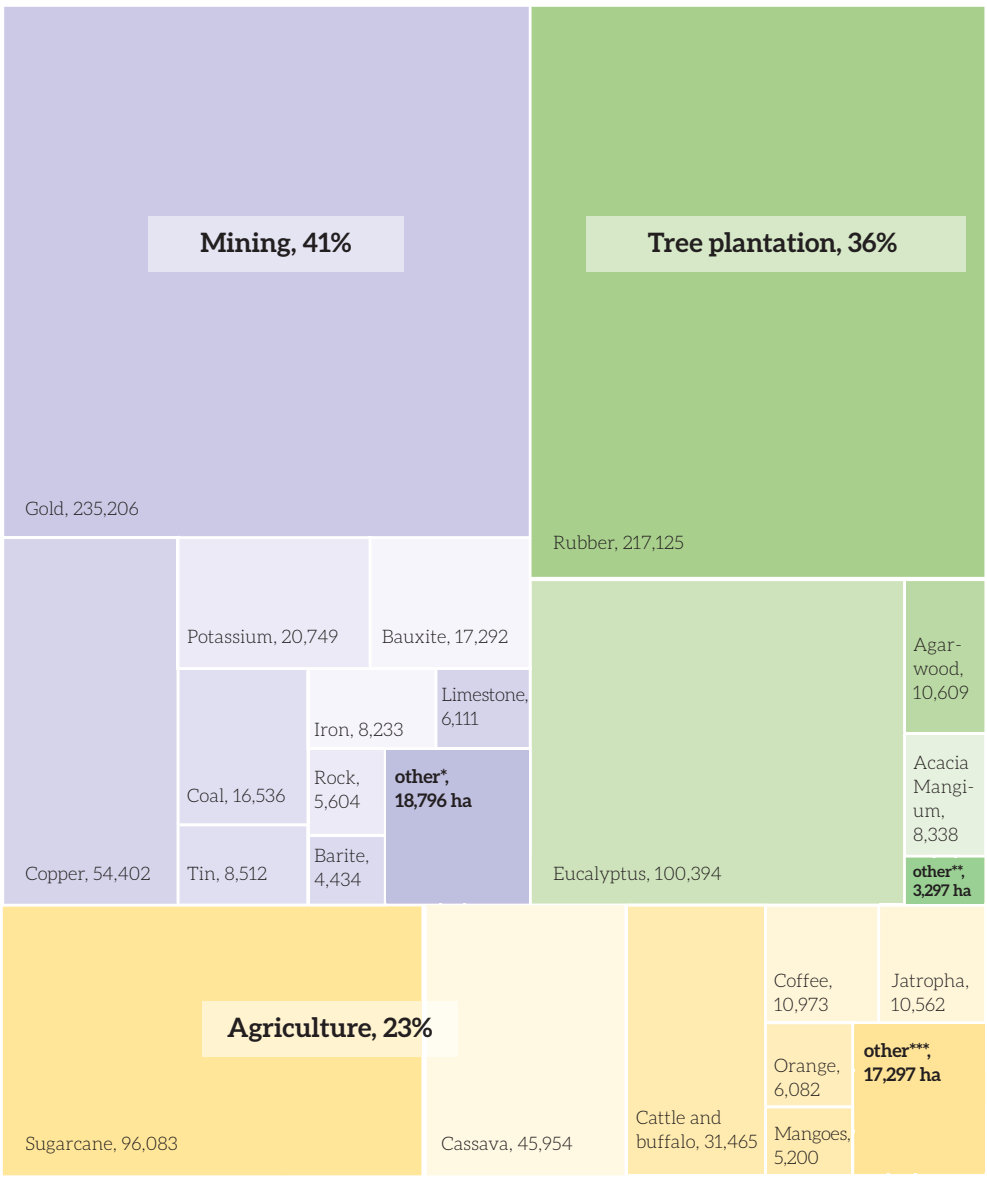


Figure 14: Number of land deals and total areas granted from 2000 to 2016 by subsector. (1) Cumulative number of deals; (2) Cumulative area; (3) Number of deals granted per year; (4) Area granted per year

Invested products

The inventory reports a total of 133 different products across the three focal subsectors. These products are either as the main product of a deal, or as an auxiliary product[27]. Deals for rubber, gravel, and limestone were by far the most numerous (see Figure 15). Together they constitute nearly half (43%) of all deals, with 17% producing rubber, 14% gravel, and 12% limestone. Other significant products in terms of number of deals include cattle and buffalo, coffee, cassava, rock (for construction), eucalyptus, and rice. The 20 most common products account for 83% of all deals and include the products rubber, gravel, limestone, cattle and buffalo, coffee, cassava, rock, eucalyptus, rice, sandstone, barite, fish, clay, tin, coal, sugarcane, agarwood, pigs, gold, and salt.

In contrast, the projects with the largest area granted are gold (25%), rubber (23%), eucalyptus (10%), and sugarcane (10%). Gold deals constitute a total of 235,206 ha of land granted, and rubber deals nearly 220,000 ha. The top ten products by total area granted account for 87% of the total area granted, and included gold, rubber, eucalyptus, sugarcane, copper, cassava, cattle and buffalo, potassium, bauxite, and coal.



* includes (in descending order of area granted): Sapphire, Gypsum, Gravel, Lead, Laterite, Pagodite, Keua bom, Antimony, Clay, Rhyolite, Zinc, Salt, Magnesium, Keo nang fan, Peat, Sandstone, Guano, Granite, Basalt, other

** includes (in descening order of area granted): Teak, Rubber seedlings, Paulownia, Pine, Kenaf, Mulberry fiber, Yang bong, Eucalyptus seedlings, tea seedlings, other

*** includes: Rice, Palm oil, Cashew nut, Passionfruit, Corn, Pigs, Banana, Fish, Mulberry, Ornamental plant, Noni, Medical plant, Soy, Jack fruit, Goat, Moringa, Tobacco leaves, Oil crops, Poultry, Asparagus, Ginseng, Rosella, Ginger, Pear, Papaya, Dragon fruit, Shrimp, Chili, Bamboo shoot, Black ginger, fruit, Mushroom, Durian, other

Figure 15a: Most common products invested in by area granted

[27] Many land deals focus not only on one, but several products in their projects. Such multi-product deals are particularly common in the mining subsector, where several mineral ores are mined in one mining site, e.g. gold, silver, and copper. The land deal inventory accounts for the main and auxiliary products. In order to avoid having many different combinations of products, the focus here is on the most common product for every deal.

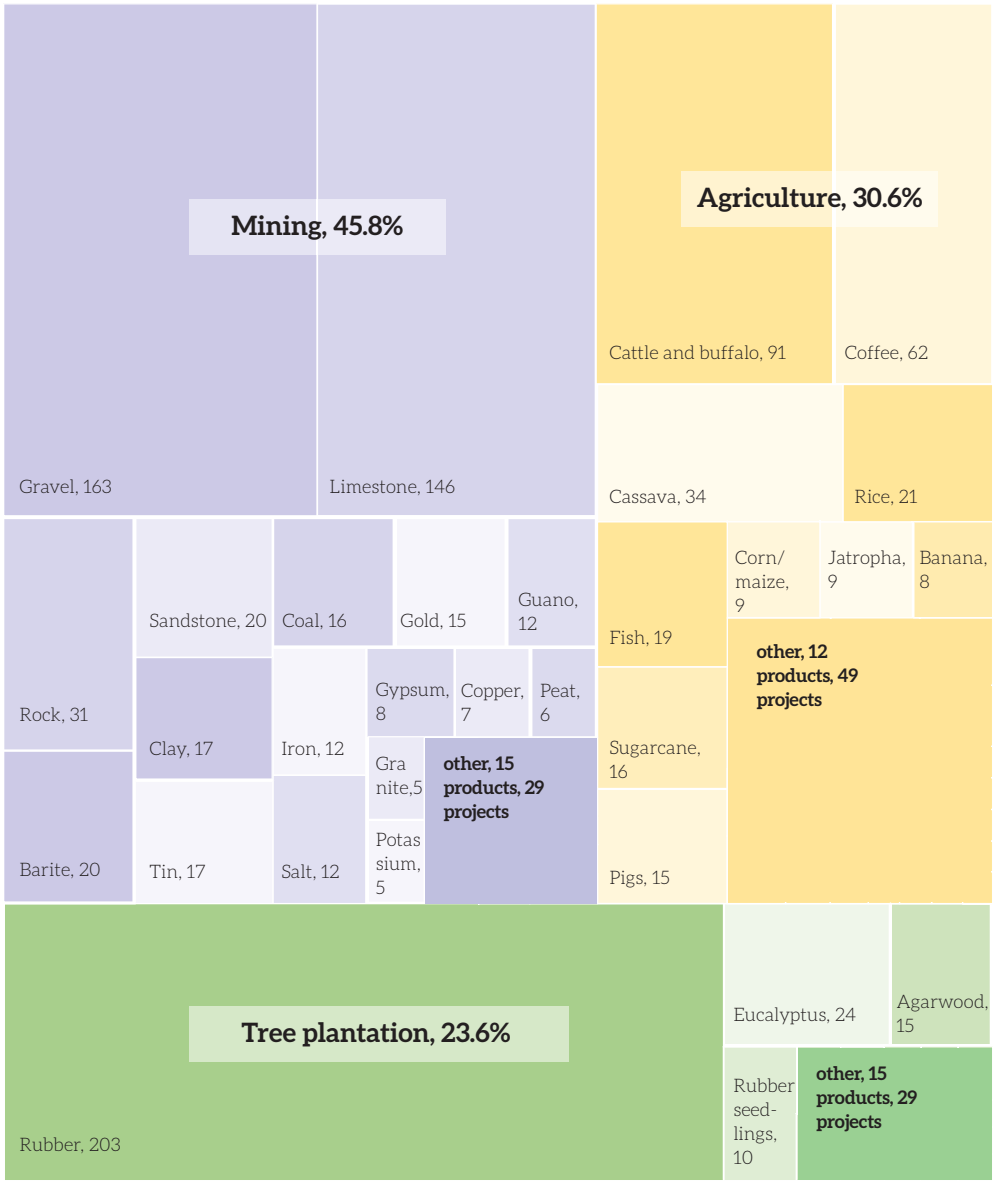


Figure 15b: Most common products invested in by deal count

Products in the agricultural subsector

Within the agricultural subsector, land deals in the inventory produce 58 different products[28] produced across 361 deals. As shown in Figure 16, the most common products by number of deals granted were cattle and buffalo (91 deals), coffee (62 deals), cassava (34 deals), rice (21 deals), fish (19 deals), sugarcane (16 deals), and pigs (12 deals). The ten most common products by area granted are listed in Table 13. Sugarcane was by far the most common crop, and sugarcane projects tend to be large-scale operations. These projects constitute more than 40% (96,083 ha) of the total area granted in the agricultural subsector, but this area is distributed among only 16 deals. Sugarcane is followed by cassava, which accounts for more than one-fifth (21%) of the area granted. These two products, together with livestock, coffee, jatropha, orange, and mango, account for 92% of the total area granted for agricultural projects and each has a total granted area greater than 5,000 ha.

In terms of spatial distribution, Luang Prabang, Champasak, and Xiengkhouang are hotspots for cattle and buffalo land deals, while coffee is concentrated on the Bolaven Plateau. Large sugarcane deals are located along the Mekong in Khammouan and Savannakhet Provinces (see Figure 16).

[28] Beyond the products shown here, a few broader categories including "General crops", "Fruit", and "Vegetables" exist in the inventory database, where the exact product could not be determined during data collection and was hence not further specified. These three general categories account for a total of 7 deals.

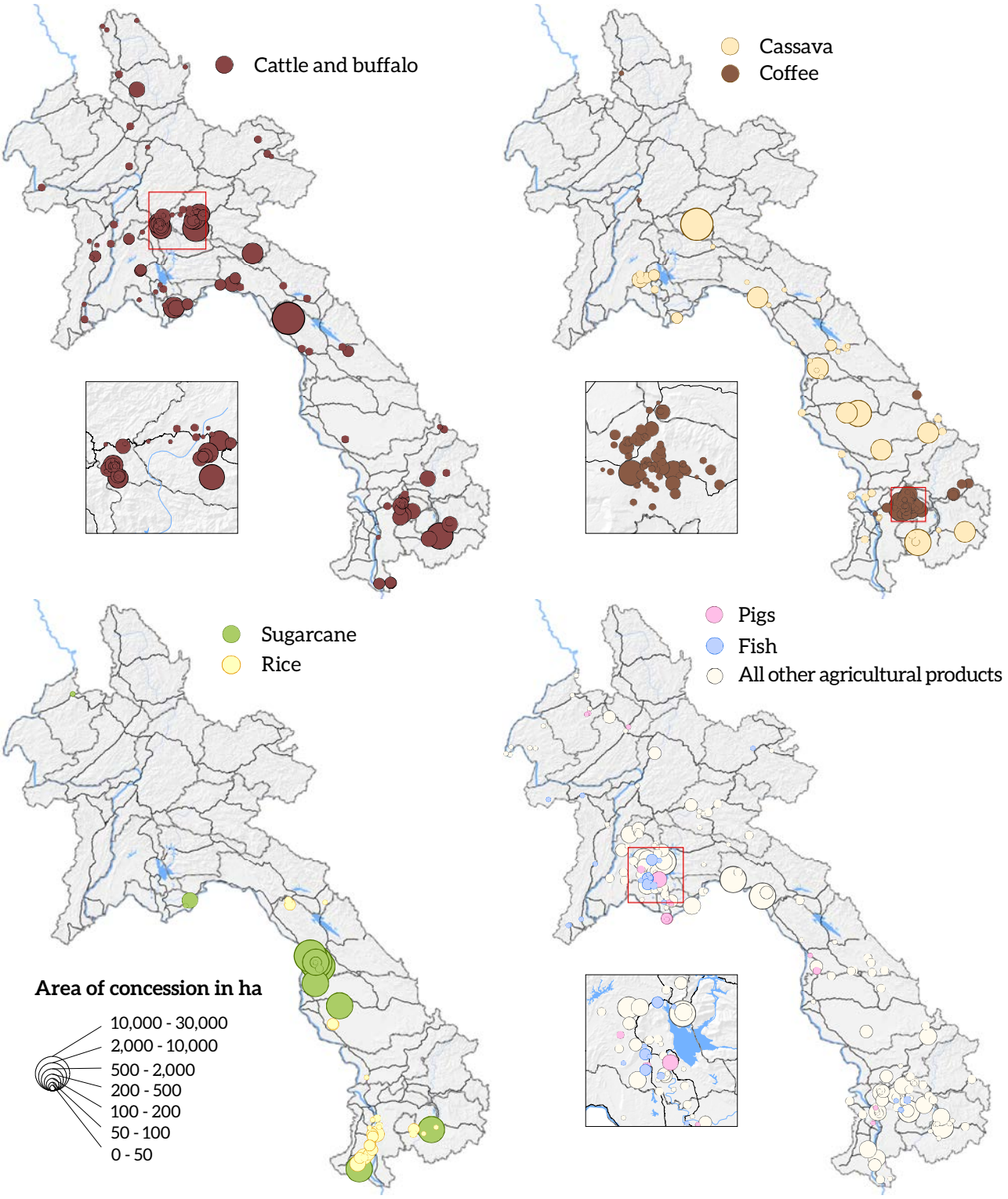


Figure 16: Agricultural deals by product and area granted; top left: Cattle and Buffalo, top right: Coffee and Cassava, bottom left: Sugarcane and Rice, and bottom right: Pigs, Fish, and all other agricultural products.

Table 13: Number of deals and total area granted for products in the agricultural subsector

Product	Number of deals	Share of deals	Area granted (ha)	Share of total area granted for agricultural deals
Sugarcane	16	4%	96,083	43%
Cassava	34	9%	45,954	21%
Cattle and buffalo	91	25%	31,465	14%
Coffee	62	17%	10,973	5%
Jatropha	9	2%	10,562	5%
Oranges	5	1%	6,082	3%
Mangoes	2	1%	5,200	2%
Palm oil	4	1%	2,225	1%
Rice	21	6%	2,927	1%
Passionfruit	1	0%	1,389	1%
All other products (n=36)	116	32%	10,757	5%
Total	**361**	**100%**	**223,617**	**100%**

Products in the tree plantation subsector

In the tree plantation subsector, rubber is the most common crop in terms of number of deals, with 203 rubber deals (73% of all deals in the tree plantation subsector) across the country, as well as by total area granted (64%, see Figure 17). At the time of data collection, an area of more than 200,000 ha had been granted for rubber deals. In northern Lao PDR, there are multiple hotspots for the establishment of rubber plantations, particularly Luang Namtha Province. Another rubber hotspot is the Bolaven Plateau in Southern Lao PDR, and across the provinces of Attapeu, Champasak, Salavan, and Xekong.

After rubber, the most common tree plantation products are eucalyptus and agarwood. These three products (rubber, eucalyptus, and agarwood), together account for nearly 97% of the total area granted to tree plantation deals, and around 87% of the deals in this subsector. Another 16 products are produced in the tree plantation subsector, though the total area granted for these products only amounts to 10,534 ha, or 12.3% of the total area granted for tree plantations (see Table 14).

Rubber plantation, Bachieng district, Champasak Province. © Stéphanie Jaquet, 2014

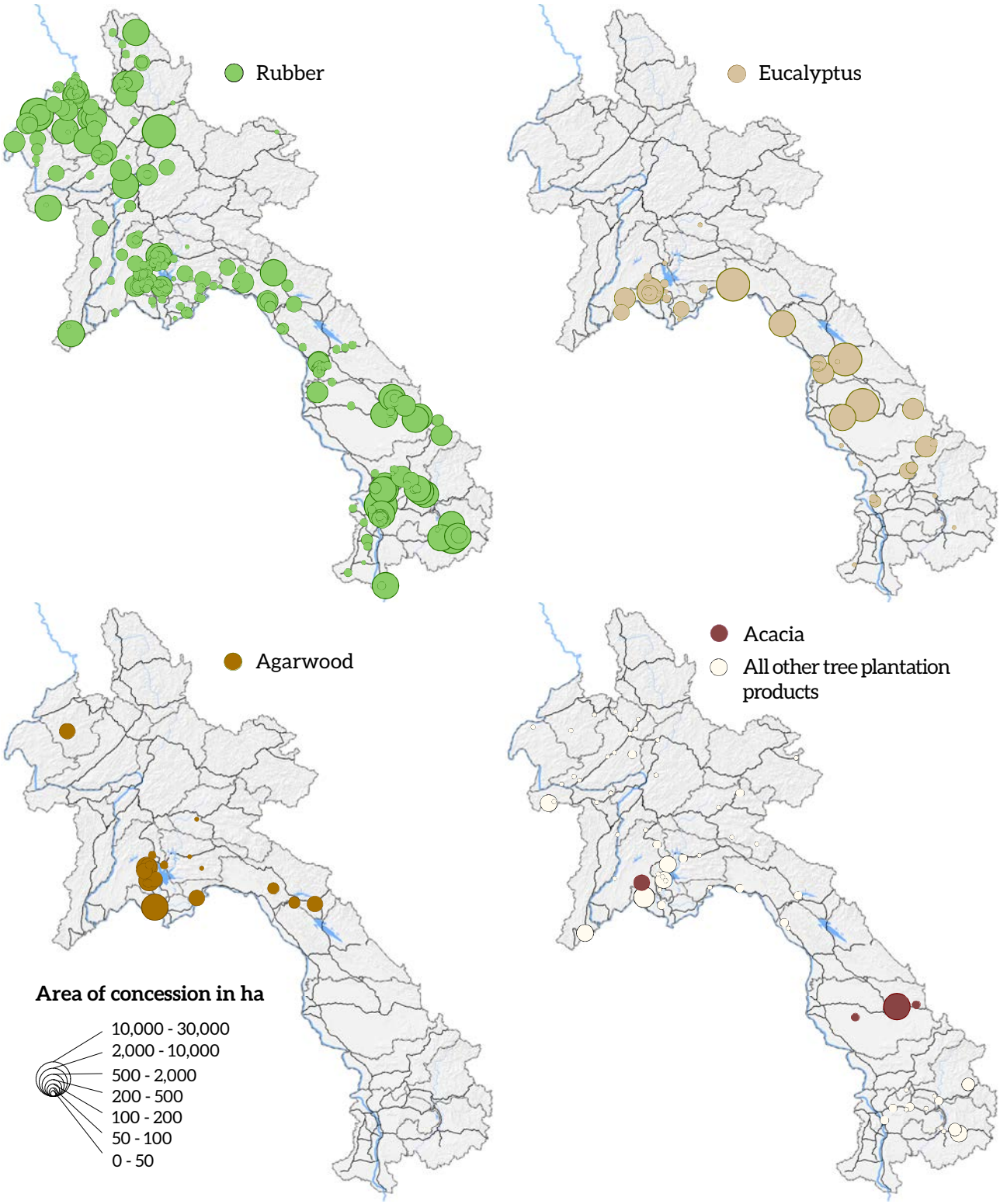


Figure 17: Tree plantation deals by product and area granted (ha). (a) Rubber, (b) Eucalyptus, (c) Agarwood, and (d) Acacia and other products

Table 14: Most common products in the tree plantation subsector

Product	Number of deals	Area granted (ha)	Share of tree plantation deals	Share of total area granted for tree plantation deals
Rubber	203	217,125	73%	64%
Eucalyptus	24	100,394	9%	30%
Agarwood	15	10,609	5%	3%
All other products (n = 16)	37	11,635	13%	3%
Total	**279**	**339,763**	**100%**	**100%**

Products in the mining subsector

The mining subsector counts a total of 47 different products or combinations of products. As multiple minerals are often mined within one mining deal or site, some products are only ever named as auxiliary products in combination with a main product, e.g. silver or nickel. Here, only the main product of a deal was accounted for. With 163 deals, gravel constituted 30% of all mining deals, followed by limestone with 27% of all mining deals (see Table 15). Gravel and limestone deals are spread across the country (see Figure 18).

Gold mining accounted for by far the largest area granted in the mining subsector. With 235,206 ha, it covers 59% of the total area granted for mining deals (see Table 16). Together, gold and copper cover 73% of the total area granted for mining projects with only 22 deals combined. Further common products besides gold and copper are potassium, bauxite, and coal (see Table 16).

The inventory shows that minerals are frequently mined in combination. Gold is mined in a total of 52 deals, but occurred as the main product in only 15 of these deals. The inventory includes 14 deals where two or more minerals are mined in the same deal, e.g. gold, iron, zinc, lead, and copper. Together, these multi-product deals accounted for 47% of all mining deals granted. The two largest mining deals together – a mine in Savannakhet for extraction of gold, silver, and copper, and a gold mine in Bolikhamxai – account for 47% of the total area granted for all mining deals.

The 30 projects with the largest area granted are all deals for mineral ore mining, and comprise 90% of all mining deals. This reflects the fact that ore is relatively difficult to extract, thus it often requires a large investment of capital and expertise which is more feasible to develop these projects on large areas of land. Due to these constraints of production and excavation, the mineral mining sector consists of a small number of deals, which makes it very dependent on factors such as global demand and market prices for a few minerals. Mineral mining is complemented by a large number of very small-scale mining deals targeting the production of construction materials – primarily gravel and rock – for which rural development and urbanization processes are generating growing demand.

Table 15: Most common products of the mining subsector by number of deals

Product	Number of deals	Share of all mining deals
Gravel	163	30%
Limestone	146	27%
Stone *(Stone is used as a construction material)*	31	6%
Sandstone	22	4%
Barite	20	4%
Tin	17	3%
Clay	17	3%
Coal	16	3%
Gold[29]	15	3%
All other products	94	17%
Total	**541**	**100%**

[29] Includes deals with multiple products, but where gold is the most common product.

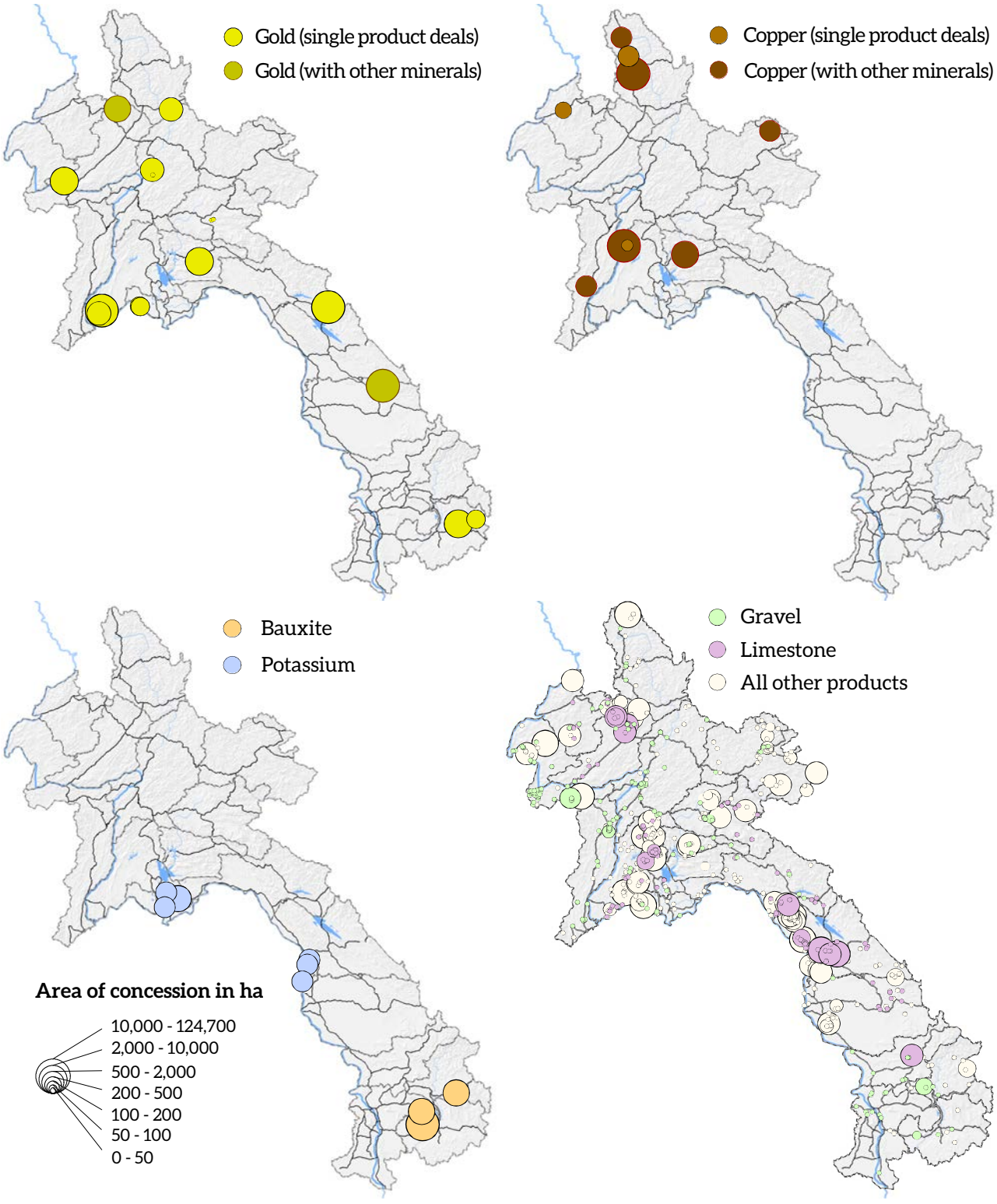


Figure 18: Mining deals by product and area granted

Table 16: Most common mining products by total area granted

Product	Number of deals	Share of all mining deals	Area granted (ha)	Share of total area granted for mining deals
Gold	15	3%	235,206	59%
Copper	7	1%	54,402	14%
Potassium	5	1%	20,749	5%
Bauxite	2	0%	17,292	4%
Coal	16	3%	16,536	4%
All other mining products	496	92%	51,689	13%

Mining projects in the preparation phase

In addition to mining deals in the excavation phase, described above, the land deal inventory contains 237 deals in preparatory phases (prospecting, exploration, initial and detailed feasibility study). As shown in Figure 19 and Figure 20, there is a high density of deals of the preparatory phase located in southern Lao PDR, in Xekong and Attapeu Provinces, and northwest of Vientiane Capital in Vientiane and Xayabouly Provinces. A total area of 10,735,077 ha has been granted to deals still in the preparatory phase at the time of data collection. The development of petroleum projects accounts for almost half (48%) of this area and includes a total of three deals. The products copper, gold, and coal follow after petroleum as the most common products to be produced in the remaining area granted (see Table 17).

Table 17: Most common mining products of deals in the preparation phase (stages exploration, prospecting, and feasibility study) by area granted

Main product	Area granted (ha)	Share of total mining area in preparation phase
Petroleum	5,138,400	47.86%
Copper	1,432,790	13.35%
Gold	1,150,671	10.72%
Coal	642,061	5.98%
Iron	393,302	3.66%
Bauxite	338,728	3.16%
Gas	308,500	2.87
Potassium	285,942	2.66%
Other	1,044,682	9.73%
Total	**10,735,077**	**100%**

Lignite mine in Hongsa District, Xayabouly Province. © Michael Epprecht, 2018

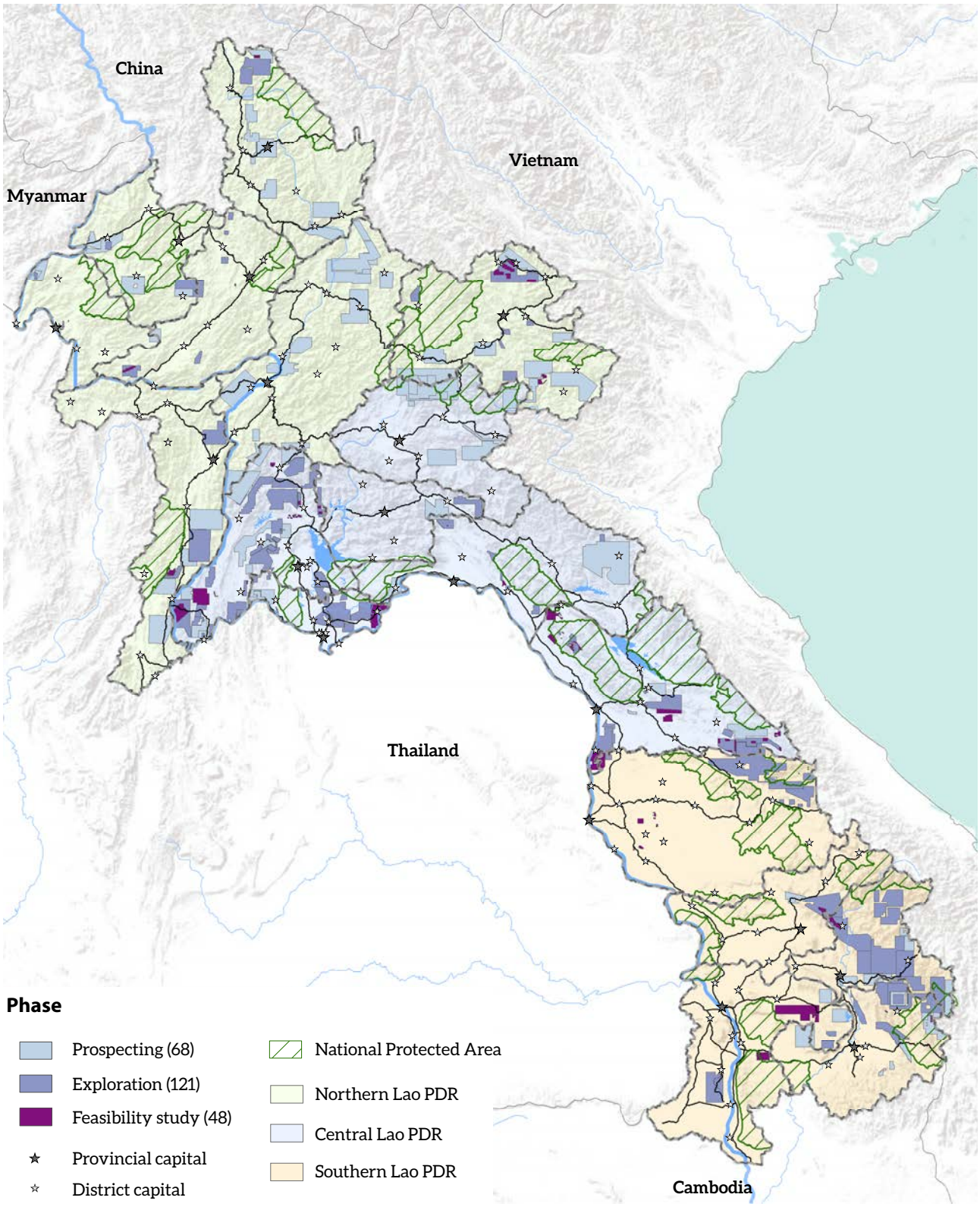


Figure 19: Mining deals in preparation

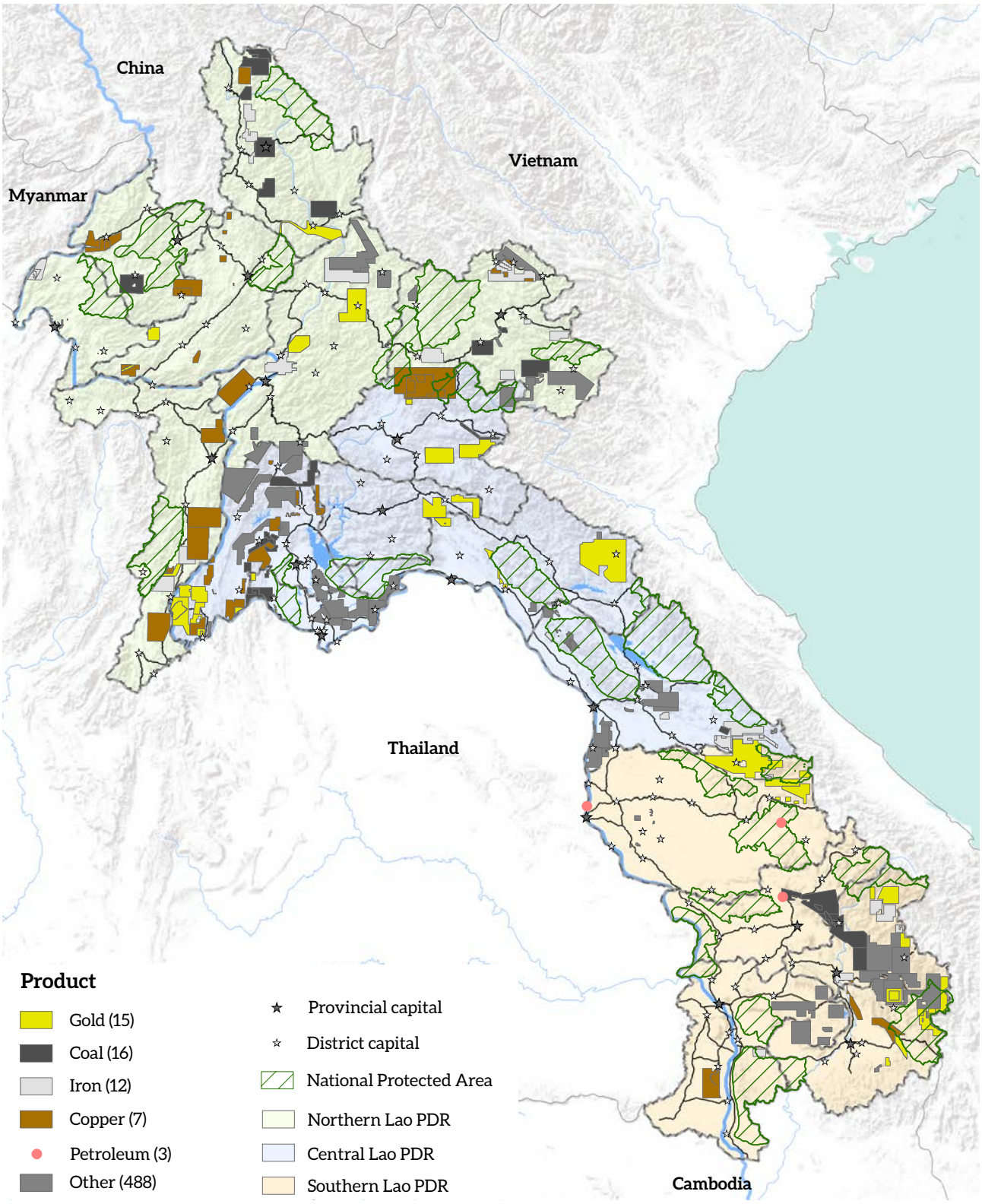


Figure 20: Mining deals in preparation by main product

Deals by country of origin of investors

One key consideration when measuring and comparing land investments in the Lao PDR is whether deals are driven by foreign or domestic capital, and how the origin of investors reflects the country's growing integration into regional and global economies. Lao investors are by far the most significant in terms of number of deals. Across the primary sector, there are 716 domestic deals, which is 61% of all deals in the primary sector (see Table 18). Domestic deals are spread across the entire country but are found in particularly high density along road No. 10 leading north from Vientiane Capital (see Figure 21). Vientiane Province has the highest number of domestic deals (97), followed by Xayabouly (68), where a great number of deals are located in the vicinity of the Boten border crossing to China, and Champasak in the South (66), where many deals have been established on the Bolaven Plateau.

The inventory indicates 381 deals granted to foreign investors. The main foreign countries with companies who have invested in land deals in the Lao PDR are its direct neighbours – China, Vietnam, and Thailand – of which Chinese investment is by far the most significant in terms of area granted. Additionally, Chinese investors have entered into 40 bilateral or multilateral joint venture projects. Chinese land deals are also significantly larger (at 1,753 ha on average) then those of other common foreign investors (with Thai land deals an average 1,438 ha, and Vietnamese deals 1,246 ha on average). South Korean investors also have a total of 30 deals in the primary sector, making South Korea the fourth most common country of origin for investors. The remaining foreign investors are primarily from other Asian countries - India (6 deals), Japan (6), Malaysia (9), and Singapore (3) – and a limited number of deals are with investors from western countries. Figure 21 shows that deals under foreign investment are predominantly located close to the respective investor country borders.

When looking at the total area granted per country of origin, Lao and Chinese deals are the most significant with 276,541 ha and 287,436 ha, or 29% and 30% of the total area granted respectively (see Table 18).

Table 18: Most common countries of origin of investors by number of deals granted and total area granted

Country	Number of deals	Share of all deals	Area granted (ha)	Share of total area granted
Lao PDR	716	60.6%	276,541	28.8%
China	164	13.9%	287,436	30.0%
Vietnam	108	9.1%	134,616	14.0%
Thailand	43	3.6%	61,838	6.4%
Lao PDR-China	38	3.2%	33,081	3.4%
South Korea	30	2.5%	43,899	4.6%
Lao PDR-Vietnam	17	1.4%	5,072	0.5%
Lao PDR-Thailand	14	1.2%	11,325	1.2%
All other countries and combinations (joint venture partnerships)	51	4.3%	105,449	11.0%
Total	**1,181**	**100%**	**959,256**	**100%**

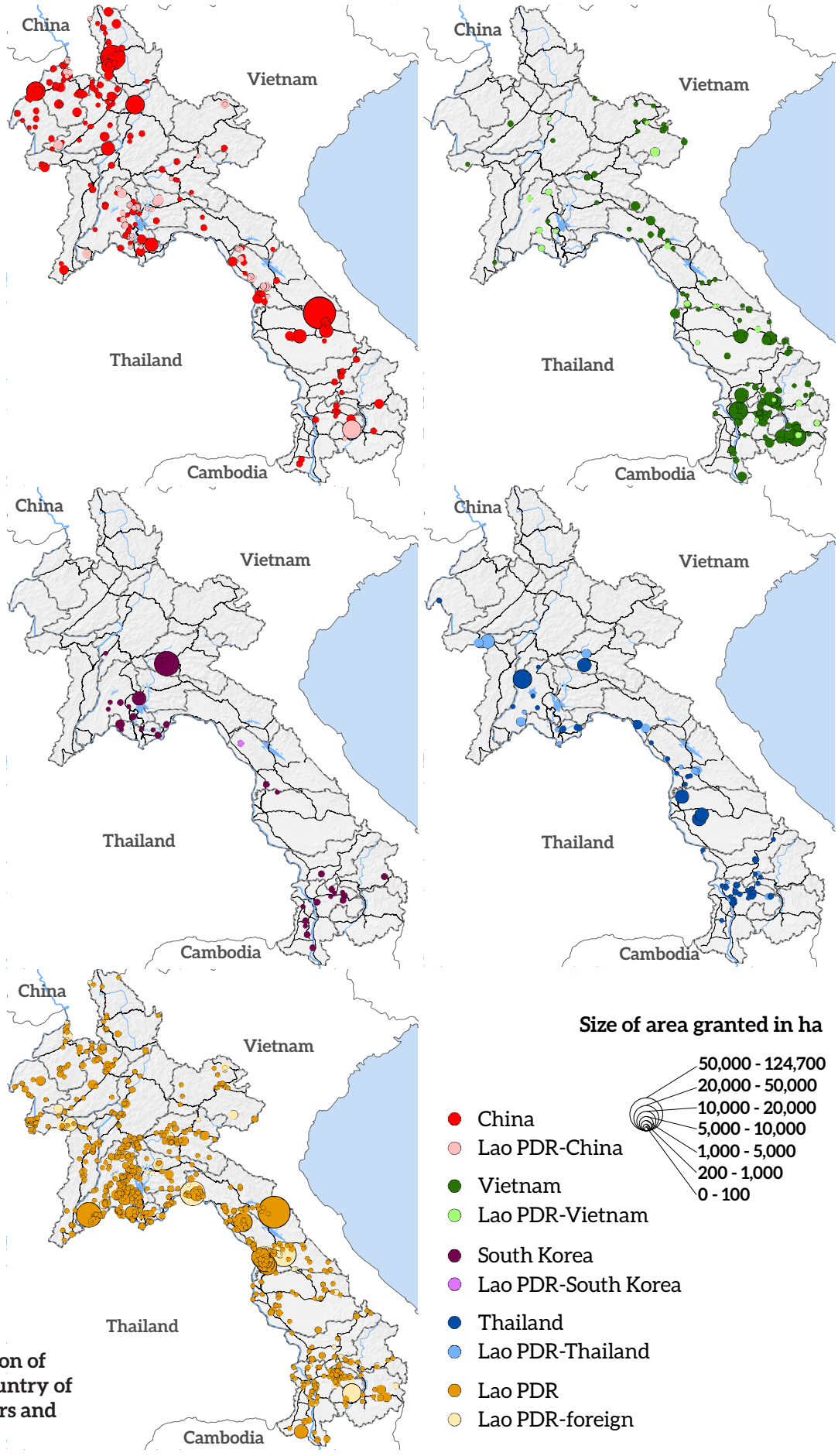


Figure 21: Location of land deals by country of origin of investors and project size

Deals by product and origin of investor

Disaggregating further by products produced offers insights into which countries were the dominant investors in certain products. Figure 22 provides an overview of the origin of investors and their respective common products. Domestic investments dominated gold and sugarcane land deals, accounting for nearly half of the area granted for gold mining and 72% of the area granted for sugarcane development. It is worth noting that this was mainly achieved through many small projects as opposed to a few large ones (as shown in the "Origin of investors" section above). Lao investors also invest in the greatest diversity of products. Altogether, there were 64 different products developed by Lao investors as compared to 39 by Chinese, 33 by Vietnamese, and 24 by Thai investors. China, as the most active foreign investor in terms of land area, predominantly invests in gold and rubber, accounting for half of the total area granted for both gold and rubber. Other main products developed under Chinese land deals include copper and potassium, which in combination with gold and rubber constitute 88% of the total area granted to Chinese investments overall. Chinese deals cover another 35 different products which constitute 12% of the total area granted to Chinese investors.

Vietnam, the second largest foreign investor in terms of area granted, invests primarily (almost 80% of its granted area) in developing rubber plantations, while the next most common products, livestock and sugarcane, account for only 5% and 4% of the area granted to Vietnamese investors. Another 30 products together account for the remaining 11% of the area under Vietnamese investment.

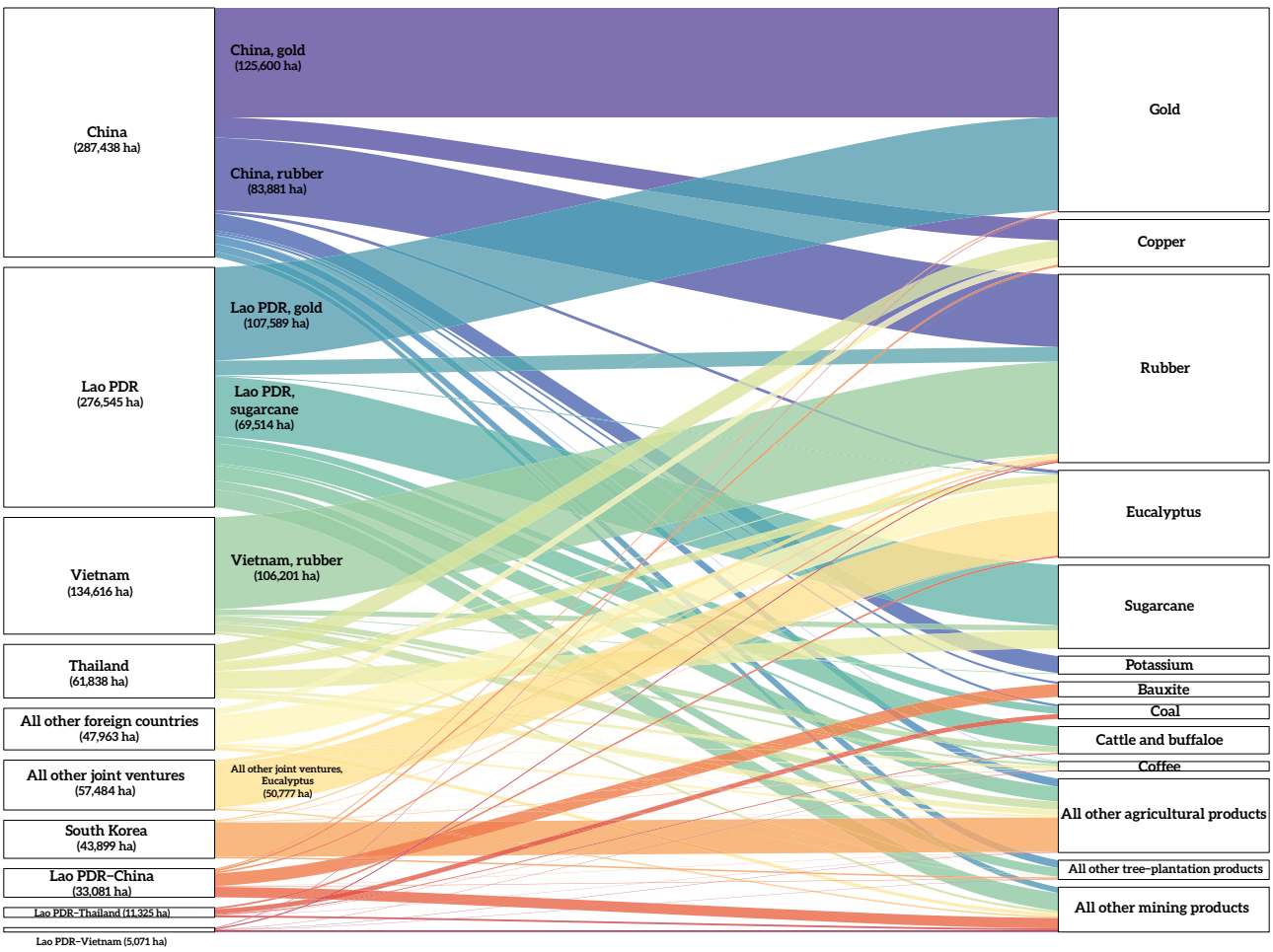


Figure 22: Most common investor countries and most common products invested in

Granted versus developed land

This section takes the above analysis one step further by considering not just the number of deals and land area granted, but also how much of the granted land has been developed. This is important when considering the potential impacts of land deals, and also relates to issues of land availability. For various reasons, investors may try to acquire deals with a larger area than they can actually develop. Reasons may include area-dependent tax benefits, access to means of financing, state subsidies, and negotiating power, which all tend to be higher with larger deal sizes. Additionally, there is the issue of land speculation,

in which investors demand to secure their access to land while it is still available, perhaps without immediate plans for development. Furthermore, during deal implementation, projects might face a number of issues, such as managerial and technical difficulties (Nolte et al. 2016), that lead them to limit their implementation to a small portion of the originally planned development area. Finally, GoL authorities have been shown to often grant areas in the initial negotiation of concession agreements that are unrealistic or unavailable, a problem exacerbated by the tendency to grant land before surveying it (Lu and Schönweger 2019). Consequently, total area granted is not always indicative of the actual extent of project operations, and therefore is not the most suitable metric when investigating issues related to potential impact. For certain questions, it is more appropriate to consider the actual area that has been developed by the investor.

The land deal inventory documents 539,622 ha developed in the agriculture, tree plantation, and mining subsectors. But the area developed in these subsectors comprises only 56% of the total area granted (see Figure 23). Furthermore, disaggregation of area developed by subsector reveals significant differences. A relatively high share of area granted has already developed in the tree plantation and mining subsectors (61% and 63%), while in the agricultural subsector only 36% of granted area has been developed.

The high share of developed area for tree plantation projects may be related to PM/13, which aimed to limit the further expansion of tree plantation projects by prohibiting the approval of new projects for rubber and eucalyptus and thus limiting those crops' development to already existing projects. This may, in turn, have incentivised those projects to expand to the maximum size possible resulting in a higher share of area granted being eventually developed.

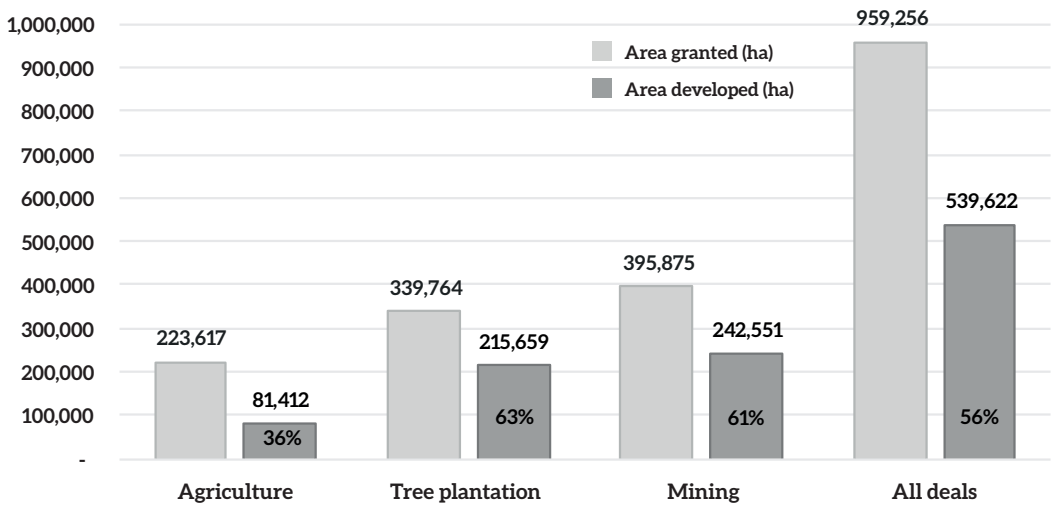


Figure 23: Comparison of total area granted and total area developed by subsector

Granted versus developed land by stage of land deal development

Further relevant insights into the discrepancy between the amount of area planned for land deals and the area developed is provided by disaggregating of area granted and area developed by stage of land deal development. A total of 480,049 ha had been developed by deals in their active development stages (start-up/construction and operational) at the time of data collection. This constitutes 65% of the area granted to deals in these two stage categories. The remaining 257,983 ha granted to these deals were not yet developed (see Table 19).

For completed deals (in the stage, "contract complete and operations concluded"), 69% of the granted area has been developed. This may be a good indicator of the total proportion of land expected to be developed out of the originally granted area over the lifetime of an active deal. As seen previously, 65% of the area granted had already been developed by deals in the two stages: "start-up/construction" and "operational". This 4% difference between the share of area developed by deals in their start-up and operational stage, and the share of area usually developed over the lifetime of a land deal suggests that overall these active deals had nearly reached their expected level of development.

The total area granted to deals that have temporarily or ultimately finished their operations amounts to nearly 160,000 ha, or 16.4% of the total area granted. The undeveloped land of these deals could either be redistributed back to the government, or even allocated to deals that are interested and eligible to expand their operations, but have not been granted more land.

Table 19: Land granted but not developed by land deals

Stage of land deal development	Area not yet developed (ha)	Percent of granted area not developed
Not yet started	4,010	100%
Active deals (includes stages "Start-up/ construction" and "Operational")	257,983	35%
Abandoned	25,677	40%
Ceased operations in contract period	49,504	72%
Contract complete and operations concluded	580	31%
Never started	81,879	100%

The comparison between area granted and developed for failed deals (stages "abandoned", and "ceased operations in contract period") and properly concluded deals (stage "contract complete and operations concluded") shows that failed deals generally develop smaller proportions of the originally granted area than deals that were successfully concluded. Among failed deals, 40% (stage "abandoned"), respectively 72% (stage "ceased operations in contract period") of the area granted remained undeveloped until the termination of activities, whereas for properly concluded deals 31% of granted area was not developed (see Table 19).

Area granted and area developed for selected products

There were great differences in terms of the proportion of granted area that was developed under land deals depending on product (see Figure 24). For gold, the product with the biggest total area granted, only 48% of the granted area had been developed at the time of data collection. On the other hand, for other common mining products (copper, potassium, bauxite, and coal), nearly all of the area granted has been developed. Therefore, for these products, new projects would be necessary in order to expand the area of mineral extraction in the future.

Rubber plantations, on the other hand, have already been developed in 70% of the total area granted to rubber. 65,706 ha of land has been granted to rubber plantations that remained to be developed. Sugarcane and cassava have smaller percentages of areas developed, at 29% and 11% respectively. For sugarcane, 68,486 ha can still be developed by investors, and 40,893 ha for cassava within the limits of total areas granted.

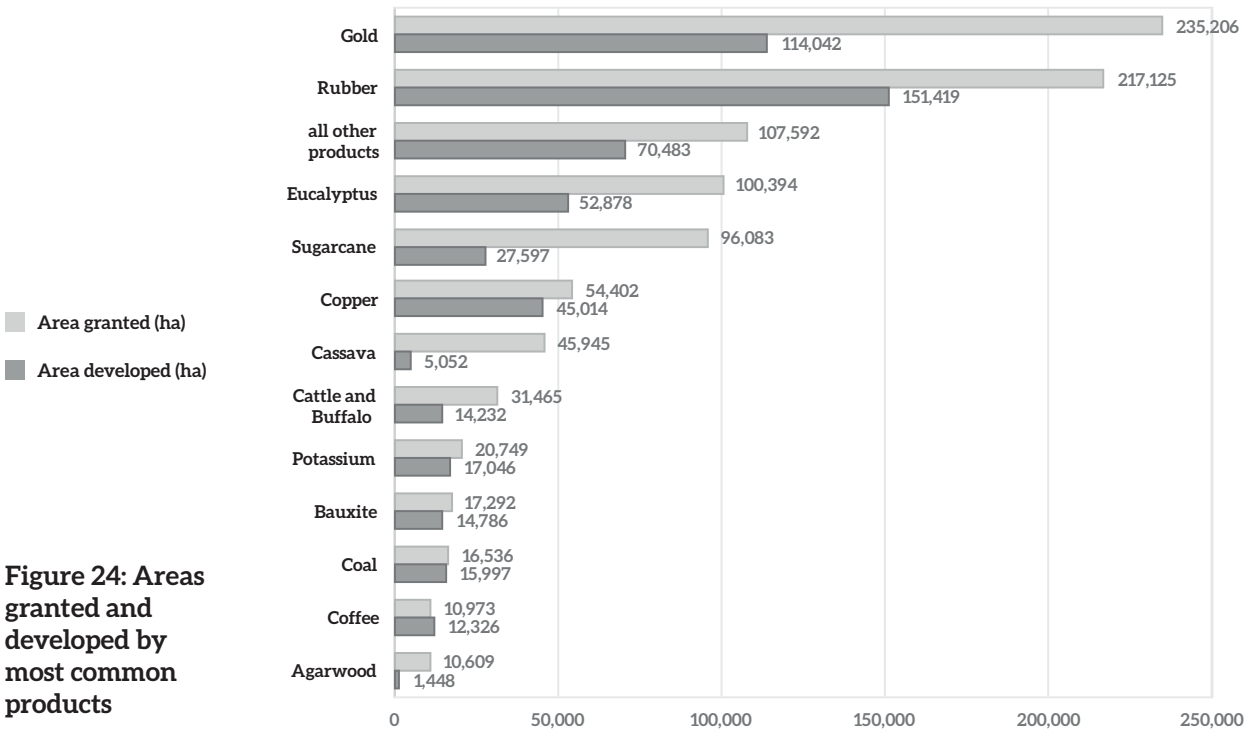


Figure 24: Areas granted and developed by most common products

Area granted and area developed by province

The various provinces of the Lao PDR showed great differences not only in terms of total area granted to land deals but also in terms of total area developed (see Figure 25). Bolikhamxai had the largest total area developed for land deals (87,016 ha), followed by Savannakhet (74,768 ha) and Champasak (71,574 ha). The ratio of area granted to area developed varies greatly between provinces. In Savannakhet, the province with the largest total area granted (228,568 ha), the area developed was only 33% of the area granted to projects (see Figure 25). Particularly in the mining subsector in Savannakhet, the total area so far developed for projects was small compared to the total area granted. Land deals in Xiengkhouang and Khammouan have so far developed only 20% and 24% respectively of their total area granted. For Xiengkhouang, the vast majority of undeveloped land can be attributed to two large deals, for which operations ceased during the contract period. They include a cassava deal for which 30,000 ha were granted but only 1,048 ha were developed, and a deal for cattle and buffalo for which 10,000 ha were granted but not developed. In Khammouan, the area developed for agriculture projects was only 2% (1,887 ha) of the area granted (80,000 ha) so far. In Khammouan, two sugarcane deals of a combined 29,424 ha granted, three cattle and buffalo deals with 13,768 ha granted, all never started operations. Three sugarcane deals which are now operational had 33,616 ha granted, but only 337 ha developed. These account largely for this difference in Khammouan between total are granted and developed area.

Land deals in Houaphan and Bokeo, the provinces with the smallest total area granted to land deal development have already developed more than 90% of their granted areas.

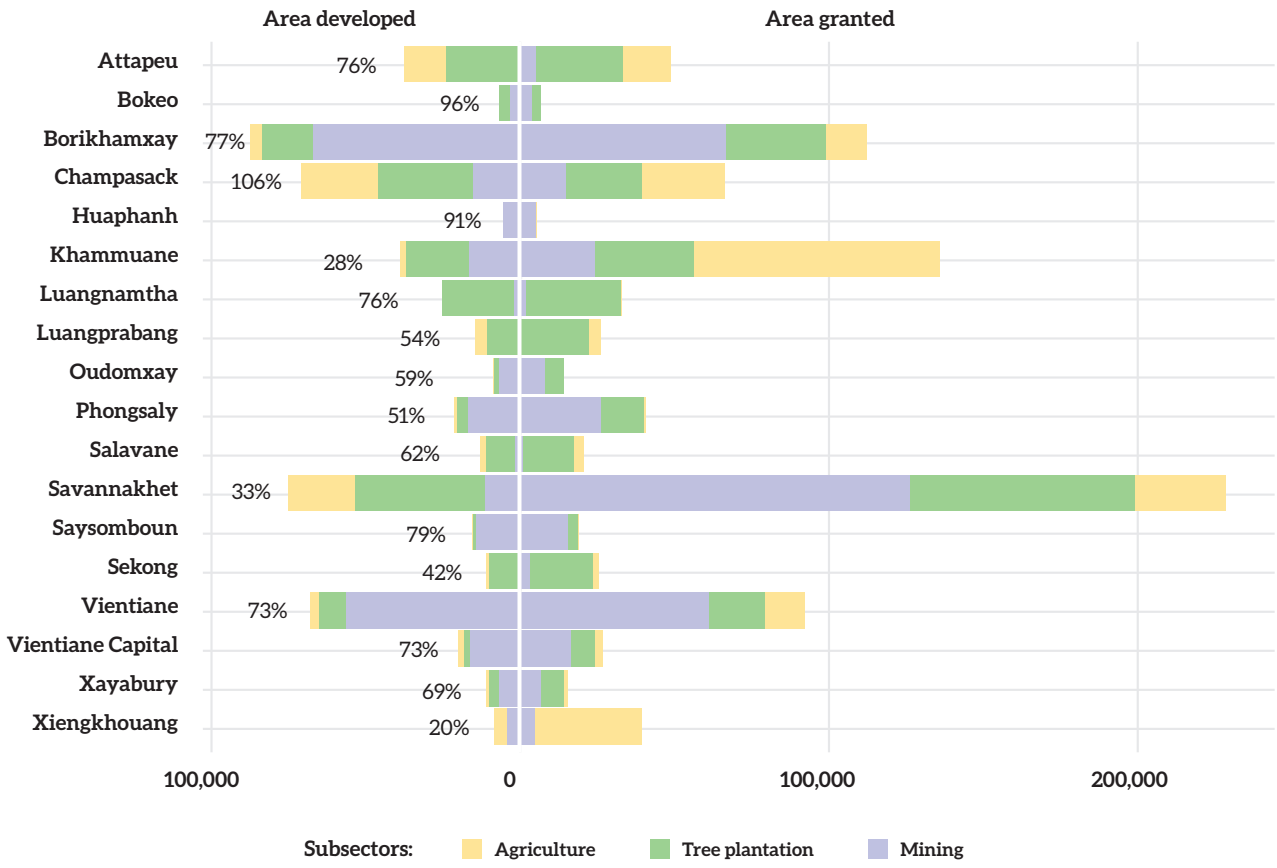


Figure 25: Areas granted and developed in each province by subsector. Percentages refer to the total share of area granted that has been developed so far per province.

Changes between the 2012 and 2018 inventories

There are now two snapshots in time available of nationwide assessments of land deals in the Lao PDR: the 2012 inventory and the 2018 inventory (see Chapter 2). This allows for the analysis of changes which took place within the last six-to-nine years[30]. During this time, the overall number of land deals in the three subsectors of agriculture, tree plantation, and mining increased by 29%, from a total of 1,126 to 1,450 deals[31]. The mining subsectors saw a significant increase of 69% increase in number of deals, or from 399 to 673 deals. An increase in number of deals also took place in the agriculture subsector, with 89 more deals, or an increase of 25%, while the corresponding area granted for agriculture deals increased by 70%. The tree plantation subsector saw a decline in the number of deals by 39, and the number of deals still registered in the 2018 Inventory constitutes 89% of the total deals registered in the 2012 Inventory[32]. Still, the total area granted for tree plantation deals rose by 16%, from 306,234 ha to 354,754 (see Figure 26).

According to the data on mining deals, the area granted in 2018 amounts to only 76% of the area listed as already granted in 2012. This likely relates to the fact that the categories of stages of operation, which in the mining subsector differentiate between deals in preparatory stages (feasibility study, exploration, prospecting) and the excavation stage, may not be accurate in some cases in the first inventory (Schönweger et al. 2012). For example, a number of mining deals were categorized as having been granted for excavation already in 2012, while in 2018 these same deals were classified as still in preparatory stages. An examination of the largest deals shows that at least 244,000 ha are concerned with this mismatch of stages of development between the two inventories.

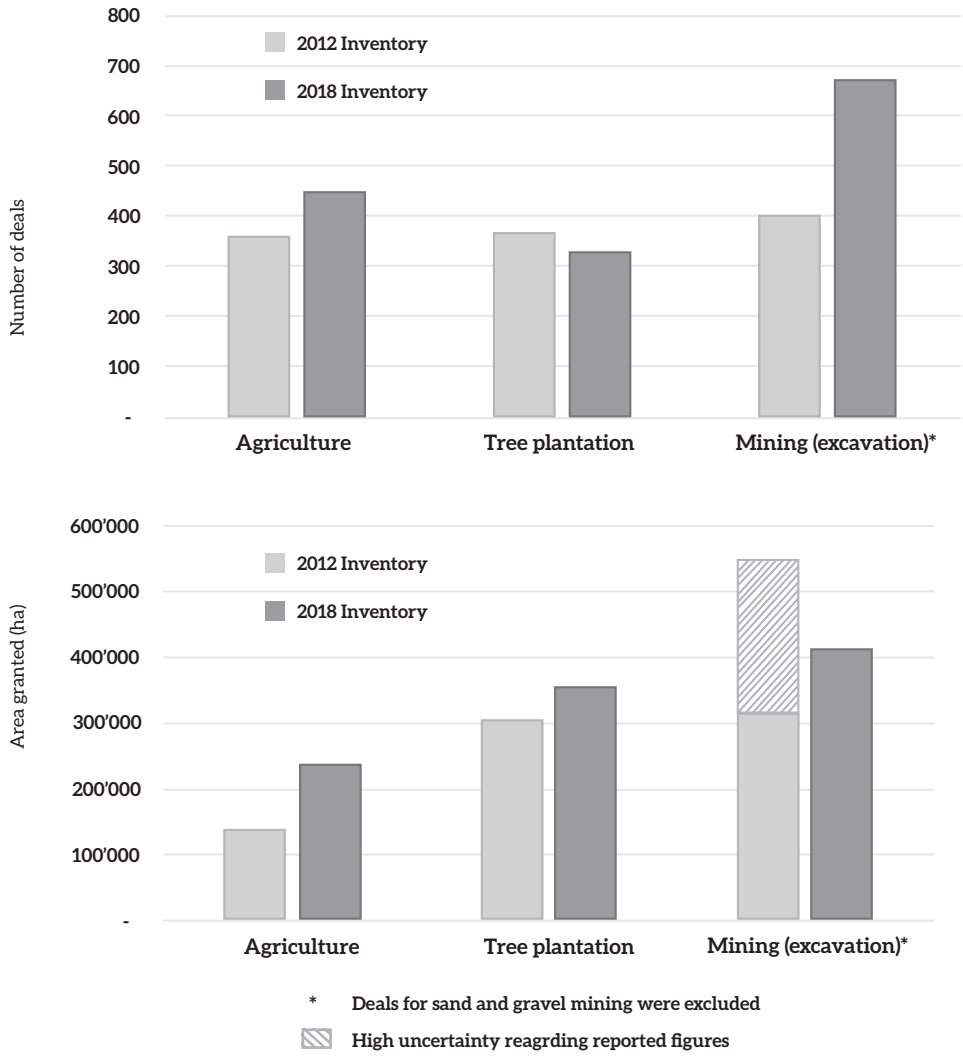


Figure 26: Change in the number of deals and area granted between the 2012 and 2018 inventories

[30] Data for the first inventory (referred to as the 2012 Inventory) was collected between 2007 and 2010, whereas the data for the second inventory (referred to here as the 2018 Inventory) was largely collected between 2016 and 2017.

[31] For consistency between the two inventories, sand and gravel were excluded from analysis here. The 2012 Inventory summarized these deals in one category, whereas in the 2018 Inventory, gravel was accounted for, but sand was omitted due to the sheer number of small sand deals and problems with accounting for them during field data collection.

[32] The decline in number of deals in the tree plantation subsector is surprising. The decline in number is most likely due to improvements in data cleaning and aggregation in the 2018 Inventory, where large-scale, multi-province deals where accounted for only once, whereas they may have been accounted for on a province by province basis in the 2012 Inventory.

Change in products

The analysis of most common products in the agriculture subsector in both inventories reveals enormous increases in areas granted for cassava and sugarcane (see Figure 27). The area granted for sugarcane nearly tripled, rising from 34,969 ha to 96,083 ha. This crop now accounts for 40% of the area under agricultural land deals, but only 25% at the time of the first inventory in 2012. The area granted for cassava surged from 14,747 ha to 47,462 ha making cassava the second most common agricultural product in terms of area granted. At the time of the first inventory, cassava was the fifth most common product by area granted, constituting only 9% of the total area granted for agriculture deals. Sugarcane, livestock, jatropha, and coffee preceded it in terms of area granted. The area for livestock raising increased by nearly 11,000 ha and the number of livestock deals increased drastically from 58 to 100, which resulted in smaller average deal sizes in the 2018 inventory (dropping from 543 ha to 423 ha). Finally, two common agricultural products saw a decline in area granted over the past few years: coffee and jatropha. For coffee, although the number of deals rose from 59 to 70, the reported area granted in 2018 has declined to 55% of the 2012 report area granted (from 19,105 to 10,517 ha). The most likely reason for this is the consolidation of small deals into fewer, larger ones. Changes in crops – particularly from coffee to cassava – as well as downsizing deals for which the original area granted was found to be too large, are prominent reasons for the decline in total area granted for coffee. The area granted to jatropha also declined drastically, to the point that the reported area granted in 2018 is only 44% of the area reported in the first inventory. Jatropha was a popular boom crop in the Lao PDR in the early 2000s when its potential as a biofuel was widely championed. This boom, however, was followed by a bust when profitability proved low and the crop fell out of favour with investors globally. While the first inventory documents a considerable number of deals as well as large areas granted, Schönweger et al. (2012) reported at that time that many deals were in the process of being cancelled or not operating. A decline in the reported area granted for jatropha of around 9,000 ha is attributed to the Kolao Farm deal, under which originally 20,000 ha was granted but the investor returned around 11,000 ha to the government due to deal failure.

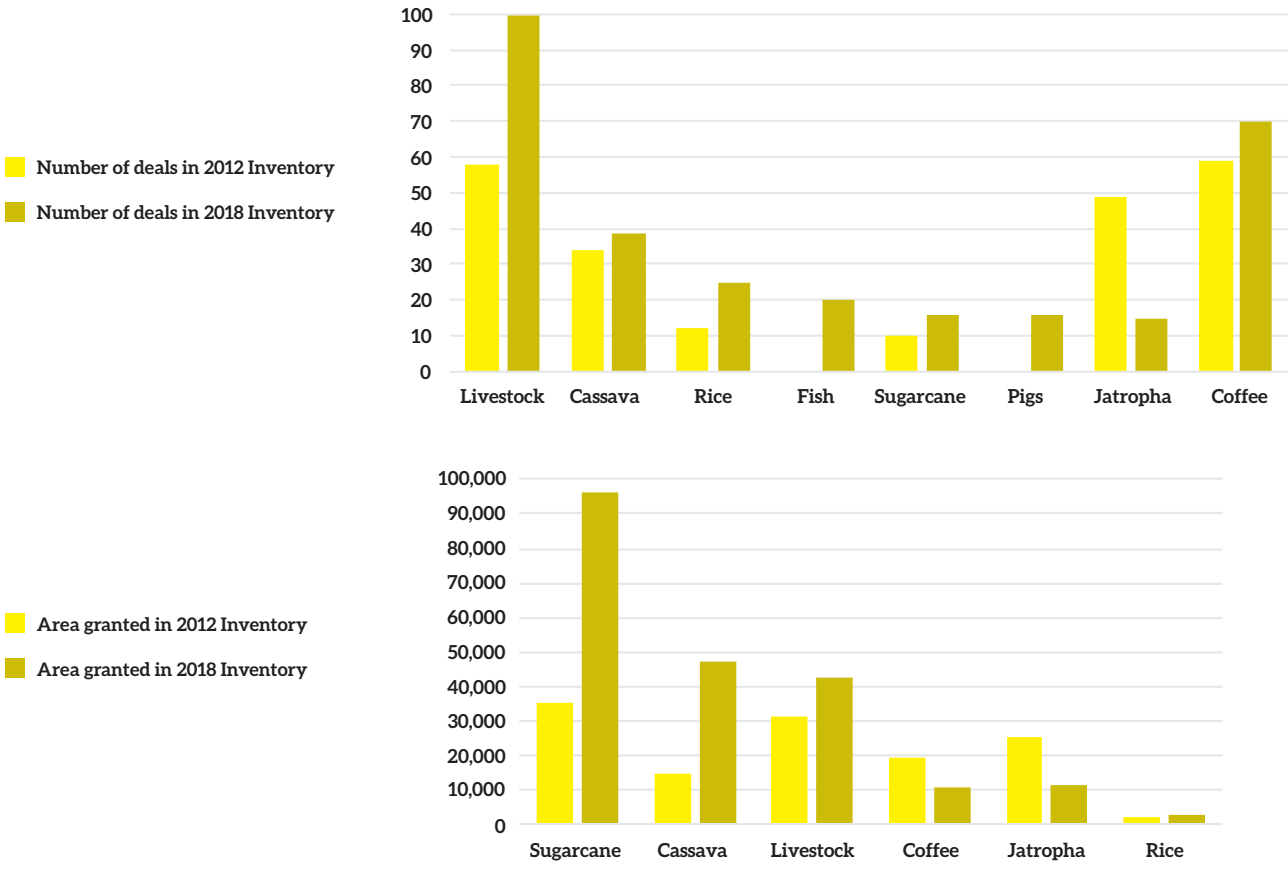


Figure 27: Comparison of most common products by number of deals (top) and area granted (bottom) in the agriculture subsector between the 2012 and 2018 inventories

In the tree plantation subsector, no changes in the major products under investment occurred between inventories. Both report rubber as the most common crop, followed by eucalyptus (see Figure 28). There was, however, a general decrease in number of deals reported, while at the same time the total area granted for rubber increased by 52% of the area granted reported in the first inventory (increase of 75,422 ha), and by 14% for eucalyptus (increase of 13,731 ha). The high increase in the reported area granted between the two inventories for rubber is most likely due to (1) an expansion of the area granted to rubber deals, (2) the fact that the 2012 Inventory didn't include 1+4 type land deals categorize the products of tree plantations in Luang Namtha Province, a major province for rubber plantation, and (3) differing figures for the area granted of deals. The area granted reported in the two inventories for a particular deal may differ either based on an expansion of existing deals, and thus an adjustment of area granted in the 2018 Inventory, or based on missing figures for the area granted in the 2012 Inventory, but reporting of such in the 2018 Inventory (e.g. a deal in Attapeu, granted in 2008, reported 17,950 ha granted in the 2018 Inventory, while its area granted was not reported in the 2012 Inventory).

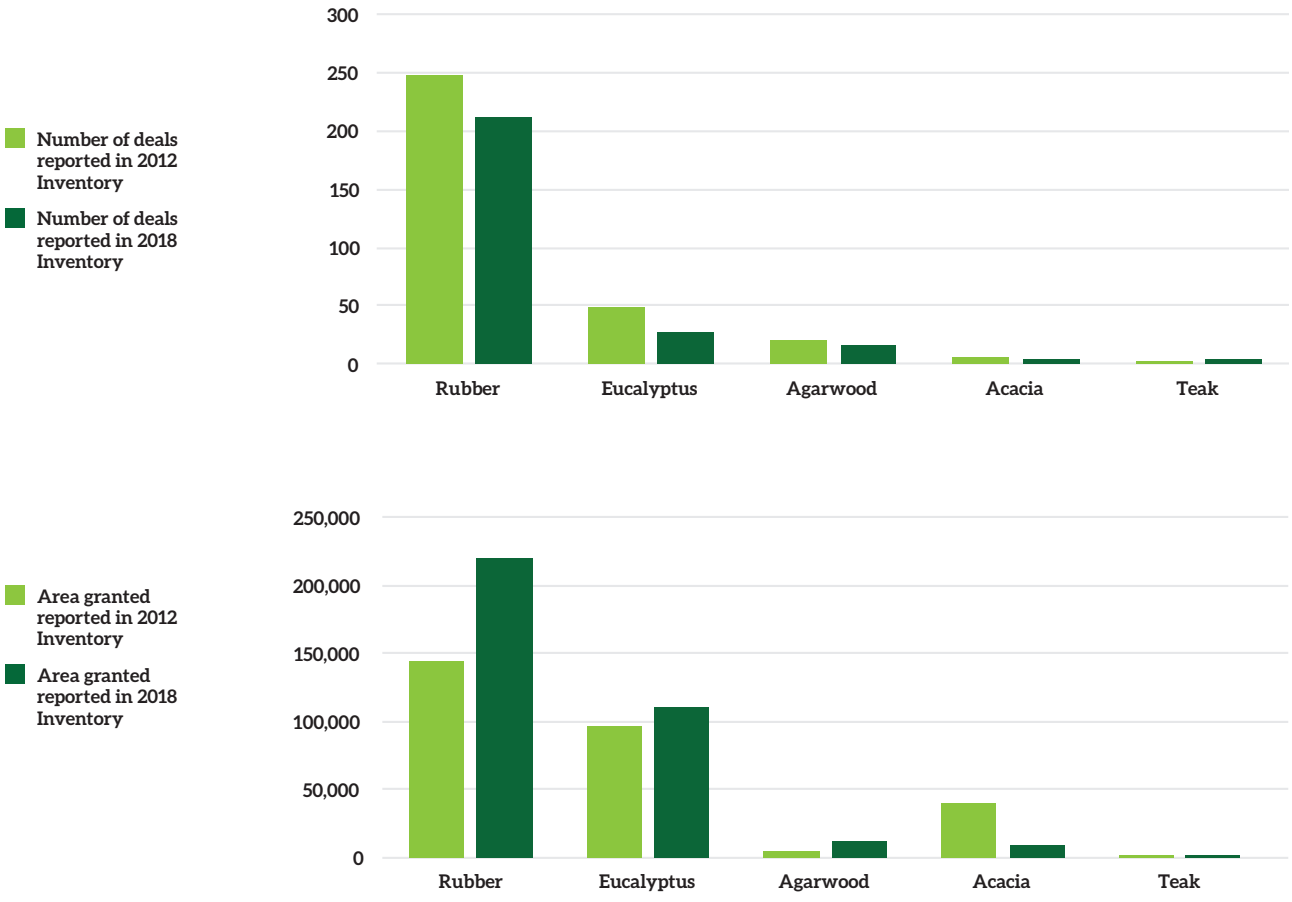


Figure 28: Comparison of most common products by number of deals (top) and area granted (bottom) in the tree plantation subsector between the 2012 and 2018 inventories

Sand and gravel constitute the most common products both in the 2012 Inventory (165 sand/gravel deals), and 2018 (170 deals for gravel alone, while sand was not accounted for). Of the remaining mining products, limestone has the highest share of deals in both inventories (14%, and 25% respectively), see Table 20. While gold, zinc, and iron are the next most common deals in the 2012 Inventory, they are less prominent in the 2018 Inventory. A number of new products also appear: barite, clay, and rock each constitute 3% of mining deals in the 2018 Inventory.

Table 20: Comparison of most common mining products between the 2012 and 2018 inventories

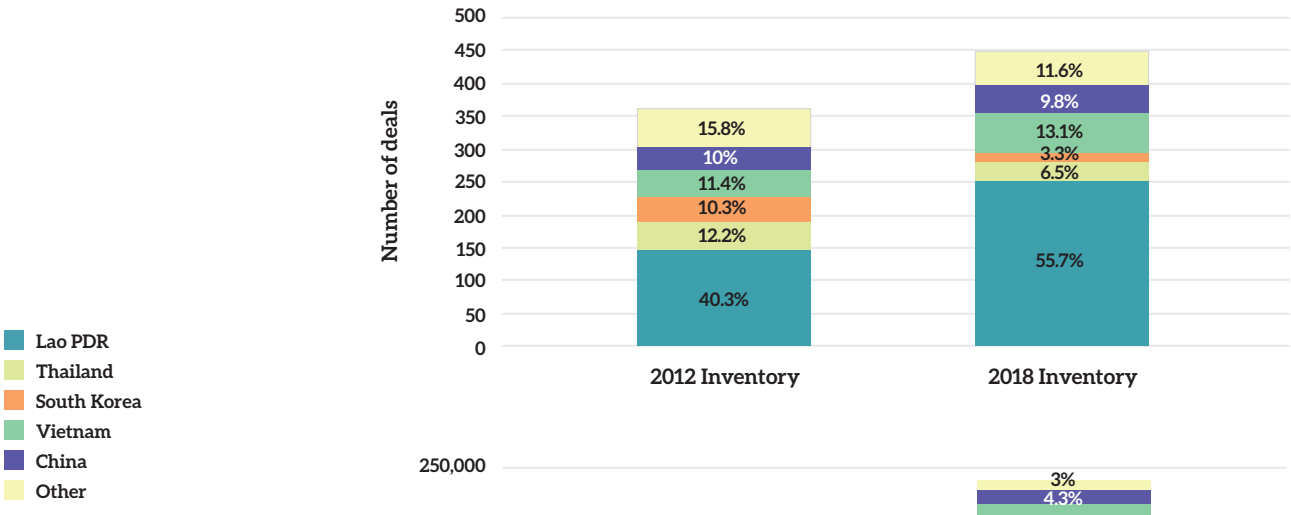
	2012 Inventory		2018 Inventory	
Product	**Number of deals**	**Percent**	**Number of deals**	**Percent**
Limestone	54	14%	166	25%
Gold	32	8%	16	2%
Zinc/Tin	23	6%	18	3%
Iron	22	6%	13	2%
Copper	16	4%	9	1%
Coal	16	4%	17	3%
Bauxite	7	2%	3	0%
Other	229	57%	431	64%
Barite	-		20	3%
Clay	-		19	3%
Rock	-		18	3%
Other	229	57%	374	55%
Total	**399**	**100%**	**673**	**100%**

Change in country of origin of investors

Within the years which separate the first and the second inventory of land deals, there has been a tremendous move from a predominance of foreign investments over domestic investments in the agriculture subsector. While domestic deals accounted for 40% of all agriculture deals in the first inventory in 2012, this rose to nearly 56% in the second inventory. This shift is more pronounced with regards to area granted for agriculture subsector deals (see Figure 29). While Lao investments constituted 19.9% of all agriculture deals and 27,836 ha granted in the first inventory, their area granted increased fourfold by 2018 and now accounts for 48.5% (115,689 ha) of deals listed in the 2018 Inventory. The agriculture subsector is no longer dominated by foreign investment, but is balanced between foreign and domestic investment. While the area under investment by South Korean and Vietnamese investors also increased (by 1.8 and 2.2 times the area reported in 2012), share of the area under Chinese investment declined and the 2018 Inventory shows Chinese investors having only 77% of the area reported as granted to Chinese investors in the 2012 Inventory.

In the tree plantation subsector, all major investing countries increased their total area granted (see Figure 30). Vietnam surpasses China as the most common country of origin of investors in this subsector, accounting for 30% of the area granted in the 2018 Inventory, as compared to 20.5% of the total area granted reported in the 2012 Inventory. The area under Vietnamese investment increased by nearly 70%, from 62,840 ha to 106,522 ha. However, as Vietnamese investments mainly focus on rubber, a considerable share of this increase in area granted might be due to an improved dataset for area granted in 2018, as opposed to real increase in area. The area granted to joint venture deals nearly doubled from 30,228 ha to 59,093 ha. Lao investors remained the fourth most prominent investor group after Vietnam, China and joint venture deals. The area granted to Indian investors dropped significantly between the two inventories. This change, however, is largely attributed to one multi-locational, Indian deal for eucalyptus (Birla Lao Pulp and Plantation Co., Ltd), which accounted for nearly 47,000 ha granted in the inventory of 2012, but which was later downsized to 30,000 ha.

No dramatic shifts in country of origin of investor occurred with regard to the number of deals granted in the mining subsector. Joint venture deals increased from 6% to 13% of all mining deals, while the shares of domestic and foreign deals decreased slightly (see Table 21). The subsector is still dominated by domestic deals, as was the case six to nine years ago, and their dominance would be even more pronounced if sand and gravel deals were included in the analysis, as the vast majority of these deals are under domestic investment.



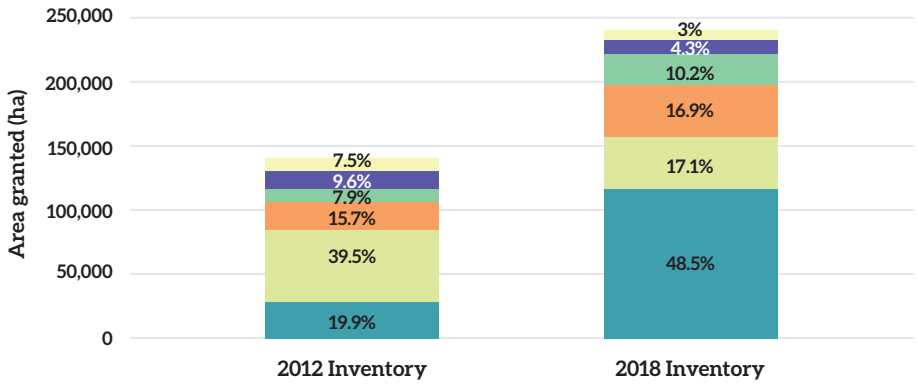
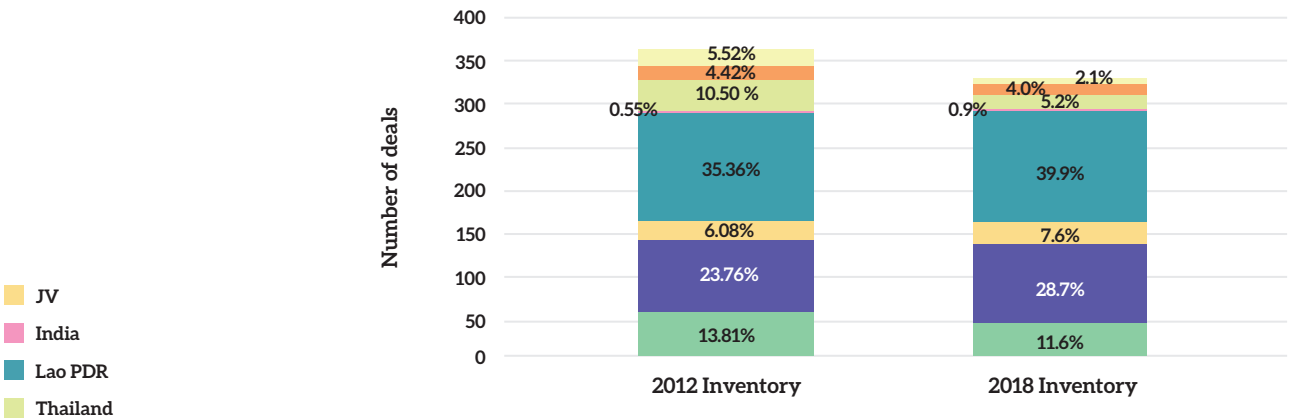


Figure 29: Changes in number of deals (top) and total area granted (bottom) by country of origin of investors in the agriculture subsector



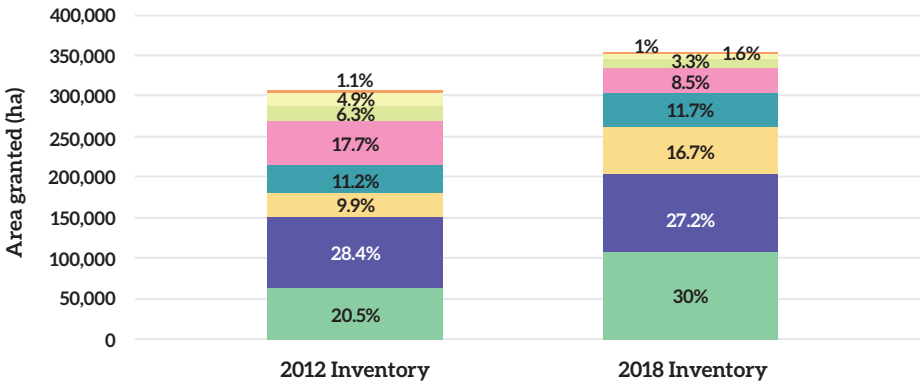


Figure 30: Changes in number of deals (top) and total area granted (bottom) by country of origin of investors in the tree plantation subsector

Table 21: Change in the number of deals by country of origin of investors and their proportion of all mining deals

		2012 Inventory*		2018 Inventory*	
Investment form	**Country**	**Number of deals**	**Share of deals**	**Number of deals**	**Share of deals**
Domestic (Lao)	Lao PDR	248	62%	390	58%
Joint Venture		24	6%	87	13%
	Lao PDR-China	Not further specified	46.00	46	7%
	Lao PDR-Vietnam		19.00	19	3%
	Lao PDR-Thailand		13.00	13	2%
	Other Joint Venture		0%	9	1%
Foreign		127	32%	196	29%
	China	69	17%	110	16%
	Vietnam	32	8%	46	7%
	Other	11	3%	28	4%
	Thailand	9	2%	6	1%
	South Korea	6	2%	6	1%
Total		**399**	**100%**	**673**	**100%**

** Sand and gravel deals excluded.*

Rubber deal near a remote village inside a national protected area, Luang Namtha Province. © Vong Nanhthavong, 2009

CHAPTER 4: Contexts of investments in land and natural resources

The previous chapter provided a description of land deals in the Lao PDR using a set of key variables from the land deal inventory. To gain insights into the socio-ecological contexts in which land deals are granted, Chapter 4 provides spatial overlays of the land deal data with selected biophysical and socioeconomic variables, an analysis of land deals in terms of the legal framework of existing rules and regulations, as well as further discussion of the social and economic dynamics around land deal development in the Lao PDR by using selected findings from the quality of investment assessment. Examining these contexts is essential for assessing potential vulnerabilities to external influences, as well as for making decisions about sustainability issues (Messerli et al. 2014).

Geographical contexts

Average elevation of land deals

The results from the overlay of land deals with elevation datasets reveal that most deals, especially in the agriculture and tree plantation subsectors, are rarely located in upland areas but rather occur more frequently in the lowlands. Approximately two-thirds of all investigated deals occur in the Mekong plains and lowland areas at altitudes below 500 masl (see Figure 31). Less than one-fifth of deals are located in the highlands[33]. More than two-thirds of deals in the tree plantation and mining subsectors, and roughly half of all deals in the agricultural subsector, are located in areas below 500 masl. On the other hand, many projects in the agriculture subsector are located in the highlands. These are primarily coffee and livestock deals, many located in the Bolaven Plateau and in Xiengkhouang Province. However, deals located in the highlands constitute less than one-quarter of the area developed for agriculture deals. More than 70% of the area developed in this subsector is in the Mekong plains and lowlands (see Figure 32). Nearly 60% of the total area developed for tree plantation deals is located below 250 masl, whereas less than one-quarter of the area developed was in areas above 500 masl. The area developed for mining deals shows a different trend, with 60% of the area already developed located in the midlands.

Accessibility of land deals to Provincial capitals and border crossings

Accessibility to Provincial capitals

Travel time to Provincial capitals can be seen as an indicator of access to markets for supplying necessary production materials, as well as selling the products of land deals. A large number of deals are located in the areas surrounding the Provincial capital (see Figure 33). The mean travel time from the nearest Provincial capital to a deal location is only around 2 hours (see Table 22), which is considerably closer than the 2.7 hours average travel time for all villages in the Lao PDR. The mean travel time from Provincial capital to areas already developed under deals varies by subsector. Agricultural and tree plantation deals follow the same trend: deals are located in areas near Provincial capitals with mean travel times of less than 2 hours. In the mining subsector, although the average travel time is still 2 hours, most are located only 1.5 hours from Provincial capitals.

A road is built to expand a rubber plantation in the mountainous landscape of Luang Namtha Province. © Vong Nanhthavong, 2009

[33] Here "lowlands" refers to areas with elevation under 500 masl, "midlands" to areas 500 – 1000 masl, and "highlands" to areas greater than 1000 masl. The Mekong plains have altitudes less than 250 masl.

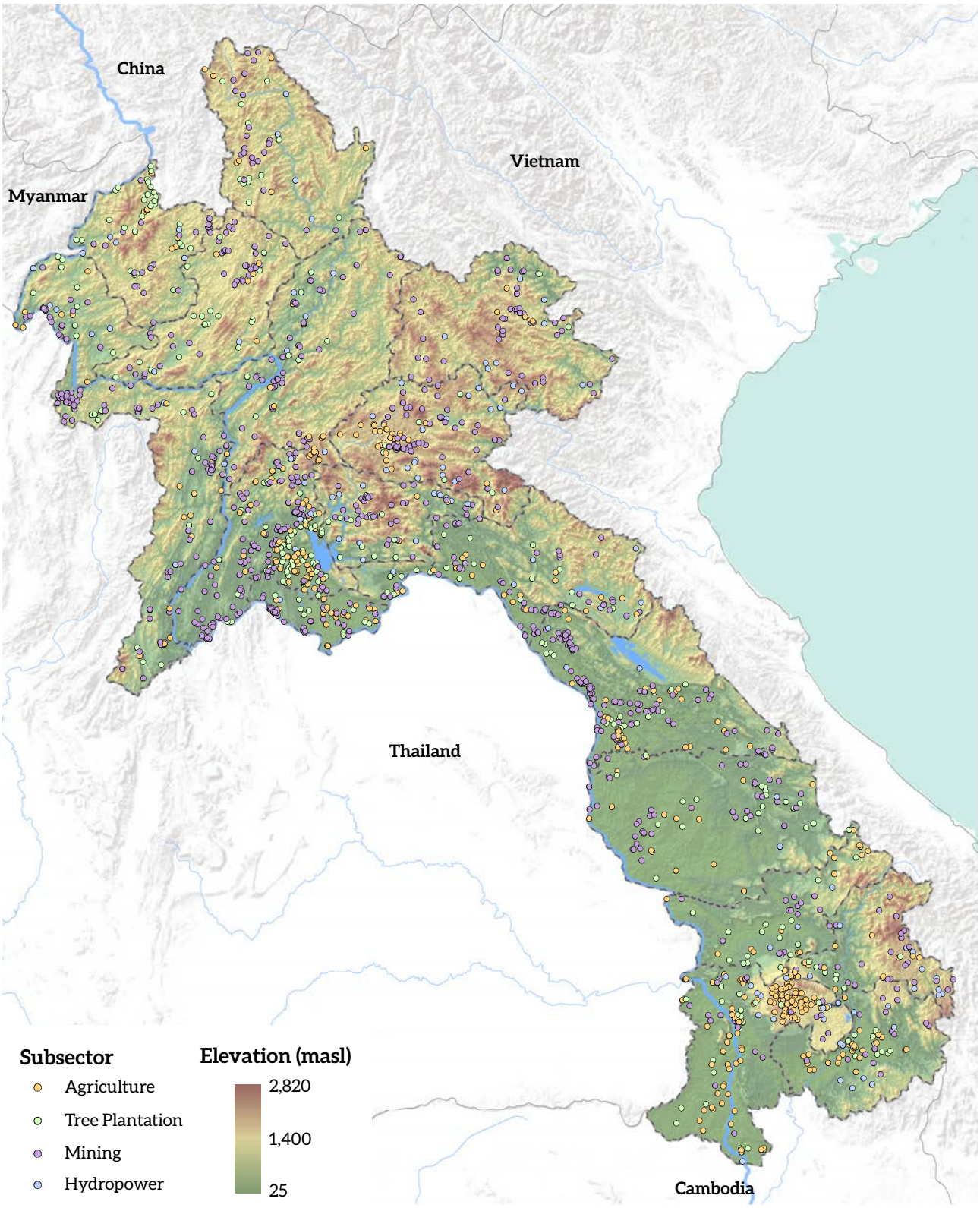


Figure 31: Mean elevation by land deals

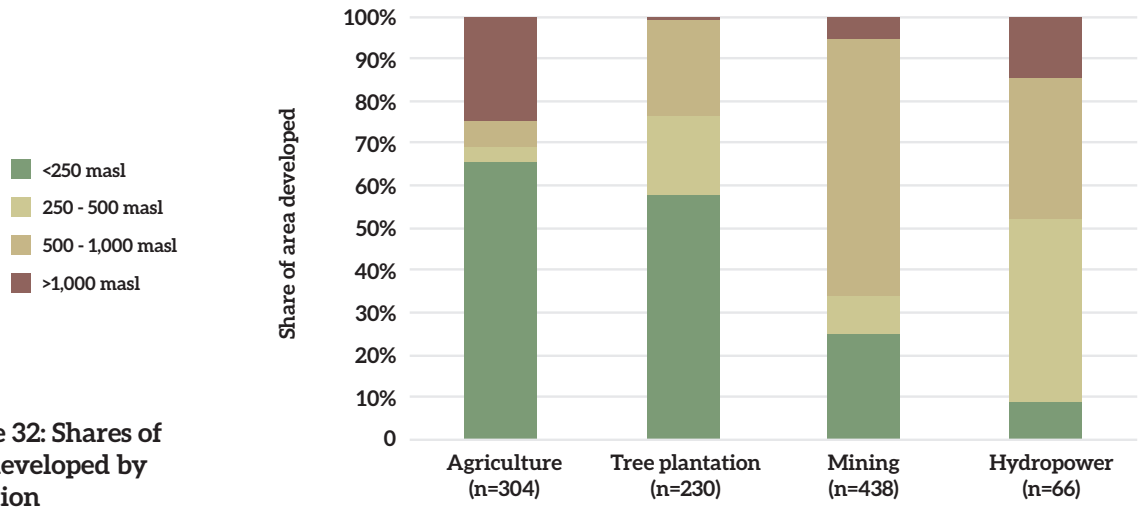


Figure 32: Shares of area developed by elevation

Table 22: Travel times from land deals to the provincial capital

	Travel time (hours)		
Subsectors	Mean	Minimum	Maximum
Agriculture (n = 316)	1.8	0.1	22.0
Tree plantations (n = 237)	2.0	0.1	9.7
Mining (n = 448)	2.1	0.0	14.2
Total (n = 1,001)	**1.9**	**0.0**	**22.0**

Results also reveal that most domestic deals are concentrated in more accessible areas (with mean travel times of less than 2 hours), compared to foreign deals (mean travel times of 2.1 hours), and joint venture deals (mean travel times of 2.7 hours). This is not surprising, as deals by domestic investors are on average much smaller than deals by foreign investors (see "Origin of Investors" section in Chapter 3), and smaller deals tend to be located closer to Provincial capitals. On average, deals under 100 ha in size are accessible in under 2 hours, deals of 100 – 10,000 ha are reachable in 2-3 hours, and deals with granted areas over 10,000 ha are located more than 3 hours away from Provincial capitals. It is sometimes not possible to find large areas of land for development in the vicinity of Provincial capitals. Small-to-medium-sized land deals may have been developed there purely based on land availability. Secondly, small-to-medium-sized deals often require better access, as investors may not have the capital to invest in building or improving infrastructure.

Accessibility to border crossings

A large number of deals are located near border crossing areas or along the main roads to China, Thailand, and Vietnam (see Figure 34). Some variation exists across the subsectors. Agricultural deals are located more commonly in areas closer to the Thai border, while tree plantations are clustered closer to both the Thai and Chinese borders. Mining deals are quite dispersed across the country.

In terms of accessibility of land deals to the nearest border crossings (international, local, or traditional), the average is 2 hours; over half (53% of all land deals, or 592 deals) are located less than 2 hours from border crossings, and more than 70% of deals (822 deals) can access the nearest border crossing within 3 hours. For international border crossings, the average travel time among all examined deals is 2.5 hours; 43% (481 deals) are less than 2 hours away, and 65% (723 deals) are less than 3 hours away. The average accessibility to the nearest border crossing is similar for agriculture, tree plantation, and mining deals.

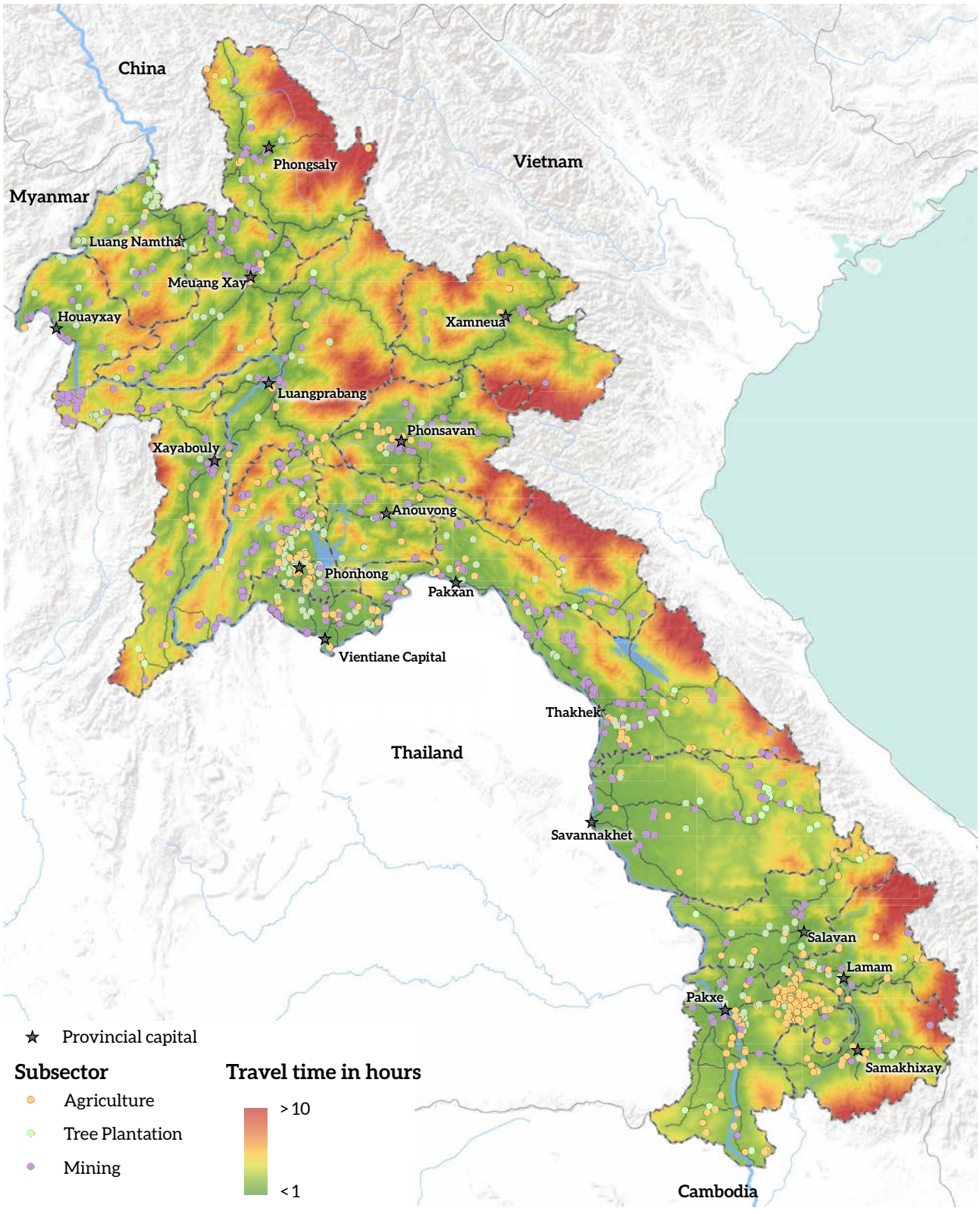


Figure 33: Mean travel time from land deals to nearest provincial capital

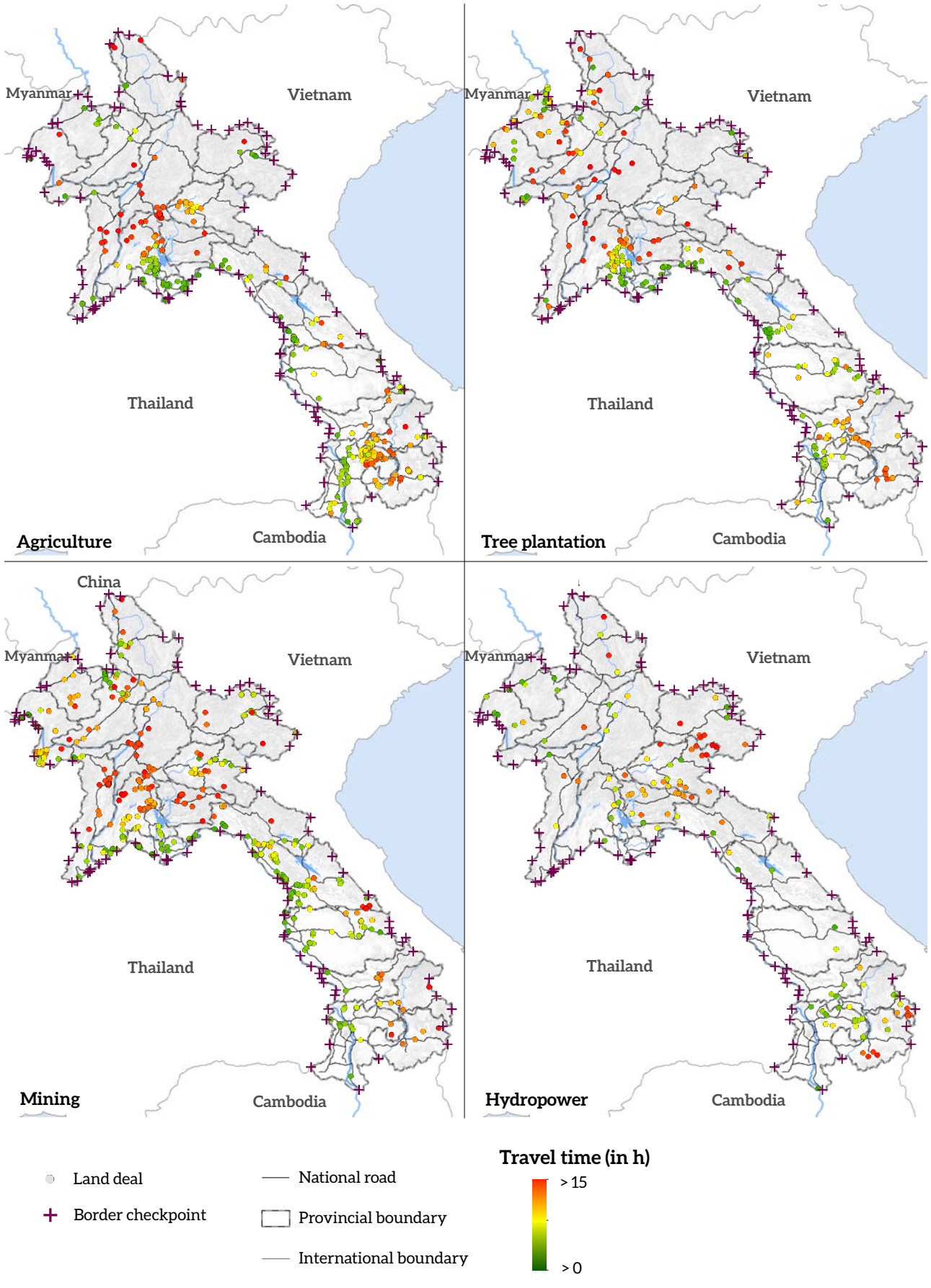


Figure 34: Mean travel time from developed land deal areas to nearest border crossing

Land allocated to land deals

Land deals developed in different national forest categories

A prominent long-term goal of the GoL is to increase the national forest cover to 70% by 2020 (GoL 2005). In order to reach this goal, developing of land categorised as forest is largely limited. At the same time, and in order to achieve this goal, tree plantations are highly promoted by the GoL in order to increase forest cover because they are categorized as a form of forest cover. Comparing the locations of deals with maps of the three national forest categories shows that a substantial number of deals have been developed inside national forest areas. Altogether, 240 deals fall inside areas categorized as forest[34] (55 deals in conservation forest, 131 in protection forest, and 54 in production forest), with approximately 30% of the area already developed (137,332 ha) within areas categorized as being under forest protection of some form; more than 70% (99,446 ha) of that was in national protection forest, another 27,000 ha in national production forest, and 11,000 ha in conservation forest. The mining subsector has the largest area developed in the three forest categories (53% of the total area developed for mining, see Figure 35). Meanwhile, land development inside areas categorized as forestlands accounts for less than 20% and 10% of the total area developed in the tree plantation and agriculture subsectors, respectively. Regarding tree plantation deals, one could make the argument that a replacement of forest cover with tree plantations does not change the share of forest cover in the long-term, but brings economic benefits which are not provided by natural forest areas. A counter argument could be made taking into consideration multiple benefits beyond the mere calculation of forest cover (e.g. environmental services such as carbon in soil and vegetation, watershed protection, and biodiversity).

Fencing around a cassava plantation, inhibits access to forest resources. Champasak Province. © Stéphanie Jaquet, 2014

[34] A land deal is considered "inside" a forest category if its polygon of developed land intersects with that of a forest category, according to the national forest categories spatial dataset (see Chapter 2 for details on the spatial analysis and modelling of developed area in cases where this data did not exist from field data collection).

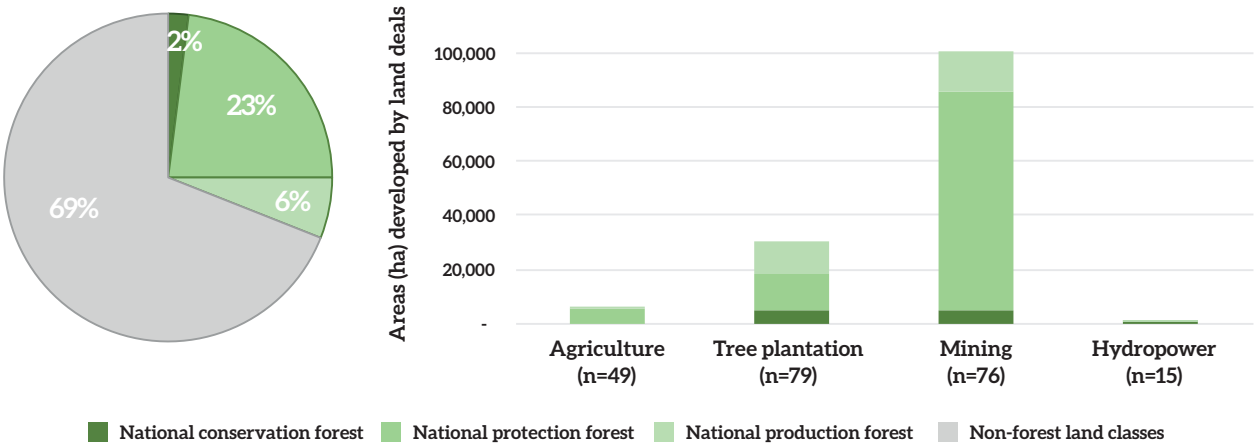


Figure 35: Shares of developed area for land deals that fall inside one of the three national forest categories. Left: total shares of area; right: shares by subsector

The three forest categories were first established in the Lao PDR in 1993 (GoL 1993) when 18 sites were declared national conservation forest, but the number of declared conservation forest areas have increased since then. While some deals were granted prior to the establishment of the national forest categories, most deals that expanded into one of the three national forest categories were approved between 2006 to 2009, or between 2014 to 2016 (see Table 23). Deals granted in 2016 have the largest total area developed within the three forest categories (a total of 55,765 ha).

Table 23: Number of deals and their total area developed inside national forest categories by year of granting of land deal

Year of approval	Number of deals	Number of deals located in one of the three national forest categories	Share of deals located in one of the three national forest categories	Area developed within the three forest categories as of 2016
1993	3	1	33	198
1994	3	2	67	8,237
1995	3	0	-	-
1996	3	2	67	9
1997	3	0	-	-
1998	8	0	-	-
1999	5	4	80	5,862
2000	8	0	-	-
2001	6	0	-	-
2002	14	1	7	326
2003	15	3	20	2,747
2004	38	14	37	9,688
2005	49	5	10	2,141
2006	143	44	31	29,108
2007	99	26	26	6,466
2008	186	54	29	25,420
2009	145	32	22	41,997
2010	75	13	17	2,565
2011	67	15	22	3,622
2012	110	25	23	7,444
2013	110	21	19	641
2014	140	51	36	7,330
2015	132	41	31	3,563
2016	129	33	26	55,765

The reasons land deals occur in areas categorized as forest are numerous. One may be that people are unsure where forest boundaries lie due to a lack of data sharing between state institutions. Another could be the conscious and purposeful development of land deals inside one of the three forest categories based on a shortage of otherwise suitable land, or weak law enforcement and monitoring of such unlawful behaviour. Figure 36 shows different examples of cases where land inside national forest categories has been developed.

Forest areas cleared for a rubber plantation in Luang Namtha Province. © Vong Nanhthavong 2009

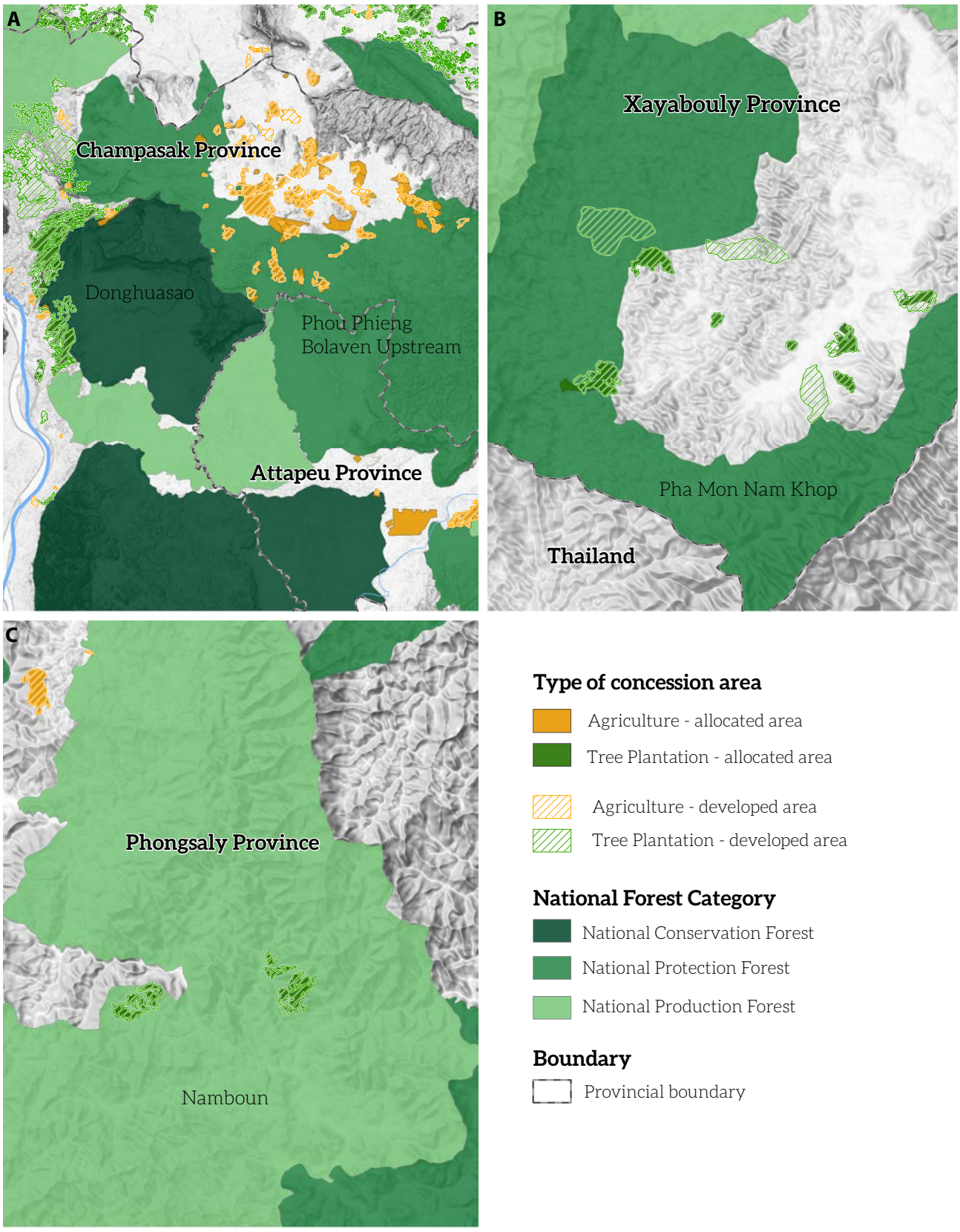


Figure 36: Examples of land deals developed within areas categorized as national forest; Champasak Province (top left), Xayabouly Province (top right), and Phongsaly Province (bottom)

Land use types allocated for land deals

In the Lao PDR, land allocated to land deals is not idle land in most cases (Messerli et al. 2014). Often, it was previously used by nearby residents for food production or for the collection of NTFPs, firewood, or construction materials. Therefore, land deals sometimes have detrimental impacts on local livelihoods if the opportunities they offer (e.g. jobs, access to markets) are not sufficient to compensate for the goods and services that the land previously provided. Because of these complex issues, village level data (interviews with village authorities and interviews with impacted villagers) from the quality of investment assessment were used to characterize the local livelihoods in areas of land deal development (see Table 8 in Chapter 2 for more detail on the quality of investment data used).

Results from interviews with village authorities revealed that in the majority of cases (93%), a single land use category was allocated for the development of the land deal. Only in 7% of the cases had land been allocated across or within two or more land use categories for the development of a deal. As shown in Figure 37, secondary forest was the most common land use type allocated to land deals (in 26% of all cases), followed by primary forest (18%) and fallow lands (15%). Paddy fields were allocated to land deals in only 4% of all cases.

The high percentage of allocation of secondary and primary forest implies that land deals contribute to the conversion of forest land, and thus may have caused deforestation and forest degradation. The allocation of forest land for land deal development also reduces the amount of NTFPs and wood available for nearby communities. As a consequence of the allocation of fallow lands, upland farming is limited to smaller areas in affected villages. The crop-fallow-rotation cycles are shortened, which has been shown to negatively impact a series of ecosystem services (reducing rice yields, carbon stocks, agro-biodiversity, and hydrological functions).

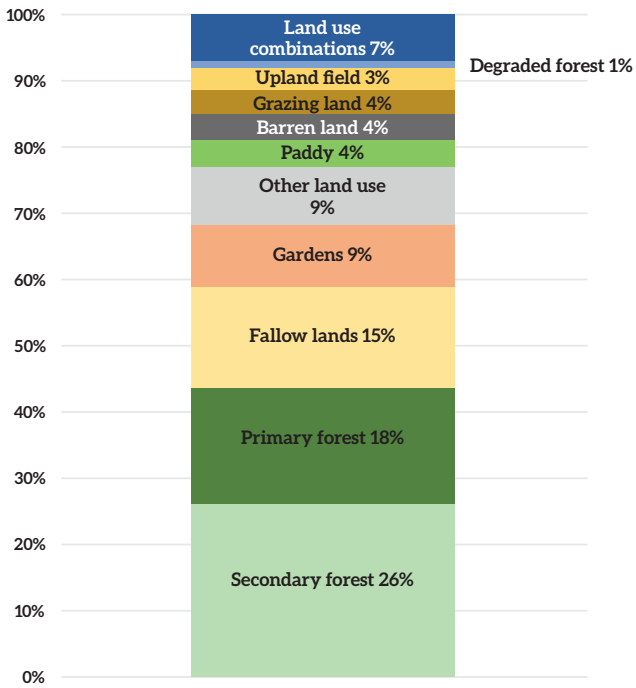


Figure 37: Land use types allocated for land deals

Uses of areas allocated for land deals prior to deal development

The most common prior land use named by village authorities was for the collection of NTFPs, firewood, and construction materials (see Figure 38). In half of all the villages, the areas allocated to land deals were important for the collection of NTFPs, firewood, and construction materials for household consumption. These were collected for sale in only 20% of all cases. Other important land uses were gardening (mentioned in 32% of all cases), and upland rice farming (31% of cases mentioned this use). The prevalence of village authorities reporting that upland rice farming and the collection of NTFPs and wood were important uses of these lands corresponds with the fact that the most common land use types allocated to land deals are secondary forest, primary forest, and fallow fields. While only 4% of land allocated to land deals was

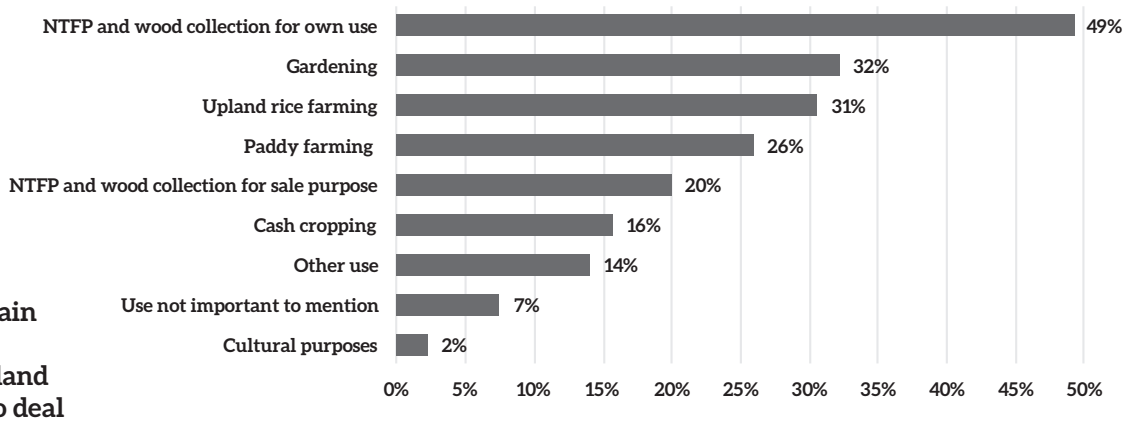


Figure 38: Main uses of land allocated to land deals prior to deal development

previously used for paddy farming, paddy rice farming is still mentioned prominently as a main livelihood activity for villages (in 26% of all cases). This could suggest that, even though only small areas of paddy had been allocated to investors, it strongly impacted the community when this type of land was lost.

Socio-economic contexts

Contexts of ethnicity and poverty

The spatial analysis of data from the land deal inventory with village boundaries shows that land deals were developed in 23% of all villages (or 1,977 villages) of the Lao PDR. These villages are home to more than one-fourth of the country's population. As shown in Table 24, the share of villages with and without land deals is similar across ethnic groups as represented by the four ethno-linguistic families in the Lao PDR. An exception are villages mainly inhabited by Hmong-Mien people, where only about one-sixth (17%) have had a land deal developed within their village area.

Disaggregating ethnic groups further by ethno-linguistic category reveals significant differences in terms of the presence of land deals. Fewer than 20% of all villages where the majority of inhabitants are of the Lao ethno-linguistic family have land deals (see Table 25). On the other hand, more than half of the villages with a predominantly Bahnaric-Khmer population have land deals.

Overlaying poverty data from 2015 (Coulombe et al. 2016, Epprecht et al. 2018) with the locations of land deals reveals that more villages where land deals are developed are in the upper, better-off quintiles of villages (26% in the first, and 30% in the second quartile) compared to the lower poverty quintiles (22% each). Table 26 and Figure 39 illustrate these findings. Villages with land deals therefore also have lower average poverty rates (27%) compared to villages without land deals (29%).

Table 24: Villages impacted by land deals by main ethno-linguistic families

Ethno-linguistic family	Lao-Tai	Mon-Khmer	Sino-Tibetan	Hmong-Mien
Villages without land deals	3,478 (76%)	1,984 (75%)	347 (76%)	705 (83%)
Villages with land deals	1,076 (24%)	650 (25%)	108 (24%)	143 (17%)

Table 25: Villages impacted by land deals by main ethno-linguistic categories

Ethno-linguistic family	Lao-Tai		Mon-Khmer					Sino-Tibetan	Hmong-Mien	
Ethno-linguistic category	Lao	Tai/ Thay	Khmuic	Palaungic	Katuic	Bahnaric -Khmer	Vietic	Tibeto-Burman	Hmong	Mien
Villages without land deals	2147 (80%)	1318 (71%)	1209 (85%)	42 (82%)	583 (69%)	137 (48%)	19 (86%)	350 (76%)	659 (84%)	50 (77%)
Villages with land deals	528 (20%)	546 (29%)	221 (15%)	9 (18%)	266 (31%)	151 (52%)	3 (14%)	109 (24%)	130 (16%)	15 (23%)

Table 26: Share of land deals by village-level poverty quartiles

	Village-level poverty (by quintile)			
	Upper quintile	2nd quintile	3rd quintile	Poorest quintile
Villages without land deals	24	23	25	26
Villages with land deals	26	30	22	22

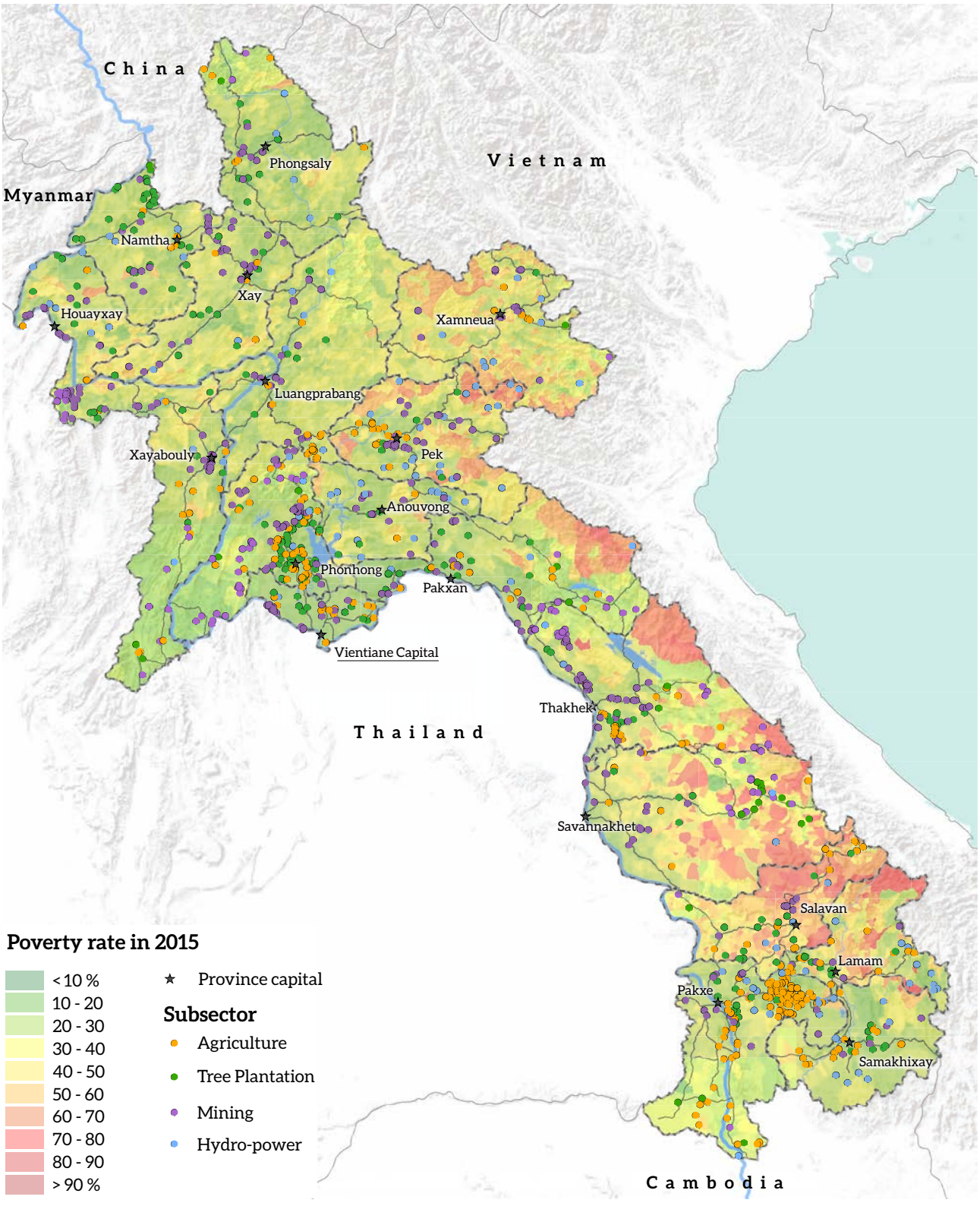


Figure 39: Land deals by subsector and village-level poverty rates

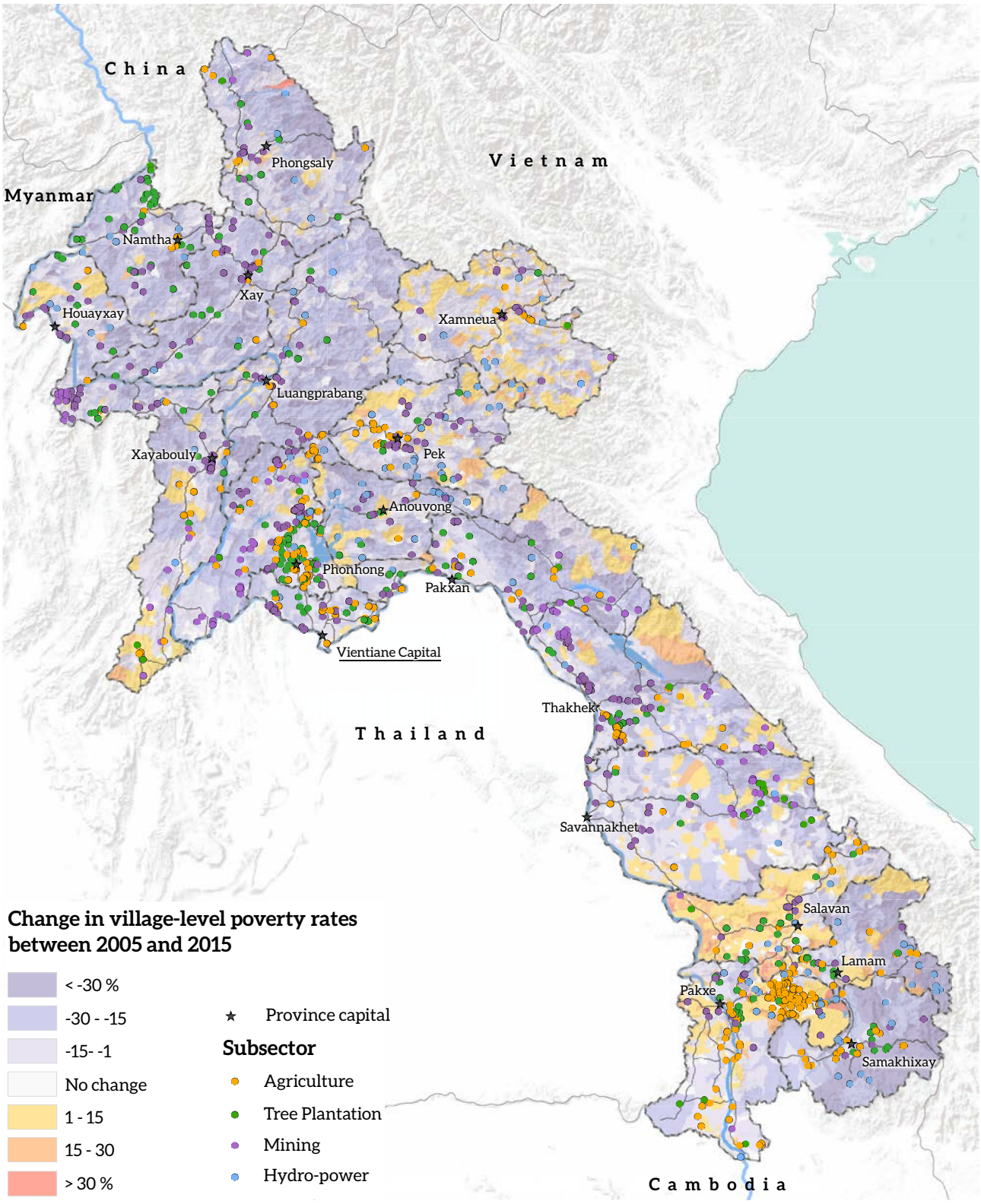


Figure 40: Land deals by subsector and change in poverty rates

When comparing the poverty rates of areas affected by land deals in 2015 with those in 2005 (Epprecht et al. 2008 and Epprecht et al. 2018), it is evident that while the poverty rates decreased in villages with and without land deals, this effect was slightly stronger in villages with land deals (-14%) than in villages without land deals (-12.6%). To what extent this difference can be attributed to the effects of those land deals is difficult to determine and will require further research.

The fact that land deals tend to be located in better-off areas means that the poorest areas of the Lao PDR do not have as much opportunity to benefit from the potential of improved infrastructure and employment opportunities that might come with the development of land deals. However, poverty rates are not different for remote villages with land deals compared to remote villages without land deals. This also suggests that remote villages do not suffer economically from the potential negative impacts of land deals.

The mean poverty rates are around 22% across all three examined subsectors. Interestingly, poverty reduction was strongest in villages with tree plantation deals, and weakest in villages with agricultural projects (see Table 27, Figure 40). Again, to what extent this pattern is influenced directly by the respective land deals requires further research.

Land deals made by investors from the Lao PDR or neighbouring countries (primarily China, Vietnam, and Thailand), are implemented in villages with a wide range of poverty levels – from rather poor to well-off villages. Land deals made by non-neighbouring Asian investors, such as South Korean, Malaysian, Japanese, Indian, and Singaporean projects, are located more often in comparatively better-off villages. The only two Swedish projects, two eucalyptus plantations, and are located in rather poor villages with poverty rates near or above 50%.

Main livelihood activities in villages affected by land deals

The livelihoods of villagers affected by land deals are quite diverse according to the results rendered by the quality of investment assessment. When asked about the three main livelihood activities, lowland farming was stated as the main livelihood activity by 73% of the village authorities interviewed; upland farming was the main activity for 13% (or 57 villages), livestock for 5%, and in 6% cash cropping (see Table 28). Livestock and cash cropping were frequently mentioned as the second or third most important livelihood activities, while other activities (e.g. wage labour, petty trade, and handicrafts) were only mentioned as the third livelihood activity.

Table 27: Status and changes in mean poverty rates in affected villages by subsector

Subsector	Village-level poverty rates	
	2015	Change 2005 - 2015
Agriculture	21%	-12%
Tree plantation	23%	-15%
Mining	23%	-13%

Table 28: Three main livelihood activities in villages with land deal development

Livelihood activities	Main activity	2nd activity	3rd activity
Lowland farming	73%	9%	4%
Upland farming	13%	15%	4%
Cash crops	6%	28%	22%
Livestock	5%	38%	37%
Petty trade	0%	2%	6%
Handicrafts	0%	1%	2%
Collecting NTFPs and hunting	2%	0%	3%
Wage labour	0%	3%	9%
Other	0%	3%	9%
No data	0%	1%	4%

The above results show that land deals were predominantly developed in lowland farming contexts. For the villages which indicated lowland farming as their main livelihood activity, the most common second activity was livestock farming (134 villages, or 42% of all lowland-farming villages), or cash cropping (100 villages, or 31%, see Figure 41). Upland farming was the second most important livelihood activity after lowland farming, and was mentioned by 55 villages (17% of villages).

Villages where upland farming was the main livelihood activity were the second most commonly affected by land deal development. In upland farming focused villages, the next most common livelihood activities were lowland farming (20 villages, or 35%), and cash cropping (20 villages, or 35%). Raising livestock is the third most common livelihood activity (14 villages, or 25% of villages).

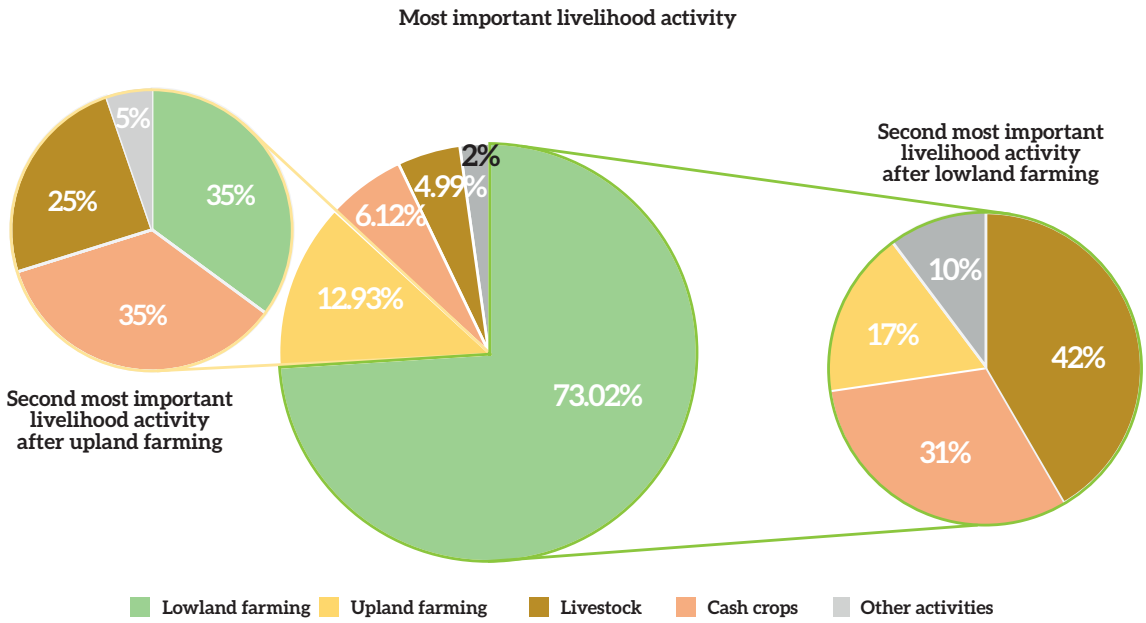


Figure 41: Most important livelihood activities in villages with land deals

Legal contexts

Compliance with Lao legal obligations

The legal obligations of land deals are numerous and not always clear. They were established by a series of laws and regulations detailed in Table 29 and Table 30 below. In this assessment, the focus was on six fundamental legal aspects: Concession or Exploitation Licenses (authorizing initiation of the investment), the Economic and Technical Feasibility Study (ETFS, which determines whether the project will yield sufficient benefits to justify costs), the Initial Environmental Examination (IEE) or the Environmental and Social Impact Assessment (ESIA) and associated Environment and Social Management and Monitoring Plans (ESMMPs), the Environmental Compliance Certificate (ECC) confirming the acceptance of the ESIA or IEE and their associated ESMMPs, the PDA (authorizing initiation of development activities), and the concession agreement.

Although the main legal regulations for land deal development were in place by the late 1990s and early 2000s (see Figure 42)[35], the content of these regulations has shifted over time. In principle, project terms should be updated to be consistent with current legal requirements. However, this is not always possible (e.g. in the case of feasibility studies or impact assessments of existing projects) nor is it always legally mandatory.

[35] Annex 4 gives an overview of the progressive development of legal requirements with regard to concessions and leases.

Table 29: Legal requirements and assessments for agriculture and forestry deals

Agricultural and Tree plantation subsector		
Key required documents	**Responsibility**	**Included in analysis**
PDA	MPI/DPI and investor	**X**
IEE/ESIA report	Third party	**X**
ECC (approving the IEE/ESIA)	MoNRE	**X**
Concession agreement	MoNRE & investor	**X**
Concession license	MPI/DPI	**X**
Memorandum of Understanding (MoU) for field study	DPI or MPI and investor	
Investment application	Investor	
Field study report together with map of potential areas to be granted	MONRE and MAF	
ESMMP	Third Party	
ETFS	Investor	
Certificate on approval of ETFS	MAF	
Notification/agreement letter	Prime Minister's Office or Governor	
Business license	MoIC	
Tax license	Ministry of Finance (MoF)	
Agri-business license	MAF	
State land title	DoL or PoNRE	
Certificate on utilization of state land	DoL or PoNRE	

Sources: GoL 2009b, MPI 2015, and bilateral consultation with IPD-MPI, DoL-MoNRE and DoPF-MAF

Table 30: Legal requirements and assessments for mining deals

Mining subsector		
Key required documents	**Responsibility**	**Included in analysis**
PDA on Mineral Prospecting & Exploration	MPI and investor	**X**
Concession license	MPI	**X**
IEE/ESIA report	Third party	**X**
ECC (approving the IEE/ESIA)	MoNRE	**X**
Concession license	MPI	**X**
Investment application	Investor	
Notification letter	PMO	
Sketch map on proposed areas for prospecting	DGM	
Prospecting license	DGM	
Business license	MoIC	
Tax license	MoF	
Notification agreement on prospecting	DGM	
Sketch map on approved areas for prospecting	DGM	

Mining subsector		
Key required documents	**Responsibility**	**Included in analysis**
Exploration license	DGM	
Report on prospecting phase	Investor	
Notification letter on exploration	DGM	
Sketch map on approved areas for exploration	DGM	
Initial feasibility study license	DGM	
Report on exploration phase	Investor	
Notification letter on initial feasibility study	DGM	
Sketch map on approved areas for initial feasibility study	DGM	
Notification letter on detailed economic & technical feasibility study (DFS)	DoM	
Report on initial feasibility study phase	Investor	
Sketch map on approved areas for DFS	DoM	
PDA for mining and processing	MPI and investor	
Report on DFS phase	Investor	
Approval letter on DFS	DoM	
ESMMP	Third Party	
Notification letter for concession agreement negotiation	PMO or governor	
Sketch map on approved areas for mining	DoM	
Infrastructure & facility construction for mining operation license	DoM	
Notification letter for infrastructure construction for mining operation	DoM	
Mineral processing plant operation license	DoM	
Report on completion of infrastructure & facility construction	Investor	
Notification letter on mineral processing plant operation	DoM	
Mineral extraction license	DoM	
Notification letter on mineral extraction	DoM	

Sources: GoL 2009b, MPI 2015, and bilateral consultation with IPD-MPI, DGM and DoM-MEM, and DoL-MoNRE

Herbicide use blackens ground in a eucalyptus plantation in Savannakhet Province. © Miles Kenney-Lazar, 2015

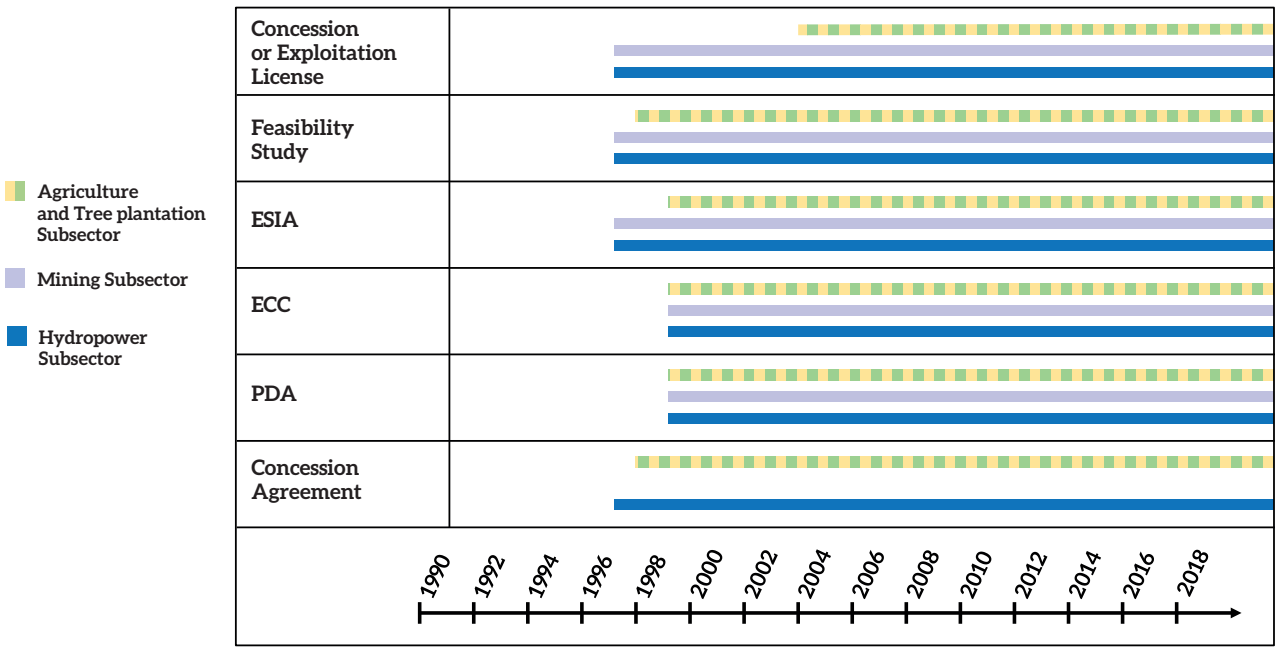


Figure 42: Evolution of legal requirements for land deals over time (1990-2016)

For this report, the presence and absence of the key documents detailed above, along with the year a deal was granted, are analysed in order to provide first insights into the degree of legal compliance across the full inventory of land deals. For agriculture and tree plantation deals, the same set of key documents are considered (see Table 29), whereas a separate set of documents are considered for mining deals (see Table 30).

Rates of legal compliance for investment projects based on the presence or absence of key legal documents are in general low (Figure 43), particularly with regard to environmental and social measures (including impact assessments and environmental certifications). This is of particular concern since relevant legislation has precluded the development of investment projects without certified impact assessment since at least 1999. The purposes of environmental and social impact assessments (both IEE and ESIA) are to (1) determine whether the social and environmental impacts of the proposed project will be greater than the benefits received, thus serving as a mechanism to prevent inappropriate investments, (2) provide a basis of information and analysis for the re-design of proposed projects to enhance benefits and minimize impacts, (3) quantify all environmental and social impacts and identify appropriate mitigation measures to reduce such impacts to a minimum and, where impacts remain, adequately compensate for them, (4) establish measures and protocols to monitor impacts and the effectiveness of mitigation measures through the project period and, through this, to (5) enable monitoring and enforcement.

The low-degree of compliance for impact assessments (2%) is particularly problematic given that this aspect of legal compliance is designed to protect affected communities and the natural environment from negative effects or problematic aspects of land deals. It is noteworthy that very few impact assessments and compliance certificates are found at the relevant agencies at each level of government, suggesting that if such documents cannot be systematically produced, impact assessment and management plans must not be fulfilling their purposes. The existence of impact assessment reports and environmental compliance certificates does not necessarily provide an indication of their quality, however. While some impact assessments have been well-developed, the quality of some are poor and inadequate. In part, this has been due to a lack of clarity with regard to the process of impact assessment (thus prompting the issuance of the Ministerial Instructions 8029/MoNRE (MoNRE 2013a) and 8030/MoNRE in 2014 (MoNRE 2013b), specifying requirements for the IEE and ESIA respectively. It is worthwhile to note, however, that the presence of environmental compliance certificates (ECC) is slightly more common than that of the impact assessments themselves, suggesting that some projects may have received compliance certificates even in the absence of impact assessments, to which the certificate ostensibly pertains.

Compliance for PDA and concession agreements is comparatively higher, though neither exceeded half of all projects nationally. This is problematic in that, where such legal compliance cannot be established, it is impossible to assess whether projects are being developed in accordance with their agreed purpose

and terms of agreement, or whether these have followed proper approval protocols. With 53% of all projects lacking a concession agreement, for example, it is not possible to know who actually approved the project and thus whether or not the projects are legal.

Legal compliance by subsector

Disaggregation by subsector suggests important variations (see Figure 43). While no subsector demonstrates adequate performance with regard to compliance on environment and social impact assessments, the agricultural subsector is particularly low, with only 1% of projects able to demonstrate compliance. The tree plantation subsector also has low environmental and social compliance, with further difficulties pertaining to the timing of the impact assessment. The results of the more detailed (but sample-based) quality of investment assessment indicate a similar pattern, except that mining subsector investment projects have the highest rate of coverage of the impact assessment (30%), followed by tree plantations (20%), and agriculture (15%). The quality of investment assessment further finds that the majority of tree plantation projects that had carried out impact assessments did so only after the land was cleared for plantation, which is in direct conflict with both legal provisions and the purpose of the impact assessment. Across all subsector, compliance with regard to Feasibility Studies is low, especially for the mining subsector, though the mining subsector perform best for the presence of PDAs.

Legal compliance by country of origin of investors

Disaggregating legal compliance by the origin of investment (Figure 43) indicates that domestic investments score lower than foreign investment and joint ventures across all categories of compliance, with the exception of the environmental and social impact assessment, which is second-lowest (behind joint venture projects). It is possible that foreign investment projects have a higher compliance rate due to legal requirements in the country of origin of investment. The sample-based quality of investment assessment shows that the sampled projects have higher (though still low) rates of compliance with regard to environmental and social impact assessment. Joint venture projects within the sample have the lowest rate of compliance (11% of deals), followed by domestic (19%) and foreign deals (35%).

Legal compliance by level of approval of land deal

Disaggregation of legal compliance by level of approval (whether a project was approved at the central, provincial or district level) in general shows that projects approved at the central level are more compliant, with the exception of conducting the Feasibility Study, for which compliance is lower than projects granted at both provincial and district levels (Figure 43).

An assessment of change in legal compliance over time shows no discernible pattern, suggesting that enhanced legislation and regulatory measures have not generally been effective at improving the legal compliance of investment projects. This lack of a clear pattern is itself suggestive. Generally speaking, legislation pertaining to investment projects has been continuously improving over time. Improvements in enforcement and compliance have, however, lagged behind in some cases. This points again to a substantial gap between policy and practice.

Sub-national compliance findings

An analysis of how compliance rates vary across provinces was carried out at the sub-national level (see Figure 44). Compliance rates here pertain to the location of the investment, rather than the level of approval, meaning that a particular province's compliance rate does not relate directly to the regulatory performance of provincial authorities, as projects in any province may also have been approved and regulated at the central level. A few trends emerged. Vientiane Capital ranks lowest for 5 of the 6 key elements of legal compliance examined in detail, with only somewhat higher compliance with regard to the PDA. Conversely, Bolikhamxai, and Salavan generally rank better than other provinces with regard to compliance.

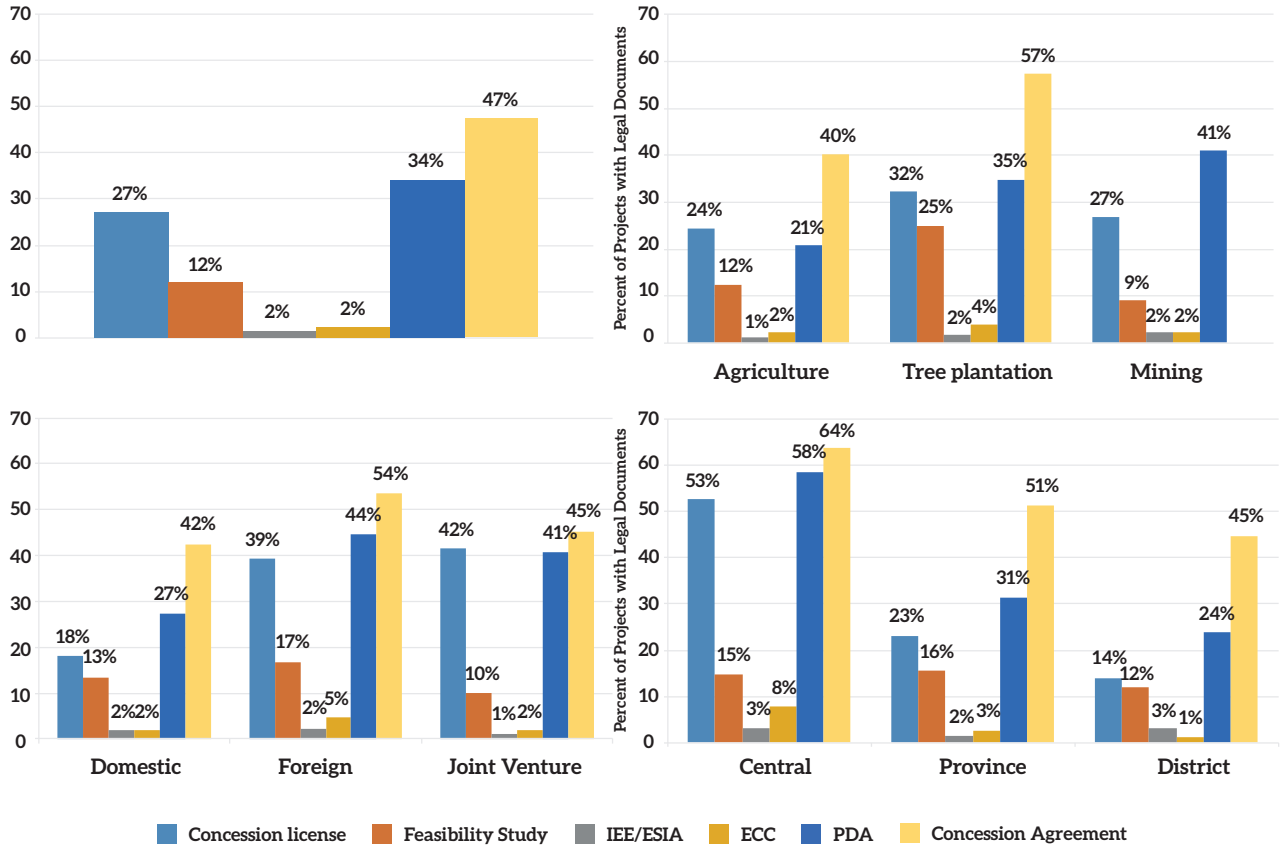


Figure 43: Legal compliance of land deals summarized (top left), and disaggregated by subsector (top right), type of investment (bottom left), and level of approval (bottom right)

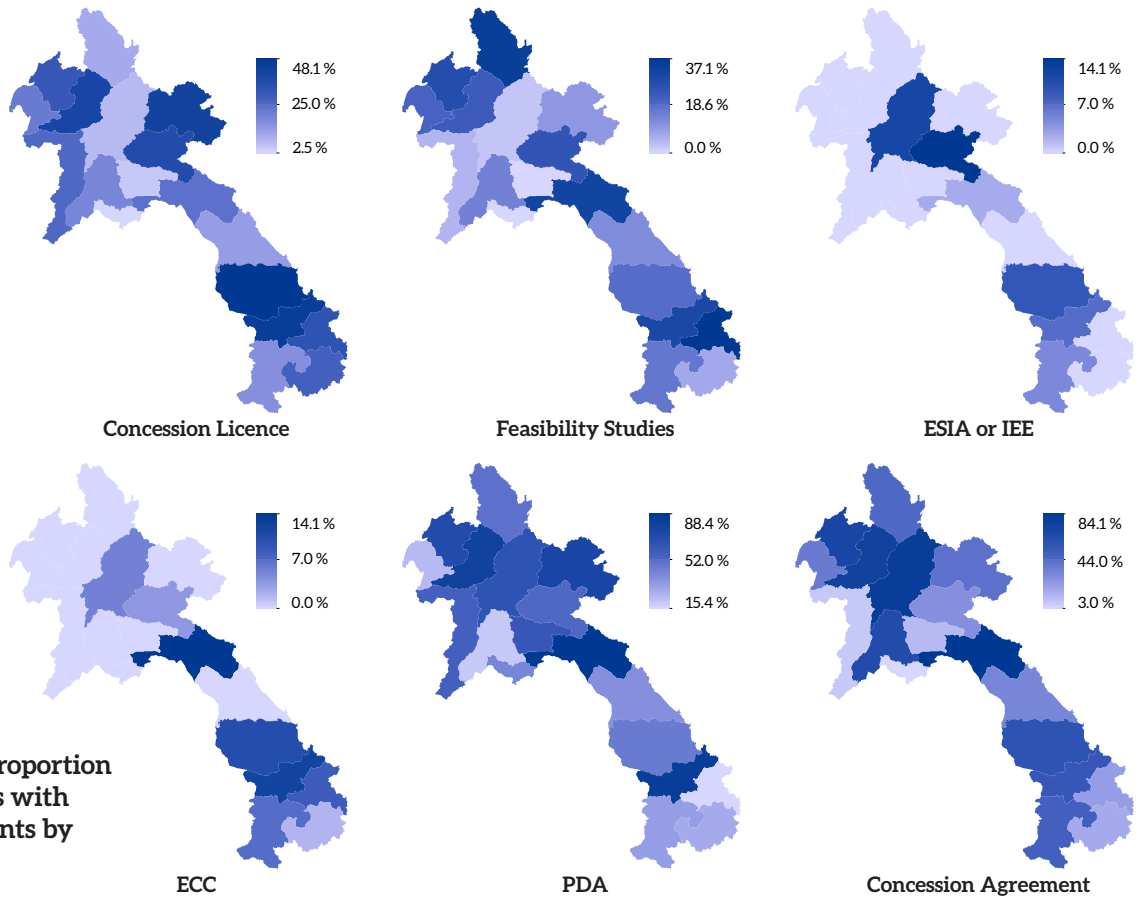


Figure 44: Proportion of land deals with key documents by province

Compliance with international standards on inclusion of village communities in the contract granting process

There are also international standards for more responsible investment in land, including full disclosure in the granting and development of land deals (Franco 2014), as well as adherence to community-centred safeguards which have been designed to focus on questions of land tenure security, stakeholder participation, and the need for free, prior, and informed consent (FPIC). The participation of affected stakeholders in the negotiation and granting process is understood as an important means to ensure that land deals benefit local communities and respect the prevailing land tenure situation. Here, findings from the quality of investment assessment on the way in which affected communities were involved at the time of land deal granting are presented (see Table 8 in Chapter 2 for details on the quality of investment data used).

Degree of consultation with affected communities

Poor consultation with affected village communities during the granting process of a land deal is a main factor causing misunderstandings and conflict between land deal developers and communities. In order to shed light on the issue, the quality of investment assessment asked village authorities whether and in which ways the village community was consulted prior to land deal granting. In the majority of deals across the agriculture, tree plantation, and mining subsectors, the village authorities were consulted in some way (80% of deals in these subsectors), while the village authorities were not consulted in 15% of deals, and village authorities did not know of the deal before project activities took place in 5% of deals. As shown in Figure 45, disaggregation by subsector reveals that higher degrees of consultation with village authorities takes place for agriculture and tree plantation deals (87% and 85%). For mining deals, village authorities are less commonly involved in the consultation process (69% of all mining deals). Disaggregating by project size shows that the degree of consultation is similar for all deal sizes.

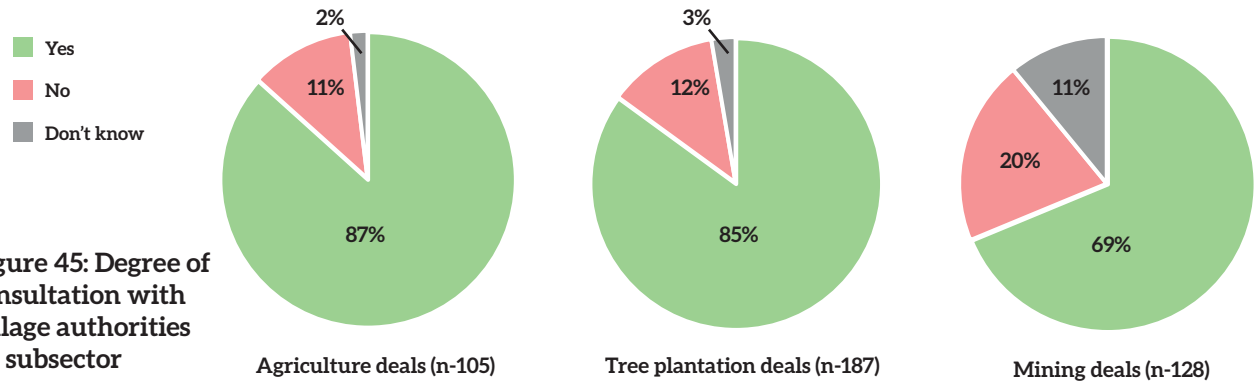


Figure 45: Degree of consultation with village authorities by subsector

For deals where affected villages were indeed consulted in some way, oftentimes only village leaders (village committees, or the village chief alone) were consulted. This was the case for 35 villages with mining deals (41% of assessed deals), 32 villages with agriculture deals (35% of assessed deals), and for 50 villages with tree plantation deals (31% of assessed deals). Still, where the village was consulted, consultations were open to the entire village in the majority of cases – 63% for agriculture projects, 69% for tree plantation projects and 56% for mining projects (see Figure 46).

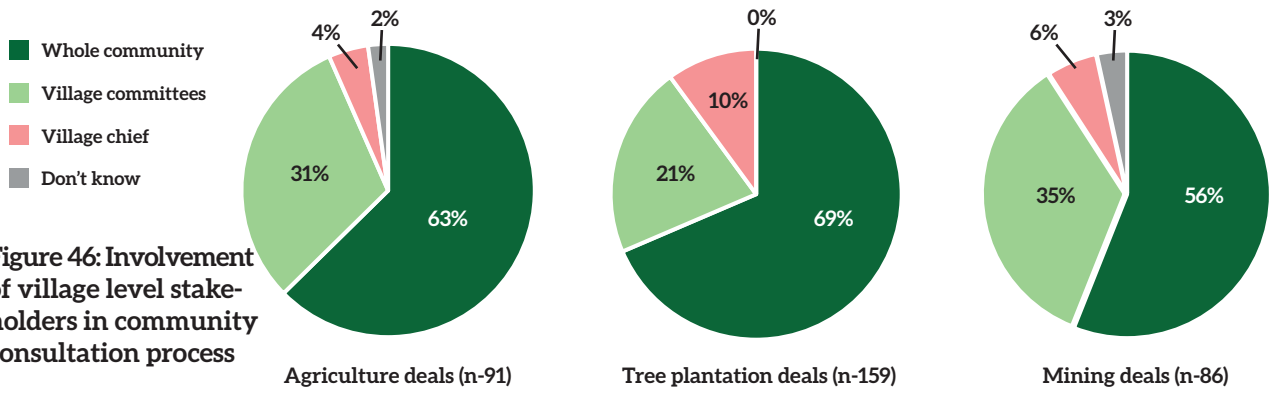


Figure 46: Involvement of village level stakeholders in community consultation process

Type of consultation with villagers

In 8% of the cases where village authorities affirmed the involvement in the land deal granting process, village consultation took place in the form of simple notification and information about the land deal. In all other cases (96%) the villagers were able to negotiate on concrete aspects of the planned land deal. Benefits such as employment, monetary compensation, and infrastructure, were named most frequently by village interviewees in terms of the items they negotiated over. Benefits (e.g. infrastructure or employment provided by the deal) were mentioned in 41% of all such cases, in 19% of which this was the only issue negotiated over, and in 22% it was in combination with other issues they negotiated (see Figure 47). Negotiations regarding the size of land deals as well as the allocated land were mentioned in 33% and 31% of cases respectively. Land compensation was part of negotiations in 23% of all cases.

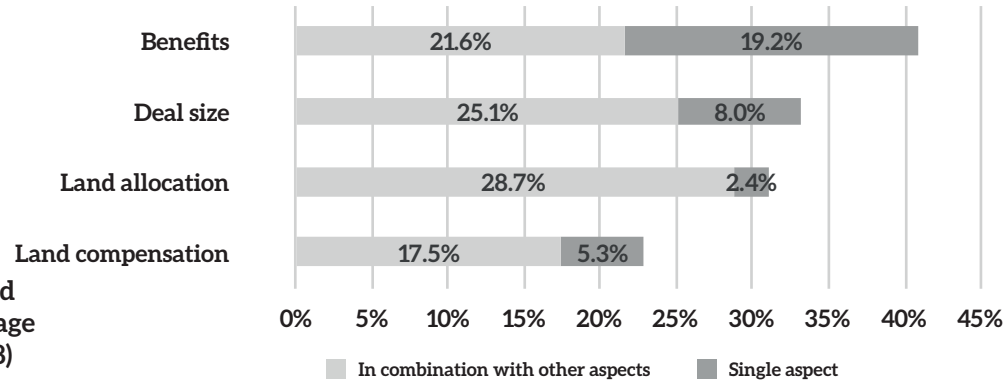


Figure 47: Most frequently negotiated issues named by village communities (n = 338)

Level and type of consent

Interviews with village authorities further revealed that, while village communities were involved in negotiations in the majority of cases, they did not always agree with the planned land deals on their village lands. The outcomes of negotiation were mixed: across all three subsectors, consent regarding a land deal was given in 233 cases (83% of all cases). In 64% of the villages where consent was provided (149 villages), it was provided according to FPIC criteria; in the remaining cases consent was given, but the criteria for FPIC were not fulfilled. There are also differences in consent rates between the three subsectors (see Figure 48). In the mining and agriculture subsectors the rate of village consent given for proposed land deals was higher (91% and 81% of villages respectively), and the percentage of cases where this consent was given using an FPIC-like form of negotiation[36] dominated. In the tree plantation subsector, however, the process of negotiation followed FPIC criteria in only 48% of all cases. The village communities refused to give consent in 16% of agricultural deals, 19% of tree plantation deals, and nearly 8% of mining deals.

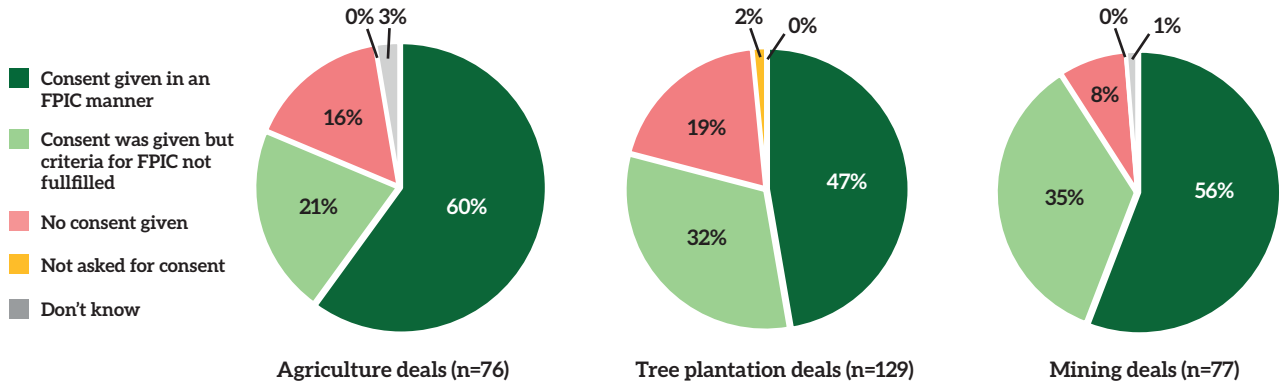


Figure 48: Type of consent given by village community for land deals

The above results show that when consultation was carried out, the consent rates for proposed land deals were high. Nevertheless, for a large number of villages where land deals were developed, either no consultation took place, or the consulted villagers specifically did not give consent to the land deal being implemented. This was the case in affected villages for 23% of all agricultural deals, 26% of all tree plantations, and 28% of mining deals.

[36] FPIC-like negotiations are understood here as negotiations in which villagers could make decisions on a land deals through their own representatives (e.g. village elders, village committee), and regardless of these government-appointed village representatives, they could give or withhold their consent prior to the approval of the deal by the government. Thereby, formal and informal (customary ownership, occupation or use) tenure of villagers on the concerned land) was considered.

Characteristics of investors

The quality of investment data also serves as a tool for understanding investor experiences and certain investing company structures and characteristics that may explain or affect management and investment approaches. The GoL aspires to transform the Lao PDR from one of the least developed countries in the world into a crossroads of economic activity for mainland Southeast Asia. Under the aforementioned slogan, "turning land into capital," the GoL established a range of policies and institutional measures meant to incentivize and attract investment, particularly in land, as the state's central strategy for economic development. Despite this range of regulations meant to make investing easier and more straightforward, however, the Lao PDR is still ranked 141 out of 190 countries in terms of the ease of doing business within its borders (The World Bank 2018) [37]. Documenting investors' experiences and perspectives is therefore important to understanding the shifting context and central issues in land and resource governance in the Lao PDR.

Investor characteristics

Understanding the country origins and structures of the companies investing in the Lao PDR may help the GoL better accommodate and regulate them when operating in the country. Since the 2012 inventory, Chinese investment has surpassed that of other countries in terms of capital invested, though Thailand and Vietnam remain top investors and Lao companies remain active in all sectors. Interviews with company representatives revealed that the majority of investing companies were privately owned (58% of all deals, accounting for 25% of the total area granted), whereas 17% were individual or family businesses – though these were of very small size on average and primarily occurred in the agricultural subsector – and 12% were publicly listed corporations (or 19% of the total area granted, see Table 31).

The categorization of investors by company ownership structure is important for understanding what actors drive investment decisions and how their operations are structured. For instance, family businesses and individual investors are often small-scale, lean operations without access to significant amounts of capital but which may utilize flexible family labour. They can therefore operate successfully in economies like the Lao PDR's, which exhibits low overall growth rates and high risk, but a significant amount of opportunity for this kind of small, flexible economic enterprise. Publicly listed companies and state-owned companies, meanwhile, might have significant access to capital, while also being differently accountable for their investment impacts than, say, state-owned enterprises. Whereas publicly listed companies are accountable to their stakeholders through public disclosure and transparency requirements, small (family and individual) investors may be difficult to monitor, and state-owned enterprises are usually held responsible by their home country governments and citizens. Private companies have different levels of access to resources, but can be understood to invest their capital independent of state and public fundraising channels. These ownership categories thus provide some guidance as to how investors may operate (at what scales, with what types of resources and support) and be held accountable.

Disaggregation of investors by subsector revealed that individual and family businesses were far more likely to invest in agriculture (24 deals, or 77% of all individual/family business deals) and tree plantations (7 deals, or 23% in this category) but did not engage in mining. This is unsurprising considering that family businesses typically lack the capital wealth required to develop mining infrastructure. Private companies invested across the three subsectors, though slightly more (44 deals, or 42% of private company deals) in mining than in agriculture and tree plantations (33 and 27 deals, or 26% and 32% of deals in this category respectively). All but one state-owned enterprise (a rubber plantation) invested in mining, while publicly listed companies more frequently invested in tree plantations (see Figure 49). Information on the ownership category of investor companies can help the GoL decide how to hold companies accountable for their activities in the country and can help it understand and attend to companies' needs and preferences.

Constraints experienced by Investors

As mentioned, the Lao PDR can be a challenging place to do business, but the GoL has made concrete steps towards strengthening the regulatory process and systems of governance for land investments. To understand these dynamics better, company representatives were asked about any constraints they had experienced during the development of the land deal. The main constraint listed was a lack of access to finance or working capital, and this was experienced fairly evenly across the three subsectors (see Figure 50).

Land disputes were far less frequently mentioned by mining investors, whereas no agricultural deals mentioned struggling with host country regulations – perhaps a result of the large number of agricultural investors that are under domestic ownership who may be more accustomed to their own country's regulatory system, and perhaps also because agricultural deals tend to be smaller and have fewer regulatory oversights.

[37] A ranking established by the World Bank's 'Doing Business' project, which rates countries based on their regulatory environment for conducting business and the enforcement of national regulations. http://www.doingbusiness.org/data/exploreeconomies/lao-pdr.

Table 31: Categories of investors (n = 179)

Category of investor	Share of all deals	Share of total area granted
Private company	58%	25%
Individual/family business	17%	2%
Publicly listed corporation	12%	19%
State owned enterprise	6%	9%
NA	5%	46%
Other	1%	0%

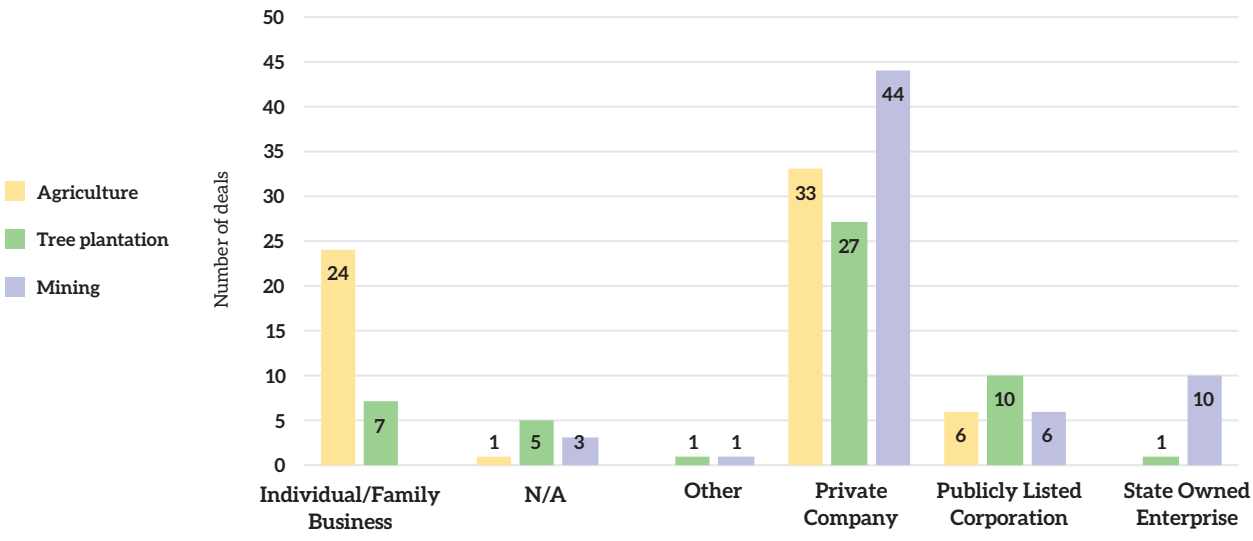


Figure 49: Categories of investors by subsector

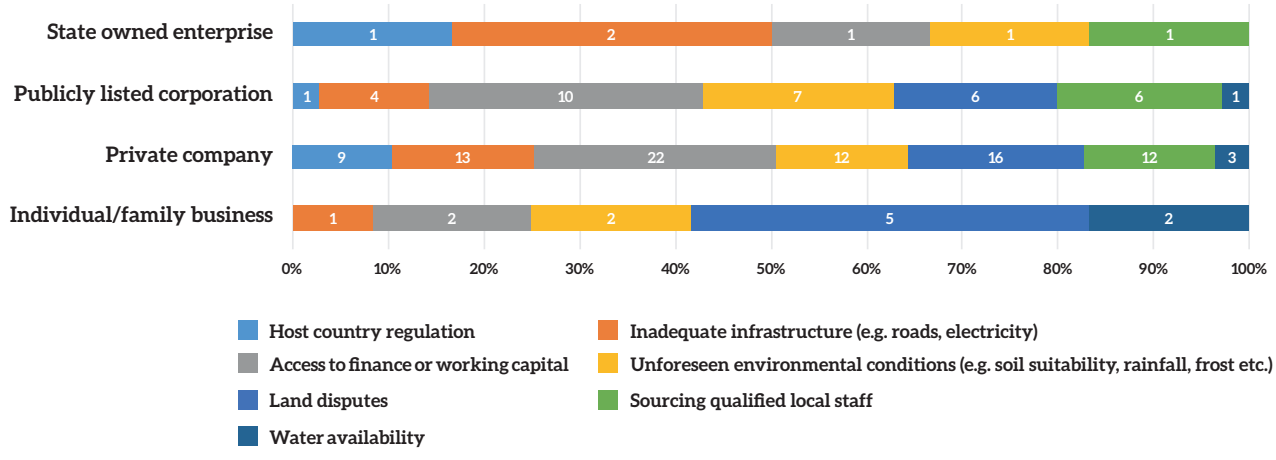


Figure 50: Constraints experienced during land deal development by category of investor

Meanwhile, few trends stood out across investor countries or across company categories. Among individual and family investors, land disputes were more frequently mentioned but none mentioned issues with host country regulations (see Figure 50). Other trends, such as those among state-owned enterprises, could not be rigorously analysed or interpreted due to the low number of responses in those categories.

The lack of clear trends in investor reporting of constraints experienced is in itself an important finding of the analysis. This data is based solely on company representative reporting, but comparing their responses to those of other stakeholders at the individual deal level – especially to reports from affected communities and local government staff – could be used in the future to reveal disconnects in either reporting or in actors' perceptions of various operations. For example, company representatives reported difficulties sourcing qualified local staff could be compared to deals in which affected communities reported a lack of employment opportunities generated.

Rubber plantation, Bachieng district, Champasak Province. © Stéphanie Jaquet, 2014

Young workers prepare the terrain for planting in Luang Namtha Province. © Field team, 2009

CHAPTER 5: Impacts of land deals

Over the past several years, the negative impacts of land deals on the environment and on local populations have received a lot of media attention. In the Lao PDR, this has raised concerns about whether the benefits of land deals indeed outweigh the costs. In the following sections, the quality of investment data is used to assess selected impacts of land deals, particularly their impacts on employment, on food security for affected communities, and on the environment and the well-being of nearby communities from the use of herbicides and pesticides.

Impacts on employment

For the assessment of impacts of land deals on rural employment, the analysis is based on selected questions from the interviews with impacted villagers, village authorities, and company representatives (see Table 9 in Chapter 2 for details on the quality of investment questionnaires used and the answer rates for different aspects used in assessing the employment impacts of land deals).

Types and numbers of jobs offered by deals

The results from the quality of investment assessment reveal that land deals generate a considerable amount of employment. In the nine provinces where the quality of investment assessment was conducted, nearly 40,000 jobs have been created by land deals. The tree plantation subsector provides by far the majority of jobs (75.1% or 29,810 jobs, see Figure 51). Agriculture deals provide 19.6% (7,794 jobs), and deals producing agricultural crops account for 93% of those jobs, whereas livestock deals only accounts for 7% of jobs in this subsector. The mining subsector provides only 5% of all jobs generated by the sampled land deals. Many of the jobs generated by land deals are only

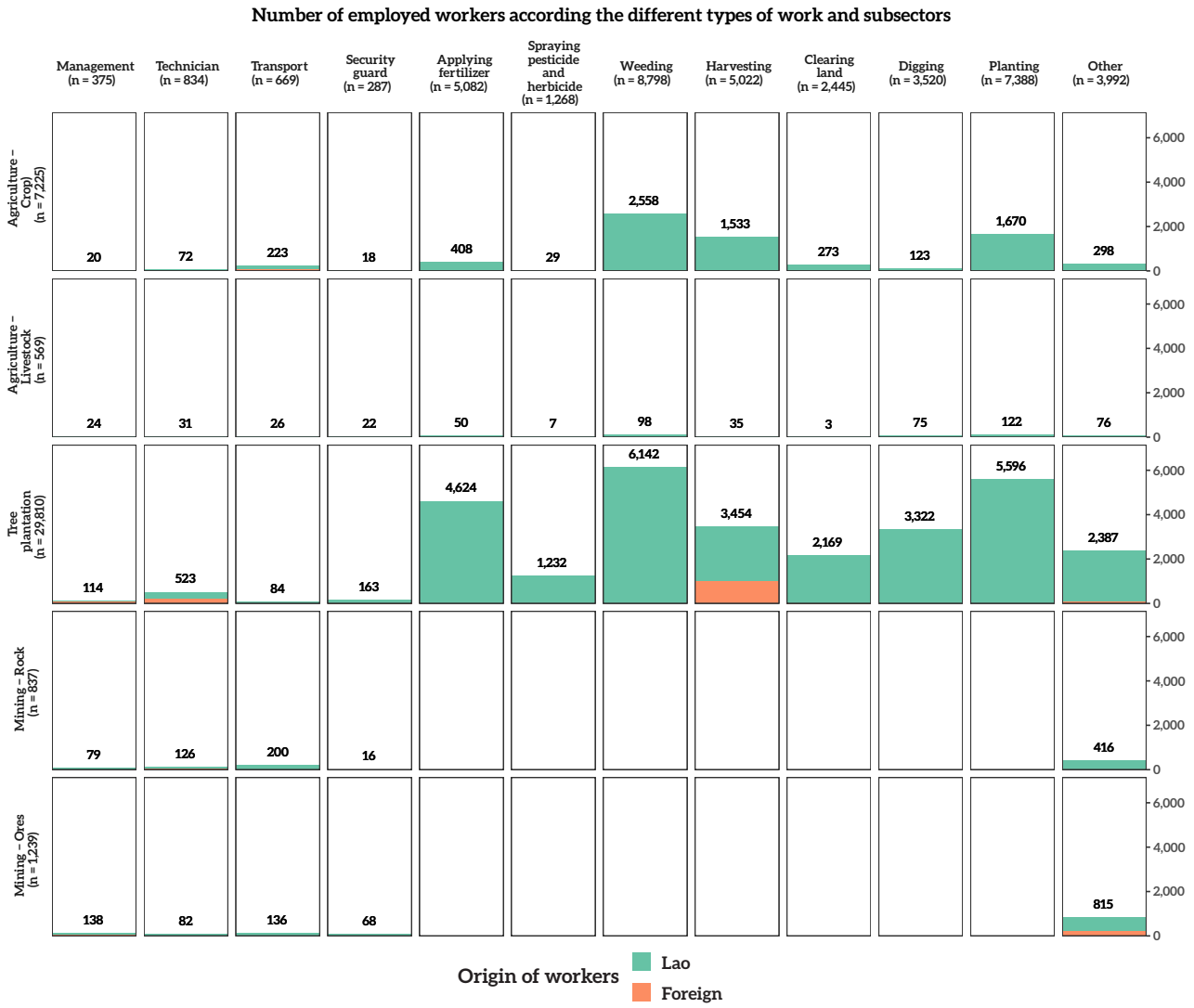
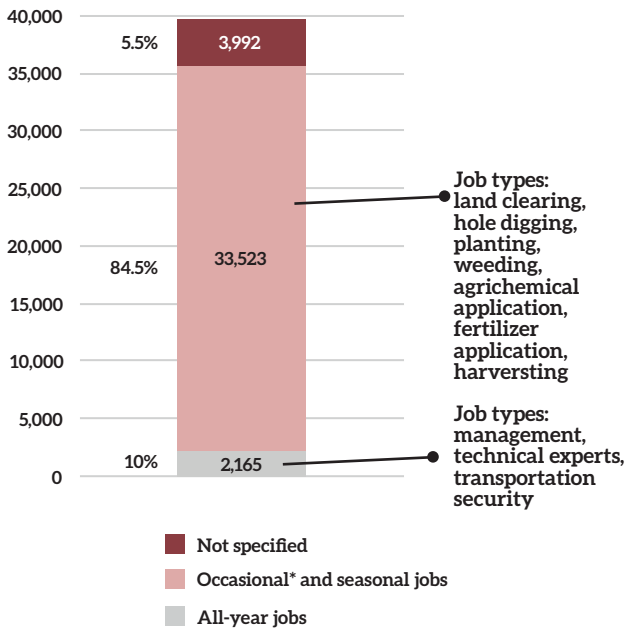


Figure 51: Number of jobs provided by land deals in the agriculture, tree plantation, and mining subsectors in different job categories

seasonal (see Figure 52). In total, 85% of the jobs offered are seasonal and have low technical skill requirements; these included activities like planting and weeding which account for 7,388 and 8,798 jobs respectively. Only 5% of all jobs offer a monthly salary in which the employees have a fixed term contract. These include management and technical expert positions, and year-round service personnel (e.g. drivers and security guards).

Many jobs created by land deals are only available during the start-up phase of a project. These temporary jobs account for 13,353 jobs or 34% of the total number of jobs generated by land deals, including activities such as land clearing, soil preparation, and planting crops. In the mining subsector, a great number of jobs are available during the construction phase, but in the operational phase, generally fewer jobs are available. Investors, however, often hire employees for different activities, e.g. for weeding or applying fertilizer. Such positions then ensure that different seasonal activities combined provide for year-round employment.

Aside from revenues and contributions to macro-economic growth, the GoL initially expected employment to be generated for affected communities, especially in rural areas. It was expected that these employment opportunities would contribute to local livelihood improvement (GoL 2004). Regulations dictate that investors should prioritize hiring Lao citizens, but the GoL allows the investor to hire 15% of its total required physical labour and 25% of all required management or technical experts from foreign countries if necessary (GoL 2013). However, the results from the quality of investment assessment reveal that in 41% of deals (82 deals) of the total sampled, investors do not follow this regulation and instead hire more foreign migrants than the government regulation permits. In total, 2,169 more foreign workers are employed by these deals beyond what the government regulation permit for these deals. Roughly 46% of those foreign workers are employed in the mining subsector. This could be explained by the fact that, in general, jobs in the mining industry require very specific expertise and knowledge. The rural work force often lacks such skills, explaining why so few Lao workers are employed in mining deals compared to deals in the agriculture and tree plantation subsectors. In the tree plantation subsector, 849 more foreign workers beyond the government regulation permit are employed by 25 deals . The agricultural subsector has the lowest number of foreign migrants employed beyond the government permit with only 313 labourers hired by 19 deals.



** occasional jobs are only relevant during a certain project stage (e.g. during construction)*

Figure 52: Shares of jobs offered by land deals

Although government regulations limit hiring foreign workers based on business unit, from a policy point of view, it is important to understand the nature of jobs for which foreign workers are hired beyond that limit. The quality of investment data reveals that, overall, investors do not hire foreign workers for lower skilled jobs such as clearing land, preparing soil, planting, or weeding, but primarily for higher skilled jobs, especially applying agrichemicals, harvesting crops, management, technician services, and transportation (see Figure 53). Nevertheless, the situation varies by type of land deal. In general, the proportion of foreign workers employed by livestock operations is very small compared to others. Agricultural crop production deals bring a considerable number of foreign workers into the Lao PDR to apply agrichemicals or work in transportation (the share of foreign workers for those jobs accounts for two-thirds or 37% of the total required labour for respective jobs). For tree plantation deals, a significant number of foreign workers perform harvesting work (30% of the total required labour for harvesting), and work as managers (72%) and technicians (45%). For mining ore deals, a substantial number of foreign workers hold jobs in management or as technicians, consisting of 47% and 39% of all labour for those two jobs.

The fact that more foreign workers are employed by deals than the government regulation permits can be understood from two perspectives. Firstly, the domestic workforce does not contain sufficient skilled labour to supply the demand created by these deals.

Figure 53: Share of foreign workers within the different job categories and subsectors

Although one of the most important factors in attracting large-scale investments in land in the Global South is low labour costs (Li 2011), and the Lao PDR has been successful in doing over the last fifteen years, it has struggled to provide skilled labour, especially for a new boom cash crop (rubber), and an emerged industry (ore mining). Secondly, companies hire workers from outside the country because they cannot attract Lao workers as many villagers (24 cases) stated that they did not want to take these jobs because they were undesirable work, or because they had prior bad experiences with the investor, including being cheated or experiencing poor labour conditions.

Employment opportunities and gender

The results from the quality of investment interviews with impacted villagers reveal that, out of approximately 27,416 jobs offered to the residents in these villages by the land deals, roughly two-thirds are held by women (see Table 32). The proportion of male to female workers is different across the three subsectors and the products therein. Notably, for livestock deals (the quality of investment assessment includes 36 deals for cattle and buffalo, two for pigs, and one for goats), almost all workers (96%) are women. Although in Lao households, men are typically responsible for taking care of large livestock such as cattle and buffalo, while women are responsible

for taking care of small livestock such as pigs and poultry (Stür et al. 2002), the results of this assessment for employment in the livestock sector do not fit this typical Lao division of labour. This may be due to the fact that these jobs mainly involve fodder planting and weeding, which are considered women's jobs (ADB and The World Bank 2012).

The share of women working in mining deals, in contrast, is small and amounts to only 16% of jobs in rock and clay mining deals and 32% in ore mining deals. In general, employment opportunities in the mining industry are considered dangerous and are therefore viewed as more appropriate for men than for women (Lahiri-dutt 2007; Huesca 2013; Kotsadam and Tolonen 2013). The quality of investment results support this general picture. A more equal balance between women and men is found in tree plantation and agricultural crop deals, which constitute the largest employment categories of all sampled deal types. Out of a total of 17,626 jobs offered by tree plantations and 5,347 jobs offered by agricultural crop deals, 55% and 46% are taken by women workers.

Table 32: Jobs created by deal categories and gender

Employment type	Total jobs	Female workers	% Female workers
Agricultural crop (n = 72)	5,347	2,453	46%
Agricultural livestock (n = 45)	3,695	3,538	96%
Tree plantation (n = 182)	17,626	9,613	55%
Mining ore (n = 59)	397	128	32%
Mining rock and clay (n = 78)	351	57	16%
Total (n = 436 villages)	**27,416**	**15,789**	**58%**

Beneficiaries of employment opportunities

As the above results show, land deals in general offer a substantial number of jobs, including salaried and seasonal jobs. However, the proportion of villages where land deals are developed, and where villagers indeed engage in employment with the land deal, are very uneven (see Table 33). Overall, village authorities of 59% of all sampled villages (in total 492 villages were assessed) state that at least one villager was employed as a wage labourer at the time of the interview. The share of villages that report having benefited from these employment opportunities varies by subsector: agricultural crop and tree plantation deals have the highest proportion, with 73% and 65% of sampled villages reporting benefits, respectively. Mining, on the other hand, has the lowest share of villages reporting benefiting from wage labour opportunities.

Table 33: Share of villages where residents are engaged in wage labour by land deals

Product groups	Total number of villages	Number of villages where residents were employed by a land deal as wage labourers	
		Number of villages	Percent
Agricultural crop	73	53	73%
Agricultural livestock	61	17	28%
Tree plantation	204	133	65%
Mining ore	59	34	58%
Mining rock and clay	95	54	57%
Total	**492**	**291**	**59%**

Numerous factors may explain why villagers are not employed by the land deals that impacted them. The interviews with the village authorities reveal that nearby villagers are often not qualified for the jobs offered (see Figure 54). Moreover, a large number of villages (24), especially the ones impacted by mining deals, claim that jobs are often offered to foreign migrants instead of to affected communities. Twenty villages that were impacted mainly by agricultural deals state that they were never aware of any employment opportunity with these land deals at all; in other words, investors never recruited workers from those villages. In 19 villages, they reported never having received information about whether there were employment opportunities with a land deal or not. Many villagers (18), especially those impacted by mining and tree plantations, claim that jobs offered by the land deal required high-level skills, and affected villagers were not provided any training to acquire such skills. Moreover, jobs offered by land deals are often considered undesirable because they require hard work for low pay, and many villagers have experienced poor labour treatment, e.g. unpaid wages (13 cases). Other reasons for not engaging in employment with land deals in their villages include the availability of better alternative opportunities for employment (11 cases).

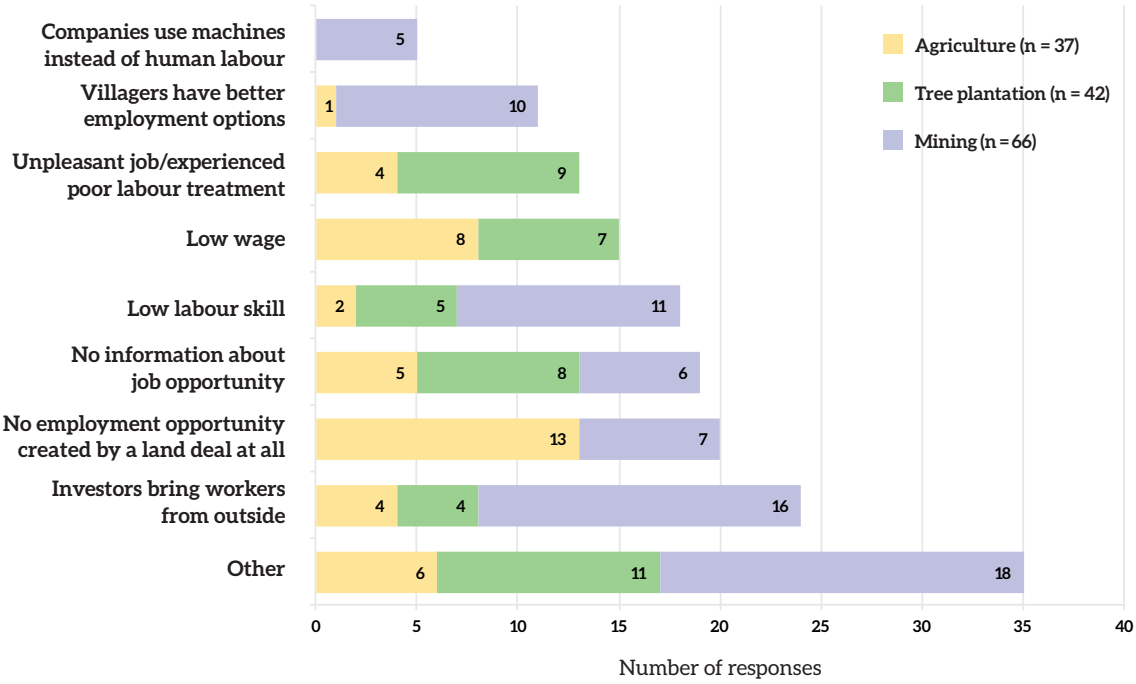


Figure 54: Main reasons for not engaging in employment with land deals

Poor labour conditions is a problem frequently reported in the media and in case studies (e.g. Molina 2011). The results from the quality of investment assessment support these reports, showing that poor labour treatment was encountered by one-third of impacted villages who were employed as wage labourers by land deals. These problems occurred more often with foreign land deals and somewhat less often with domestic companies (see Figure 55). Various forms of poor treatment or cheating are reported in the quality of investment assessment, but the most common relate to unpaid wages, delays of payment, and reduction of wages or salary. Impacted villagers also state that they were not allowed to take short breaks during work, but this was only reported with foreign investment deals. Furthermore, poor labour treatment seems to be observed more commonly in the tree plantation subsector than in agriculture and mining subsectors.

The reasons stated by companies for not employing local people differ significantly from the reasons reported by villagers. Company representatives of 22 land deals (nearly 11% of the sampled land deals) claim that they do not employ any local community members in wage labour. Nine of these state that they think local communities have better employment options than the jobs offered by the land deal. Six company representatives argue that the working age population is small in their area, meaning that there is an insufficient supply of physically capable labourers. Four representatives express that work in the agriculture and tree plantation subsectors is seasonal and only available at the same time that local villagers are busy with their own crops. Lastly, four companies said that they do not employ affected villagers as wage labourers because those villagers are unskilled.

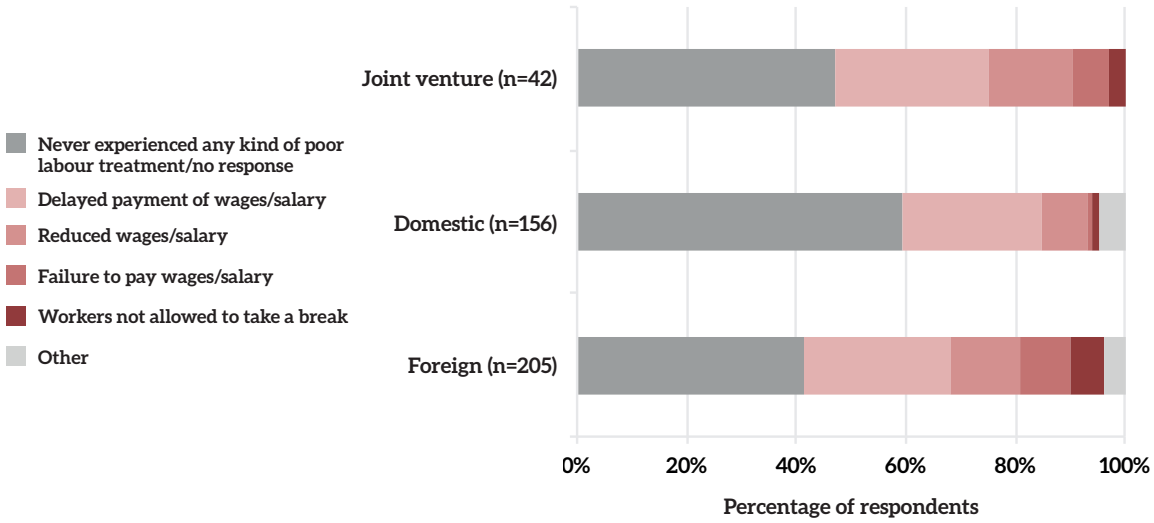


Figure 55: Forms and occurrences of poor labour treatment or cheating by type of investor

Job creation across subsectors

Agriculture and tree plantation deals

Deals that create the highest number of jobs per area unit are all in the agriculture subsector, namely for the production of pigs, asparagus, mulberry leaves for silkworms, vegetables, and medicinal plants. These deals all provide more than 100 jobs per 100 ha (see Table 34). In contrast, the predominant tree crops, including rubber and eucalyptus, create far fewer jobs per hectare than agricultural crops. On average, every 100 ha of rubber plantation creates only 16 jobs, while 100 ha of eucalyptus creates fewer than 10 jobs. Even though rubber is considered a labour-intensive crop (Burger et al. 1995), the number of jobs created by rubber plantations in the Lao PDR is far smaller than the number of jobs created by rubber in other developing countries, where the average is 42 jobs created per 100 ha (Deininger, Byerlee 2011).

The differences in the number of jobs created by land deals depends primarily on the product and the way that product was produced. For instance, the main reason that land deals focused on pig production create a higher number of jobs per hectare is likely because pig production requires high labour input at all stages of production (Ferry 2011; Buloke Shire Council 2017). Vegetable and fruit production, including coffee, is another type of labour-intensive agriculture, as most work is done by hand, especially harvesting. Thus, the peak in labour demand for vegetable and fruit production is during harvest.

Disaggregating the data by country of origin of investors reveals that foreign investment in the agriculture and tree plantation subsectors has created 55 jobs per 100 ha, which is more than double the number of jobs created by domestic (19 per 100 ha) and joint venture deals (27 per 100 ha). An obvious explanation for this may be due to the fact that the majority of domestic investments are small-scale deals in terms of both land acquired and invested capital per deal, and these deals seem to more often be family businesses. Thus, they may rely more on family labour to implement their deals instead of hiring outside labourers.

Mining deals

With around 400 jobs per deal, gold mining deals provide by far the highest number of jobs per deal (see Table 35). This is followed by potassium mining with 151, and coal with 78 jobs generated per deal respectively. The smallest number of jobs created per deal in the mining subsector are in gravel, peat, lead, and barite deals, with less than 10 jobs per deal.

Table 34: Average number of jobs generated per 100 ha in agriculture and tree plantations

Average number of jobs per 100 ha	Product	Number of jobs per 100 ha of area developed	Total area already developed (ha)
Agricultural subsector			
>100	Pig (n = 2)	631	50
	Asparagus (n = 1)	359	81
	Mulberry leaves for silkworm (n = 2)	120	74
	Vegetables (n = 1)	116	9
	Jatropha (n = 1)	115	57
	Medicinal plants (n = 1)	110	345
50-100	Moringa & custard apple (n = 1)	76	201
	Coffee (n = 3)	70	304
	Banana (n = 4)	57	257
20-50	Orange (n = 1)	43	51
	Palm oil (n = 1)	28	72
	Corn (n = 3)	21	193
	Oil crop (n = 1)	20	157
10-20	Sugarcane (n = 3)	19	26,168
	Noni (n = 1)	18	150
	Goat (n = 1)	16	92
	Rice, cassava, coffee (n = 1)	16	190
	Large-livestock (n = 28)	12	4,429
	Cassava (n = 4)	11	368
<10	Fruits (n = 2)	9	100
	Cassava & corn (n = 1)	2	100
Tree plantation subsector			
50-100	Orchid (n = 1)	70	30
20-50	Agarwood (n = 2)	32	212
10-20	Pine tree (n = 1)	19	150
	Rubber (n = 33)	16	64,002
<10	Acacia (n = 1)	6	8,138
	Eucalyptus (n = 8)	6	23,635
	Eucalyptus & acacia (n = 1)	4	230
	Rubber & agarwood (n = 2)	4	300
	Agarwood (n = 1)	1	100

Table 35: Average number of jobs per deal in the mining subsector

Type of product	Product	Average number of jobs per deal
Mining - ore	Gold and other minerals (n = 3)	468
	Potassium (n = 2)	151
	Coal (n = 4)	78
	Iron (n = 3)	48
	Tin (n = 5)	44
	Barite (n = 4)	22
	Gypsum (n = 4)	21
	Salt (n = 1)	19
	Lead and barite (n = 1)	4
	Other (n = 2)	16
	Clay (n = 2)	52
Mining - rock and clay	Lime stone (n = 29)	21
	Quartz (n = 4)	18
	Gravel (n = 19)	9

Wages offered by land deals

Interviews with affected villagers provide interesting insights into the wages paid by land deals for different types of jobs. As some jobs are paid based on the basis of time allocated to an activity (e.g. monthly or daily wages) and others are paid based on productivity (e.g. number of holes dug, hectare cleared, etc.) all types of wages are converted to daily wages in order to be comparable across the different job types (see Chapter 2 for details on the conversion method).

Overall, wages in the mining subsector are higher than in the other subsectors (see Table 36), and wages in agriculture deals are slightly higher than in tree plantations. Unfortunately, the higher wages offered in the mining subsector do not typically benefit affected communities much, as mining deals offer considerably fewer jobs to affected villagers than do agricultural and tree plantation deals.

The mean daily wage varies from one job type to another, especially in the agriculture and tree plantation subsectors. Obviously, wages for high-skilled and salaried jobs are substantially higher than low-skilled and seasonal jobs (see Table 37). For low-skilled and seasonal jobs, agriculture and tree plantation deals show opposite trends. While the highest wage in agriculture is paid for spraying herbicide, and the lowest is for soil preparation, the highest wage on tree plantations is for soil preparation, and the lowest is for spraying. This can probably be explained by the fact that soil preparation for tree planting is considered a harder job because the worker needs to dig a larger and deeper hole than when planting agricultural crops.

Interestingly, in the tree plantation subsector, wages paid for pre-harvest jobs (except for digging) are lower than wages paid for jobs during the harvesting phase. For example, workers are only paid around 35,000 kip per day for land clearing compared to nearly 50,000 kip for harvesting. One explanation for the higher wage paid for harvesting in tree plantation subsector is that, for example in the case of rubber, tapping may require a higher skill set, and be considered a more difficult job as it has to be conducted during the night time. Unfortunately, this higher wage for harvesting in the tree plantation subsector does not benefit impacted villagers much, as harvesting (again, largely tapping of rubber trees) tends to be carried out by foreign workers instead of affected communities.

Table 36: Wages per day by subsector

Subsector	Daily wage (kip)				
	Mean	Min	Max	Mode	National minimum wage per day in 2015 (MLSW 2015)
Agriculture (n =97)	53,335	10,000	200,000	50,000	45,000
Tree plantation (n = 169)	49,337	10,000	150,000	40,000	45,000
Mining (n = 119)	77,119	23,000	138,000	110,000	45,000

Note: for this analysis data from Luang Prabang Province were excluded as the assessment there took place in 2014, before the introduction of national minimum wages.

Table 37: Wages per day by type of job

Type of job	Nature of employment	Phase of operation	Average wage per day (kip)		
	1= Salaried employee 2= Seasonal labour 3= Not specified	1= Start-up 2= Operational 3 = Both 4 = Not specifie	Agriculture	Tree plantation	Mining
Management	1	3	126,500	21,000*	82,000
Technician	1	3	112,000	69,750	97,833
Transport	1	3	62,111	121,833	98,604
Security guard	1	3	40,222*	32,631*	60,781
Land clearing	2	1	36,131*	35,547*	N/A
Digging	2	1	30,850*	55,005	N/A
Planting	2	1	46,463	40,799*	N/A
Weeding	2	3	48,323	36,637*	N/A
Spraying pesticide and herbicide	2	3	73,889	31,267*	N/A
Applying fertilizer	2	3	44,990	34,963*	N/A
Harvesting	2	2	45,473	48,700	N/A
Other	3	4	43,375*	49,739	46,375

** wage is lower than national minimum wage. National minimum wage/day as of 2015 was 45,000 kip (MLSW 2015)*

Workers are paid at the end of the day, Salavan Province. © Field team, 2010

Impacts of use of agrichemicals

In this section, results from the data collected on pesticide use, regulatory compliance and the perceived environmental and health impacts of pesticide and herbicide use on agriculture and tree plantation deals are presented. The section mainly draws on interviews conducted with company representatives about their agrichemical use and environmental compliance, and on interviews conducted with DAFO staff, DoNRE staff, and the local DLSW staff, about regulatory compliance, safety training and perceived environmental or health impacts of pesticide and herbicide use on the plantations (see Table 9 in Chapter 2 for details on the used quality of investment questionnaires and the sample sizes). Finally, results from the interviews conducted with affected villagers about their perception of environmental or health impacts of pesticide and herbicide use on the plantations are presented.

Pesticide and herbicide use

Company representatives reporting to the survey teams regarding the use of agrichemicals may be somewhat unreliable, with many projects reporting that they did not use pesticides or herbicides even when the industry standard is to do so. Given the recent cancelation of projects for banana plantations due to the misuse of agrichemicals, it would not be surprising if company representatives were cautious about sharing data on agrichemical use on their plantations. Legally importing pesticides directly to the provinces is often difficult with the only two legal wholesale outlets in Vientiane. Only 20% of company respondents reported using herbicide (n=121), and 22% of company respondents reported using pesticide (n=125) (see Figure 56); 30% of company representatives reported using either pesticide or herbicide.

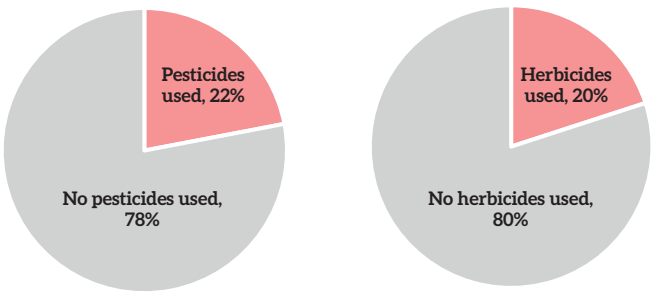


Figure 56: Share of company representatives reporting the use of agrichemicals.

It is highly unlikely, especially in large-scale plantations, that these data are accurate. For example, 46% of rubber projects claimed to be using no pesticide or herbicide. Many projects reported zero pesticide or herbicide use for products that would be very difficult to cultivate at that scale without agrichemicals. Examples of these projects include:

- 200 ha Chinese owned banana plantation
- 2,600 ha Vietnamese owned cassava plantation
- 300 ha Lao owned maize plantation
- 150 ha Lao PDR-China owned hectare citrus fruit plantation
- 10,000 ha Thai owned sugarcane plantation

Fertilizer use was also likely underreported – only 45% of company respondents said they used standard synthetic fertilizers in their operations.

Permits for agrichemical use

While the majority of companies reported receiving written permission to use agrichemicals from the government, very few received permission from MAF, local PAFO offices or local DoNRE offices. For 67 deals, (58% of company representatives who answered this question) reported receiving written permission for pesticide and herbicide use on their operations. Of those, only 19 respondents reported obtaining permission for agrichemical use from either PAFO or MAF; only one listed another government agency. None of the companies received permission for agrichemical use on their land deals by PoNRE/MoNRE.

Safety training

The staff at local offices of the DLSW were interviewed about the safety training and equipment available to workers on plantation projects. Department staff were able to confirm that for eight land deals, adequate safety training for workers was provided, and five projects provided adequate protective equipment for workers. Not every DLSW office had information on the relevant projects, so this is not a comprehensive assessment.

Perception of environmental and health impacts of pesticide and herbicide use

Negative perceptions of agrichemical impacts were common. GoL officials were asked about their general impression of impacts caused by agrichemicals. According to one or more representatives of different GoL agencies interviewed, 33% of respondents claimed projects had a negative or very negative impact on environmental health due to pesticide use, 49% of respondents perceived a negative or very negative impact from herbicide use. Further investigations into the type and scale of these perceived impacts are needed, the survey did not collect this information.

Perceptions from DAFO and DoNRE staff

DAFO and DoNRE staff were asked to rate their perceptions of the impacts of pesticide and herbicide use for each land deal. The analysis of interviews with these different stakeholders shows that DAFO staff had an uneven perception of the impact of pesticides in the project areas they supervise. The vast majority said that pesticides either had no impact, they did not know, or the question was not applicable to the land deal at hand (see Figure 57). Only 11% (15 cases out of 132) of respondents said that pesticides had a very negative impact in the project area; 21% (29 cases out of 134) said the same for herbicides. The projects in which DAFO staff perceived a very negative impact from pesticides included sugarcane plantations, rubber plantations, banana, livestock and eucalyptus projects, the majority of which were large scale (over 1,000 ha) with the exception of a few mid-sized banana plantations. Some of the projects DAFO staff saw as causing problems with pesticide use, were projects in which the companies denied using pesticides at all.

Not all deals were covered by surveys at both DAFO and DoNRE offices, not every office evaluated every project and not every office had the same level of knowledge about each deal. However, DoNRE's evaluation was relatively close to DAFO's in terms of how many projects were perceived to be creating problems with their pesticide and herbicide use practices. For a given project evaluated, an average of 9% of respondents said the project created a very negative impact from pesticides; 17% said the same about herbicides.

While the experience of each agency was different in each location, qualitatively, the perception of negative impact seemed to be widely shared. However, not all projects were perceived as bad actors. There were significant levels of agreement between DAFO and DoNRE officials about which projects were managing pesticide use in a harmful way: 15 separate projects were named by at least two government offices as having a negative or very negative impact. Company representatives answered questions about pesticide use for 11 of the 15 deals singled out by local government as bad actors. Five of those company representatives said they were using no herbicide or pesticide in their operations.

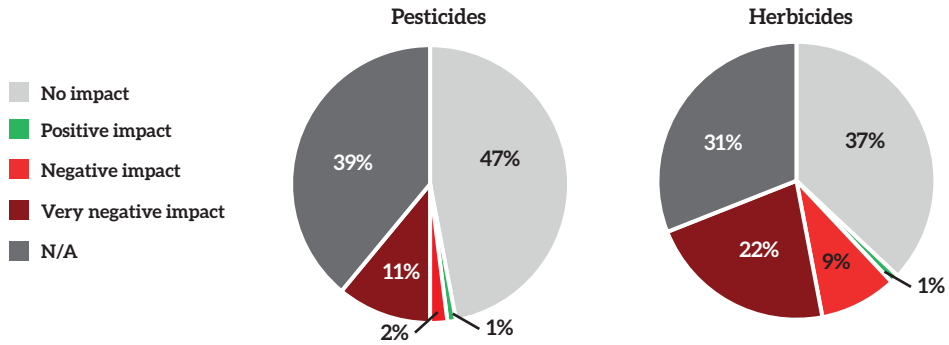


Figure 57: Perception of impacts of pesticides (left) and herbicides (right) by DAFO staff

Perceptions from Villages

Village authorities were asked the same questions as DAFO and DoNRE staff. Amongst them, the perceptions of negative impacts from pesticide and herbicide use were widespread in villages (see Table 38 and Figure 58); 41% of respondents reported a negative or very negative impact from herbicide use, and 19% of respondents reported a negative or very negative impact from pesticide use.

Many factors can affect people's perceptions of pesticide impacts, and misconceptions about pesticides are common. However, the vast majority of negative perceptions of pesticide use were shared between one or more informant. Of those that perceived a negative or very negative impact of pesticide use (56 out of 282 respondents), 90% of the time that assessment was shared independently by another interviewee in either the affected project area or a government office. Similarly, of those that perceived a negative or very negative impact of herbicide use (116 out of 283

Table 38: Perception of level of impacts of pesticides and herbicides by different stakeholders

	Perception of pesticide impact % of respondents reporting impact			Perception of herbicide impact % of respondents reporting impact		
Level of impact	**DAFO (n=132)**	**DoNRE (n=124)**	**Villages (n=282)**	**DAFO (n=134)**	**DoNRE (n=126)**	**Villages (n=283)**
No impact	47%	32%	47%	37%	27%	33%
Positive	1%	0%	0%	1%	0%	0%
Negative	2%	8%	7%	9%	7%	10%
Very Negative	11%	9%	12%	22%	17%	31%
N/A	39%	51%	33%	31%	49%	25%

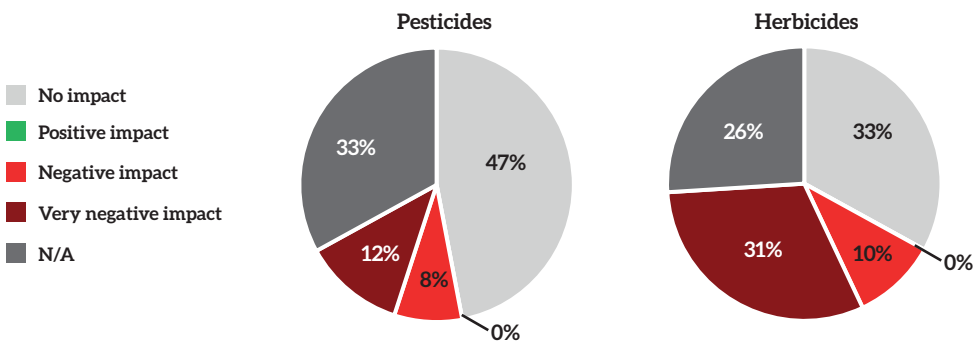


Figure 58: Perception of impacts of pesticides (left) and herbicides (right) by affected villagers

respondents), 89% of the time that assessment was shared independently by another interviewee in either the affected project area or a government office.

Impacts on local food availability

In order to assess the impact of land deals on food availability for affected communities, village authorities were asked whether they had witnessed changes in the amount of food that villagers were able to access after land had been allocated to deal development, as opposed to before the land deal (see Table 9 in Chapter 2 for details on the sample size). A majority (61%) of village authorities responded that there had been no change in food availability. This could mean that the land allocated to the deal was not important in terms of overall food quantity. Alternatively, it could mean that villagers could compensate for the loss of food sourced from the areas affected by the land deal, for example by buying food at the market instead.

In nearly one-quarter (24%) of all cases, village authorities reported a decrease in food quantity. The perceptions of village authorities on changes in food quantity differed depending on the subsector in which land deals were made (see Figure 59). For tree plantation projects, a decrease in food availability was perceived in 36% of nearby villages, whereas a decrease was perceived by only 17% and 14% of villages affected by agriculture and mining deals.

Village authorities of villages affected by agriculture and tree plantation deals named several reasons for the perceived decline of food availability, which they attributed to the development of the respective land deal. The most prominent factors for the decrease were the loss of areas for NTFP collection and for farming (see Table 39). Changes in climatic conditions and chemical contamination attributed to the land deals were also reported by 13% and 10% of all cases. When asked about the most important factors which led to an increase of food availability, the creation of wage labour opportunities by the deal, or outside of the village, were most commonly offered as explanations (see Table 39).

The results suggest that the development of land deals contributed to a shift in food sources for nearby communities. Firstly, village authorities reported a decrease in rice produced within the village in 24% of all cases (see Figure 60). The land deals seemed to increase the need for local villagers to purchase this staple food. Secondly, the quantity of NTFPs collected decreased in 58% of all villages; in 38% of all cases the quantity collected decreased by more than 50% after the land deal was implemented.

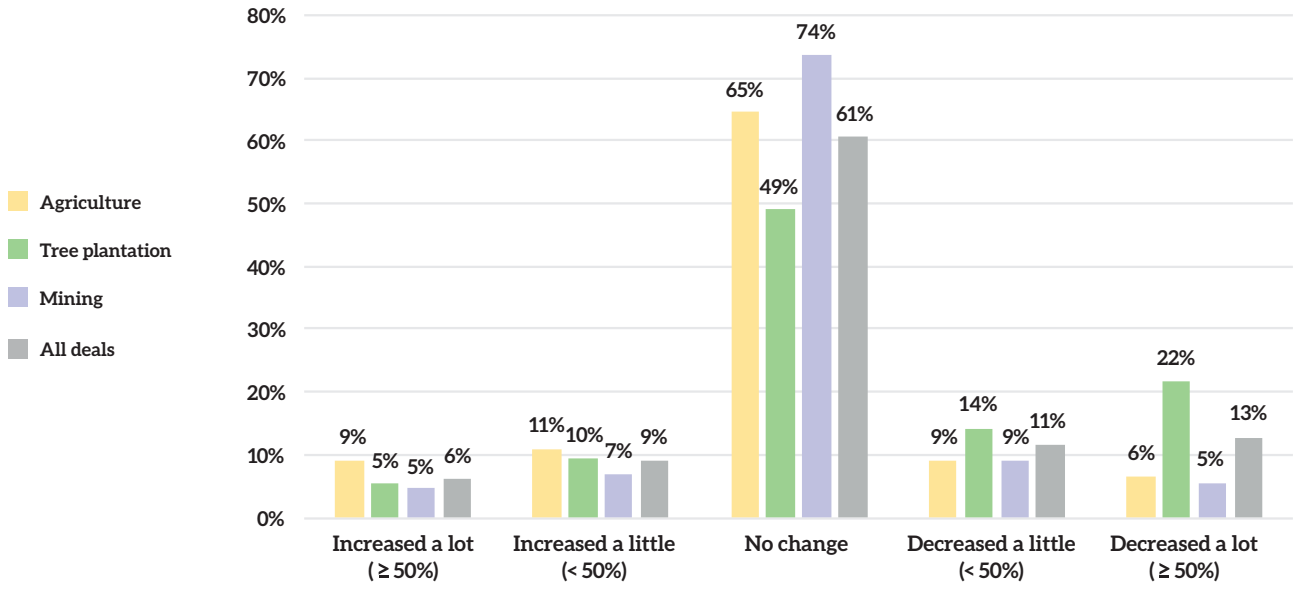


Figure 59: Impacts of land deal development on food availability perceived by village authorities of affected villages

Table 39: Reasons for changes in food availability according to village authorities for agriculture and tree plantation deals

Decrease in food availability		Increase in food availability	
Reason reported	**Frequency (n=60)**	**Reason reported**	**Frequency (n=49)**
Area for NTFP collection decreased	43%	Creation of jobs by land deal	61%
Farming land decreased	40%	Better accessibility and access to markets	43%
Change of local climatic conditions	13%	Paid jobs for children	18%
Chemical contamination	12%	Uptake of paid labor elsewhere	8%
Population growth	8%	Higher productivity on remaining land due to technology transfer	6%
Decrease in livestock	3%	Other reasons	2%

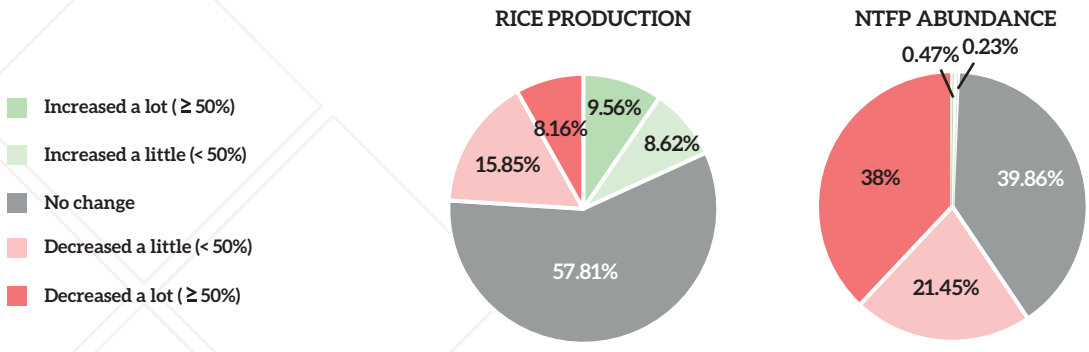


Figure 60: Impacts of land deals on quantities of rice production (left) and NTFP abundance (right) perceived by village authorities

Wide spacing in a eucalypt plantation allows other uses in between rows of trees in Savannakhet Province. © Rob Cramb, 2012.

CHAPTER 6: Rating land deals using the Index for Quality of Investment (IQI)

This chapter presents the results of rating land deals with regard to compliance, and environmental, social and economic impacts, derived from the quality of investment assessment by using the multi-tiered Index for Quality of Investment (IQI).

Rating land deals on a scale from 0 to 100

The IQI gives scores ranging from 0 (low quality) to 100 (high quality) for a land deal (see Chapter 2 for a detailed description of the design of the IQI). The results show that the vast majority of projects (184, or 66% of the 279 assessed deals) overall score an average of 52, with the majority of deals reaching IQI scores of between 40 and 60 (see Figure 61). Deals with mid-ranging scores account for 50% of the area granted in the quality of investment dataset (total area granted is 429,804 ha), while the total area developed by them amounts to 161,540 ha. Ten percent of the sampled land deals have very low scores between 25 and 40. The minimum score of 25 is for a palm oil Vietnam-owned plantation deal (5,168 ha developed) in Attapeu Province. The maximum score of 74 is for a large-scale potassium mining deal (3,500 ha granted) in Khammouan Province and a small (3 ha granted) Lao-owned gravel exploitation deal in Phoukhoun district in Luang Prabang Province.

The distribution of scores differs slightly across subsectors (see Figure 61). Many (42%) of all agriculture subsector deals score between 50 and 60, while only 29% of deals in the tree plantation subsector score in this range. More tree plantation deals (51%) score between 40 and 50. Mining deals perform better with 32% of all deals scoring between 50 and 60, and another 32% of them between 60 and 70.

A concentration of higher scoring deals occurs in areas around Vientiane Province, Savannakhet, Khammouan, and Xiengkhouang Provinces, as illustrated in Figure 62, while lower scoring deals are mainly located in Attapeu Province. Disaggregation by region reveals that land deals located in the central provinces score higher than those in the South (see Table 40). In the North, deals with similarly high scores are found in Luang Prabang and Xiengkhouang, while deals in Oudomxai Province as well as in the South score lower. Deals in southern provinces have lower mean scores than elsewhere, which suggests that these deals have had more pronounced adverse impacts on local livelihoods in that region, including dispossession, reduced household incomes, and deforestation, compared to deals in the northern provinces. This interpretation corresponds with previous local case studies (e.g. Baird 2010; LNRRIC, FSS, FER 2009; Global Witness 2013; Kenney-Lazar 2011). The lowest provincial mean score is for deals in Attapeu Province (mean of 42).

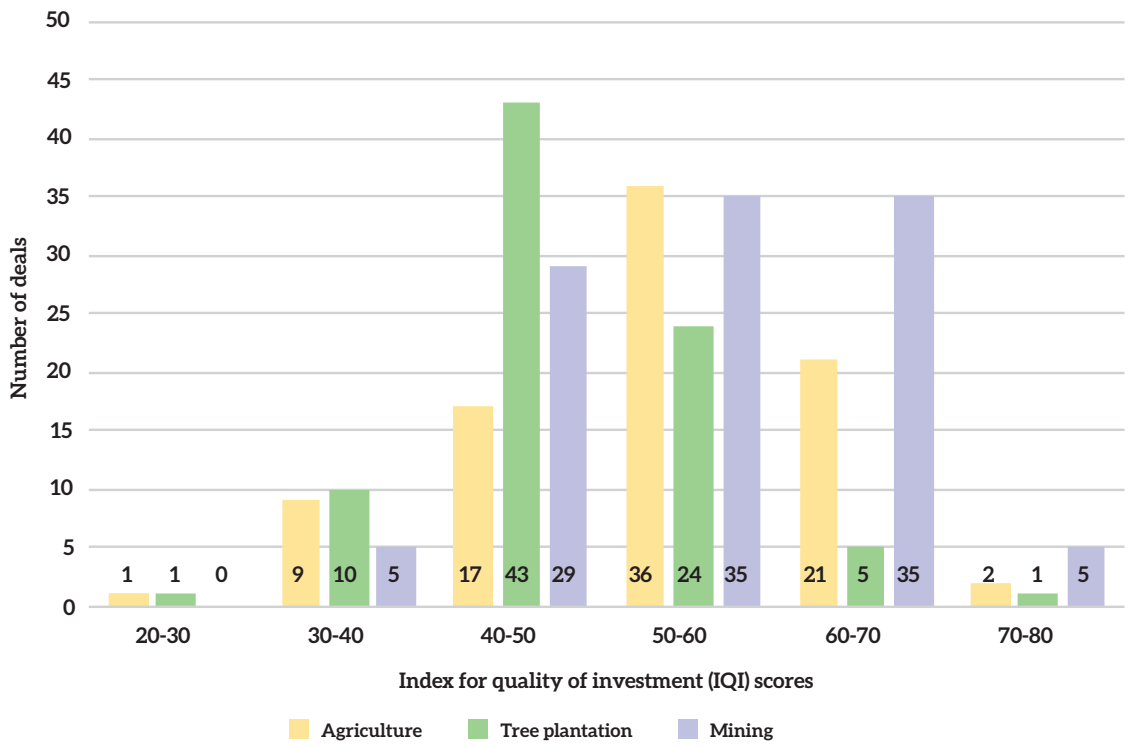


Figure 61: Tier-1 IQI scores by subsector

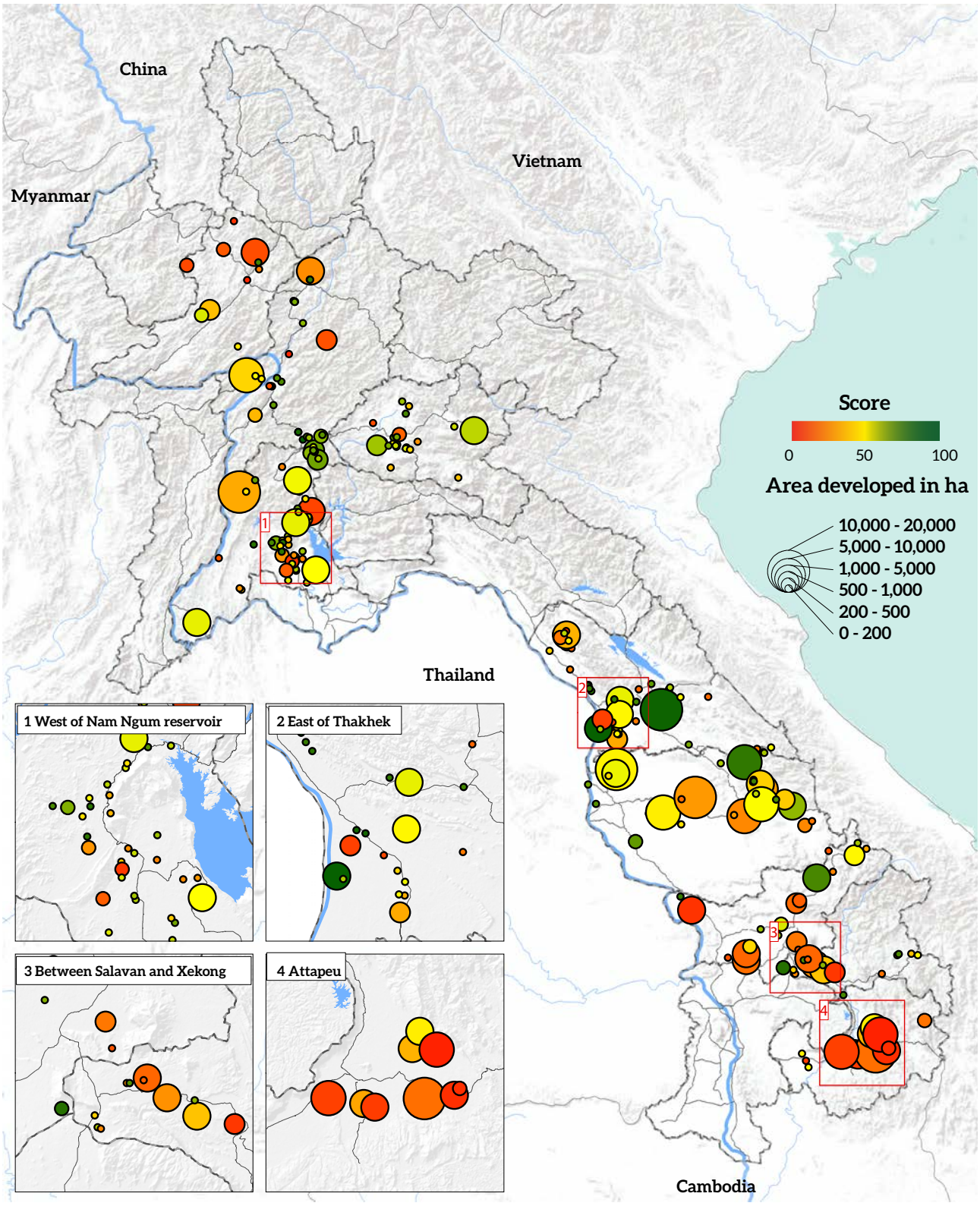


Figure 62: Land deals by IQI Tier-1 score and size

Table 40: Provincial mean IQI scores by geographical region

Region/Province	Scores			
	Mean	Min	Max	Standard deviation
North	55	29	74	10
Oudomxai (n = 14)	47	30	64	10
Luang Prabang (n = 43)	59	29	74	9
Xiengkhouang (n = 26)	53	38	66	7
Central	53	31	74	9
Vientiane (n = 60)	52	34	67	7
Savannakhet (n = 35)	54	43	68	8
Khammouan (n = 44)	53	31	74	11
South	47	25	67	10
Salavan (n = 21)	49	33	67	10
Xekong (n = 19)	48	36	63	8
Attapeu (n = 14)	42	25	64	10
Total (N = 279)	**52**	**25**	**74**	**10**

The five highest and lowest scoring deals

The five highest scoring deals with score over 70 - four are located in Khammouan Province, and one is in Luang Prabang Province. They include the mining deals (products: limestone, potassium, and gravel), one deal for pig raising, and one eucalyptus plantation. Two each of them are foreign- and Lao-owned, and one is a joint venture" (see Table 41).

On the other hand, the five lowest scoring deals at Tier-1 include two domestic, two Vietnamese, and one Chinese deal. Three are agricultural deals (products: palm oil and vegetables), two are rubber deals and one tin deal, located in Attapeu, Khammouan, Luang Prabang and Oudomxai Provinces.

Table 41: The five highest and lowest scoring deals at Tier-1

Product	IQI Tier-1 score	Origin of investor	Level of approval	Province	Size	
					Area granted (ha)	Area developed (ha)
Five top-scoring deals						
Gravel	73.78	Lao PDR	No data	Luang Prabang	No data	0.2
Potassium	73.66	China	Central	Khammouan	3,500	3,500
Limestone	72.83	Lao PDR	Province	Khammouan	5	5
Eucalyptus	72.58	Lao PDR-Japan	Central	Khammouan	25,000	16,302
Pig	72.11	Thailand	Province	Khammouan	46	47
Five lowest-scoring deals						
Palm oil	24.69	Vietnam	Central	Attapeu	No data	5,168
Rubber	29.04	Lao PDR	No data	Luang Prabang	55	62
Vegetables	30.22	China	Province	Oudomxai	9	9
Tin	30.57	Lao PDR	Province	Khammouan	43	42
Rubber	30.97	Vietnam	Central	Attapeu	3,000	2,998

While the IQI scores at Tier-1 render a rough overview and basis for comparison between land deals, Tiers 2 and 3, discussed in later sections, will provide more details regarding which facets (Tier-2) and indicators therein (Tier-3) influenced overall Tier-1 IQI scores. The highest and lowest scoring deals featured here will be further showcased in the sections focusing on Tier-2 results.

IQI scores at Tier-1: Comparing and analysing land deals by different key categories

Foreign deals on average score lower (average score of 49) than domestic and joint venture deals (average scores of 54, see Table 42). Disaggregation by subsector reveals that mining deals score slightly higher (mean of 55) than agricultural deals (mean of 53), and considerably higher than tree plantations (mean of 48). Furthermore, deals granted at the district level scored higher on average (mean of 59) than deals granted at the provincial and central levels (means of 52 and 50 respectively).

Figure 63 presents the results of the analysis of Tier-1 scores by area developed per deal. These scores vary slightly across subsectors, but overall, deals operating at small scales (< 100 ha developed) score higher than medium to large deals (> 100 >10,000 ha developed). Average scores for deals of different areas developed vary between 57 (for deals < 10 ha) and 52 (for deals 50-100 ha of size), while medium to large deals score lower on average.

Table 42: Summary statistics of Tier-1 IQI scores for different categories of deals

Mode of disaggregation	Categories of disaggregation	Mean score	Minimum score	Maximum score
Subsector	Agriculture	53	25	72
	Tree plantation	48	29	73
	Mining	55	31	74
Implementation stage	Start-up/preparation (n=75)	53	25	70
	Operational (n=204)	52	30	74
Origin of investor	Domestic	54	29	74
	Foreign	49	25	74
	Joint Venture	54	33	73
Level of deal approval	Central level	50	25	74
	Province level	52	30	73
	District level	59	38	70

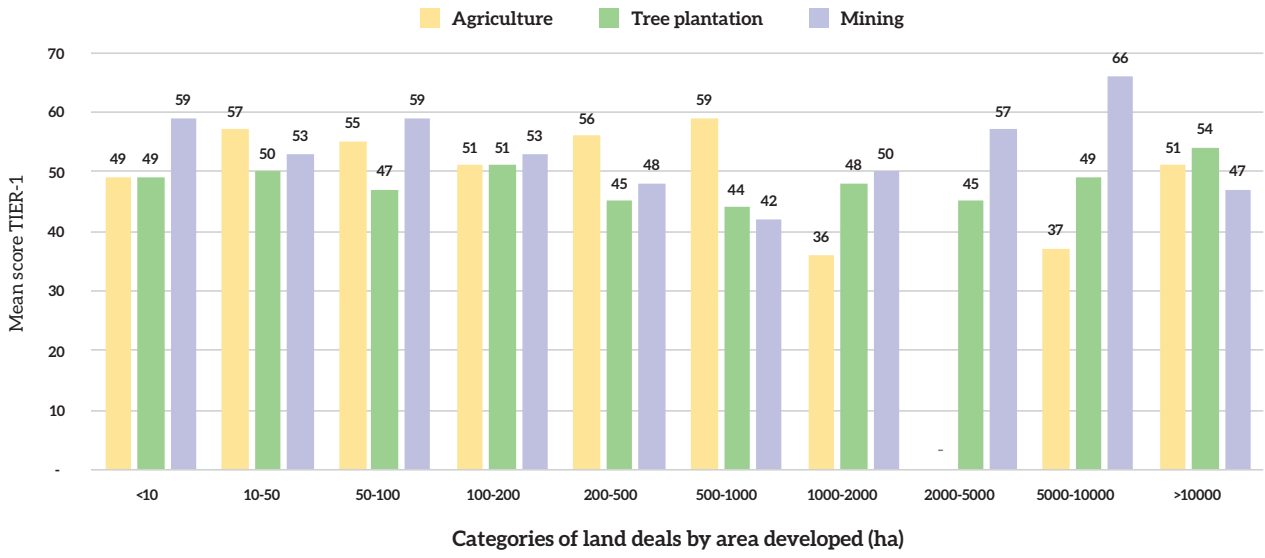


Figure 63: Tier-1 IQI scores by categories of deal size

IQI scores at Tier-2: Scores for legal compliance, and environmental, social, and economic impacts

The results at Tier-2, where the scores of every facet – compliance, and environmental, economic, and social impacts – reveal that the average scores for all four facets were generally mediocre. Most deals score higher in terms of legal compliance and environmental impacts with average mean scores of 14 out of a possible maximum of 25 (see Table 43). Still, the mediocre average score for legal compliance runs parallel to the finding in the previous analysis of the low availability of project documents (Chapter 4)[38]. Land deals on average score worse in terms of their economic impacts (average score of 13) and social impacts (average score of 11) than in the other two facets.

As can be seen from Table 43, a wide range of scores exists across all four facets. Deals score as low as 2 for their social and economic impacts, and legal compliance. On the other hand, some land deals performed very well, leading to a maximum score of 24 in terms of their environmental impacts.

Table 43: Summary statistics of Tier-2 IQI scores for all sampled land deals

Facet	Mean	Min	Max	Mode	Standard deviation
Legal Compliance	14	2	23	17	4
Environmental Facet	14	3	24	15	4
Economic Facet	13	2	22	12	4
Social Facet	11	2	22	4 & 14	5

The five highest and lowest scoring deals: Contribution of the four facets

A detailed look at the scores of the five deals with the highest and lowest IQI scores at Tier-1 reveals that no patterns exist across the four facets, but that the facet scores differ on a case-by-case basis (see Figure 64). For instance, the potassium deal with the highest overall investment quality (at Tier-1) scored high for legal compliance, environment impacts, and economic impacts, while it performed relatively poorly in terms of social impacts. For the eucalyptus deal with a very high overall score of 73, the main contributors to this high score were legal compliance, economic impacts, and social impacts, while its environmental impact facet scored lowest.

The same findings hold when looking at the five deals with the lowest investment quality. There is no pattern with respect to these deals' performance across the four facets. On the other hand, although these five deals score very low at Tier-2 across all four facets, they perform better in some respects than deals with top scores. For example, the rubber deal with a very low overall score of 30 has a higher Tier-2 score for social impacts (12) than the limestone deal which scores 73 (which score 8 for social impacts).

Deals with highest and lowest scores for legal compliance, and environment, economic, and social impacts

In this section, the land deals which score highest and lowest in each facet are presented. They serve to showcase either particularly poor or good performance of deals across specific facets. Land deals which score high in a given facet could serve as examples and lead the way towards other deals achieving higher scores in the same facet. They could be used for conducting field visits and enabling joint learning between investors and GoL representatives, and further in-depth studies could examine the reasons and conditions that allowed these deals to excel.

Four mining deals and one agriculture deal have the highest scores (greater than 21) in legal compliance (see Figure 65). These top-scoring deals produce gypsum (two deals), rhyolite, clay and medicinal plants. The central government approved four of the five. The lowest scores in terms of legal compliance (with below 7) are attributed to a palm oil deal, an orange orchard, a coffee plantation, a eucalyptus plantation, and a coal mine. These five deals with the lowest legal compliance scores are mostly small-scale domestic deals with less than 200 ha granted.

In terms of environmental impacts, the highest scores (over 22) are for deals implemented in Khammouan Provinces. Most are foreign investments in the mining subsector (gravel, limestone, clay, gypsum, and potassium extraction). All of these deals are small, with areas developed of less than 50 ha. The majority of deals with the lowest scores (less than 5) are tree plantations (three rubber and one agarwood). A palm oil deal in Attapeu, the same deal with one of the five lowest legal compliance facet scores, and an orchid project, also score less than 5 in terms of environmental impacts. All these lowest-scoring deals have areas developed over 100 ha per deal.

[38] Differences in results in Chapter 4 and Chapter 6 here are based on differences in the variables included for the respective analyses. The analysis of legal compliance in Chapter 4 examines the number of legal documents required by Lao regulations that were available for a land deal, based on all land deals in the inventory. Legal compliance as discussed here is based on quality of investment data and the set of indicators for legal compliance, including whether or not land deals follow related Lao regulations in the approval process, whether the concession agreement was enforced, and whether local communities were involved in the land granting processes (including whether they were consulted and whether they consented), and progress made in the development of the land deal.

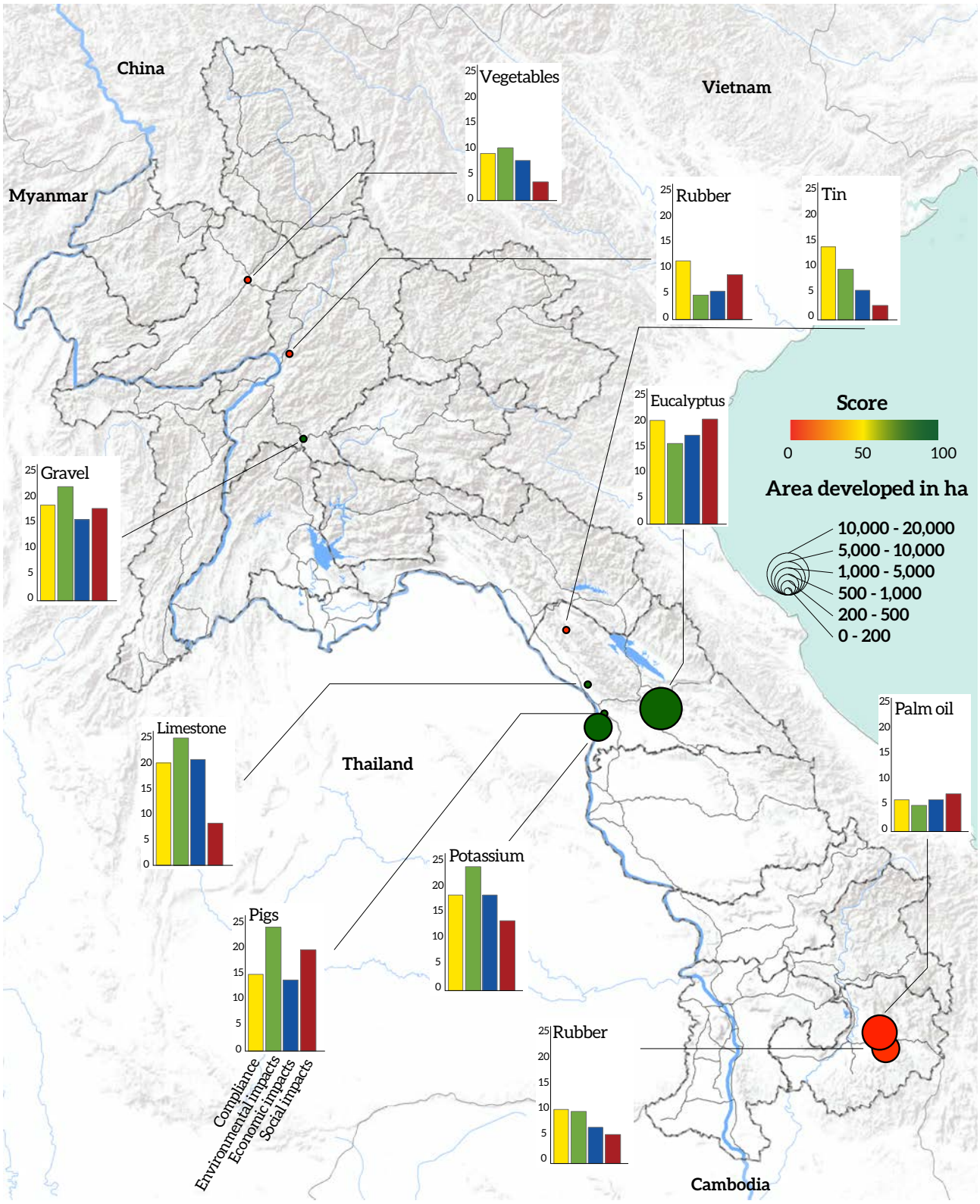


Figure 64: Tier-2 IQI scores for the five highest and lowest quality deals

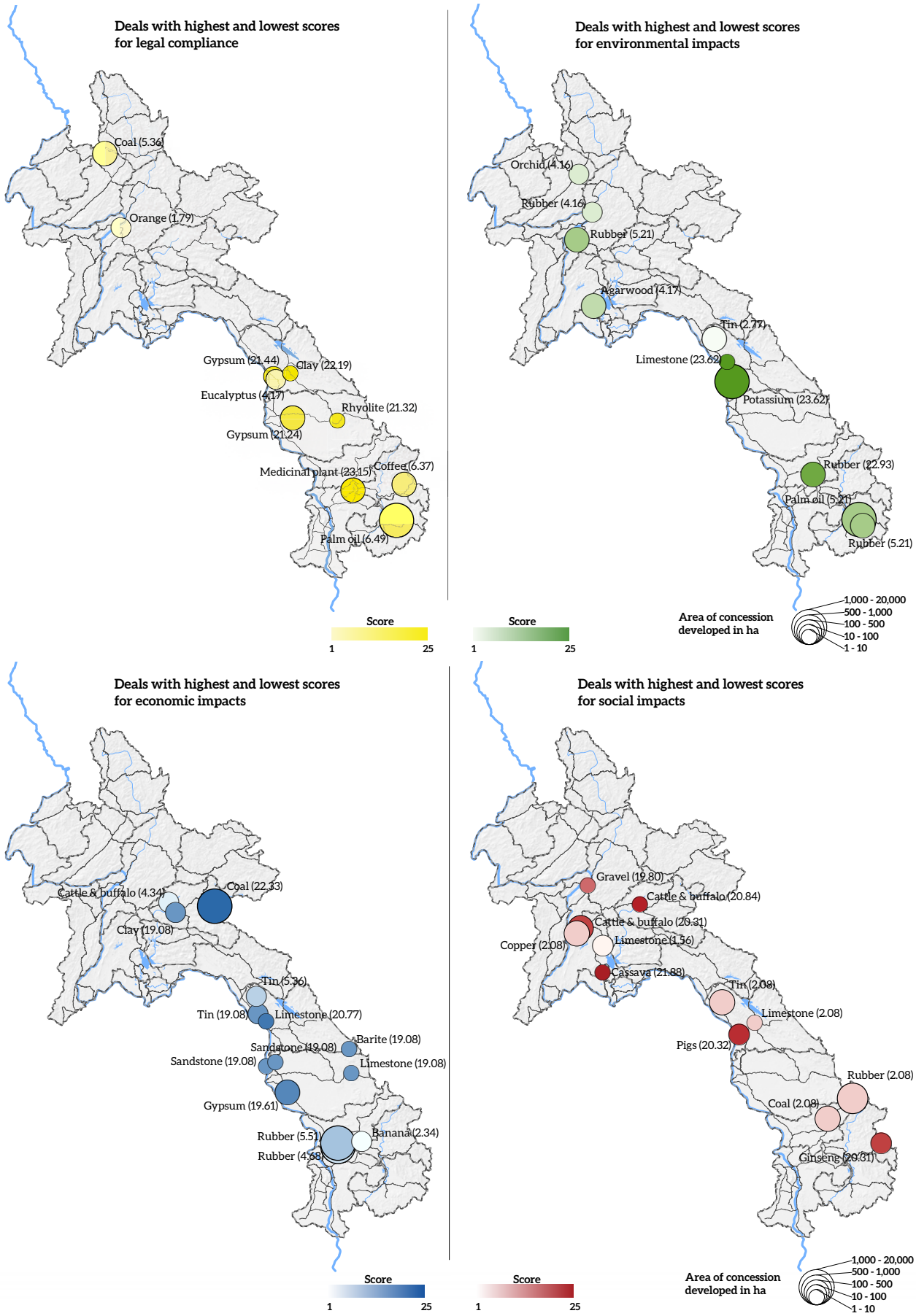


Figure 65: Tier-2 top- and low-scoring deals: Legal compliance (top left), environmental impacts (top right), economic impacts (bottom left), and social impacts (bottom right).

In terms of economic impacts, the deals with the highest scores (greater than 19) are all small-scale deals under 20 ha. All were approved at the province level. They produce coal, limestone, gypsum, tin, barite, clay, and sandstone. Four of them are domestic deals. The five deals with the lowest scores (below 6) produce bananas, livestock and rubber, and tin extraction. Three are foreign deals while the rest are domestic. Two were approved at the central level, another two at the province, and district government approved one deal.

Finally, all highest scoring deals in terms of social impacts (over 20) were in the agriculture subsector and produce cattle, cassava, pig, and ginseng. The lowest scoring deals produce limestone, coal, copper, tin and rubber. and five deals were approved at the central level, and another one was approved in the province.

For the aforementioned palm oil and rubber deals in Attapeu, all four facet scores are low or very low. Besides these two deals, however, no other deals exhibit low scores across all facets. There is great variability in the performance of deals across the four facets and all combinations of high and low facet scores are observed. For instance, one tin deal in Khammouan Province scores relatively high in terms of economic impacts, but low in social and environmental impacts. Meanwhile, one rubber deal in Salavan Province which scores very high in terms of environmental impacts scores very low in economic and social impacts. Other interesting case include sandstone deal in Savannakhet, which score very low in terms of social impacts but quite well in other facets.

IQI Tier-2 scores disaggregated by key characteristics of land deals

A comparison of land deals based on the origin of investors reveals slightly higher scores for domestic and joint venture deals than for foreign deals (see Figure 66). Domestic deals score slightly higher in terms of legal compliance and environmental impacts, with mean scores of 15 for both facets. These differences in scores are too slight to prove that domestic deals are significantly more likely than joint venture or foreign deals to engage with impacted villagers, but they do suggest areas of difference across deals which are worth further researching. Foreign investments achieve lower scores than domestic deals, which may indicate that foreign investors have a limited understanding of Lao laws and therefore fail to appropriately engage with villagers. The results further reveal that domestic and joint venture deals score higher in terms of economic impacts (mean scores of 13 and 14 respectively). This may indicate that domestic investors have a higher interest than foreign investors in contributing to economic development in their own country (see Oya 2013 and Mirza et al. 2014).

The disaggregation of the dataset by subsector reveals that the overall quality of land deals varies somewhat between agricultural, tree plantation and mining

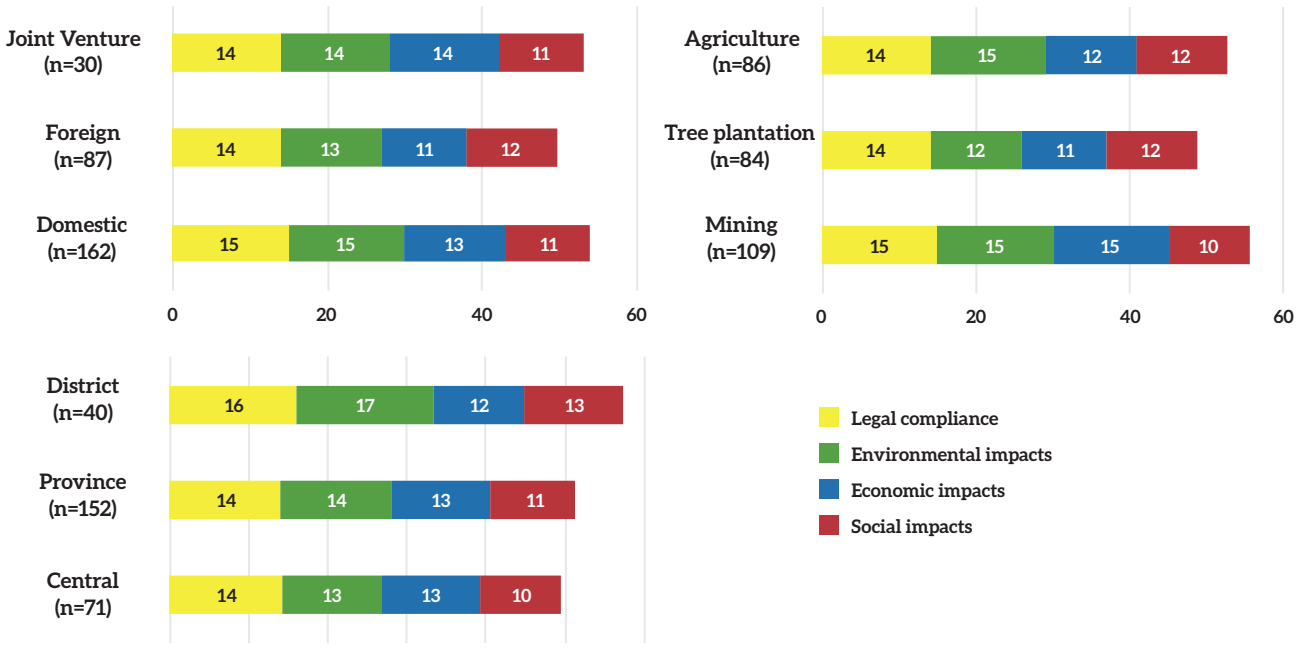


Figure 66: Average Tier-2 IQI scores disaggregated by country of origin of investor (top left), subsector (top right), and governmental level of deal approval (bottom)

subsectors (see Figure 66). Mining deals score slightly higher in terms of legal compliance. Based on field observations, an obvious reason that mining deals might score relatively higher is that the approval process for mining deals generally takes longer than in other subsectors, which affords investors more time for inclusive approaches during deal negotiation, but also for obtaining the required legal documents. Additionally, the start-up phase of a mining deal follows only after several years of prospecting, exploration, and feasibility studies[39]. During the preceding phases, investors have to produce numerous legal documents, conduct field surveys and environmental and social impact assessments, as well as consult with villagers.

Agricultural and mining deals score slightly higher than tree plantation deals in terms of environmental impacts (with means scores of 15, 15, and 12 respectively). Looking into the indicators of this facet reveals that the main reasons tree plantation deals score lower in terms of environmental impacts were that (a) deals did not conduct EIAs or did so but not in a meaningful way (e.g. the EIA was conducted only after land was cleared), (b) deals exhibit poor management of the use of agrichemicals resulting in reports of air, water, and soil pollution by affected communities and government authorities, (c) deals tend to cause more forest loss because many of them were implemented in conservation, protection, or production forest, and (d) deals tend to cause more adverse impacts on livestock production in surrounding areas.

Mining deals score significantly better in terms of economic impacts (15 as compared to 12 and 11 for agriculture and tree plantation projects). The main differences between mining and other subsector deals in this facet are that a) mining deals are less likely to cause the deterioration of local resources such as farmland, NTPF availability, pasture land, and water in the surrounding areas compared to agricultural and tree plantation ones, b) at the same time, mining deals are more likely to contribute to the development of local infrastructure, namely roads, in the impacted villages, c) many deals in the mining subsector tend to contribute more to local economic development by using local suppliers of fuel or equipment, and processing outputs in the country before exporting.

The scores for social impacts in the mining subsector, in contrast, were the lowest across all three subsectors, with mining deals having scoring an average of 10. One explanation for this is the fact that employment is the key indicator assessed in the social facet, but unfortunately, mining deals offer far fewer jobs to affected communities than agricultural and tree plantation deals (see Chapter 5 for an in-depth discussion of the impacts of land deals on employment). In terms of governmental level of deal approval, as illustrated in Figure 66, the majority of deals approved at district level score higher in terms of legal compliance and environmental impacts than deals granted at the province and central levels. As mentioned in the discussion of Tier-1 results above, deals approved at the district level tended to have greater levels of involvement with impacted villagers, namely through consultation and consent in land acquisition, and at the same time are less likely to break the terms of the concession agreement and relevant regulations. It can further be assumed that the concerned government authorities at this level are better able to monitor the activities and progress of land deals because due to their being located in proximity to project sites.

Performance of the indicators of legal compliance, and environmental, economic, and social impacts

This section presents the results of the analysis of the contribution of scores of all the indicators of which the four facets are composed. This detailed analysis is aimed at allowing the GoL and the respective responsible ministries and departments therein, to identify the most urgent needs for improvement of quality aspects through concrete actions related to the individual indicators, to which GoL responsibilities can be matched.

Indicators of legal compliance and their contribution to the facet score

The legal compliance facet includes seven indicators: (1) land survey conducted & deal approved prior to land being cleared, (2) adheres to land deal boundary, (3) respects concession agreement, (4) inclusive village consultation prior to land clearing, (5) village consent and grievance mechanisms established, (6) project progressing according to schedule, and (7) progress reporting (see Chapter 2 and Annex 3 for a detailed description of each indicator). Figure 67 presents the results of the analysis of the performance of the indicators in this facet. The indicators "adherence to concession boundary" and "respect of contract" stood out as the categories in which deals score highest within the legal compliance facet, across the examined projects. 88%, or 245 deals perform well in terms of staying inside the allocated concession boundary, and thus limiting their operations to allocated land. Nearly 90% of all deals either never broke the agreement terms, or have committed only minor violations. Deals score mediocre in terms of village consultation, reflecting that consultation either happened only in a very limited, non-participatory manner, or in a way that did not allow villagers much opportunity to

[39] Article 36 of the Mineral Law (revised version) dated December 20th 2011, limits the timespan for these different stages in the preparatory phase of a mining deal to two years for prospecting, three years for exploration and one year for the conduction of a feasibility study.

negotiate with investors regarding to size of a land deal, concession boundary, or benefits provision. Only a small proportion of deals perform well regarding local consultation. Twenty-seven percent of all deals (74 deals) score poorly meaning that consultation did not take place at all.

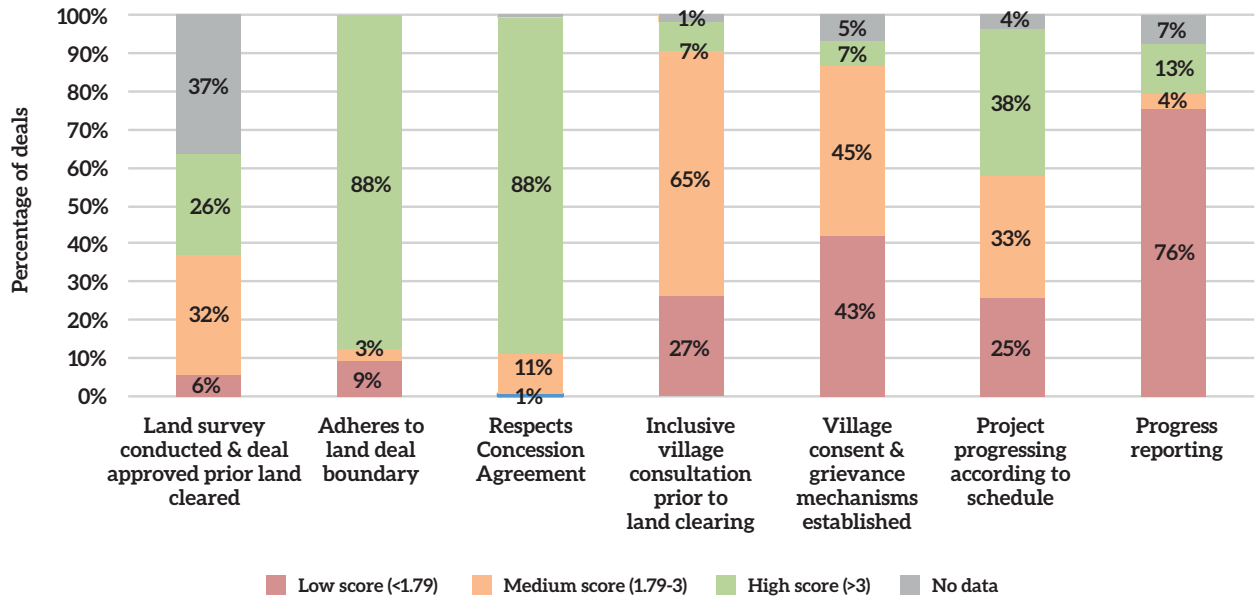


Figure 67: Performance of the legal compliance indicators

Regarding village consent for the development of a deal and grievance mechanisms, most deals perform very poorly overall. For 40% of all deals (117 deals), consent was not asked of villagers prior to clearing land, and in 45% of all cases (125 deals) villagers did give consent to the implementation of the deal at hand but did not feel free to speak up and decline the deal. In the majority of cases, the impacted villagers were not able, or only to a very limited degree able to raise grievances against any misconduct committed in relation to the land deal development. This poor performance in the consultation process, as well as with regards to responding to grievances raised, could have severe consequences for a land deal. Affected villagers who have a negative impression of the land deal from the start in turn may not be willing to work for the land deal or may generally oppose the deal. Affected communities' negative impressions and exclusion from negotiations makes it more likely that they will oppose deals.

The discrepancy between high scores for the indicator "respecting of the contract" and low scores for "village consultation" and "village consent and grievance mechanisms" shows a lack of pressure on investors to adhere to international standards with regards to good governance, most importantly FPIC and the Voluntary Guidelines (VGs, FAO 2005). Neither contracts nor Lao laws seem to mention the conditions which have to be fulfilled and methods followed during project negotiation. As a consequence, conducting inclusive, participatory contract negotiations is a generosity of the individual investor of a deal, rather than an obligation against which they will be then held accountable in terms of the indicator, "Respecting the contract".

In general, deals perform very poorly regarding reporting to relevant government authorities, especially at the district level (DPI, DONRE and DAFO/DoEM)[40], for which the indicator "progress reporting" accounts for 76% of all deals (211 deals) and meaning that they did not submit progress to government authorities at all (see Figure 67). The results of the indicator "survey and approval" are quite special in the sense that this indicator could only be assessed for 63% of all land deals examined. In the cases where it could be assessed, the share of deals with mediocre and high scores well exceeded the share with low scores. The poor data availability for this indicator has two consequences. First, for the IQI, the inclusion of the indicator in the present form needs to be reassessed. The indicator was composed of (a) time of clearance of land (before or after signing of the agreement), (b) the conduct of a land survey, (c) the provision of a map on potential deal boundaries in the survey report or concession agreement, and (d) presence of general knowledge by local villagers regarding the land deal development. Secondly, if the indictor should be included in the IQI in the future,

[40] As stated in the investment or concession agreement, the investor has to submit a progress report to concerned government agencies at least once a year.

then means to improve data availability should be taken.

The indicator of project progress referring to the progress made by a deal according to its project plan or schedule, nearly 40% of total deals score high but one-fourth of total deals score low because they are not able to make much progress, and sometimes because the quality of invested crops is perceived of as low by government and village respondents. While another 33% of all deals perform moderately in this aspect meaning that their project progress is not great but also not too bad.

Indicators of environmental impacts and their contribution to the facet score

The environmental impacts facet of the IQI was composed of the six indicators: (1) avoided clearing forest, (2) conducted EIA properly, (3) conducted environmental monitoring properly, (4) proper chemical use and management, (5) no pollution, and (6) minimized impact on livestock. The indicators "minimized impact on livestock" and "avoided clearing forest" were the highest scoring indicators in this facet (see Figure 68). In relation to minimizing impacts on livestock, the results show that in 9% of all cases (25 deals), the land deals trigger negative impacts related to livestock as grazing land was allocated for land deal development, causing livestock to be pushed into other areas of the village (e.g. forest areas) or caused villagers to cease raising livestock. In the vast majority of cases (77%) however, no adverse impacts regarding livestock were reported. These results starkly contrast reports by local case studies which suggest that negative impacts on livestock are more widespread (e.g. Kenney-Lazar 2011; Nanhthavong 2012; Shi 2008; Yasuhiro and Sibounkeuang 2010).

A majority of all deals (63% or 117 deals) score high in the "avoided clearing forest" indicator. These indicators considered whether or not a deal was developed in areas of forest categories (conservation, protection or production forest) based on interviews with government and village authorities and data from the land deal inventory (spatial overlays with data on forest categories, see Chapter 4). Still, the results also indicate that for nearly one-quarter of deals (23%) at least some areas of forest were cleared, which implies that land deals still contribute to adverse environmental impacts in the form of deforestation and forest conversion, and with associated loss of biodiversity and ecosystem services.

One-quarter of all land deals included in the assessment score low for "proper chemical use and management". These low scores result from reports of adverse impacts by impacted villagers and the use of chemicals without approval from government authorities. It was found, however, that a large number of deals (44%, 124 deals) score well for this indicator. According to the results of the quality of investment assessment, these deals either do not apply any chemicals at all or do so but manage them properly so that no serious negative impacts are perceived by the respondents. The use of chemicals and their potentially adverse environmental impacts is discussed in more detail in Chapter 5. The findings of that section imply a need for a re-evaluation of the assessment methods of this subject. The analysis relies solely on the responses of impacted villagers and company representatives, which may be misleading due to the potential lack of knowledge of stakeholders, or vested interests by company representatives may prefer not to disclose information on the use of chemicals in their operations.

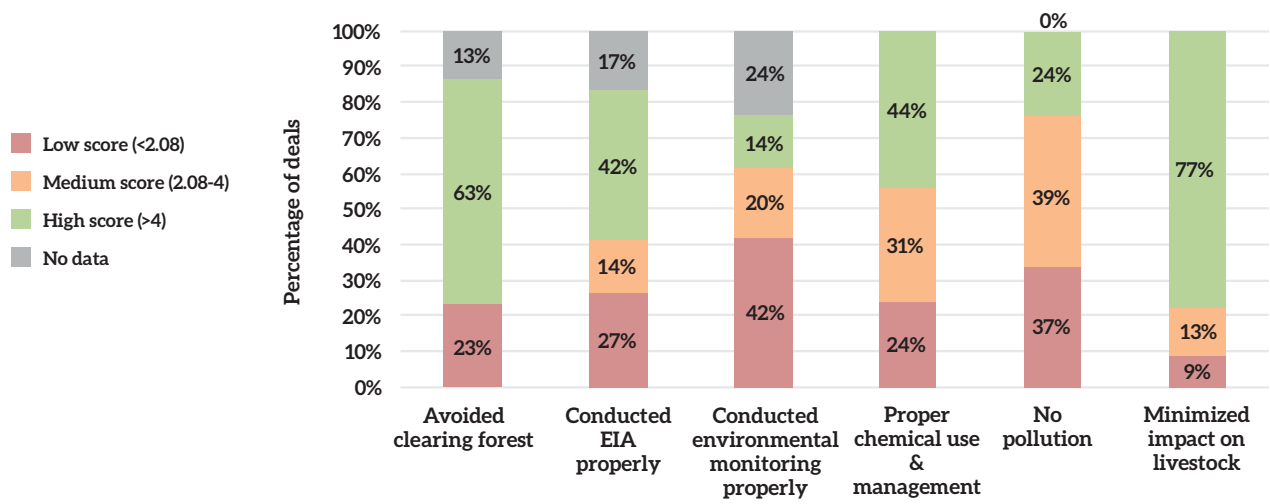


Figure 68: Performance of the environmental impacts indicators

The indicator "conducted EIA properly" performs relatively well compared to other indicators of this facet. Nevertheless, only 42% of all deals (117 deals) receive a high score, meaning that the EIA was conducted according to Lao law, before the project's start. Still, one-third of all deals (75 deals) receive low scores as the EIA took place only after land was cleared, or no EIA was conducted. Environmental monitoring was conducted at alarmingly low levels. 42% of land deals did not conduct any monitoring at all, and another 14% of deals conducted monitoring in an insufficient manner, e.g. irregularly and not including key elements like an EMMP.

Indicators of economic impacts and their contribution to the facet score

The economic impacts facet included the eight indicators: (1) avoided impacting household land holdings, (2) paid compensation to impacted households, (3) paid fees, (4) contributed to infrastructure development, (5) avoided clearing valuable land, (6) improved local incomes, (7) avoided impacting natural resource availability, and (8) contributed to local economic development (see Chapter 2). Figure 69 shows the performance of these indicators.

Deals scored lowest in the indicator "improved local incomes". For 83% of all examined land deals (232 deals) villagers report that incomes either stayed the same or decreased. Furthermore, the indicator "Contributed to local economic development" is also relatively low – for more than one third (96 deals) of all projects no data was available for this indicator, but the scores of those deals where data was available were low for 33% of deals (91 deals) and mediocre for 14% of deals. This reflects that land deals participated in or facilitated the creation of out-grower schemes in addition to their land deal only to a limited degree, and that they tended to use external suppliers and processors as opposed to local ones. These findings are in stark contrast to the guiding principle, which is also integrated into the TLIC policy, that land deals should improve livelihoods at the local level.

A large share of deals perform well for the indicator "avoided impacting household land holdings". In 59% of all cases (166 deals), the number of households that lost land. Also, most deals score well in terms of providing compensation for lost land when promised. In 61% (169 deals) of cases, the compensation process was adequate, all impacted villagers received compensation, and the compensation was not only promised but delivered. Impacted households were predominantly compensated according to an official procedure.

To determine the value of converted land for the indicator "avoided impacting household land holdings", villagers were asked about the former use of land granted to a land deal. Two-third of sampled deals (61%, or 170 deals) the land converted for the development of a deal was of high importance to villagers, which typically means the deals were established on land considered vital for local livelihoods. Villagers impacted by these deals claim that they used these areas of land for food and cash crop production or for collecting goods (food, fuel, NTFPs, building materials) and as a main source of household income prior to deal establishment. The high importance of these pieces of land to the villagers is reflected in low scores (see Figure 69).

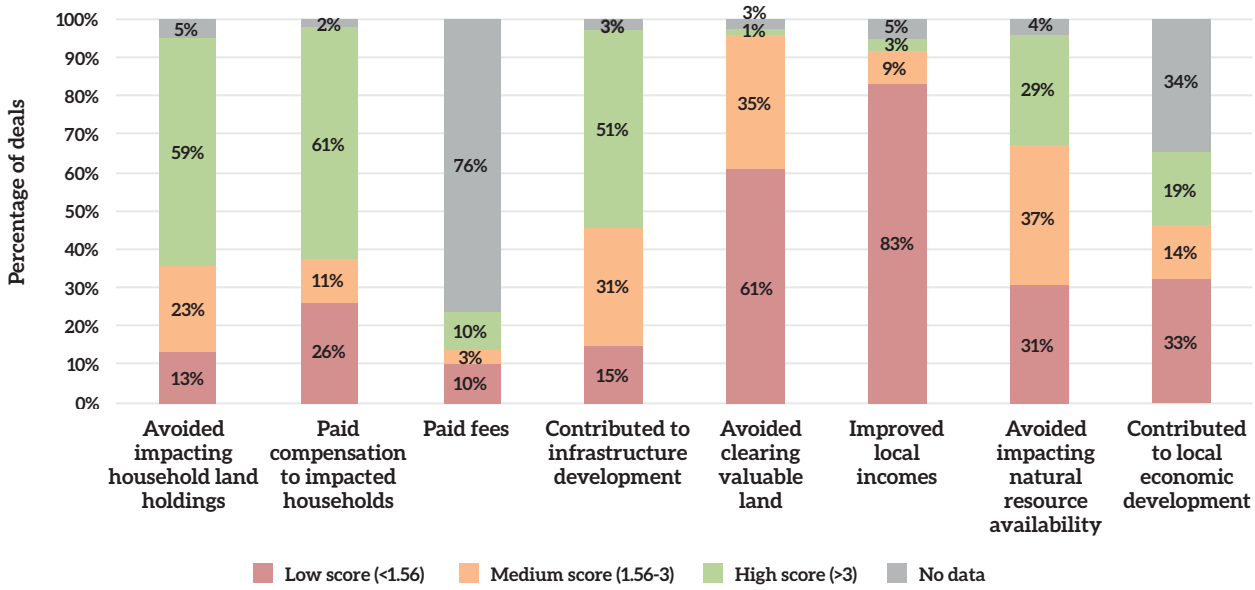


Figure 69: Performance of the economic impacts indicators

Scores for the indicator "contributed to infrastructure development" are relatively high across all deals. Fifty-one percent of all deals (143 deals in total) which promised to contribute to improving local facilities including building roads, schools, or clean water provision systems have done so. However, the indicator needs to be interpreted with care as deals which do not contribute any infrastructure development can still get high scores if they did not promise the villagers anything. For the indicator measuring payments of fees, royalties and taxes, there is also limited data availability. For more than 70% of all deals (212 deals), the assessment of this indicator was not possible through the methods used. The ability to generate revenue from land deals through fees, loyalties, and taxes paid was one of the main expectations of the GoL, and it was observed here that these revenues are collected by Financial Sector at the central, provincial and district levels across the country annually. Unfortunately, in this assessment data from the MoF could not be accessed. Thus, there is an urgent need to make these data available and accessible in order to assess this indicator better.

Indicators of social impacts and their contribution to the facet score

The social impacts facet is composed of eight indicators related to employment offered by land deals to affected communities: (1) limited using foreign workers, (2) respected legal age of and gender equality for workers, (3) fair wages, (4) good labour practices, (5) employed workers from impacted villages, (6) minimized health and safety hazards, (7) avoided negative impact on food security, and (8) provided technology transfer and social development (see Chapter 2 for more detailed description of the indicators).

The results from the examined land deals reveal that a great number of deals perform poorly across most of the eight indicators, as shown in Figure 70. Most prominently, the indicators for "provided technology transfer and social development" and "fair wages". While it was anticipated by the GoL that land deals would bring new farming techniques and introduce new technologies, especially in the case of agricultural and tree plantation deals, and hence trigger social development in rural areas (GoL 2004), the data from this assessment shows that hardly any land deals transferred new skills and technology. For the indicator of "fair wages", wages paid to workers were compared to the Lao PDR's minimum wage requirements[41], and the wages paid to men and women were compared. In total, 59% of all deals (164 deals) paid workers below the minimum wage and there is a significant gender wage-gap (more than 10,000 kip per day).

The indicator "good labour practices" performed best out of the eight indictors. The data at hand shows that poor labour treatment seems not to occur in a large number of deals (57%, or 158 deals). These findings contradict the stories reported in local case studies, where it was found that companies treat workers quite poorly, for instance, not paying due wages, not allowing short breaks, etc. (e.g. Baird 2010; LNRRIC et al. 2009; Molina 2011). Still almost one-third of deals are rated with low score because they applied poor labour treatment. Furthermore, the indicator "Limited using foreign workers" performs relatively well (second-best performance amongst the indicators of

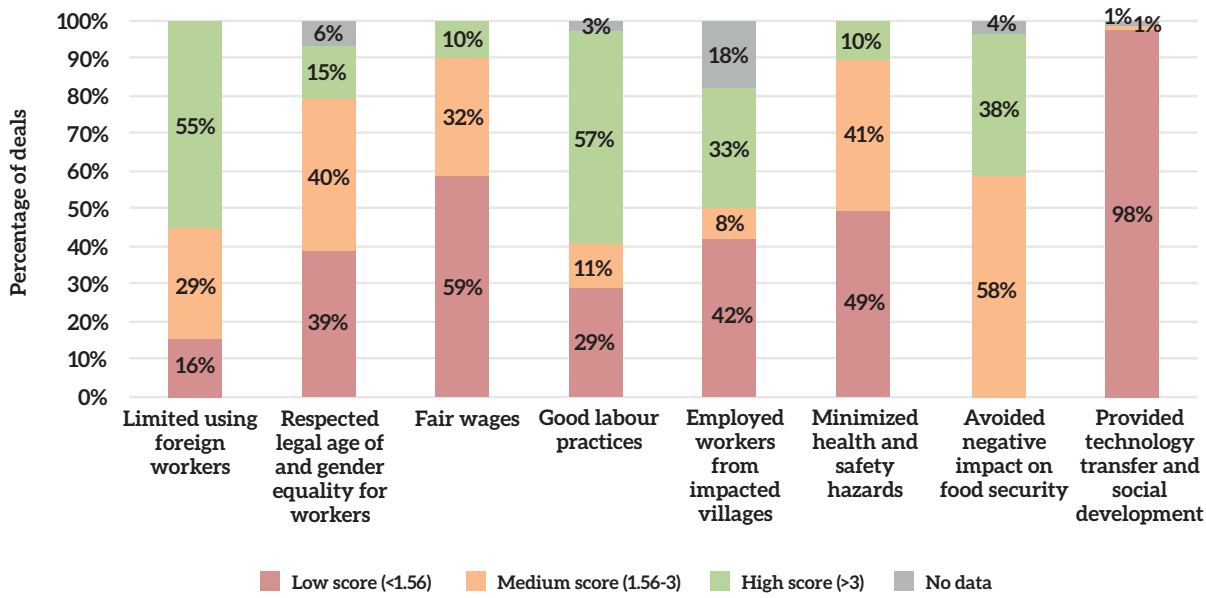


Figure 70: Performance of the social impacts indicators

[41] MLSW's Ministerial notification number 808/MLSW, dated 9 February 2015 determines minimum wage in the Lao PDR as 900,000 kip per month per worker or around 45,000 kip per day (MLSW 2015).

this facet. The GoL allows companies a share of foreign workers of up to 15% of manual labourers, and 25% for experts or technical workers[42]. Over half of the examined deals (55%, or 153 deals) rendered high scores, which means that they have used rather low shares of foreign workers and instead hired domestic workers. Still, the data shows that the other half of all projects perform poorly with regard to employing domestic workers. A surprising 65% of all deals (82 deals) violate both limits, and another 35% violate one or the other limit set by the GoL.

With regard to equal opportunities offered to men and women[43] and the legality of the age categories of sourced workers (legal working ages are 14 to 64 years old)[44] the data reveals that a very low share of deals (15%) adhere to these principles and laws, thus employing male and female workers equally, and only employing workers of legal working age. In contrast, 39% of all deals (109 deals) receive low scores for offering unequal opportunities based on gender, and for employing workers outside of the legally defined age group.

To understand the degree to which labour opportunities reach impacted villages, village authorities, villagers in impacted villages, and company representatives were asked where the workers currently employed by companies were from. This was then compared with the number of households that lost land to a deal. Although a significant amount of employment was indeed created by deals overall (see Chapter 5), these employment opportunities have not primarily gone to impacted villages, either because they go instead to migrant workers or because the amount of employment offered to impacted villages is not comparable to number of households who experienced land loss, and over 42% (118) of all deals score low in this indicator as a result. Moreover, many respondents (villagers and company representatives alike) claim that employment opportunities offered by these deals are unstable, and in many cases jobs are mostly offered to impacted villagers only in the first few years, but opportunities decline considerably afterward, even when a deal becomes productive.

Half of all deals (49%, 138) score low in terms of "minimized health and safety hazards". Based on interviews with impacted villagers, local employees never received any safety training or safety equipment for performing high risk tasks such as spraying agrichemicals. Consequently, these deals caused negative impacts on local health.

Non-timber forest products, fruit and vegetables for sale at a local market in Vientiane Province. © Micah Ingalls, 2006

[42] According Article 68 under the Labour Law 2013 (revised version) (GoL 2013), the GoL allows a business entity to bring up to 15% of total required physical labour and 25% of total required technical or managerial experts from foreign countries.
[43] Equal amount of male and female workers was defined as a female ratio of between 40-60% of total number of workers employed by a deal.
[44] According to Article 101 under Labour Law 2013 (revised version, GoL 2013).

IQI scores of selected common products

This section presents the IQI scores of land deals of selected common products, some of which were listed in the PM/13 (rubber, eucalyptus, gold and tin). The analysis shows no general difference in quality between products listed in PM/13 and other common products (see Table 44). Rubber and tin deals indeed perform poorly (mean IQI scores of 47 and 43 respectively); eucalyptus and gold, on the other hand, were suspended yet performed better (means of 51) than some products which were not listed in the ban, e.g. banana plantations (mean 46) which were not on the PM/13 moratorium list.

At Tier-2, looking at the facet scores, IQI scores vary from one facet to another by product (see Table 44). Deals for cassava, cattle and buffalo, and banana production perform relatively well in terms of legal compliance and environmental impacts but poorly in the other two facets. Tree plantation deals perform poorly in terms of legal compliance, environmental impacts, and economic impacts compared to other products, but have considerably higher IQI scores for social impacts. Mining deals for limestone, gravel, barite, and gold perform relatively well in terms of legal compliance, environmental impacts, and economic impacts, but poorly in terms of social impacts. Lastly, coffee deals show an overall low mean score. This is due to the relatively mediocre quality performance across all four facets.

Table 44: Select products and their Tier-1 and Tier-2 IQI scores

Agriculture (n = 54)		54	36	70	15	16	12	11
Cassava (n = 6)	No	54	51	64	14	18	10	12
Cattle and buffalo (n = 36)	No	56	36	70	15	17	13	11
Coffee (n = 7)	No	50	43	61	12	12	13	12
Banana (n = 5)	No	46	40	54	15	11	9	10
Tree plantation (n = 80)		48	24	73	14	12	11	11
Eucalyptus (n = 13)	Yes	51	33	73	14	13	11	12
Agarwood (n = 6)	No	50	34	67	14	13	12	11
Rubber (n = 61)	Yes	47	29	63	14	11	10	11
Mining (n = 83)		55	31	74	15	15	15	11
Limestone (n = 36)	No	56	40	73	15	15	16	10
Gravel (n = 21)	No	62	48	74	16	17	13	15
Barite (n = 7)	No	51	44	65	13	15	15	8
Gold (n = 5)	Yes	51	43	66	14	12	15	9
Coal (n = 6)	No	50	33	63	13	13	17	6
Tin (n = 8)	Yes	43	31	51	12	9	14	7
Total (N = 217)		**50**	**24**	**73**	**14**	**14**	**13**	**11**

Sugarcane harvesting operations near Muang Sing, Luang Namtha Province. © Mick Shippen, 2019

CHAPTER 7: Synthesis

The report at hand summarizes key findings of a wide range of aspects of the current situation of land deals in the Lao PDR. It draws on two new datasets: first, a nation-wide inventory with important baseline information on land deals, and second, a more detailed quality of investment assessment dataset on 296 selected land deals assessing them based on their record of legal compliance, and indicators of their environmental, economic, and social impacts. The second dataset can be understood as a more comprehensive snapshot of 296 starting or operating land deals in nine provinces aimed at deepening the broader knowledge included in the national inventory.

The inventory data shows that the pace of granting new land deals has significantly slowed since the last assessment. Although a continuous rise in the total granted projects is documented, the total area granted per year has slowed drastically over the last decade, resulting in smaller deal sizes granted in recent years. This trend towards smaller deal sizes runs parallel to recent findings of global trends with regard to deal sizes (Nolte et al. 2016). A decade ago, when the Turning Land into Capital (TLIC) policy (PCI 2006) was coined, land deals were widely perceived by the GoL as an ideal tool for monetizing natural resources and driving rural development. Large areas of land were granted to investors in order to achieve the envisioned economic and development goals. But these large deals have posed a multitude of challenges once they reached implementation stages. A lack of qualified local labour, access to technology, and sufficient infrastructure all contribute to the difficulties of granting and developing large land areas, and consequently, deal sizes granted have decreased in recent years. Smaller deal sizes are also likely linked to more realistic planning by the GoL based on the gained experiences, and the scarcity of available land (Messerli et al. 2015).

The inventory is also able to document that a huge gap exists between the area granted for a deal and the area that has been developed by the investor. For land deals which have temporarily ceased, only 28% of the area granted has been developed, and for deals which have concluded their operations and completed the contract, only 69% of the area granted has been developed. These results raise the question of whether it is necessary to allocate new areas of land for new land deals, or whether the unused land of existing deals could be reallocated to the new deals. Furthermore, new deals could be allocated on land that had be used but abandoned by a previous deal.

The majority of deals have moved from the preparatory phase into implementation, which includes the start-up and construction stage as well as the operational stage. This means that, in the near future, the Lao PDR will see an increase in the production of goods and revenue created from land deals, as well as a general increase in the demand for labour for these projects. In turn, their social and environmental impacts will be scaled up.

Contributions of land deals to the development of rural areas in the Lao PDR

A main question in the debate over land deals in the Lao PDR concerns their overall contribution to rural development and poverty eradication on which the TLIC policy was based. In the past, land investments were widely regarded as tools to bring development, and in order to attract investment to remote areas, incentives such as low tax rates or tax exemptions were given to investments in more remote areas[45]. Land deals were expected to have especially positive effects in the uplands where smallholders are thought have low capacity to boost their agricultural productivity on their own (see Alexander, Millar, Lipscombe 2009; MAF 2010). While it is beyond the scope of this report to assess the performance of the TLIC policy, the various analyses presented here provide evidence that the contribution of land deals to rural development has been far lower than envisioned and that improvements do not primarily occur in the least developed areas of the country, as was expected. New or improved infrastructure has been provided only by a few land deals. In line with the findings of other studies (e.g. Messerli et al. 2015), the inventory data reveals that land deals are rarely established in remote areas. Instead, they are typically established near existing economic hubs such as Provincial capitals and border crossings. In these locations, investors are often able to avoid the cost of establishing or improving infrastructure. The quality of investment assessment further shows that only 12% of investigated deals are publicly listed corporations, which often have access to significant amounts of capital. The vast majority of land deals are developed by private companies and family businesses, many of which mention a general lack of access to finance capital when asked about obstacles to project development, which in turn may explain the aforementioned low rates of infrastructure investment resulting from deals.

Over time, however, this trend is reversing. The inventory shows that land deals are being established in more remote areas over time. Deals approved before 2005 were located around 1.5 hours from provincial capitals compared to 2 hours for those approved between 2005 and 2012. Deals approved since 2015 are on average located 2.5 hours from provincial capitals. This trend suggests that land is becoming scarcer around existing economic hubs and transport routes, and therefore that new land deals are pushed further into the hinterlands. On the other hand, this might suggest better adherence to the GoL policy in terms of allocating more remote, less accessible land for new deals.

[45] Lao Investment Promotion Law (revised) 2009

With regard to geographic features, land deals do not target remote upland areas but are instead located predominantly in the more accessible lowlands. In these areas, higher degrees of commercialization and intensification of agricultural production have already been driven by smallholder innovation (Nanhthavong 2017). It may be that commercial land investors are not the sole pioneers of economic development in rural areas who trigger further development, but rather that land deals are attracted by smallholder innovation in areas where agricultural production is already increasingly market oriented. The location of land deals in more populated areas (near to Provincial capitals, border crossings, and in the lowlands more generally) also guarantees a higher availability of suitable workers for the land deals.

As such, land deals have brought considerable employment opportunities and with this have indeed contributed to agrarian transition in the Lao PDR by providing off-farm and wage labour opportunities (The World Bank 2016). The quality of investment assessment shows that nearly 40,000 jobs were created by 202 land deals in the agriculture and tree plantation subsectors, constituting an average of 29 jobs generated per km2 of planted area. However, challenges concerning these created jobs which limit the benefits provided to affected communities remain. One challenge concerns job security over time. Most offered jobs in land deals (85%) are seasonal, meaning they do not provide year-round employment. There is also great fluctuation in the number of jobs offered by land deals over time, relating not only to the seasonality of jobs (weeding and harvesting require a large number of workers who are not needed during other times), but to the project lifecycle. While a large number of workers is usually needed in the start-up phase (34% of all work is limited to this phase), fewer workers are needed for the remainder of the implementation of the deal.

A second challenge relates to the types of jobs offered and the level of income they provide. Land deals offer mostly low-skilled jobs, such as land clearing, soil preparation, planting, weeding, and applying agrichemicals. While these low-skilled jobs may match the limited respective skills of local workers, these jobs also receive very low pay, frequently below the national minimum wage. Investors in the Lao PDR show a problematic tendency for employing foreign workers, particularly for jobs requiring technical expertise. Most foreign employees are in managerial positions (e.g. 72% of all jobs related to management in the tree plantation subsector are taken by foreigners), are employed to spray herbicides and pesticides (59% of whom are foreigners), or do harvesting in tree plantations (25% of whom are foreigners). In the mining subsector, 28% of jobs are held by foreign workers. The high share of foreign workers lowers the contribution of land deals to development in the Lao PDR, both from an economic perspective (salaries of foreign workers are presumed to largely flow back to their countries of residence) as well as from an educational perspective (knowledge is not transferred to Lao residents but remains with the foreign workforce). An increase in knowledge through capacity building among nearby residents is thus largely not provided by land deals. The quality of investment assessment also reveals that there is a general inability as well as unwillingness of affected communities to work for land deals by which they are negatively impacted. This lowers their ability to benefit from the wage labour opportunities of the deal. Moreover, jobs offered often require a specific skill set not easily gained in nearby villages, and investors do not usually provide skills training. In some cases, impacted villagers are a priori excluded, as they may never be approached by investors about employment opportunities. Meanwhile, in the opinion of many local communities, the jobs offered by these companies consist of very hard work for low wages. Finally, many villagers have had bad experiences with company representatives, which also discourages them from working with companies.

Compared to the 2012 inventory, an increase in the portion of deals under domestic investment has been documented. While 40% of deals in the 2012 inventory were domestic investments, now 56% of deals in the current Inventory are domestic with an especially significant increase in the agriculture subsector. This may relate to a change in the national investment climate, wherein domestic investors have been able to learn from the first phase dominated to a higher degree by foreign investment, and are now better positioned to invest in land.

Quality of land deals

Both the land deal inventory and the quality of investment assessment render key insights into the quality of land deals. The results from the inventory reveal a high failure rate of land deals across the three subsectors examined. In all, 17% of all examined deals either never started operations or have been abandoned. Another 10% of all deals ceased their operations within the contract period. These deals have left nearly 80,000 ha of land originally granted to them undeveloped.

A review of the documents related to the land deals in the inventory indicates that legal compliance is generally low, and that deal quality in terms of environmental and social impacts and the certification of mitigation and rehabilitation measures is alarmingly low. The low legal compliance relates both to situations wherein the project failed to fulfil key legal obligations and to cases wherein legal obligations may have been met but sufficient documented evidence could not be

obtained by the assessment teams (often because such documents were lost). Less than half of all projects were able to provide PDAs or concession agreements, making it impossible to assess whether those deals developed an appropriate area or followed other contractual agreements. A consideration of social and environmental impacts and a thorough examination of relevant documents, however, would be a crucial next step to assessing the costs and benefits created by a given deal, defining appropriate impact mitigation measures, and adequately compensating for the remaining impacts.

The detailed quality of investment assessment presented in this report constitutes the first cross-sectoral collaboration of the GoL in a systematic and comprehensive assessment of a wide range of aspects of quality of land deals. The assessment was limited to nine provinces due to time and financial and staff resources constraints. Still, the assessment includes all primary sector deals in the start-up or operational stages in those provinces with granted areas over 10 ha for agriculture and tree plantation deals, and over 5 ha for mining deals. This resulted in 296 deals which can be deemed a representative sample for the country.

These 279 deals in the quality of investment assessment were ranked based on indicators of four facets of quality in order to arrive at an IQI score: legal compliance, and environmental, economic, and social impacts. The IQI score is based on selected variables from the quality of investment assessment and the inventory, and represents a novel index for rating and comparing land deals with regards to the four aforementioned quality facets. In general, the land deals assessed receive scores reflecting mediocre land deal quality. While the maximum achievable IQI score is 100, the vast majority (66%) of the investigated deals, which together account for 55% of the granted area for assessed land deals in the Lao PDR, attain scores between 40 and 60 only.

At the most general level (Tier-1) of the IQI, a few trends are identified related to various quality aspects accounted for within the different data disaggregated by subsector, product, origin of investor and more: (1) tree plantation deals have lower scores than agriculture and mining deals; (2) a regional concentration of land deals with low scores is found in southern Lao PDR, particularly in Attapeu Province, and a concentration of high scoring deals (the five top scoring deals, all above 70) in Khammouan Province; (3) foreign investments score slightly lower on average than domestic and joint venture projects, although three of the five top-scoring deals are foreign-owned investments; finally, (4) deals granted at the district level score slightly higher than those granted at province and central levels. When comparing the scores of the four facets, deals across the entire dataset score lowest in terms of social impacts, and the most prominent indicator influencing such low scores relates to the lack of jobs offered as a whole, but particularly to affected communities.

These findings from the application of the IQI imply that there is a generally great potential for improvement of quality of investment for land deals throughout the entire primary sector of the economy. The lack of clear patterns of levels of quality across the four facets and between different sorts of disaggregation also implies, however, that improvements have to happen in all four dimensions. All aspects need to be tackled and investors have to be motivated to improve on a case-by-case basis in order to achieve a higher level of quality of land deals across the board.

Impacts of land deals on the environment and local livelihoods

With more than a decade of experience with land deals in the Lao PDR, and through experience with the many land deals that have been operational for some time, the negative effects on the environment and on affected communities have become clearer. The new data on land deals presented in this report sheds light on a few selected adverse impacts of land deals so far.

The land deal inventory shows that some land deals are drivers of forest conversion and deforestation. In national conservation forest areas, which encompass those areas of highest national interest for conservation of biodiversity and natural ecosystems, approximately 11,000 ha have been developed under 55 deals. The available spatial data used includes both forested areas and those simply zoned as forest, thus finer grain analysis is required to accurately measure the likely scale of deforestation and forest conversion attributable to these deals. Regardless, granting land in national conservation forest areas is a clear breach of existing GoL laws and regulations and a setback to the national forest strategy, in which national forest cover of 70% is envisioned by 2020 (GoL 2005). There are two potential reasons large areas for land deals have been granted in forest areas. Firstly, investors may seek additional income from logging land they develop. Timber values have increased, triggered by a growth in demand from regional and international markets and a resultant rise in the cross-border timber trade (Ingalls et al. 2018; Smirnov 2015). Secondly, the demarcation of the national conservation forest areas in the Lao PDR has been poorly managed and there exists a lack of information exchange between relevant administrative institutions at different levels. Thus, GoL representatives and investors may not realize that a deal is located within an area zoned as national conservation forest at the time of land allocation.

Further evidence of forest degradation and deforestation due to land deals is provided by the quality of investment assessment results. Considering the actual land cover and not the zoning of land, the quality of investment assessment results demonstrate that primary and secondary forest are the land cover categories most commonly allocated for land deal development. This allocation of forest areas for land deal development goes in hand with reports by affected villages of lost NTFP collection areas. NTFP collection constitutes an important component of local livelihoods, but the development of land deals often limits their access to or completely destroys these areas. Loss of NTFPs is the main reason reported for decreasing food availability among local communities affected by land deals. In 38% of all interviewed villages in the quality of investment assessment, the amount of NTFPs collected decreased by more than 50% with the development of a land deal, and a decrease in overall food availability was reported in nearly one-quarter of all sampled affected villages.

The use of agrichemicals and their impacts, especially when inappropriately handled, on the environment and the health of nearby villagers and workers is widely discussed in the Lao PDR. The quality of investment assessment provides an important baseline of general information on these impacts, and can thus shed light on national debate around the issue. These findings cannot be deemed generalizable for all land deals – only around one-third of village authorities claim that pesticides have negative impacts on their communities. Still, the quality of investment assessment reveals that there is relative agreement between DAFO, DoNRE and village authorities about which land deals manage agrichemicals in a harmful way. Of all deals, 15 are named as having negative or very negative impacts based on their pesticide use, while 29 are noted for their herbicide use, mainly consisting of sugarcane, rubber, banana, livestock, and eucalyptus deals. The quality of investment assessment also reveals that enforcement of environmental and health and safety regulations is uneven and companies often do not have official permission for their agrichemicals use, and do not conduct required environmental reporting or safety training for workers.

A changed discourse on land deals focused on improving quality and balancing trade-offs

Over the last decade, the discourse on land deals has changed tremendously in three ways. First, the common view of land deals as a vital tool for rural development and an effective driver of envisioned agrarian transition for the Lao PDR has changed. The initial perception of land deals as a path to quick economic and social wins has turned into an understanding that land deals potentially bear huge risks in the form of severe adverse impacts. This change in perception resulted in several bans and moratoria, of which PM/13 and its extension constitutes the most prominent one. Realizing the multitude of adverse impacts of land deals, a number of deals for selected products were suspended and are to be continued under the condition that evidence of their costs and benefits can be provided. The bans were effective in the sense that they stopped the development of the specified controversial products for which bad practices were reported. However, as can be seen from the results presented in this report, bans have been ineffective as a regulatory mechanism to fix complex long term issues. They prohibit land deals of products with suspected quality issues altogether, while other projects with negative impacts are allowed to continue and no measures are taken to address their effects. Additionally, the bans of deals in specific products trigger a shift towards investments in other products which are not listed in the bans. Thus, they seem to neither improve the quality of deals in banned products, nor do they necessarily stimulate better practices in new deals for other products. The bans have hence not brought about the envisioned wider change towards more responsible behaviour, but may have shifted the social and environmental impacts of non-compliant and unsustainable operators from banned products to products not enlisted in the bans (e.g. investors switching from rubber to bananas).

As with any form of development, land deals entail sustainability trade-offs which must be weighed carefully against each other. For instance, avoiding clearing forests and forest fallows may be impossible for the development of a land deal. Hence, the development of a land deal reduces forest cover and consequently adversely affects the national goal for obtaining 70% forest cover by 2020. Another example of trade-offs is that employing technology and using inputs (machinery and agrichemicals) may increase productivity, but limit employment opportunities for affected communities and may have adverse environmental impacts. Many of the key trade-offs to be considered are not incompatible with ideals of sustainability. As a consequence of these trade-offs, development priorities and sustainability goals have to be repeatedly negotiated and agreed upon at national, sub-national, and local levels. Consequently, the process of granting of land deals should be embedded in higher-level strategic planning processes. At the same time they should be carried out using inclusive and participatory approaches. In this respect, the conduct of FPIC during deal granting, along with monitoring and enforcement of the agreements reached can be seen as a minimum requirement for any land deal. The GoL should push for higher compliance with FPIC, especially since this report finds that in over one-quarter

of all villages where land deals were developed, either no consultation took place, or the consulted villagers specifically did not give consent to the land deal being implemented.

Thirdly, while the PM/13 may not have had a measurable, immediate impact on quality of investment, it represents an explicit call for deeper collaboration across a series of GoL departments within different ministries. This initiated a dearly needed change from state institutions focusing on single sectors towards shared responsibility for governing land deals across institutions in the GoL. It opened the door for collaborative work on the land deal inventory and the quality of investment assessment and constitutes the first cross-ministerial effort at such a scale on the topic of land deals. The data of the first inventory collected ten years ago was not recognized officially by the GoL, a fact largely ascribed to the lack of involvement and consultation with multiple ministries. In contrast, the data collected through the DECIDE Info III project has already been officially endorsed by MAF, MoNRE, MEM and MPI, and hopes are high that the report will be recognized throughout the GoL as baseline data for further actions. The collaborative effort taken here to create the inventory and quality of investment databases has catalysed the inter-ministerial collaboration called for in PM/13. The inclusion of detailed background information on investors also reflects a recognition that different companies have different strategic strengths and weaknesses which likely accompany different approaches to operating in the Lao PDR. Governing this diversity of investors will require the careful consideration of differences among investors and their motives, resources, and organizational structures, and will benefit from the ability to connect company perspectives with those of other stakeholders affected by the same deal.

Landscape dominated by banana and rubber plantations in Luang Namtha Province. © Julie Zähringer, 2017

Banana concession in Bolikhamxai Province. © Field team, 2010

CHAPTER 8: Recommendations and outlook

Key areas of action to improve the quality of land deals

Based on the findings presented in this report, there are a few areas where concrete immediate action should be taken by the GoL in order to enhance land deal quality in terms of compliance, and environmental, economic, and social impacts of land deals, and to steer deals towards maximizing potential benefits, and minimizing, containing and properly dealing with their negative impacts.

Enhancement of land deal implementation

The results of the land deal inventory revealed that land deals typically neither expand to their intended size nor operate over the intended period. 13% of all deals granted (covering nearly 82,000 ha) never started operations. The results also show that a majority of land deals exceed the allowed limit of the time between contract signing and start of project activities and are hence in breach of PM/135 (GoL 2009a). Stricter enforcement of the PM/135, or cancelling deals which fail to start development within three years of deal granting, could address this.

Many other deals concluded operations while still within the contract period, or abandoned planned investment activities. The root causes for these early termination and abandonment of operations needs to be assessed in order to define suitable follow-up actions. It is recommended that a method for screening investors to assess their capacity for developing intended land deals be introduced. This screening should include, amongst other things, a check of secured capital for the proposed land deal, as well as investors' experience with regards to the proposed activities and the scale of operation, as indicators of the ability of investors to implementation a proposed project. A certain profiling of investors (by capital, capacity, motivation, experience, etc.) could help minimize the risks of failure of future land deals.

Evaluation and restitution of land of terminated land deals

Concluded land deals have left nearly 60,000 ha of land behind after the projects were terminated. Another nearly 160,000 ha of land that was granted but has yet to be developed by investors. It is recommended for used areas that an evaluation be carried out of the land use change that occurred, the current conditions of the land, and the present and future foreseeable risks this land bares (e.g. whether the land was irreversibly restructured or contaminated). For all the granted areas of terminated deals, used or unused, social impacts need to be assessed and mitigated. A redistributing such lands to other purposes is one option to be considered.

Enhancement of opportunities for the local population

Despite the creation by land deals of a considerable number of jobs, the quality of investment assessment showed that there are limited benefits for the residents of impacted villages regarding the provision of employment by land deals. Thus, immediate action is needed with regards to improving the employment opportunities generated for affected communities. Elements of potential focus include (1) obligations for investors to provide training in order to transfer required skill sets to workers; (2) enforcement of existing policies regarding the quota for foreign labour; (3) the enhancement of education and vocational training with a focus on labour skill development and workers' rights and obligations; and (4) monitoring and enforcement of existing rules regarding labour conditions.

Mitigation of negative environmental impacts

This report has shown that land deals cause negative environmental impacts, particularly deforestation and forest degradation, which in turn harms biodiversity and negatively affects a series of ecosystem services (e.g. carbon uptake and storage, watershed services). Primary and secondary forest were the land cover categories most commonly reported in the quality of investment assessment as affected by land deal development. The land deal inventory also revealed that 55 deals are located within national conservation forest areas. It is recommended that no further land be developed in this forest category and, in order to prevent future implementation of land deals within national protected areas, their boundary demarcation needs to be clarified and consequently communicated to all administrative levels. Furthermore, the management of boundaries needs to be improved. In-depth studies using high-resolution spatial data on land cover change need to be carried out in order to assess the actual contribution of land deals to deforestation. Real-time monitoring of deforestation events near and within areas allocated to land deals could eventually be an integral part of a nation-wide management and monitoring system for land deals.

In the quality of investment assessment, 15 agriculture and tree plantation deals were identified where herbicide and pesticide use caused severe impacts on the environment and livelihoods. These deals need to be further investigated and strategies to improve the type of agrichemicals used and their application need to be defined and implemented. As the quality of investment assessment shows very low response rates for questions regarding the use of agrichemicals, a future land deals management and monitoring system would benefit greatly from the inclusion of alternative methods of assessment in this area (including standardized field observations and measurements).

Enhancement of investment quality through immediate focus on largest deals

The current discourse on land deals is dominated by reports of bad practices and low quality of investment. In reaction to the discovery of bad practices, the GoL has so far primarily ordered moratoriums of the granting of new deals for mineral prospecting and exploration, and rubber and eucalyptus plantations (e.g. PM/13). Since land deals are considered such an important part of the Lao economy and rural development, it is suggested that the focus shift towards more pro-active measures for dealing with poor practices. This can be achieved through: (1) improvement of existing bad practices, (2) learning from good examples, that is, land deals exhibiting exceptionally high quality, and (3) increasing accountability through regular monitoring and enforcement.

The IQI findings provide for a robust baseline for the identification of deals of poor quality, as well as ones of high quality. High IQI scores within the four facets have been achieved by a few selected deals, showing that high quality is indeed possible. Land deals with high overall IQI scores, or with high facet scores, constitute model cases to highlight through joint learning activities for the GoL as well as investors willing to improve their practices.

As a feasible immediate measure with great potential implications, a focus on increasing the quality of the largest deals in all three subsectors is proposed. In the agriculture subsector, the 16 largest deals constitute 73.4% of the total area granted in the subsector, and these deals are all over 5,000 ha in size. In the tree plantation subsector, the 42 largest deals constitute 83.7% of the total area granted and all deals are over 2,000 ha. In the mining subsector, the top nine deals constitute 67% of the total area granted, and all are larger than 5,000 ha. Altogether, these 67 deals account for 77% of the total area granted and for 75% of the total area developed for land deals in these three subsectors. Of these largest deals, 57 are in their start-up or operational stage, and 29 of them were assessed in the quality of investment assessment[46]. It is recommended that immediate action be taken to increase the overall quality of these deals by using deals with the highest scores in every facet as examples to learn from.

Strengthening capacity and cross-sectoral collaboration for evaluation and monitoring

Cross-sectoral coordination and exchange

The work presented in this report has contributed significantly to the recent move towards more integrated and stronger inter-ministerial collaboration in granting and governing land deals. This shift constitutes a solid basis to continue and strengthen the governance and evaluation of cross cutting, multifaceted challenges inherent in managing land deals. It is recommended that the GoL widen collaboration efforts by including additional ministries and departments in a cross-sectoral manner for enhancing the quality of land deals.

In some cases, the collaboration of ministries and departments carried out so far has revealed a clear lack of clarity with regards to procedures which cut across different ministries, and the responsibilities and mandates in granting, evaluating, and monitoring land deals. A prime ministerial order aimed at clarifying the responsibilities and mandates in cross-sectoral information sharing could move forward the efforts of clarification initiated by the collaboration at hand.

Assessment and inventory approaches

The collaboration under the DECIDE Info III project served to create a broad baseline of data for land deal management and monitoring. It is recommended that this work be continued with the aim of creating a cross-sectoral monitoring system for land deals. The continuation of work should start with a review of the methodologies and results presented in this report and a discussion of how a monitoring system could evolve out of it.

The results of the quality of investment assessment show that an interview-based approach delivers limited results for certain topics. The overall answer rates to some questions was mixed. For example, getting accurate data on the use of herbicides and pesticides from company representatives was difficult because companies were mostly unwilling to speak about their pesticide use. Furthermore, the quality of investment survey was limited for the purpose of creating a basic overview across a multitude of aspects and hence lacks topical depth in many respects. With regards to pesticide and herbicide use, for example, the quality of investment interviews only asked stakeholders whether they perceived positive or negative impacts of agrichemical use – not specifically what those impacts were or what practices they were linked to. For a monitoring system to be effective, a small set of key indicators needs to be collected to reflect important areas of interest across the board. This needs to happen repeatedly and frequently. Hence, alternative ways of sourcing this information, such as through field observations and measurements, need to be developed. The extent and means of data collection in terms of the different topics covered need to be carefully weighed against the overall scope of the monitoring framework, under careful consideration of available time and financial resources. The formulation of a set of minimum standards (e.g. standard contracts) and procedures (reporting and monitoring) and adherence to them by and for all land deals would greatly simplify assessment and monitoring efforts in general.

[46] The 29 assessed deals included five agriculture deals, 22 tree plantations, and two mining deals.

To date, many government operations are isolated, most record keeping is paper based, and paperwork processing is not yet automated or digitized. This leads to information delay, if not loss.. A future land deal management and monitoring system can be a tool for fostering vertical integration. Such a system will perform best if designed to address officially mandated tasks and responsibilities, and make use of the most feasible process and appropriate technology for data entry and retrieval. It is recommended that the land deal inventory be developed into a management system which is continuously fed current data by the responsible and mandated GoL agencies at different levels following an agreed upon monitoring cycle. A future management system for evaluation and monitoring of land deals should be connected to or integrated further into existing sectoral databases and will need to be widely accessible for different GoL ministries in order to retrieve timely information in accordance with their regulatory mandates.

Vertical integration and communication

As mentioned above, the work at hand has revealed a lack of clarity of government mandates with regard to land deal management and monitoring. This lack of clarity concerns all GoL administrative levels and has led to missing information on land deals. While the quality of investment assessment has shown that there is a tendency for deals to achieve higher IQI scores when granted at the district level, it also became evident through the field work that there is a lack of knowledge of the processes of land deal granting and monitoring and the broader regulatory framework at lower levels of government. Furthermore, a general lack of communication between the administrative levels was observed. It is hence recommended that a special future focus be on capacity building regarding mandates between ministries, their departments, and across administrative levels. In addition, more responsibility and financial resources should be given to district authorities in order be able to closely monitor the implementation of land deals, as the results of the IQI scores demonstrate that deals managed at the lower administrative levels attain higher quality of investment scores.

Finally, a broadly inclusive discussion on the topic of land deals should begin. It remains important to gain a better understanding of the overall benefits and costs of large-scale land acquisitions for affected communities, rural development, and the achievement of national development goals. A redefinition of priority areas, and improved incentive and penalty frameworks are both needed. The trade-offs between social, economic, and environmental aims need to be further assessed to negotiate and navigate appropriate pathways, and the impact of land deals needs to be assessed also in the context of goals set and agreed on by the international community, for example the Sustainable Development Goals. Against this background, it is important that the GoL engage with other key stakeholders, namely impacted communities, the private sector, development partners, and civil society, on the topic of land deals, and that the GoL then enters into collaborations with each in order to further responsible and sustainable investment in land.

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Annex

Annex 1: Overview of documents used for the inventoring of land deal key attributes
Available online: http://www.decide.la/files/en/NLCR2020/Annex01.pdf

Annex 2: Overview of key variables for land deals recorded in the land deal inventory
Available online: http://www.decide.la/files/en/NLCR2020/Annex02.pdf

Annex 3: List of variables used in the Index for Quality of Investment (IQI)
Available online: http://www.decide.la/files/en/NLCR2020/Annex03.pdf

Annex 4: Progressive development of legal requirements with regard to concessions and leases
Available online: http://www.decide.la/files/en/NLCR2020/Annex04.pdf

Worker applying agrichemical in a bean field, Oudomxay Province. © Mick Shippen, 2019

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