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Concessions

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in the

Lao PDR

Taking Stock of Land Investments



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Concessions and Leases in the Lao PDR: Taking Stock of Land Investments - 2012 -

Oliver Schönweger,
Andreas Heinemann, Michael Epprecht, Juliet Lu, Palikone Thalongsechanh



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The data presented and analysed in this publication is based on the State Land Leases and Concessions Inventory Project data. The Centre for Development and Environment (CDE) cleaned the inventory data and combined it with other spatial and socioeconomic datasets. Every reasonable effort was made to ensure that the data presented and analysed within this publication is as accurate and complete as possible. The authors however offer no warranty regarding the accuracy, adequacy, legality, reliability or completeness of the data contained in the State Land Leases and Concessions Inventory or other data layers included. The authors will likewise accept no legal liability or responsibility for any errors or omissions in the information.

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Concessions and Leases in the Lao PDR: Taking Stock of Land Investments

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Acronyms

BMZ	Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung (German Federal Ministry for Economic Cooperation and Development)
CDE	Centre for Development and Environment
DLMA	District Land Management Authority
DoF	Department of Forestry
DoS	Department of Statistics
FDI	Foreign Direct Investment
FIPD	Forest Inventory and Planning Division
GIS	Geographic Information System
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (German International Cooperation)
GoL	Government of the Lao PDR
GPS	Global Positioning System
JV	Joint Venture
LECS III	Lao Expenditure and Consumption Survey III
LMRP	Lao-German Land Management and Registration Project
LPDP	Lao-German Land Policy Development Project
MEM	Ministry of Energy and Mines
MoNRE	Ministry of Natural Resources and Environment
MPI	Ministry of Planning and Investment
NCCR	Swiss National Centre of Competence in Research North-South
NLMA	National Land Management Authority
NREIC	Natural Resources and Environmental Information Centre
NPA	National Protected Area
PLMA	Provincial Land Management Authority
SDC	Swiss Agency for Development and Cooperation
SNIS	Swiss Network for International Studies
TABI	The Agro-Biodiversity Initiative



As part of its aim of supporting economic growth and poverty alleviation, the Government of the Lao PDR (GoL) is seriously committed to the sustainable development of the nation's rich natural capital and land. In order to achieve the social development objectives identified under the United Nations Millennium Development Goals initiative by the year 2020, increasing national forest cover and revenues from land management have been identified as vital initiatives. Private investment in land, especially through leasing and granting concessions of state land to investors for development, has thus been strongly encouraged by the GoL. While this has brought about a significant increase in investment in land in the Lao PDR, weaknesses in national land planning and the enforcement of investment regulations have generated concerns regarding the implications of such projects for local land tenure security, food security and natural environments, among other issues.

In order to ensure that the recent boom in land-based investment contributes to poverty alleviation and sustainable development, its impacts and trends must be critically examined.

A lack of comprehensive and accurate documentation of concessions and leases of state land already granted has inhibited progress in the regulatory arena, as well as the capacity for evidence-based decision making more generally. In response to this, in May 2007, a moratorium on granting land was enacted, and an evaluation of approved projects, their activities and effects initiated. The former National Land Management Authority (NLMA) and the Lao-German Land Management and Registration Project (LMRP) of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), with funding from the German Federal Ministry for Economic Cooperation and Development (BMZ), carried out an inventory of state land granted for investment.

On this basis, with funding received from the Swiss Agency for Development and Cooperation (SDC), the Natural Resource and Environmental Information Centre (NREIC) of the Ministry of Natural Resources and Environment (MoNRE), in cooperation with the Centre for Development and Environment (CDE) of the University of Bern, performed the analysis presented in this book, "Concessions and Leases in the Lao PDR: Taking Stock of Land Investments".

This publication provides valuable data, informative analysis and critical perspective on the state of land and natural resource development in the Lao PDR. It can thus be considered a form of feedback on government policies, particularly those implemented by MoNRE, as well as a guide for promoting efficient, equitable and sustainable land management in line with Articles 77 and 78 of the Land Law of 2003 (GoL/NA, 2003).

I would like to convey my special thanks to the Swiss Agency for Development and Cooperation (SDC) for funding this publication, the participating teams at both CDE and GIZ, the line ministries, local government organizations and other relevant agencies who have actively provided this project with their support, making this important and invaluable piece of collaborative research and analysis possible.



Dr. Akhom Tounalom

Vice Minister of the Ministry of Natural Resources and Environment, Lao PDR

The Lao PDR is rich in natural resources, and thus the governance of its land is the backbone of sustainable development, economic growth and poverty eradication. Land and natural resources have attracted significant investment, both foreign and domestic, over the last 10 years, and thus have contributed to generating substantial national revenue. The Lao PDR has thus evolved into a supplier of raw agricultural commodities, tree crops, minerals as well as hydropower, mainly for its large neighbouring economies, leading to a drastic increase of the demand on land.

Due to the lack of reliable or comprehensive data about investment in land, the Government of the Lao PDR (GoL) and the National Assembly felt the need to gain a comprehensive overview of ongoing investment projects and to quantify the extent of land concession and lease areas as the basis for future decision making and policy development. In response, the German Federal Ministry for Economic Cooperation and Development (BMZ) through the Lao-German Land Management and Registration Project (GIZ LMRP) has provided financial support and technical advice to the former National Land Management Authority (NLMA) to collect data for a State Land Leases and Concessions Inventory. This information was compiled in the State Land Lease and Concession Inventory database, out of which provincial reports have been produced.

The State Land Leases and Concessions Inventory represents a globally unique and extremely valuable database, especially in the Lao PDR where commercial pressure on land has increased exponentially over the last decade. Until today, all available insights are based on either aggregated official statistics (GoL reporting) or site specific case study information. Hence, there has been no detailed, comprehensive set of information compiled on a national scale describing land concessions and leases. As active as the debate on this topic has been, it has nonetheless suffered from this lack of a national baseline of data.

A vast store of data has now been collected at the local level, and in a spatially explicit manner which allows for relating it to other national level information (e.g. socioeconomic data). This represents the first insight into the contexts (e.g. in relation to poverty, environment and infrastructure) land concessions and leases take place in. Against this backdrop, to make this valuable data available and to generate added value on a national level, the Swiss Agency for Development and Cooperation (SDC) supported the analysis upon which this "Concessions and Leases in the Lao PDR: Taking stock of Land Investments" is based. Consolidation and analysis was carried out in a trilateral way, mainly between the Natural Resource and Environment Information Centre (NREIC) of MoNRE and the Centre for Development and Environment (CDE) of the University of Bern, with significant contributions from the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ).

We expect the knowledge and insights provided in this publication to support the Government of Laos in better pursuing evidence-based decision making and sustainable development. Its contents may also point to current and potential negative aspects of land investment, as well as constructive strategies for avoiding or mitigating their effects. Similarly, we expect that a range of national and international agencies active in the field of land management and governance will find great value in this report as a reference and guide to constructive discourse on investment in land in the Lao PDR for the years to come.

Ruth Huber

Regional Director
SDC Programme for the Mekong Region



Dr. Petra Mutlu

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The team would like to thank all participating line ministries for sharing information and for their valuable collaboration. Thanks as well to all organizations that provided additional data and maps during the process of data collection. The efforts of all provincial and district administrative authorities involved are greatly appreciated, including the Provincial and District Land Management Authorities (PLMA, DLMA) and concerned sectors in all provinces that provided support and cooperated with the team. Village authorities and communities were also invaluable contributors to this research. Furthermore, the team is extremely grateful for the support of the technical staff from the Office of Land Information and Mapping of the PLMA and DLMA in all provinces, who contributed actively to the success of data collection.

The team would like to express its gratitude to the Centre for Development and Environment (CDE) and the Swiss Agency for Development and Cooperation (SDC), as well as the Lao-German Land Management and Registration Project (LMRP) of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and the German Federal Ministry for Economic Cooperation and Development (BMZ) for providing funding, equipment, and logistical and technical support.

Special thanks to the fruitful exchange between and contributions from the Swiss National Centre for Competence in Research North-South (NCCR) the Swiss Network for International Studies (SNIS), the Land Observatory Project and the Agro-biodiversity Initiative (TABI). Finally, thanks to all international organisations and individual experts, especially to Mike Dwyer who meticulously reviewed this publication, for sharing information and contributing in one way or another to the success of the project.

Investment in land is a cross-cutting issue considered integral to socioeconomic change, natural resource management and economic development in the Lao PDR. Expanding demand for raw materials by rapidly growing neighbouring economies (particularly Thailand, Vietnam and China) and the establishment of policies and regulatory frameworks favourable to land- and resource-intensive investment have driven a rapid increase in the area of land granted for development. The number of land deals has skyrocketed in recent years, increasing fifty fold from 2000 to 2009. Still, constructive debate as to the costs, benefits and sustainable alternatives to this shift has remained hampered by a lack of reliable and comprehensive data.

The State Land Leases and Concessions Inventory represents a globally unique and extremely valuable database from various perspectives. It contains the spatially explicit data collected under the former NREIC-GIZ project, and is the first systematic inventory that allows for visualising and analysing the extent and dimensions of land-intensive investment across the entire country. Until now, all available insights into the expansion of land investments in the Lao PDR were based on either aggregated official statistics or site-specific case studies. As a result, no detailed information on land concessions was available on a national level. The data in the inventory was collected locally and in a spatially explicit manner where possible, allowing its combination with other national level data to provide stronger insight into regional patterns as well as the contexts in which land concessions and leases occur.

Since October 2011, the Swiss Agency for Development and Cooperation (SDC) has provided funding to the Natural Resource and Environment Information Centre (NREIC) to pursue data collection in this area of interest. This funding made it possible for the Centre for Development and Environment (CDE) of the University of Bern and the NREIC to capitalise on the existing wealth of data by collaborating on this publication. This publication presents the analysis of the inventory, providing a series of “snapshots” into the data, along with additional interpretations of key characteristics and trends.

Overall Results and Analysis

This book presents for the first time an overall picture of land concessions and leases in the Lao PDR on a national level. It thereby grants information and insights into key issues, the spatial distribution of land deals and the wider context of land intensive investment.

The analysis excludes logging concessions, contract farming and hydropower projects, and analyses mining exploration concessions only briefly and in isolation from other land investment types. The analysis therefore focuses on 2,642 land deals which total 1.1 million hectares – roughly five per cent of the Lao PDR’s national territory. Due to these exclusions and other limitations described in chapter 1, this 1.1 m ha can be considered a conservative number. To put this in perspective, rice constitutes the main crop grown in the country, yet the area under rice cultivation totals only 0.97 m ha (MAF, 2012). The extent of investment is also astounding given that areas granted are biased towards being located on forest land and in more accessible areas.

The majority of projects (62%) are under 5 ha in size, and leases tend to be far smaller than concessions. While 213 concessions are over 500 ha in size, the majority of leases are under 5 ha. Hence a few large concessions make up a significant share of the entire area granted: the largest 135 projects (5% of all projects) constitute 89% of the total area under investment. Most land under investment, especially for projects over 1,000 ha in size, is utilized for primary sector activities including forestry (consisting mainly of monoculture tree plantations but excluding logging concessions), agriculture and mining projects. The secondary and tertiary sectors constitute only 3% and 7% of the total area under investment respectively. Mining is the most significant subsector in terms of total projects and area under investment (21% and 50% respectively); mining projects are also the largest on average, at 1,155 ha. Agriculture and forestry both claim 14% of all projects, though forestry projects are on average almost twice the size of agriculture projects (885 ha and 453 ha on average respectively).

Domestic investors hold a sizeable number of projects (1,705 or 65% of all projects), though domestic projects are on average almost ten times smaller than those under foreign investment. China, Thailand and Vietnam are the largest foreign investors, both in terms of the number of projects and area covered by these projects (617 deals or 23% of all deals, and 579,821 ha or 53% of all land under investment). Chinese investors hold the greatest number of investment projects of any foreign investing country (299), but these tend to be slightly smaller in size than Vietnamese investment projects, thus the total area under Chinese investment is lower than that under Vietnamese investment (199,015 ha and 307,169 ha respectively). Joint ventures are similar to foreign projects in average size (1,048 ha); as a result, despite the small number of joint venture projects (140 deals), they still account for 123,673 ha of the total area under investment. Investment occurs heavily throughout the Lao PDR, though the total area under investment is greatest in the North while Central Lao PDR has the highest number of deals.

A range of products are cultivated or extracted from lands under investment, and follow patterns likely linked to biophysical conditions, export market demand and policy drivers. Sugarcane and Jatropha, in which Thai and South Korean investors are the most involved, cover vast areas (34,969 ha and 25,179 ha respectively) compared to other agricultural products, and are predominantly located in the South and Central regions where flat, productive agricultural lands are more abundant. 66% of tree plantations are located in the South, mostly under Vietnamese investment. Rubber is by far the dominant tree planted regardless of region or investor (with 225 deals covering 129,614 ha). These numbers also underrepresent the extent of rubber cultivation, considering that contract farming rubber schemes, which are frequent in the North, are legally not concession or lease agreements (and are hence generally not included in these figures). This is despite the fact that various studies have shown some contract farming to resemble concessions in their implications for labour and compensation agreements (Shi, 2008; Dwyer, forthcoming). Mining exploitation projects occur primarily in the North and Central regions, with only 6% of all area under mining investment located in the South. Mining exploration projects cover vast expanses of land (1,026,873 ha), almost equal to all other areas under concession or lease combined.

Spatial Analysis and Context

To gain some insight into the socioeconomic and biophysical context in which land concessions and leases are granted, this publication analyses the inventory data in combination with a variety of secondary data. Although only 1,258 deals (53% of all deals) are spatially referenced and therefore included in this part of the analysis, the outcomes contribute significantly to wider debate on land leases and concessions.

Not surprisingly, most area under investment (68%) occurs in the lowlands of the Lao PDR (below elevations of 500 masl). Areas under investment also tend to be relatively accessible, with most within one hour travel time to the nearest district capital. Primary sector deals occur in the most remote areas of all sectors, with mining projects on average occurring farthest from district capitals (58% of projects over 2 hours from the closest district capital). Areas under foreign investment are also less accessible on average, especially compared with those under domestic investment – a trend most likely related to the larger average project area and heavier involvement in primary sector activities of foreign investors.

In total, the spatial analysis includes approximately 1,900 villages with land under concession or lease – again, a conservative figure considering the limited number of spatially referenced land deals. Areas where investment projects occur show an average poverty incidence of 27% (poverty incidence is calculated using methods defined by Epprecht et al. (2008)). This is significantly lower than the only available nationwide village level poverty estimation which estimated the average poverty incidence at 34.7% (Epprecht, 2008). Similarly, literacy rates in areas under investment are 80%, seven percentage points higher than the national average of 73%. Whether the impacts of investment projects differ in remote as compared to more accessible areas is an important question for further research.

Foreign investment, particularly from Vietnam, China and Thailand, occurs in areas slightly less affluent than domestic and joint venture projects, though all still have poverty incidences below the national average. Primary sector project areas are, of all areas under investment, the poorest and least literate, with forestry subsector investments occurring in the poorest areas of almost every subsector. Lao-Tai is the dominant ethno-linguistic family in areas under investment (72% of people in areas under investment are Lao-Tai as compared with 64% of the national population). Populations in areas with primary sector investment projects, which tend to be more remote and less affluent, have a greater per cent of non-Lao-Tai (34%) than any other sector.

The GoL has set an ambitious goal of reaching 65% forest cover by 2015 and 70% by 2020 (MAF, 2005). The Forestry Law (GoL, 2007) defines and delineates three forest management categories: conservation, protection and production forest. These categories do not indicate the current land cover but are instead administrative categories determining management and land use regulations. By overlapping the inventory data with spatial data (MAF/DoF, 2011), almost one third of all concessions and leases granted were shown to occur on lands categorized as forest. While production forest could be expected to host the greatest number of investment projects considering limitations on development activities in protection and conservation forest areas, most investment occurs on lands categorized as protection forest (23% of all area under investment). This gap between regulatory level priorities and on-the-ground development is a major concern, and demands further study if forest regeneration and protection is to be taken seriously as a policy priority.

National Forest Inventory Data (MAF, 2002) was used for analysis of the land cover classes under investment in the Lao PDR. The results indicate that the largest share of land under investment occurred within 'unstocked forest and ray', with 45% of all area under investment in this land cover class, followed by 37% on 'forest' land. Unstocked forest and ray includes varying types of bush fallow, some secondary forest and areas under rotational agricultural systems. The dominance of these two land classes in land under investment will likely mean significant impacts on land cover – particularly on forested land – in the Lao PDR.

Outlook

The findings of this publication serve distinct purposes in the wider debate over land concessions and leases in the Lao PDR. To start with, they serve as an important baseline for further research. These results, in combination with existing case studies, point to a number of weaknesses in current land management and governance. Specifically, they highlight issues in investment policy implementation, government coordination and transparency. This publication also presents opportunities for deeper analysis or the scaling up of current findings. Further research is necessary to gain a wider understanding of key driving factors and decision making processes behind the trends in land investments observed here.

Furthermore, the publication improves the potential for visual presentation and analysis – the spatial “legibility”, so to speak – of the current landscape of resource-based investment in the Lao PDR. It moves beyond specific case studies to make sense of the wider context of land-intensive investment, which is a critical step considering the lag between regulation and government capacity for monitoring, and the pace of granting investments in land. There also exist many other data layers which, combined with the inventory data, may reveal additional findings and expand on the analysis presented here.

Finally, beyond the policy implications of the results, the fact that this data has been collected on a national scale, analysed and published in this format, represents an important achievement in transparency. This represents a landmark in the development of tools for evidence-based policymaking, as well as for wider efforts at reforming the collection, organization and sharing of information in the Lao PDR. The authors of this publication thus hope that its findings may therefore shape relevant legal frameworks and contribute to the revision of the forestry and land laws, as well the elaboration of an overarching and coherent land and natural resource management policy.



Cashew Nut Plantation, Bachiang District, Champasack Province

I - INTRODUCTION

This publication presents the first nationwide analysis of land concessions and leases in the Lao PDR. It comes at a pivotal moment after investment in land has expanded significantly throughout the country, sparking increased dialogue and a greater level of scrutiny regarding the impacts of this expansion, both inside the Government of the Lao PDR (GoL) and throughout wider civil society. Investment in land, particularly foreign direct investment, has been championed as an effective development tool by a number of actors. Such significant transformations in national landscapes, however, could engender drastic socioeconomic and environmental change, affect food security and traditional livelihoods and could ultimately pose challenges to national sovereignty.

The publication is the outcome of a joint effort between the Ministry of Natural Resources and Environment (MoNRE), the Centre for Development and Environment (CDE) and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)¹, to consolidate the most comprehensive national database on state land leases and concessions compiled by MoNRE and GIZ (hereafter called the “inventory”).

The inventory represents a globally unique and extremely valuable database from various perspectives. **It is the first systematic inventory that allows capturing, visualizing and analysing the extent and dimensions of the concession phenomenon for the entire country.** The availability of detailed information on land deals at a national level, and therefore most dialogue and insight into this key issue, has been limited to aggregated official data and specific case study information. The inventory data presented in this publication, on the other hand, has been collected at various administrative levels and in a spatially explicit manner wherever possible, allowing for its combination with other national level data in order to provide further insight into the contexts in which land concessions and leases occur in the Lao PDR.

The analysis begins by describing the contents of the inventory, then goes on to examine spatial patterns as well as socio-economic and geophysical contexts of land investments in the Lao PDR. Chapter 1 provides background information on the Natural Resources and Environmental Information Centre (NREIC)² and GIZ cooperation project regarding how data was collected and compiled, as well as the strengths and weaknesses of the project’s resulting database. The second part of chapter 1 describes the methodology of data analysis and related limitations.

Chapter 2 presents an analysis of the data included in the inventory along with a detailed overview of the amount and area of concession and lease projects in the Lao PDR disaggregated by sector, subsector, product, location and origin of investment.

Chapter 3 utilizes all spatially referenced inventory data in combination with several other data layers. This chapter aims to describe the socioeconomic setting, specifically the characteristics of the population living in areas where concessions and leases occur. Patterns related to biophysical factors, regulatory land zones, accessibility and elevation gradients are also explored in order to contribute greater quantitative evidence to ongoing debates.

Chapter 4 provides final conclusions and summarizes key insights and messages for policy makers and other stakeholders in the land sector in the Lao PDR.

The Annex highlights a selection of case studies provided by NREIC reflecting the most common limitations and issues within land allocation, project implementation and monitoring in the process of granting and managing land investment projects.

¹ German International Cooperation (GIZ), formerly the German Technical Cooperation (GTZ).

² The former name of the Natural Resources and Environmental Information Centre (NREIC), while still under the NLMA, was the “Land and Natural Resources Research and Information Centre (LNRRIC)”. For simplicity, the most current name and acronym will be used here.

1.1 - Background of the State Land Leases and Concessions Inventory

The data in the current inventory was collected under a research mandate stemming from the Lao PDR's First National Land Conference, held in May 2007. The conference was largely a response to the negative side effects of land-intensive investment projects justified under the policy of "turning land into capital", which was a widely used slogan at the time. Promoting and facilitating investment via the granting of concession and lease agreements was one of the main vehicles the GoL chose to attract foreign capital to the mining, agriculture and forestry sectors (Dwyer, 2007). Turning land into capital was promoted as a "fast track" for development within the country and as a mechanism for connecting rural areas to infrastructure networks. But it also had major social and environmental costs, especially when implemented in a non-transparent and poorly regulated manner.

In complying with the National Land Conference Resolution No. 06/PM (30 May 2007), and building on the Notification of the Government Secretariat No. 734/GoL (8 May 2007) regarding state land leases and concessions, the task of nationwide data collection on state land leases and concessions was assigned to the National Land Management Authority (NLMA)³. The NLMA was charged with collecting and storing all relevant data on lease and concession projects in the Lao PDR in a uniform way, and with analysing such data and sharing relevant information with line ministries and government authorities. It was also made responsible for ensuring that information on state land leases and concessions across the Lao PDR was accurate, and for keeping this information up to date. The NLMA department responsible for this task was the NREIC. The centralized approach to data collection was meant to facilitate a quick response to the rapid changes in land and natural resources investment.

1.2 - The "State Land Leases and Concessions Inventory Project"

With financial support from GIZ, a first phase of the "State Land Leases and Concessions Inventory" project was carried out by the NREIC in 2007 and 2008. Over a period of twenty months, the NREIC attempted to collect data on projects involving state land in all 17 provinces. Data collection was limited to the provincial level, from which statistical summaries and summary tables from different line ministries and departments were obtained. It soon became obvious, however, that the available data was far from complete and that no line agencies, either at the central or provincial levels, had full or sufficiently detailed information on land leases and concessions granted up to that point. Moreover, where data was available, it was often inaccurate and the size and location of investment projects – both allocated areas and actual developments – were frequently unknown. Finally, the involvement of multiple data collection teams with different approaches meant that the data was not collected in a uniform way.

NREIC realised the need for more accurate information and spatial data on concession and lease projects in order to better pinpoint the actual location of land investments. As a result, a second phase of the project was initiated in October 2008. One team, operating under the NREIC, was established and trained with the financial and technical support of GIZ and extended their efforts to include district level data collection and ground truthing activities. Data collection started in October 2008 in the pilot provinces of Vientiane, and in June 2009 in Luangnamtha. After the pilot phase, the NLMA decided that the project should be expanded to encompass all provinces. From mid-2010 on, with additional funding made available to GIZ by the Bundesministerium für wirtschaftliche Zusammenarbeit und Entwicklung (BMZ), two additional teams were established and equipped with the aim of meeting the requirements set by the Minister of the NLMA for reaching a faster pace of data collection.

1.2.1 - Methodology of Data Collection and Compilation

Data was collected from line agencies at the national, provincial and district levels and, where possible, was compared with data collected earlier during the first project phase and with other pre-existing data from the NLMA. Documents of interest included all legal documents available (e.g. investment approvals, investment contracts, memorandums of understanding, etc.) as well as feasibility studies, available maps and progress reports on implementation.

In the next phase of the project, the team collected data in the field by visiting investment project sites and compiling GIS data using handheld GPS equipment and taking additional notes on the implementation status and location of projects. This work

was carried out in close cooperation with staff from the PLMA and DLMA. Whenever possible, the team also contacted the investing companies in order to collect additional information or maps.

The means of transportation to field locations was primarily off-road motorbikes. Each team was equipped with handheld GPS devices and a digital camera to document actual situations in the field and to photograph existing documents if scanning or photocopying was not possible. In each province, one desktop computer was distributed to the PLMA with the project's database pre-installed. PLMA staff were trained in using the database programme and were made responsible for

³ In November 2011, the NLMA was integrated into the newly established Ministry of Natural Resources and Environment (MONRE).

continuing data collection and database entry in the future, as well as for providing information related to status changes of existing and new concession and lease projects to the NLMA.

A database system was established to manage data compilation, updates, reports and analysis. GIS data was processed using ArcGIS Software and, from 2011 on, in combination with open source software including Quantum GIS and PostgreSQL. In early 2012, the whole database was migrated completely to PostgreSQL in order to provide for a direct connection to GIS software.

Data collection was finalized in the last province of Vientiane Capital City in early 2011. Reports were created for all provinces, and initial results of collected data and analysis were included. For each province, 150 copies of that province report were distributed to relevant authorities. Reports were written in Lao language and English translations have been done for some provinces, but not all.

GIZ provided additional funding from October 2011 to January 2012 to update and collect additional data in those provinces where fewer than 50% of database entries were accompanied by a polygon or at least a single GPS point. Funds were also made available for further training of provincial staff in GPS equipment usage, GIS software, and in updating and properly maintaining the database system.



Coffee Plantation, Paksong District, Champasack Province

1.2.2 - Limitations and Achievements

The data collection team encountered several problems which made it difficult to obtain comprehensive information on all investment projects. Data for each project available at the provincial and district level was rarely complete, especially with regards to documents related to the project approval process. In some cases, only one type of project document, such as the investment licence, agreement or contract was available, and for some, no documents at all were available or shared. Information about the implementation status and progress of projects (e.g. land clearance, planting, processing and production) was almost never available. Certain agencies, it was reported to the project team, do not collect such information, while many investors and companies have not

sent their progress reports to concerned state agencies. At the same time, the capacity of relevant authorities at the provincial and district level to assess and monitor the implementation of such investment projects is still limited. Some simply did not want to cooperate with the project team or disclose the information sought. In addition, the team was not able to visit the location of all projects due to prohibitive road conditions, especially during the rainy season. Thus data may be skewed due to tarmac and roadside biases inherent in the data collection process. Collecting data directly from companies or investors was a difficult task, as most investors were not present at the concession site and the team often met only representatives or workers who rarely possessed –

or if they possessed, were not at liberty to disclose – detailed information about the projects. In addition, fluctuation in the members of research and data entry teams, limits in the time allowed for data collection placed by the GoL, and differences in the levels of expertise and training among the primarily junior staff involved affected the consistency and quality of both data collection and compilation into standardised database format. Due to these limitations, the inventory has several shortcomings: It currently includes data on most but not all land concession projects and an even lower portion of the total smaller lease projects in operation. Spatial data in the form of a polygon or a single GIS point was collected for only about 53% of all projects, meaning that many projects remain empirically unmapped. Where spatial data was derived from secondary sources without further ground truthing, the location of the projects may vary in accuracy depending on the project surveyors' level of experience and/or the quality of their equipment and technical skills. Thus despite extensive efforts at ensuring consistent and comprehensive monitoring and spatial data gathering, the quality and quantity of the data varies from one province to another.

Nonetheless, ***the compiled dataset is the most comprehensive source on land-based investment in the Lao PDR and is unmatched by most countries in the region.*** It provides the first cross-sector view of approved land concessions and lease projects for the whole of the Lao PDR. The project is considered a positive example in terms of enabling transparency in natural resource management and open data sharing. The project's implementation indicates that the GoL is aware of the problematic nature of large-scale land investments without proper oversight, and that it promotes the sharing of relevant data with all involved stakeholders.

This project has, for the first time, compiled official data from all provinces, and has distributed reports on each province at annual GoL meetings (in 2010 and 2011), at several National Assembly sessions, and to the offices of relevant line ministries and provincial governments. The information compiled under the project has also been made available upon request to international research institutes, individual researchers and a range of civil society organizations, domestic and international. Through the dissemination of inventory data, the project has provided a concrete tool for evidence-based decision making and policy dialogue. Nevertheless, there remain significant obstacles to access for public audiences, both physically and in terms of bureaucratic red tape, despite longer term goals to either integrate the inventory data into an existing government web-based platform (e.g. DECIDE info Laos) and/or publish it through a MoNRE web page to be created.

Furthermore, a number of the provincial reports have provided evidence that some authorities have abused or 'misinterpreted' their power and mandates. The GoL has taken those issues seriously and a number of authorities abusing their position of power have been issued a warning, while more serious actions have been meted out to others. The reports have also shown that several companies do not follow the terms of their contracts for land leases and concessions. In 2010, the Division of Land Inspection began working with the inventory team to use inventory data for inspecting some of those companies' operations highlighted. Even more recently, the GoL decided to annul the licences of companies not fulfilling obligations within their contractual arrangements.

1.3 - Capitalising on Inventory Data

Beginning October 2011, the Swiss Agency for Development and Cooperation (SDC) has provided funding to NREIC to set up a local server for better data storage and database management, including the inventory data. With further technical support from CDE, cleaning of the inventory database was conducted (e.g. standardizing terminologies and units, addressing inconsistencies, etc.), making further analysis of this data possible. During the data cleaning process, it was decided to capitalise on the existing wealth of data and produce a publication analyzing and contextualizing state land leases and concessions data. This publication,

"Concessions and Leases in the Lao PDR: Taking Stock of Land Investments", does not simply combine all provincial data as documented in the provincial reports published, but rather presents data based on a revised database, thus areas and numbers of deals used in this analysis may differ from a summary of provincial report data. The publication presents a series of "snapshots" or views into the revised inventory data, along with some interpretations of land deal trends and investment characteristics based on the combination of the inventory with other existing data sets.

1.3.1 - Methodology of Data Analysis

The following analysis uses data from the cleaned inventory database, and overlays it with a complimentary set of data layers from other sources in order to further assess the context in which land deals in the Lao PDR are taking place. Most analysis is based upon totals, averages and weighted averages, and spatial visualizations of the data. Because the inventory emphasises the scale of land granting over issues of impact or outcomes, investment projects were included

in the analysis regardless of their implementation status.

The analysis for the overview presented in chapter 2 was performed primarily by using Stata SE 12 and MS Excel. Chapter 2 consists of a broad analysis of all concession and lease projects, disaggregated mainly by investor's country of origin, sector, subsector, product and region. ***The analysis includes 2,642 investment projects, 2,350 of which have***

area data and cover 1.1 million hectares (see Figure 1). It also includes one section on mining exploration projects, which total roughly an additional million hectares. For the mining exploration subsector, the inventory data was checked and completed with the latest available data provided by the Ministry of Energy and Mines (MEM 2010).

For the spatial analysis of the context of existing land deals in the Lao PDR (presented in chapter 3), only the deals for which geographic location was encoded in the inventory could be used. **Of the 2,642 deals in the inventory, spatially referenced data was available for only 1,258 projects (48% of all projects) covering 587,564 hectares.** Consequently, the results of chapter 3 only include 53% of the entire area documented in the inventory, a fact which must be considered when interpreting the results of this chapter. In case the spatial reference of a concession or land lease was only represented by a GPS point (and not as a whole digitized polygon of the granted area), the respective GPS point was buffered to produce a circular area which corresponds to the total area granted as indicated in the inventory.

The following data was used in chapter 3 in conjunction with the above mentioned spatially referenced shares of inventory data to provide some insight into the contexts of land deals:

1) For the socioeconomic data, the Population and Housing Census of 2005 (MPI/DoS, 2005), available at www.decide.la, as well as the Lao Expenditure and Consumption Survey (LECS) III (MPI/DoS, 2003) for poverty estimates based on the study done by Epprecht et al. (2008) were used. Though these poverty estimates are years old, they remain the most current figures measuring national trends at the village scale.

2) Accessibility is expressed in terms of travel time to district capitals, and estimations were elaborated using a cost distance model based on Messerli et al. (2008). Travel time was estimated assuming access to the best means of available transport (i.e. a car on a main road, on foot where there are only footpaths or no track at all), and taking into account road type and quality, waterways and bodies of water, slope, and land cover.

3) Forest (management) categories are based on Department of Forestry specifications (MAF/DoF 2011).

4) The land cover data is based on the National Forest Cover Inventory done by the DoF's Forest Inventory and Planning Division (MAF/FIPD, 2002). While this dataset currently contains several weaknesses and inconsistencies in quality, it is the only official data available on land cover.

The spatial intersection of land deals and socioeconomic data was done using the village polygons geometry developed by Messerli et al. (2008). Village polygons are an approximation of village territories based on accessibility. The borders between villages are delineated at the point where the modeled travel time to the neighbouring to each village is equal. The socioeconomic attributes of areas under investment were estimated by combining the socioeconomic data associated with all villages whose polygons overlap with investment polygons. As a result, the inclusion of a village in the analysis does not imply that the village settlement itself or the entire village polygon is within the area under investment, but rather that the village polygon at least intersects the investment polygon.

Figure 1 provides an overview on which data is used for what chapter and type of analysis.

Figure 1: Availability of Area and Spatially Referenced Data

		Area Data	
		Available	Unavailable
Spatially Referenced Data	Available	A 1,258 Deals 587,564 ha	B N/A
	Unavailable	C 1,092 Deals 511,970 ha	D 292 Deals
Chapter 2 Analysis: All Data Included Chapter 3 Analysis: A Maps: A Data Average Area Calculations: A and C		All Data 2,642 Deals 1,099,534 ha	



Rubber Plantation, Bachiang District, Champasack Province

II - RESULTS

Chapter 2 presents an overview of the content of the “State Land Leases and Concessions Inventory”. As land leases and concessions are most often analysed in combination, for simplicity they are referred to as “investment projects” or “land deals”. Because state land can be granted at multiple levels and across different line ministries within the government, land investments in the Lao PDR have been particularly difficult to measure and monitor. Data collection has been ad hoc in nature and transparency or dissemination of records across sectors and levels of government have been limited. As a result, aggregated data was often available from provincial or district level offices, but less on an individual project basis and often not in formats available for or compatible with other administrative areas. These limitations and gaps in the documentation of land investments leave decision makers without a strong baseline of information from which to improve the governance of large-scale land investments.

This chapter seeks to establish such a baseline by examining wider trends and quantifying the scale of investment in land across the entire Lao PDR. The analysis focuses on agriculture, forestry and mining, the three largest economic subsectors included in this analysis, and reveals the sizeable area of land now devoted to these activities. The variety of products and services being supplied by lands under investment are described and information on investors’ country of origin gives perspective on what resources and products different countries demand when investing in the Lao PDR. Thus emerges a clearer understanding of the extent and nature of land investments in the Lao PDR.

2.1 - Inventory Overview

In total, an area of 2.1 million hectares (ha) has been granted to investors, which can be compared roughly to the size of Savannakhet Province⁴ and around 9% of the total land area of the Lao PDR⁵. This 2.1 million ha, however, includes roughly one million ha granted for mining exploration. Mining projects are distinct from those granted in other sectors due to their tendency to have vast areas devoted to mineral exploration⁶ with often little to no impact in terms of land transformation and local livelihoods; mineral extraction, in contrast, entails massive direct impacts, yet is often much smaller in terms of project area⁷. The total amount of investment projects and their area dealt with here excludes mining exploration projects with the exception of section 2.2.4, which focuses on mining exploration specifically. Hydropower projects were not an explicit focus of the mandate for data collection, nor do they follow similar patterns of land use or legal status to other land concessions and leases. As a result, the data collection team did not prioritize hydropower projects, and they were therefore excluded from this analysis. However, hydropower and mining development in the Lao PDR is extensively analysed in the Report, “Lao PDR Development Report 2010 – Technical Note: The socio-geography of mining

and hydro in Lao PDR: Analysis combining GIS Information with Socioeconomic Data” (World Bank, 2010).

After excluding mining exploration and hydropower projects, **the inventory contains 2,642 leases and concessions covering 1.1 million ha**. It should be noted, however, that project areas are known for only 2,350 of these (or 89% of all projects), thus the 1.1 million ha they cover can be considered a rather conservative estimate of the Lao PDR’s total area under investment. Still, this total represents approximately 5% of the Lao PDR’s whole land area, or just over the entire area of Attapeu Province⁸. Finally, investment in land is not necessarily only done through the concession and lease agreements included in this analysis. In Northern Lao PDR especially, a large portion of agriculture and tree plantation investment is done through contract farming arrangements which are not included here. Therefore, the reported data may even further underestimate the full scale of land related investment in the Lao PDR. Nevertheless trends and emerging patterns in the distribution of land investments across economic sectors, geographical regions and investors can be shown.

2.1.1 - Form of Investment

The inventory differentiates between two forms of investment: land leases and concessions. Both forms of investment are granted on areas that are legally considered state land. The main difference between concession and lease agreements lies in the parameters of their contractual arrangement and their legal status, which is explained in Decree 135/PM 2009, Articles 2 and 4. According to those articles, concessions are assumed to involve activities which utilize natural resources more intensively, and therefore concessionaires are supposed “to pay land concession fees, cost for national resources (royalties), tax, customs fees and other fees as specified in the [land] law” (Art. 4 paragraph 2), while leases are assumed to host activities which are less resource intensive and thus lessees need only “to pay the rental fee in accordance with the rate specified in the [land] law and regulations” (Art. 4

paragraph 1) (GoL/NA, 2003). Out of all investment projects, 1,535 are concessions and 1,107 are leases (see Map 1). Lease projects were found to be much smaller in area (on average leases are three ha) than concessions (823 ha on average), and constitute less than one per cent of all state land under investment (see Table 1).

Overall, most investment projects are under five ha in size, with the majority of concessions either under five ha or between 100 and 500 ha in size (406 and 378 concessions respectively). Still, **an impressive number of land deals (135 deals, all of which are concessions) are above 1,000 ha in size, and those 135 largest concessions alone comprise the vast majority (89%) of the total area under investment**. The very few concessions over 10,000 ha comprise 59% of the total area under investment (see Figure 2).

Table 1: Overview of Concessions and Leases

	# Deals	Total Area (ha)	Average Area (ha) ⁹	% Total # of all Deals	% Total Area of all Deals
Concessions	1,535 ¹⁰	1,096,797	823	58%	99.8%
Leases	1,107 ¹¹	2,737	3	41%	0.2%
TOTAL	2,642	1,099,534	467	100%	100%

⁴ The total area of Savannakhet Province is 2,177,400 ha (MPI/DoS, 2005).

⁵ The total area of the Lao PDR is 236,800 km² or 23,680,000 ha, (MPI/DoS, 2005). In order to allow for consistent comparisons between national and regional averages, we use a slightly smaller figure (23,045,288 ha), which is derived from the measured areas of the Lao PDR’s North, Centre and South (see Table 5).

⁶ Mineral exploration refers to the process of finding ore to mine, as opposed to mining activities, which for the purposes of this publication are referred to as mining exploitation.

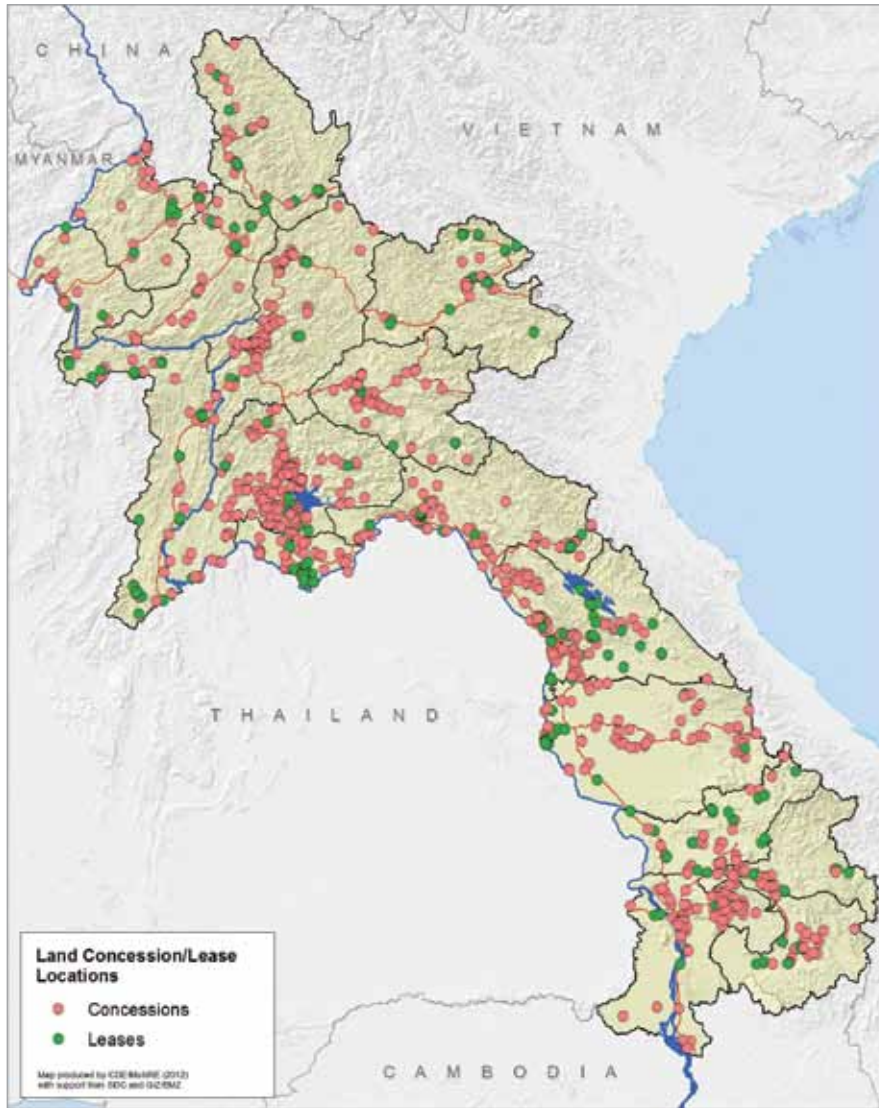
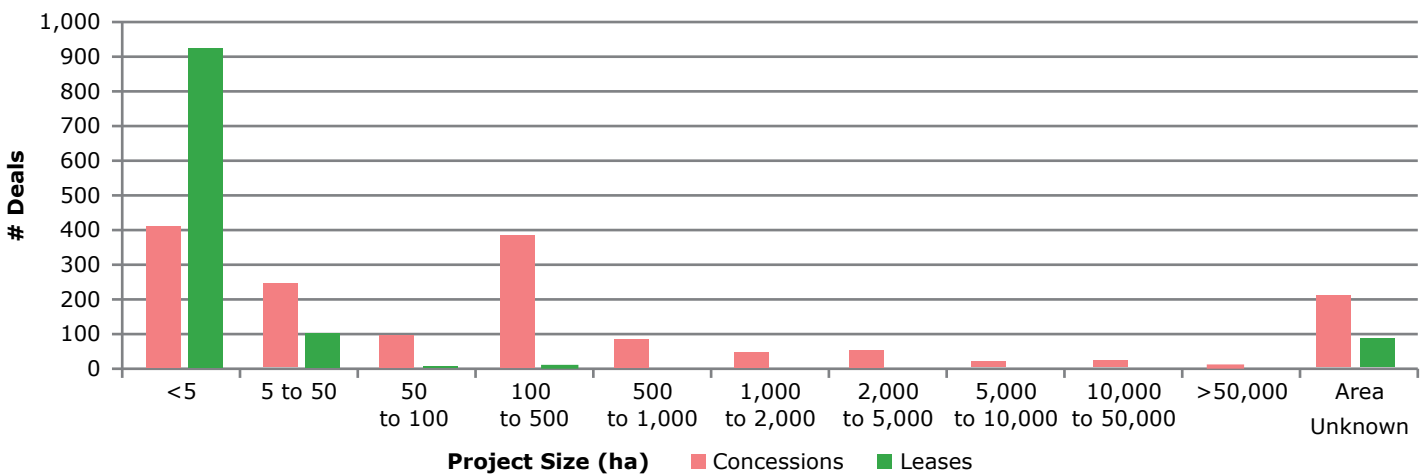


Figure 2: Number of Concessions and Leases by Project Size



7 Area is not a sole proxy for impact, especially when mining activities may entail significant water pollution and other negative impacts.
 8 The total area of Attapeu Province is 1,008,700 ha, (MPI/DoS, 2005).
 9 Only deals with area data are used in calculating averages throughout this publication.
 10 Of these, 1,328 have area data and 207 do not (13% of all concessions).
 11 Of these, 1,022 have area data and 85 do not (8% of all leases).
 12 The concessions and leases shown on this map include only those with spatial data (1,258 projects).

2.1.2 - Sectors and Subsectors

This analysis reveals significant distinctions in the characteristics of investment projects across economic sectors¹³. Not surprising considering that the Lao PDR economy is largely natural resource based, **the primary sector is the largest in terms of land deals and claims 91% of the total area of land under investment**. In terms of number of deals, however, the secondary and tertiary sectors still make up slightly over half of all projects, though they are much smaller in average size (36 and 163 ha respectively) compared to the average size of land deals within the primary sector (881 ha) (see Table 2).

Mining deals represent 21% of all investment projects but an astonishing 50% of the total area under investment, making it the largest subsector. Construction follows with the second most investment projects, but most are small in area and altogether do not even comprise 1% of the total area under investment. Agriculture and forestry each represent approximately 14% of all investment projects and cover areas 13% and 28% of the total area under investment respectively. While forestry typically encompasses a range of activities, in the context of this analysis, activities in the forestry subsector refer to tree plantation concessions and leases, but do not include logging concessions. In addition, land deals in forestry suffer a problematic association with reforestation activities, which often results in the misinterpretation of tree plantations as reforestation activities, which is not the intent of the authors. Meanwhile, the less land-intensive construction, communications, transport, wholesale/trade and education subsectors represent a total of 604 deals (23%), but cover a negligible area.

In terms of average size of land deals, the picture is fairly straightforward: primary sector deals seek larger areas of land for their land-intensive activities, as this allows them to take advantage of economies of scale and maximize profits, whereas the secondary and tertiary sectors, with a few exceptions, seek only enough land for infrastructure-related construction and therefore are small in comparison. The average area of mining deals (1,155 ha) is by far the largest, and is more than twice the average size of investment projects overall (467 ha). Forestry deals are the second largest with an average of 885 ha, and agriculture deals are 453 ha on average. Finally, tourism amounts to a small but significant portion of all area granted for investment (5% of total), largely due to one major eco-tourism project in Bokeo and a number of golf courses, each covering sizeable amounts of land. This may point to the growing importance of tourism to the Lao economy, as it is the only subsector outside of the primary sector claiming over 5% of all area granted.

The share of land deals and area under investment in the main subsectors (agriculture, forestry and mining) also depicts to a certain extent the state of economic development in the Lao PDR. According to the World Bank (2010), forestry, agriculture, hydropower and minerals comprise more than half of the total wealth of the country; from 2005 to 2010, one third of GDP growth was from the hydropower and mining subsectors alone.

2.1.4 - Origin of Investment

In comparing the scale of domestic to foreign and joint venture (JV) land deals, average area under investment per project varies drastically. **A majority of investment projects are domestic investments (65%), but these altogether comprise only 17% of the total area under investment. Foreign investment projects, or foreign direct investment (FDI), hold the greatest area of land overall, constituting 72% of the total area under investment, but only 30% of projects**. The average size of FDI projects is 1,167 ha, which is ten times the average size of domestic investment projects (117 ha) (see Table 3). This confirms general assumptions that, in terms of area granted, FDI projects tend to be significantly larger, and that FDI as a whole is the dominant form of land-intensive investment in the Lao PDR. Map 2 shows the inventory data according to investors' country of origin.

With 140 investment projects, joint ventures amount to only 5% of all projects, but have a large average area of 1,048 ha, which is almost the same as that of FDI deals. This may indicate that foreign investors, including those who have entered into joint venture agreements, often have greater access to

investment capital than Lao investors have. Reasons for this range from the less developed lending system in the Lao PDR, to the stronger financial support foreign investors receive from their own governments and banking systems, and the existence of diplomatically facilitated capital-intensive land deals. Favourable investment regulations for certain foreign firms are often established ad hoc, based on diplomatic negotiations involving, for example, strategic aid to the GoL for infrastructure or key development projects. The difference in the average areas of FDI and JV projects as compared with domestic projects also parallels the distribution of primary sector projects across investor types. 67% of all FDI projects are in the primary sector, which is significantly more than the 40% of domestic projects and even the 51% of joint ventures.

When comparing the largest subsectors across investor types, most domestic deals are within the mining (24%) and construction subsectors (21%). Most JV deals are within manufacturing/processing (26%), followed by agriculture (19%) and mining (17%), while FDI deals are distributed quite evenly between forestry (27%), agriculture (24%), manufacturing/

¹³ Typically, four sectors of the economy are referred to: the primary sector involves the extraction of raw materials and production of basic foods; the secondary sector manufactures finished goods; the tertiary sector includes all service industries; and the quaternary sector consists of intellectual activities. As only two projects in the quaternary sector are included in the inventory, this sector is not further analysed here.

Table 2: Overview of Investment Projects by Sector and Subsector

Sector	Subsector	# Deals	Total Area (ha)	Average Area (ha)	% Total # of all Deals	% Total Area of all Deals
Primary	<i>Agriculture</i>	360	140,015	453	14%	13%
	<i>Forestry</i>	367	306,234	885	14%	28%
	<i>Mining (exploitation)</i>	564	548,756	1,155	21%	50%
	<i>Total</i>	1,291	995,005	881	49%	91%
Secondary	<i>Construction</i>	392	358	1	15%	0%
	<i>Electricity</i>	10	3,730	533	0%	0%
	<i>Manufacturing/Processing</i>	427	22,878	63	16%	2%
	<i>Total</i>	829	26,966	36	31%	2%
Tertiary	<i>Communications</i>	69	37	1	3%	0%
	<i>Services/Utilities</i>	144	1,956	17	6%	0%
	<i>Tourism</i>	156	75,182	519	6%	7%
	<i>Transport</i>	20	275	14	1%	0%
	<i>Wholesale/Trade</i>	121	107	1	5%	0%
	<i>Total</i>	520	77,557	163	20%	7%
Quaternary	<i>Education</i>	2	5	2	0%	0%
TOTAL		2,642	1,099,534	467	100%	100%

Table 3: Overview of Investment Projects by Investor Type

Investor Type	# Deals	Total Area (ha)	Average Area (ha)	% Total # of all Deals	% Total Area of all Deals
Domestic	1,705 ¹⁴	181,477	117	65%	17%
Joint Venture	140 ¹⁵	123,673	1,048	5%	11%
Foreign	797 ¹⁶	794,383	1,167	30%	72%

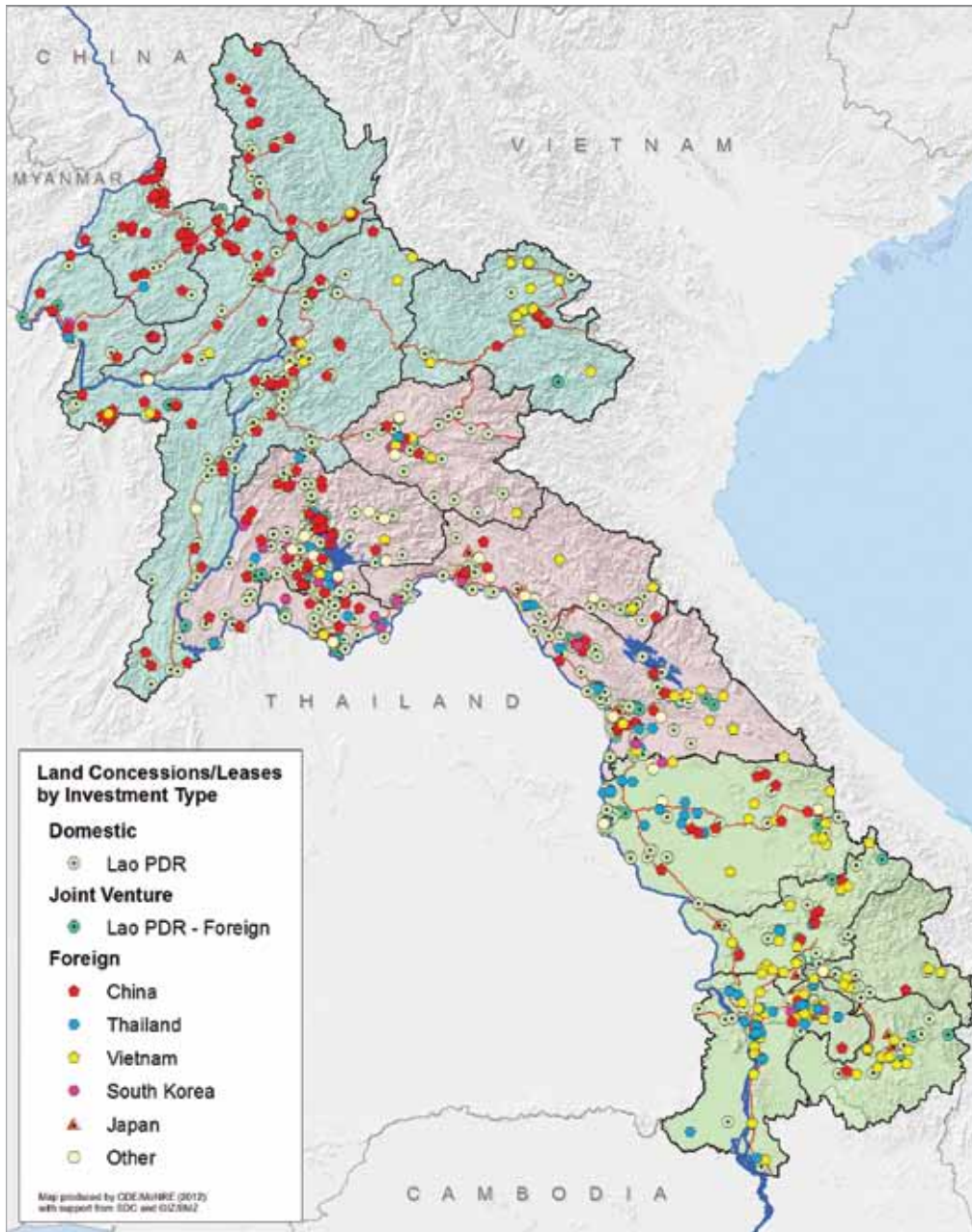
processing (22%) and mining (16%). This emphasises that, especially for foreign investors, Lao PDR is attractive for primary sector investment. This is due not only to the natural wealth of the Lao PDR but also to the fact that restrictions,

regulations and fees for natural resource extraction activities are more favourable to and flexible for investors than in many other resource-rich countries.

¹⁴ Of these, 1,554 have area data and 151 do not (10% of all domestic deals).

¹⁵ Of these, 118 have area data and 22 do not (16% of all joint venture deals).

¹⁶ Of these, 679 have area data and 118 do not (15% of all foreign deals).



The investor countries with the greatest amount of investment (both in terms of number of projects and total area under investment) are the Lao PDR's three largest neighbours: China, Thailand and Vietnam. South Korean and Japanese investment have also been growing rapidly in recent years. The dominance of Chinese, Thai and Vietnamese investment is hardly surprising considering that these countries share expansive land borders with the Lao PDR and are undergoing economic expansion which has generated significant demand for natural resources. These three countries thus also dominate most other related trade statistics (e.g. investment in terms of budget, export destinations and principal import sources).

China is the largest and fastest growing economy in the region, with particularly high demand for raw materials. Thus

its investment in land in the Lao PDR, especially in the last six years, has grown substantially. China has 299 investment projects; the most of all countries (see Table 4). Still, with just 199,015 ha covered, Chinese projects in sum cover less area than Vietnamese investment, which covers 307,169 ha across only 191 projects. Thailand follows China and Vietnam both in number of land deals and total area, with 127 deals distributed over 73,637 ha.

Joint ventures primarily involve partnerships between domestic investors and investors from the Lao PDR's neighbouring countries, with Thai (43), Chinese (30) and Vietnamese (32) joint ventures totalling areas of 9,086 ha, 62,844 ha and 20,532 ha respectively. Lao-Japan JVs are few but of considerable size with only five projects covering a combined area of 15,747 ha.

Table 4: Overview of Investment Projects by Investor Country of Origin

<i>Investor Country</i>	<i># Deals</i>	<i>Total Area (ha)</i>	<i>Average Area (ha)</i>	<i>% Total # of all Deals</i>	<i>% Total Area of all Deals</i>
<i>China</i>	299	199,015	777	11%	18%
<i>Thailand</i>	127	73,637	701	5%	7%
<i>Vietnam</i>	191	307,169	1,862	7%	28%
<i>Lao PDR</i>	1,705	181,477	117	65%	17%
<i>South Korea</i>	75	27,114	405	3%	2%
<i>Japan</i>	21	29,595	1,480	1%	3%
<i>Other</i>	224	278,787	1,245	8%	25%

2.1.6 - Investment by Region (North, Centre, South) ¹⁷

The Northern, Central and Southern regions of the Lao PDR are significantly different in terms of their socioeconomic contexts, geophysical characteristics and interaction with neighbouring nations. Land deals differ significantly by region as well; Map 3 shows these three main regions.

Central Lao PDR claims the greatest number of investment projects (1,037), though these tend to be smaller, and cover only 345,417 ha. The North, in contrast, contains fewer projects (802), but these tend to be larger, covering 406,603 ha – significantly more than the total area granted in the Central Region. Similarly, the South contains 757 projects covering 314,065 ha (see Table 5).

Given their relative proximities, it is not surprising that most projects in the North are under Chinese investment while Thai and Vietnamese deals are found largely in the South. It should be noted, however, that still 40% of Chinese investment is located in the Centre and to a lesser extent the South. Vietnamese and Thai companies have a weaker presence in the North, by contrast, but are hardly absent. Domestic projects are fairly evenly distributed across all three regions, with a slightly higher amount of investment in the Centre, especially in Vientiane Province. This prevalence of domestic projects likely explains the lower average size of land deals in this region.

Table 5: Overview of Investment Projects by Region

<i>Region</i>	<i>Total Area and % of Lao PDR</i>	<i># Deals</i>	<i>Total Area Deals (ha)</i>	<i>% Total # of all Deals</i>	<i>% Total Area of all Deals</i>
<i>North</i>	9,683,033/42%	802	406,603	31%	38%
<i>Centre</i>	6,911,340/30%	1,037	345,417	40%	32%
<i>South</i>	6,450,855/28%	757	314,065	29%	30%
TOTAL	23,045,228/100%	2,596 ¹⁸	1,066,085	100%	100%

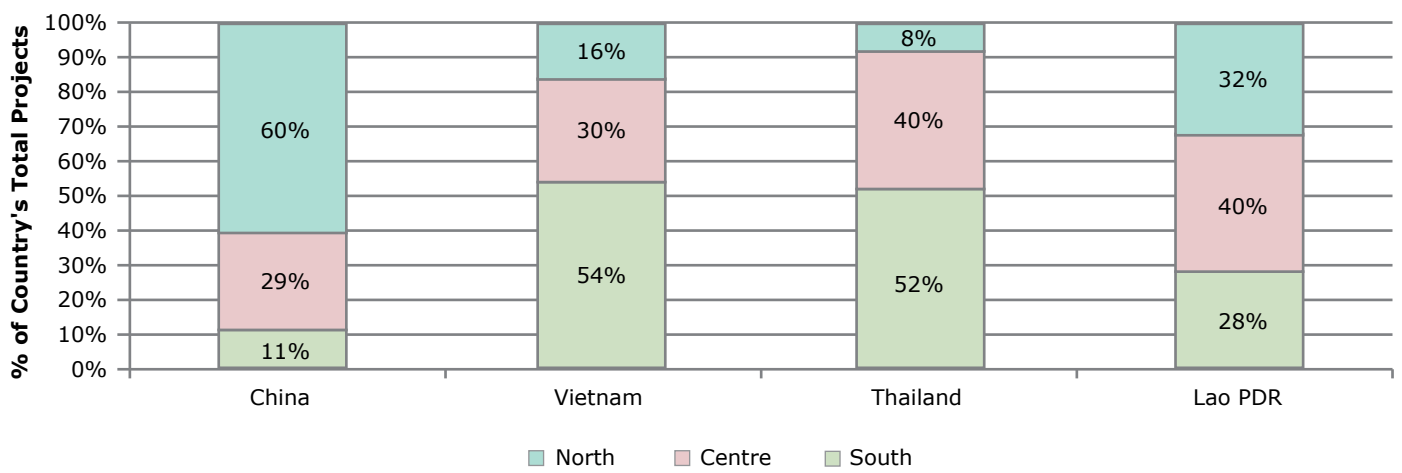
¹⁷ Northern Region: Phongsaly, Luangnamtha, Bokeo, Oudomxay, Luangprabang, Huaphanh, Xayabury; Central Region: Xiengkhuang, Vientiane, Vientiane Capital City, Borikhamxay, Khammuane; Southern Region: Savannakhet, Saravane, Sekong, Champasack, Attapeu.

¹⁸ Due to limitations in data collection, 46 of the projects did not have regional data associated with them.

Map 3: Three Main Geographic Regions of the Lao PDR



Figure 3: Main Investor Countries of Origin by Region

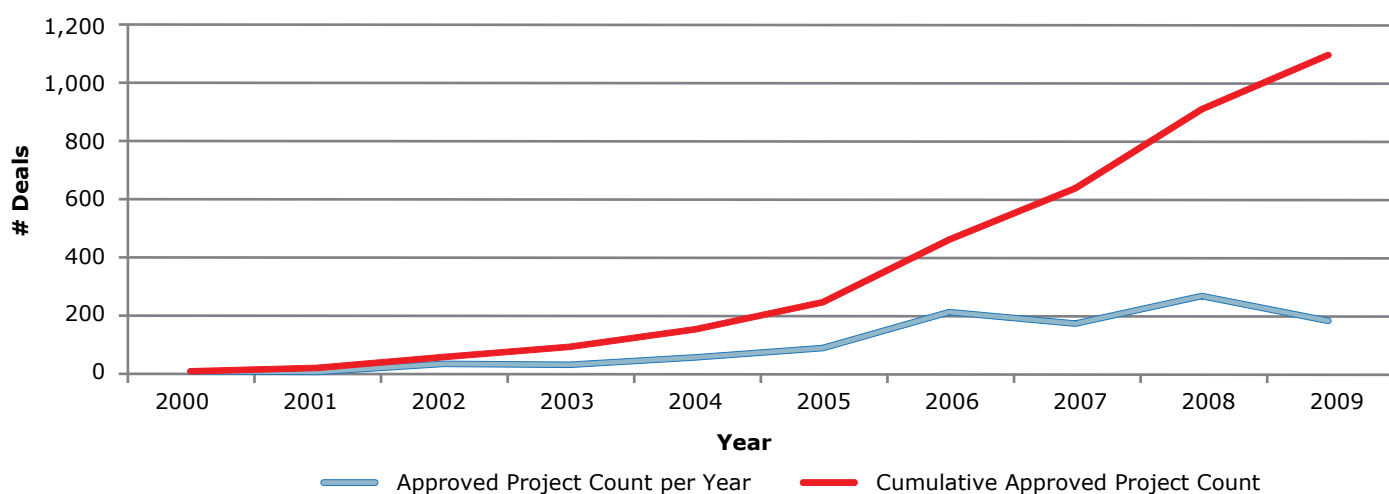


2.1.7 - Trends in Approvals over Time

Out of all projects within the inventory, the data collection team was able to obtain some type of project documentation with information on dates of approval, including contracts, written legal agreements and MOUs, for 1,100 projects. Since the year 2000, but especially since 2005, there has been a very steep increase in land deals (see Figure 4). **The number of projects granted increased by a factor of 50 in less than ten years.** The slight decrease in approved projects between 2007 and 2008 may be related to the national concession moratorium announced by the prime minister in May 2007.

The decrease in 2009 is probably not related to an actual decrease in overall approvals, but rather to the fact that the data collection for this project began in 2009, and thus an incomplete sample for 2009 and 2010 may have been gathered. The inventory data presented here mirrors investment trends as presented in Policy Brief 01/2010 developed by the Poverty-Environment Initiative (with the UNDP, UNEP and MPI). The document states that, "in 2009 alone, 208 projects were approved and implemented, valued at approximately USD 4.3 billion of FDI" (PEI, 2010).

Figure 4: Increase in Investment Projects since 2000



2.1.8 - Implementation Status

Of all projects included in the inventory, 2,027 (77%) were operational as of the end of 2010. Those projects cover 717,896 ha, or 65% of all land under investment. This does not mean that all those projects were fully implemented at that time, but rather that they had initiated activities in one way or another. It is still notable that more than three quarters of investors had launched activities at the time of data collection, as this contradicts concerns and findings in many other parts of the world that land deals are often purely speculative in nature (Anseeuw et al., 2012). Still, cases of investors exploiting granted land solely for clear-cut logging instead of

carrying out proposed investment activities, as confirmed by the inventory team, are abundant throughout the Lao PDR. Another 3% of all projects were in their initial phase of surveying or performing feasibility studies. 15% of all projects approved (meaning they had already reached an agreement with the appropriate parties regarding the area for investment and had signed a contract or MOU) were not operational at the time of surveying. Though representing 15% of all deals, these non-operational projects covered a significant 338,226 ha of land, or 31% of the total area under investment. All other projects have either been cancelled or have finished operations.

2.2 - Investment in the Primary Sector

Investment in the primary sector far exceeds investment in any other sectors, making mining, forestry and agriculture significant across most other characteristics of investment. **Mining is the largest subsector in terms of both area and number of projects (21% of all projects, 50% of total area), with forestry and agriculture less but still significantly sizeable** (see Table 2 and Figure 5).

The distribution of different types of investors across the agriculture, mining and forestry subsectors strays only slightly from overall trends (see Figure 6). While joint ventures have projects spread evenly across all three subsectors, domestic investors hold a large number of small mining projects (413 out of a total 686 domestic primary sector deals), and foreign investors are involved slightly more in forestry than in the other

subsectors (217 out of a total 796 foreign primary sector deals). Of foreign investors, China is particularly focused on tree plantations with 89 projects in the forestry subsector as compared to 69 in mining and 36 in agriculture. Vietnamese projects are more evenly spread between the three subsectors but with a few more forestry projects (50) than agriculture or mining (41 and 32 respectively). On the other hand, Thailand has slightly more projects in agriculture (44) than in forestry (38) and far fewer in mining (9).

Compared to agricultural deals, the average size of forestry projects is considerably larger, thus affecting the size of holdings of different investor countries. Few agricultural projects, excluding very large sugarcane and *Jatropha* projects under Thai and South Korean investment, can

compete in size with the other primary sector projects. **The average size of Chinese and Vietnamese forestry investments are three and four times larger than domestic land deals.** India has only a few forestry investments all by the same company, but these amount to a sizeable 54,178 ha (see Figure 6). This points to the strong access to financial capital and negotiating power investors from these countries often possess.

Mining for zinc/tin (189,900 ha) and copper (86,888 ha), as well as rubber (129,614 ha) and eucalyptus (95,978 ha) cultivation are the most significant products in terms of area in the primary sector. Within each subsector, sugarcane (34,969 ha), livestock (31,494 ha) and *Jatropha* (25,179 ha) cover the greatest areas of all agricultural products, rubber and

Figure 5: Number and Area of Projects by Subsector in the Primary Sector

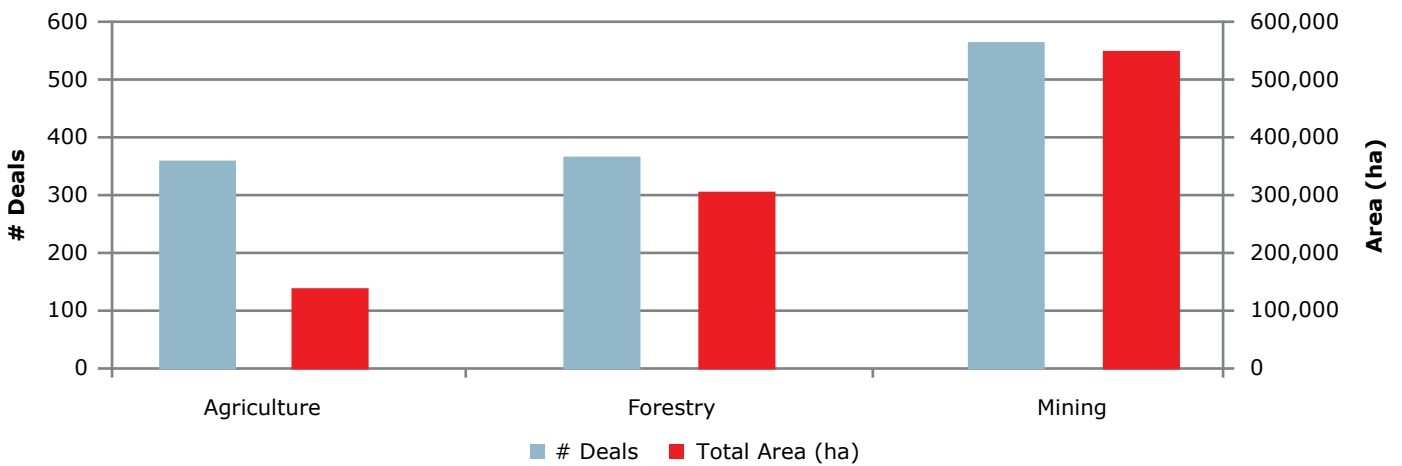
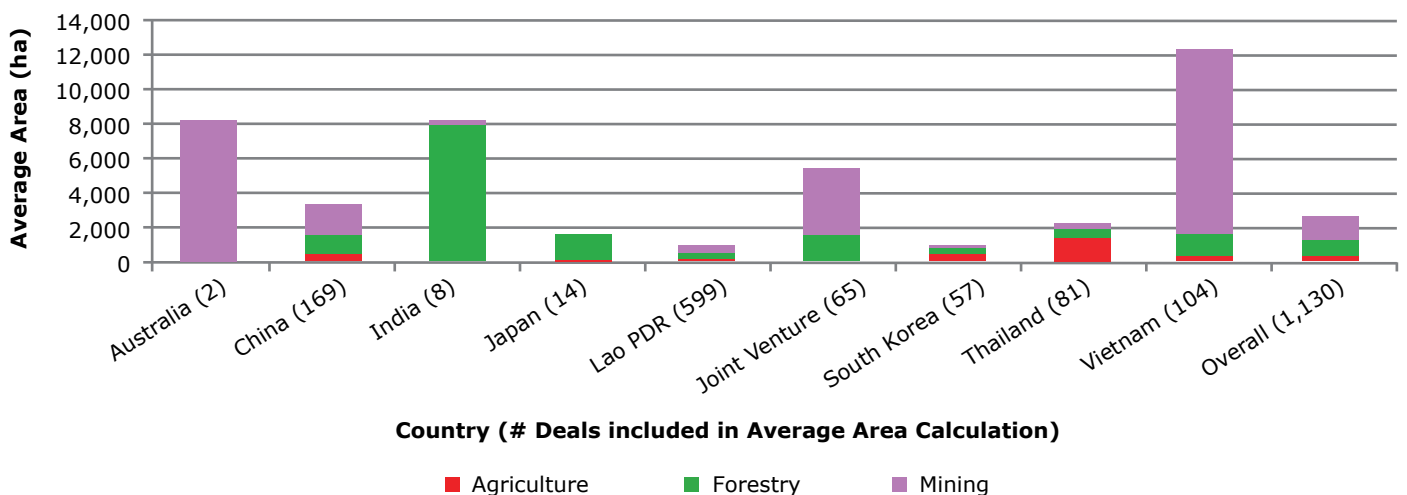


Figure 6: Average Project Area by Investor Country of Origin and Subsector

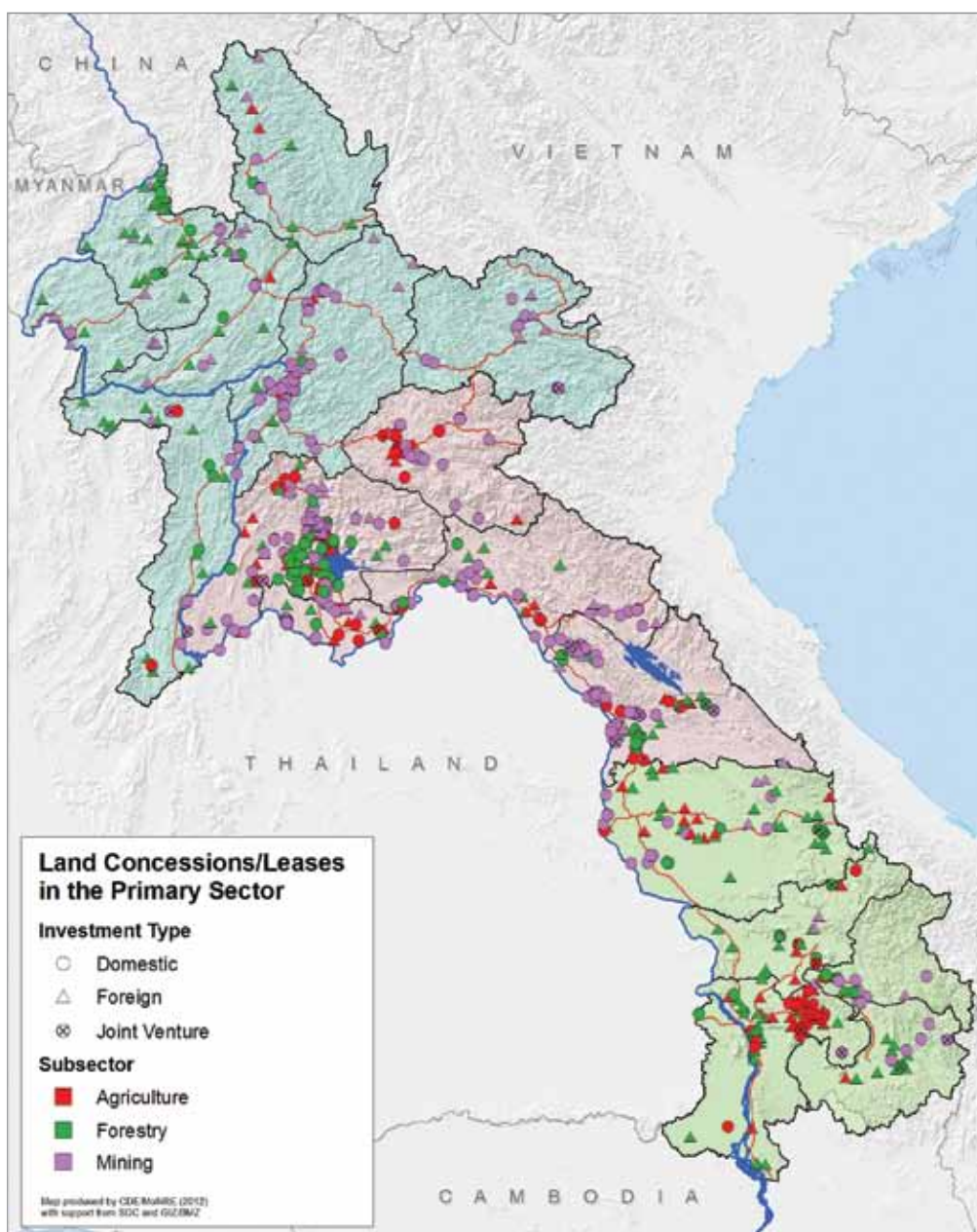


eucalyptus are the main forestry products, and zinc/tin and copper are the dominant mining products by area under investment. Still, the product with the greatest number of projects overall is rubber with 225 projects included in the inventory (see Figure 7).

Likely due to the considerable differences in geography and topography across regions in the Lao PDR, deals in each subsector are very differently distributed across regions (see Figure 8). Few agricultural projects occur in the mountainous North (less than 2% of the total area is under agricultural investment), while the flatter more productive Centre and South host 45% and 53% of all areas granted for agricultural activities. Forestry projects are even more disproportionately located in the South, with 66% of the area under investment

in forestry occurring in the South, and only 10% in the North. This scarcity of forestry deals in the North is partly due to the exclusion of contract farming arrangements from the inventory which in total most probably would dwarf the area of forestry concessions and leases examined here. The Concession Inventory Report on Luangnamtha alone documents 5,949 ha (22 land deals) under concession-like (also referred to as 1+4) contract farming agreements (NLMA, 2009a). Recent evidence also shows that many of the contract farming agreements can indeed be considered “concession-like” land deals in terms of the labour and compensation arrangements used (Shi, 2008; Dwyer, forthcoming). Mining areas are far more numerous in the North (58% of mining deals), and cover only a small area in the South (6% of mining areas).

Map 4: Investment Project Locations by Subsector in the Primary Sector



Considering the substantial amount of land already granted to investors in these three subsectors and their resulting importance in determining overall economic development, the future demand both domestically and abroad for the Lao PDR's forestry, agriculture and mining resources should receive especially critical monitoring and management.

Figure 7: Main Products by Subsector in the Primary Sector

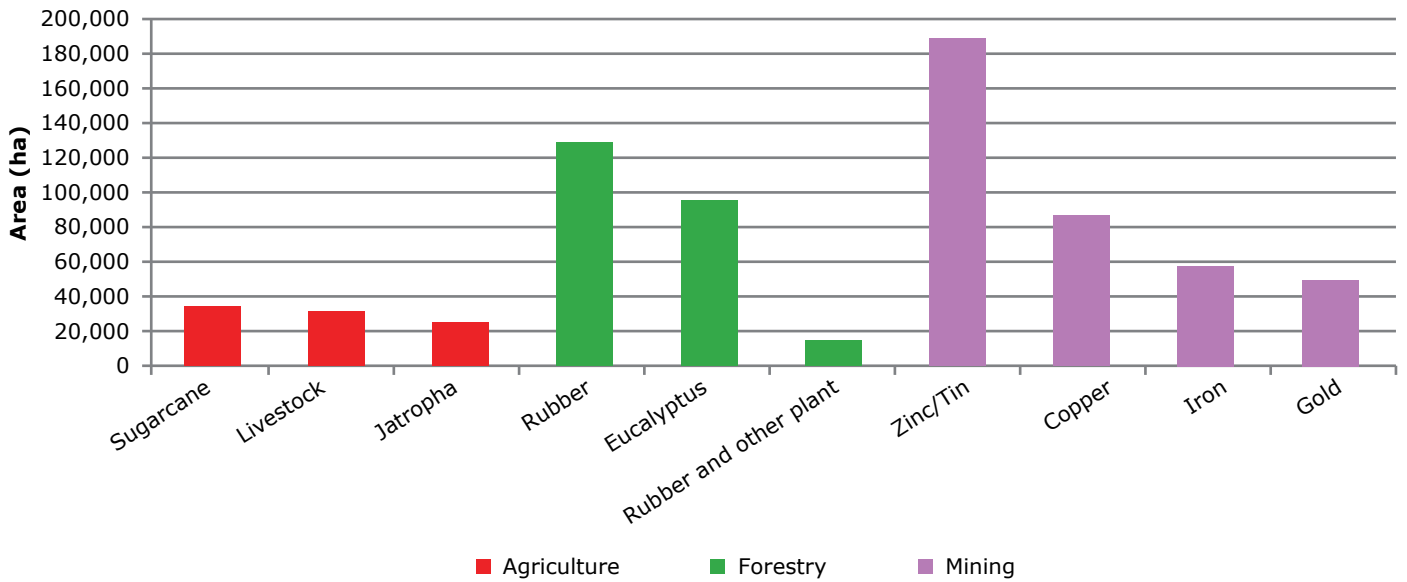
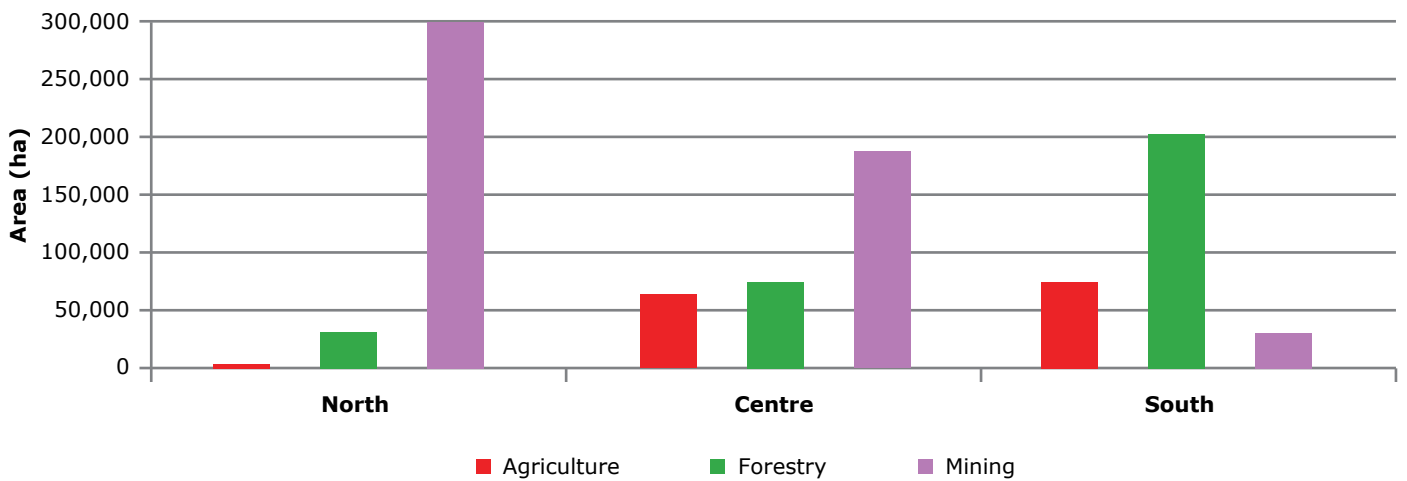


Figure 8: Area per Region by Subsectors in the Primary Sector



2.2.1 - Investment in the Agricultural Subsector

The agriculture subsector is the fifth largest in terms of number of investment projects and the third largest in terms of area. It consists of 360 agricultural investment projects, constituting 14% of all projects. They cover an area of 140,015 ha, which is approximately 13% of the total area under investment. Within the primary sector, investment in agriculture accounts for 28% of all projects and 14% of the total area under investment. The majority (88%) of all agricultural land deals are concession agreements. Lease agreements are fewer, and cover less than one per cent of the total area rented out for activities in the agricultural subsector.

Of all projects within the agriculture subsector, coffee is the most common (59) followed by livestock (58) and Jatropha (49) (see Table 6). Despite the high number of coffee cultivation projects, most of which (95%) are found in Champasack Province, the overall area of 19,105 ha under coffee cultivation is modest (see Table 6). In terms of area, the three main products are sugarcane (34,969 ha), livestock (31,494 ha) and Jatropha (25,179 ha), which combined make up 66% of all agricultural concession areas. This limited range of crops can be considered a certain risk for the agriculture sector in the Lao PDR as dependency on the international market and respective price fluctuations of these few products influences such a large share of all agriculture land deals.

While a significant number of deals were granted for Jatropha production, over half were cancelled or not operational at the time of data collection. This is likely related to the fact that

Jatropha's potential as a biofuel was at one point widely championed until its profitability proved low and the crop fell out of favour with investors globally. Jatropha projects also came under critical focus when a number of areas granted for its production were publicized as having been densely forested before being logged for Jatropha production (NLMA, 2009b). Sugarcane is almost completely under Thai investment, which accounts for nine of the ten sugarcane projects, eight of which are located in the South of the Lao PDR near the Thai border (see Map 6). While the majority of farmers in the Lao PDR are engaged in small-scale rice production, land investment for commercial rice production is fairly low, likely due to a lack of competitive advantage in industrial rice production compared to its neighbouring countries.

Over half of the investment projects in agriculture are under FDI, while 40% are domestic and only a fraction are joint ventures (see Map 6). Still, a similar pattern emerges as in overall investments: foreign investment in the agriculture subsector is larger than domestic in terms of area by a factor of four and claims almost 80% of the entire area under agricultural investment in the Lao PDR.

Table 6: Overview of Agriculture Subsector Projects by Product

Product	# Deals	Total Area (ha)	Average Area (ha)	% of All Agriculture Deals	% of Total Area under Agriculture Investment
Sugarcane	10	34,969	3,885	3%	25%
Livestock	58	31,494	573	16%	23%
Jatropha	49	25,179	547	14%	18%
Coffee	59	19,105	347	16%	14%
Cassava	34	14,747	567	9%	11%
Fruits & Vegetables	31	1,956	85	9%	1%
Rice	12	2,273	207	3%	2%
Other	107	10,293	96	30%	7%
TOTAL	360 ¹⁹	140,015	453	100%	100%

¹⁹ 309 of the 360 agriculture deals have area data (86% of all agriculture deals).

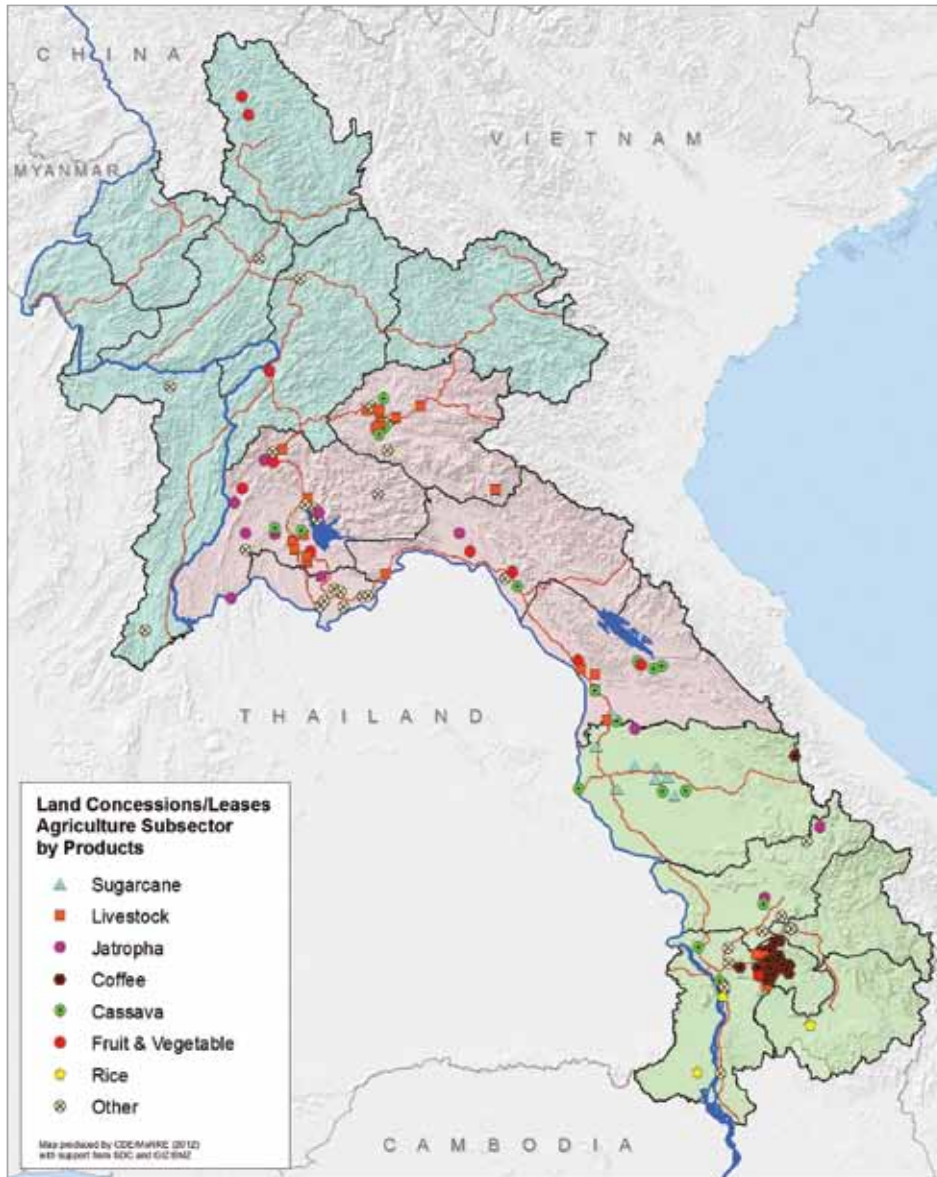
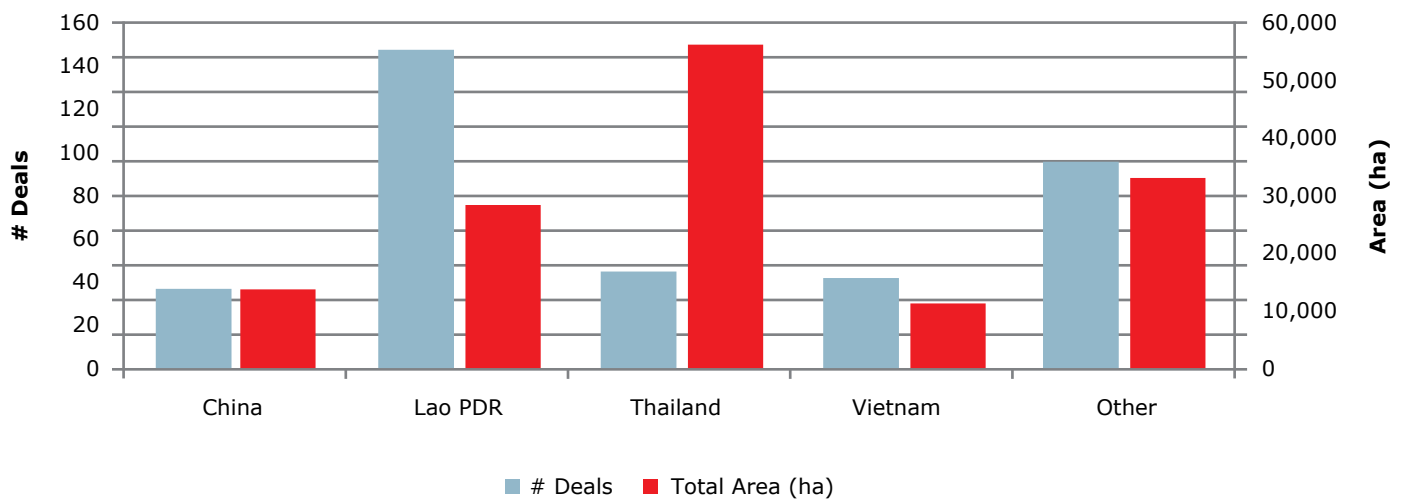


Figure 9: Number and Area of Projects by Main Investor Countries of Origin in the Agriculture Subsector



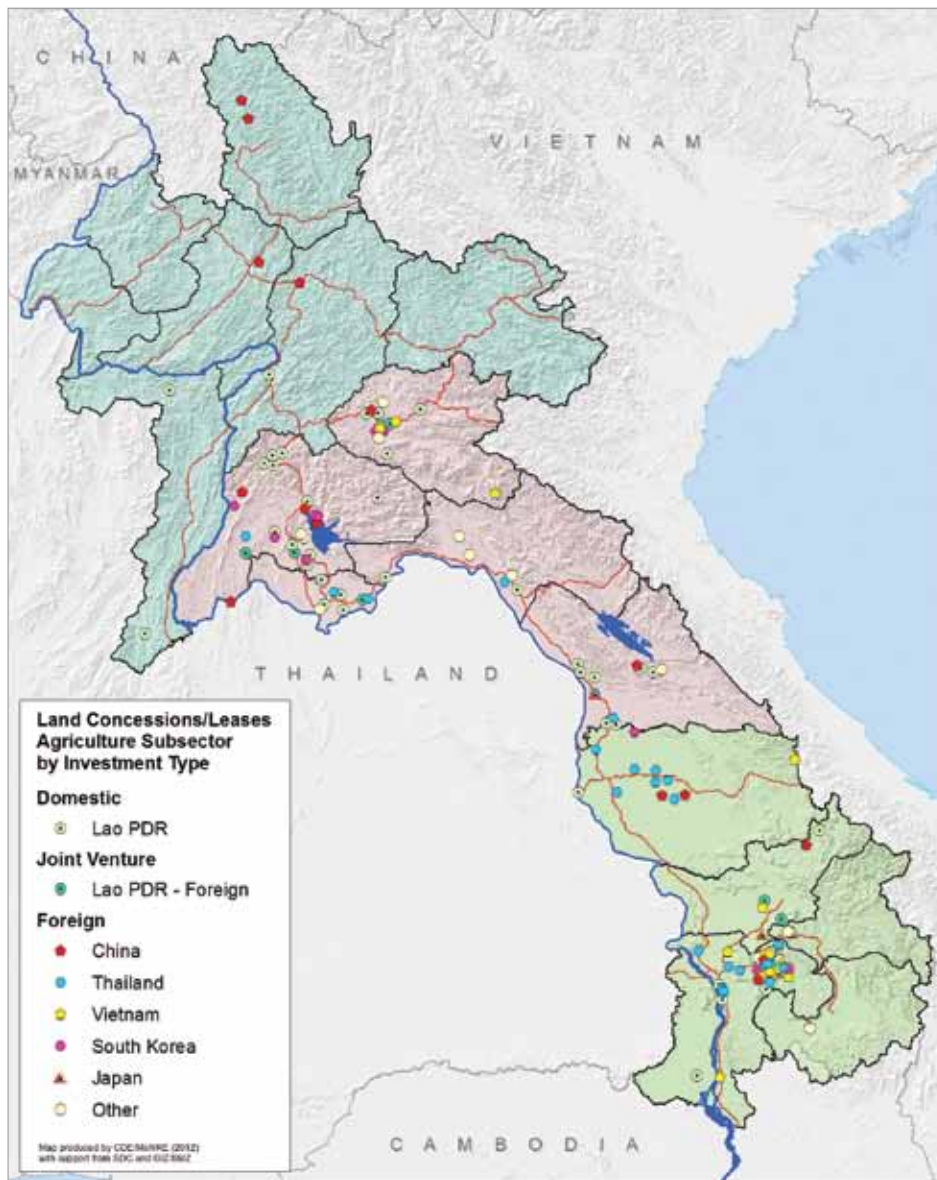


Figure 10: Main Products in the Agriculture Subsector by Region

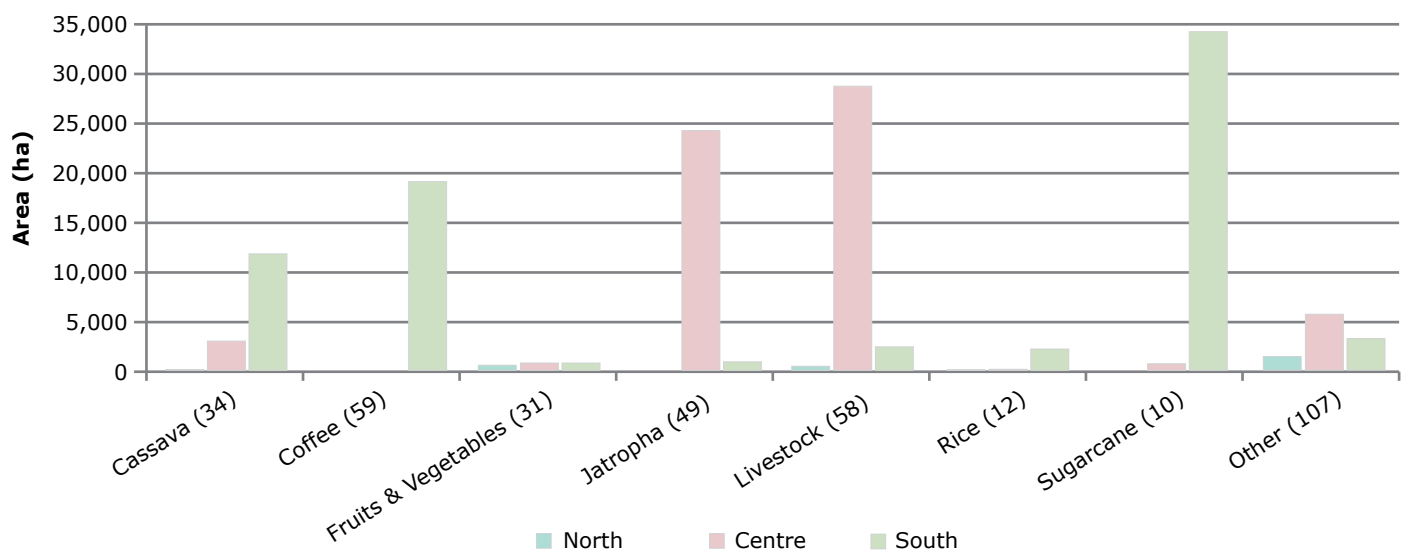


Table 7: Overview of Agriculture Subsector Projects by Investor Country of Origin

Country	# Deals	Total Area (ha)	Average Area (ha)	% of All Agriculture Deals	% of Total Area under Agriculture Investment
<i>Thailand</i>	44	55,247	1,417	12%	40%
<i>Vietnam</i>	41	11,021	324	11%	8%
<i>South Korea</i>	37	21,941	593	10%	16%
<i>China</i>	36	13,451	463	10%	10%
<i>Lao PDR</i>	145	27,836	226	40%	20%
<i>Other</i>	57	10,520	224	16%	8%
TOTAL	360 ²⁰	140,015	453	100%	100%

Of all foreign investor countries, **Thailand leads in the agriculture sector with 44 projects, ahead of Vietnam (41), South Korea (37) and China (36)** (see Table 7 and Figure 9). Thailand also holds the largest total area under agricultural investment with 55,247 ha, followed by South Korea (21,941 ha), China (13,451 ha) and Vietnam (11,021 ha). Thai investment centres on sugarcane (covering 34,969 ha), as well as livestock and coffee (10,456 ha and 5,621 ha respectively). The majority of Vietnamese agricultural investment projects cultivate coffee with 19 deals covering 6,129 ha, and while Chinese investment involves a greater variety of products, cassava projects cover by far the largest area under Chinese agricultural investment with 10,091 ha across only five projects.

Because Thailand currently invests in more land-intensive agricultural products, namely sugarcane and livestock, its average project size (1,417 ha) is far larger in the agriculture subsector than other countries (see Table 7). Holding 60% of all investment in Jatropha, South Korea's average agricultural project size is also fairly high (593 ha). Domestic investment in agriculture is primarily in livestock, but just as in the

wider trend across all subsectors, domestic deals cover very small average areas of land. The rest of the countries investing in land for agricultural activities in the Lao PDR represent only 16% of all deals in this subsector and only 8% of land under agricultural investment.

Most agricultural projects are located either in Central Lao PDR (Jatropha and livestock) or the South (coffee and sugarcane), and far fewer are found in the North (see Figure 10). Only 12% of all agricultural projects are located in the North, reflective of the country's geography but also skewed by the exclusion of land agreements outside of concessions and leases (e.g. contract farming). Both coffee and sugarcane projects (with one exception) are found solely in the South, while livestock raising and Jatropha plantations make up a significant portion of projects and area rented out to the agriculture subsector in the Central region. There is a remarkable clustering of investment of a diverse range of crops around the Bolaven plateau, much of it coffee as the ecological and climatic conditions there are highly suited to coffee production.

2.2.2 - Investment in the Forestry Subsector

Forestry is the fourth largest subsector in terms of project count and second largest by area and consists of a range of tree plantations, mostly under monoculture production of cash crop trees. The inventory contains 367 tree plantation projects, constituting 14% of the total number of investment projects. They cover an area of 306,234 ha, which is approximately 28% of the total area under investment. Within the primary sector, investment in tree plantations accounts for 28% of all projects and 31% of the total area. The vast majority (96%) of all tree plantation investments in the inventory are concession agreements. Lease agreements cover less than 500 ha (under one per cent of the total area rented out for activities in this subsector).

Of all products within the forestry subsector, rubber plantations are the most common (225 land deals) followed by eucalyptus (49) and a range of mixed tree plantations, such as rubber and teak or rubber and acacia (23) (see Map 7 and Figure 11). In terms of area, the three main products are again rubber and eucalyptus, covering 129,614 ha and 95,978 ha respectively, followed by acacia with 39,971 ha (see Table 8). The area covered by just those three products, including the area under mixed plantations, constitutes 92% of the whole area within this subsector. The largest investors in eucalyptus, unlike those dominant across all other subsectors, are India and Japan. Even among joint ventures, Lao-Japan joint

²⁰ 309 of the 360 agriculture deals have area data (86% of all agriculture deals).

ventures in eucalyptus are the largest. Similar to the agriculture subsector, the dominance of very few products (rubber and eucalyptus make up almost three quarters of the area of all forestry concessions) can lead to a considerable dependency on global markets. This is especially relevant with rubber, which is a highly globalized product with price fluctuations closely linked to oil prices. In terms of average area, the five investment deals in acacia average an astounding 7,994 ha (two Chinese acacia projects included in this average are both nearly 20,000 ha in size), followed by eucalyptus and rubber deals which are on average 2,042 ha and 609 ha in size respectively (see Table 8). Eucalyptus is typically planted on flat areas, which allows for large-scale planting, whereas rubber can be grown also on sloping land limiting the size of individual plots.

59% of land deals in the forestry subsector are under foreign investment and 35% domestic investment, with only 6% joint ventures (see Map 8). In terms of area, foreign investment covers the most land, constituting 79% of areas under forestry investment, domestic only 11%, and JV 10% of the overall area devoted to forestry projects.

Of all foreign investor countries, China leads in the forestry sector with 86 projects, ahead of Vietnam (50), Thailand (38) and South Korea (16) (see Figure 12 and Table 9). In terms of area under investment, China also has the largest total area (86,861 ha), followed by Vietnam (62,840 ha), India with just seven concessions but whose total area comes to a sizeable 54,178 ha and Thai Investment only covers an area of 19,324 ha.

The area under Vietnamese investment in rubber is far larger than rubber areas under any other investor, although a high volume of Chinese investment in rubber exists under land arrangements outside of concessions and leases, and is therefore (as mentioned above) not included here. Chinese investors are the dominant investors in rubber in the North, attributable to the ease of transport of raw rubber from the North to purchasers and processing plants in Chinese Xishuangbanna (the region bordering Northern Lao PDR). Chinese rubber investment projects are also only 341 ha on average, whereas Vietnamese rubber investments average 1,477 ha in size (see Table 9).

Most forestry projects are located in Central Lao PDR (49%) and the South (32%), while far fewer are found in the North (19%) (see Figure 14 and Map 8). Area-wise, only 10% of forestry investment projects occur in the North, most of them under Chinese and domestic investment. 66% of the total area under investment in forestry is in the South, including most of all Thai tree plantations and the majority of Vietnamese tree plantations. Of the area under investment in forestry in the South, a large portion is under rubber production as the largest rubber concessions in the country are located in that region. Domestic investment is mainly concentrated in the Central region.



Rubber Plantation, Hinheub District, Vientiane Province

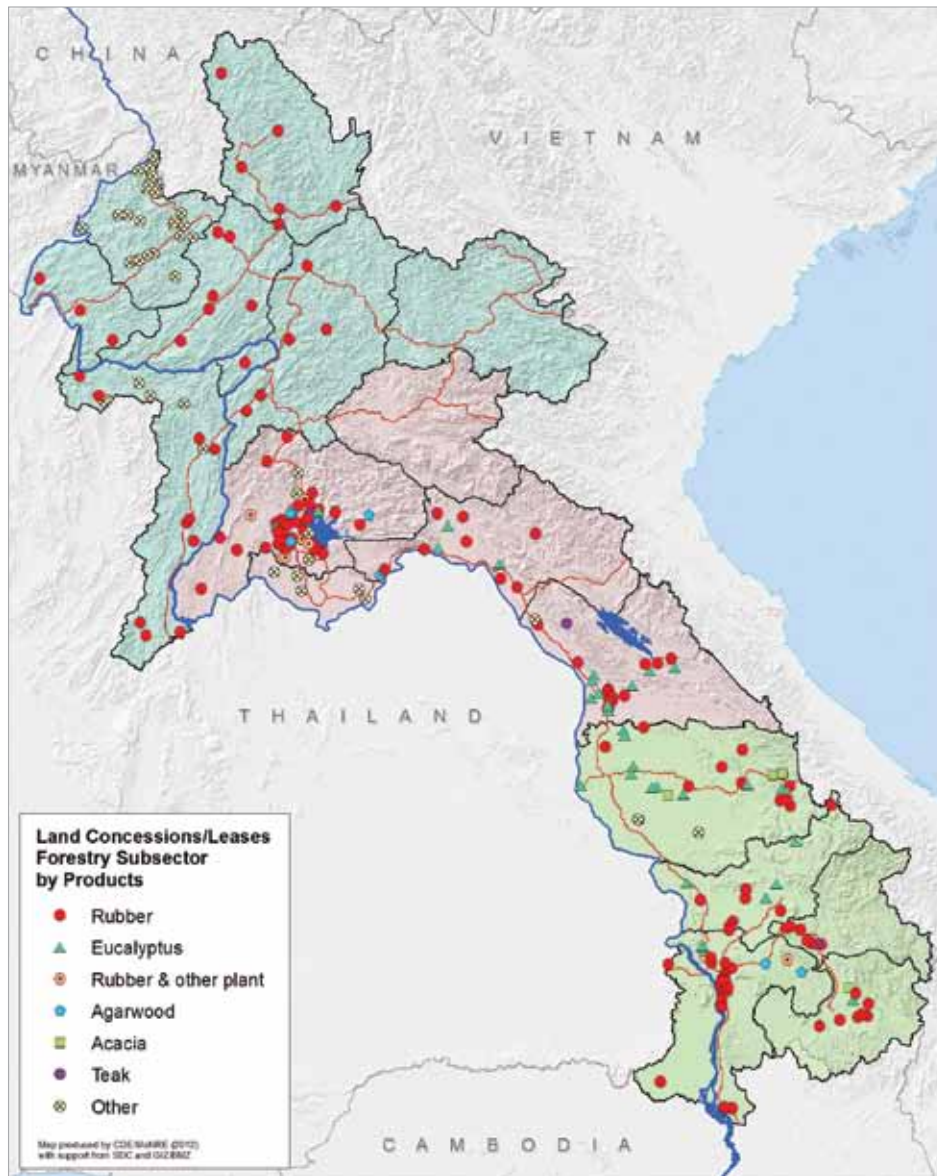


Figure 11: Number and Area of Projects by Main Products in the Forestry Subsector

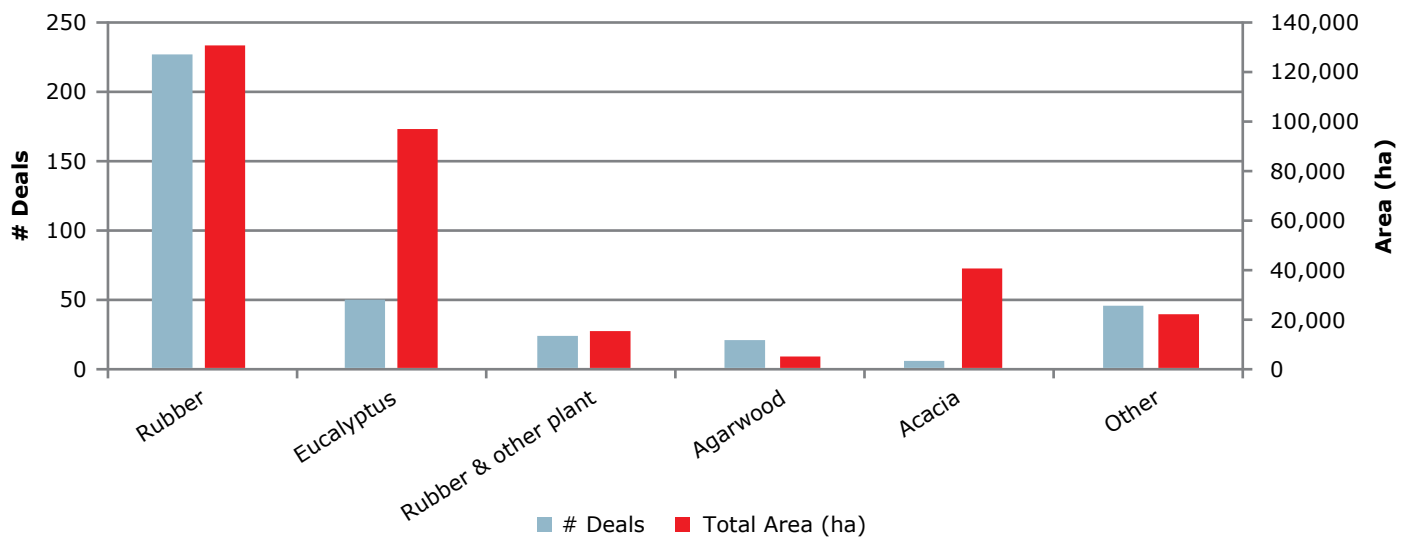


Table 8: Overview of Forestry Subsector Projects by Product

<i>Product</i>	<i># Deals</i>	<i>Total Area (ha)</i>	<i>Average Area (ha)</i>	<i>% of All Forestry Deals</i>	<i>% of Total Area under Forestry Investment</i>
<i>Rubber</i>	225	129,614	609	61%	42%
<i>Eucalyptus</i>	49	95,978	2,042	13%	31%
<i>Rubber & other plant</i>	23	14,839	707	6%	5%
<i>Agarwood</i>	20	4,603	271	5%	2%
<i>Acacia</i>	5	39,971	7,994	1%	13%
<i>Teak</i>	3	398	133	1%	0%
<i>Bamboo</i>	2	25	13	1%	0%
<i>Other</i>	40	20,807	746	11%	7%
TOTAL	367 ²¹	306,234	885	100%	100%

Table 9: Overview of Forestry Subsector Projects by Investor Country of Origin

<i>Country</i>	<i># Deals</i>	<i>Total Area (ha)</i>	<i>Average Area (ha)</i>	<i>% of All Forestry Deals</i>	<i>% of Total Area under Forestry Investment</i>
<i>Lao PDR</i>	128	34,326	286	35%	11%
<i>Join Venture</i>	22	30,228	1,439	6%	10%
<i>Foreign</i>	217	241,679	1,179	59%	79%
<i>Japan</i>	11	13,139	1,312	3%	4%
<i>India</i>	7	54,178	7,740	2%	18%
<i>South Korea</i>	16	3,504	234	4%	1%
<i>Thailand</i>	38	19,324	552	10%	6%
<i>Vietnam</i>	50	62,840	1,337	14%	21%
<i>China</i>	86	86,861	1,034	23%	28%
<i>Other</i>	9	1,833	262	2%	1%
TOTAL	367	306,234	885	100%	100%

²¹ 346 of the 367 forestry deals have area data (94% of all forestry deals).

Figure 12: Number and Area of Projects by Investor Country of Origin in the Forestry Subsector

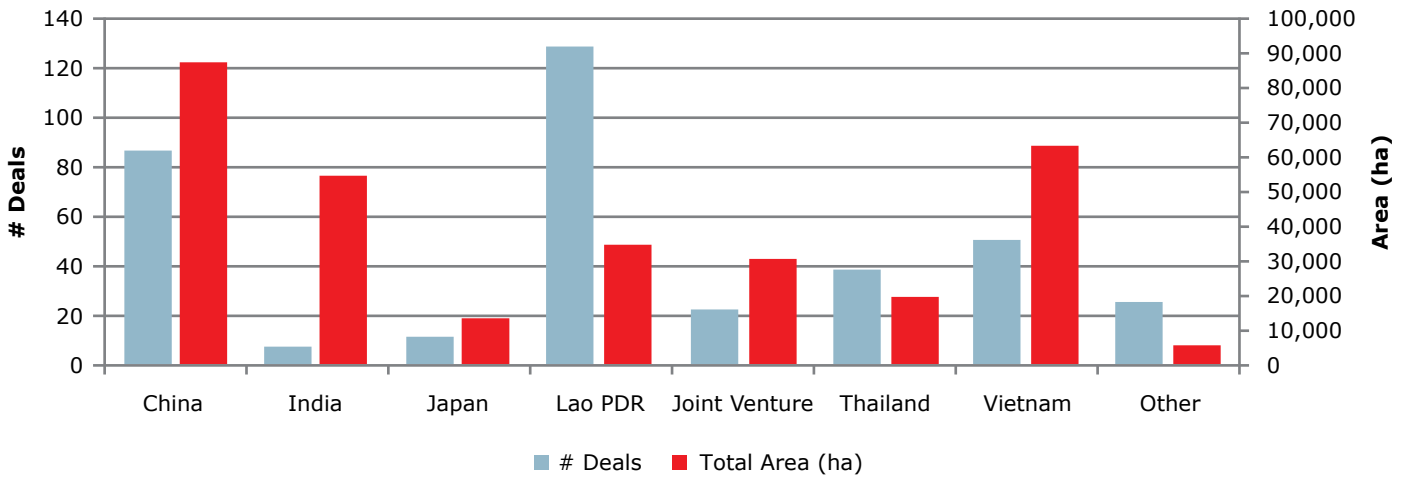


Figure 13: Main Products in the Forestry Subsector by Investor Country of Origin

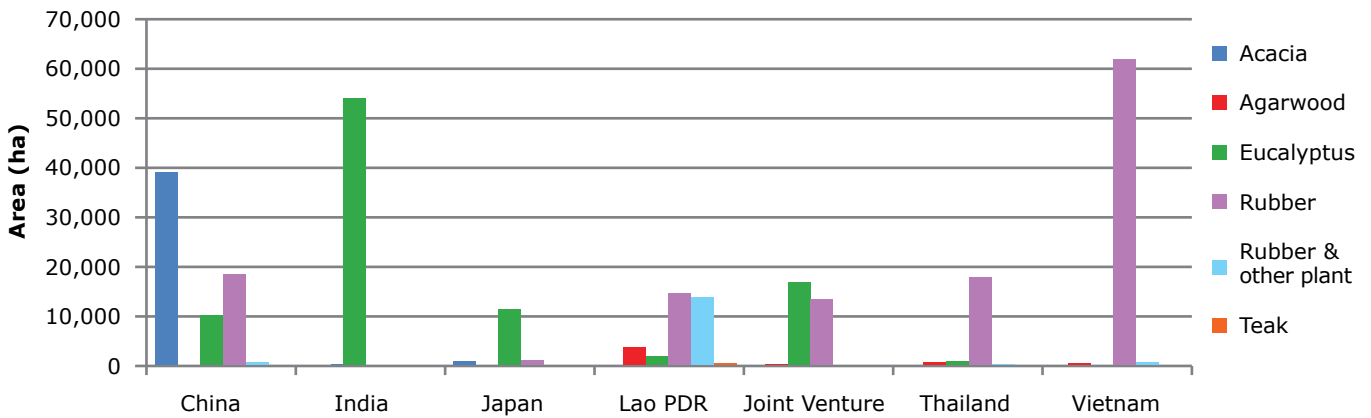
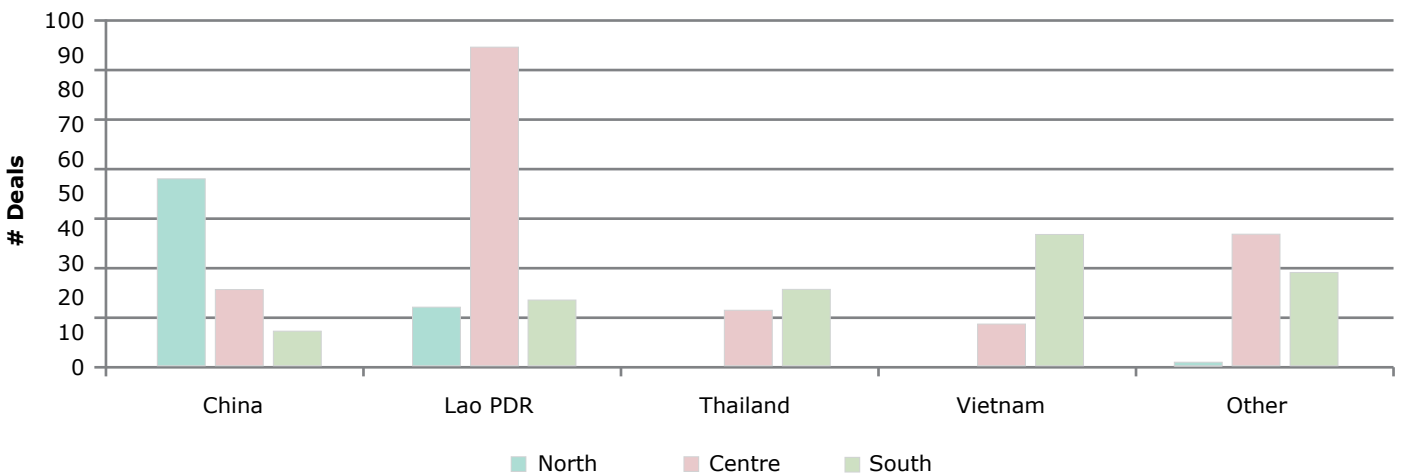
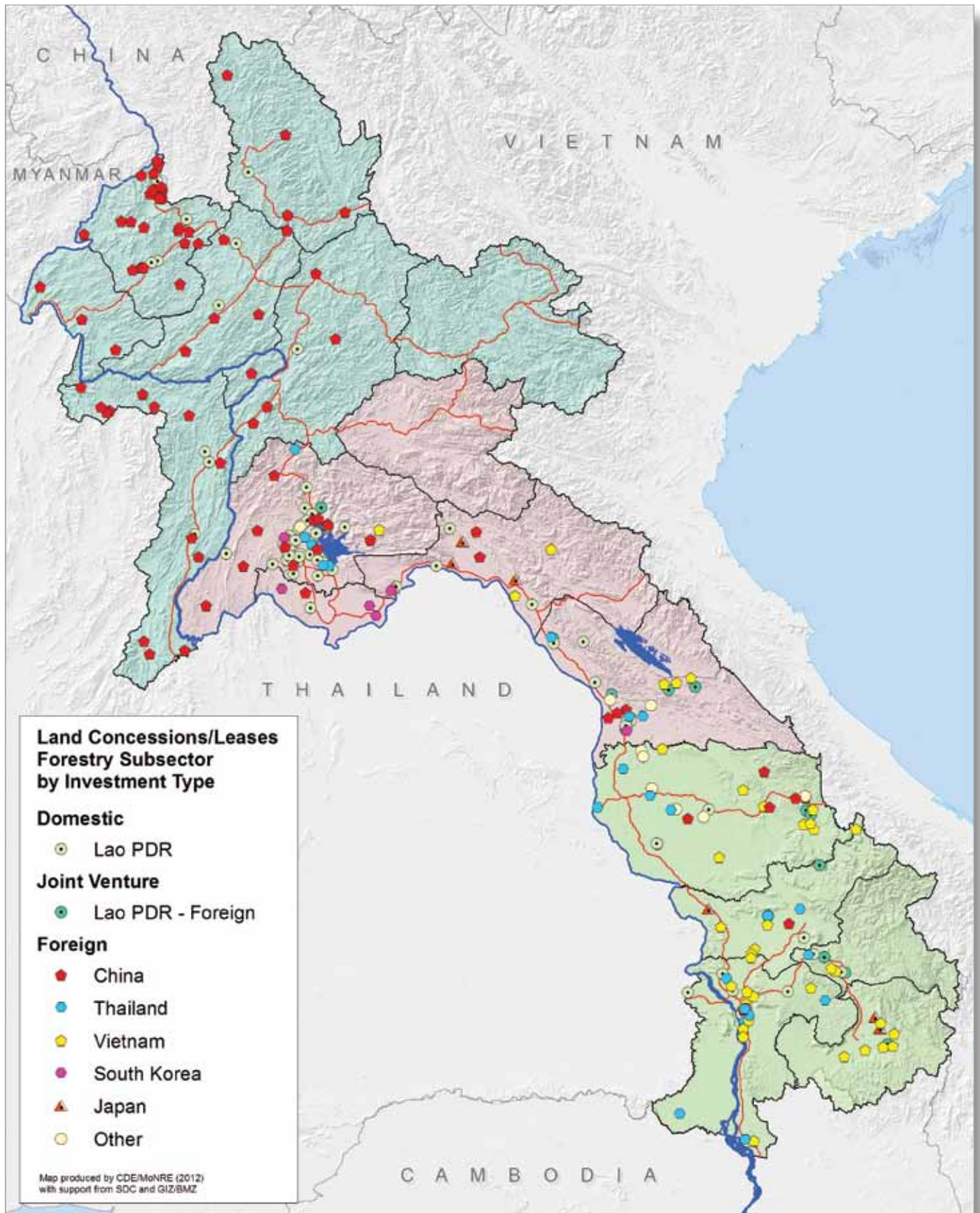


Figure 14: Main Investor Countries of Origin in the Forestry Subsector by Region²²



²² Figure includes only data with region information.

Map 8: Investment Project Locations and Investor Country of Origin in the Forestry Subsector



2.2.3 - Investment in the Mining Subsector – Exploitation

It is the largest subsector in the Lao PDR in terms of both project count and area under investment. The mining subsector contains 564 projects constituting 21% of total projects (Table 10 and Map 9). They cover an area of 548,756 ha, or approximately half of the total area under investment in the Lao PDR. The analysis within this section focuses only on mining concessions for extraction, while mining exploration is discussed in section 2.2.4. Within the primary sector, investment in mining accounts for 44% of all projects and 55% of the total area under investment. The vast majority (95%) of all mining investments are concession agreements, while lease agreements only cover an area of 700 ha.

Mining projects on average are the largest of all subsectors - significantly larger even than forestry or agriculture projects - but their sizes vary significantly at the product level. For example, sand/gravel mining constitutes by far the greatest number of deals of all mining projects (165) but the area covered is barely significant (2,987 ha), whereas just 23 zinc/tin deals cover 189,900 ha (see Figure 15 and Table 10). Of all products within the mining subsector, sand and gravel excavation projects are the most common (165) followed by gravel and stone (106), limestone (54), gold (32) and copper (16). In terms of area, on the other hand, the three main products are zinc/tin with 189,900 ha, followed by copper with 86,888 ha and iron with 57,796 ha²³. The area covered by just those three types of mining projects alone covers 60% of the whole area within the mining subsector. However, analysis of zinc/tin mining projects must take into account the fact that most of the total 189,900 ha derives from only three large concessions²⁴.

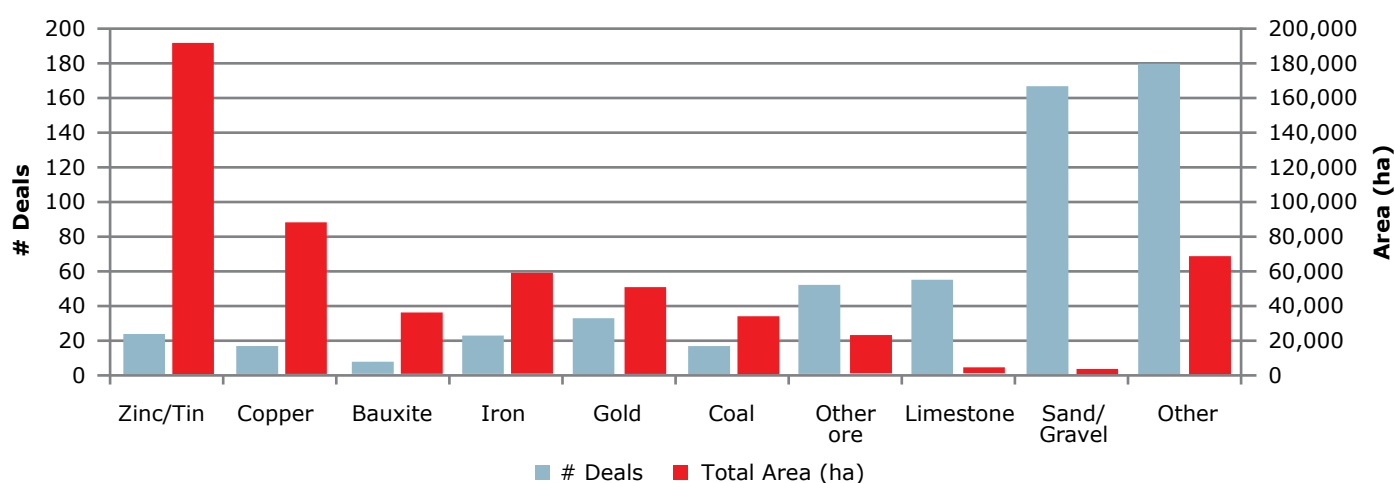
Differences in average project area across mining deals relates to the level of technical expertise and equipment required for related mining activities. While sand/gravel projects can involve fairly small-scale infrastructure and require less sophisticated extractive equipment, mining for more valuable minerals often requires highly sophisticated equipment for

large-scale extraction and therefore larger sized project areas to make those activities both feasible and profitable.

A large number of the land deals in the mining subsector are under domestic investment (73%) with only 23% under foreign investment and 4% under joint ventures (see Map 10 and Table 11). In terms of area, however, the picture looks very different. Foreign investment covers by far the largest area (65%), with domestic projects only 21% and joint ventures 14% of the total area under investment. Still, the average size of a foreign owned mining project is 3,657 ha, roughly the same as a mining project under joint venture management (3,651 ha) but more than ten times larger than the average domestically owned mine (320 ha). This reflects a pattern seen in agriculture and forestry, though the gap in average size between foreign and domestic investment projects is most extreme in the mining subsector (see Table 11). Because of the large investment required, which is most significant for mining products that are more rare or difficult to extract, foreign investors with greater access to capital and expertise are more likely to engage in mining for these products and therefore to invest in larger areas of land.

The biggest foreign investor in mining in the Lao PDR is China with 69 projects, ahead of Vietnam (32) and Thailand (9). Conversely, Vietnam has a larger total area of land under mining investment (232,965 ha) whereas all Chinese mining projects cover only 97,468 ha (see Table 11). However, if excluding Vietnam's three largest investment projects in zinc/tin mining, whose operation status are unconfirmed in the database, the adjusted total area under Vietnamese investment is only around 40,000 ha, far less than China's (see Figure 16). Meanwhile, Thai mines cover an area of not even 1,000 ha, yet joint ventures between domestic and Chinese investors cover an additional area of 57,221 ha and those with Vietnamese investors in mining cover 12,823 ha. Iron and copper are China's main products in the mining sector, which is not surprising

Figure 15: Number and Area of Projects by Main Products in the Mining Subsector



²³ Unfortunately, product information for 178 of mining projects, representing an area of 67,645 ha was unknown.

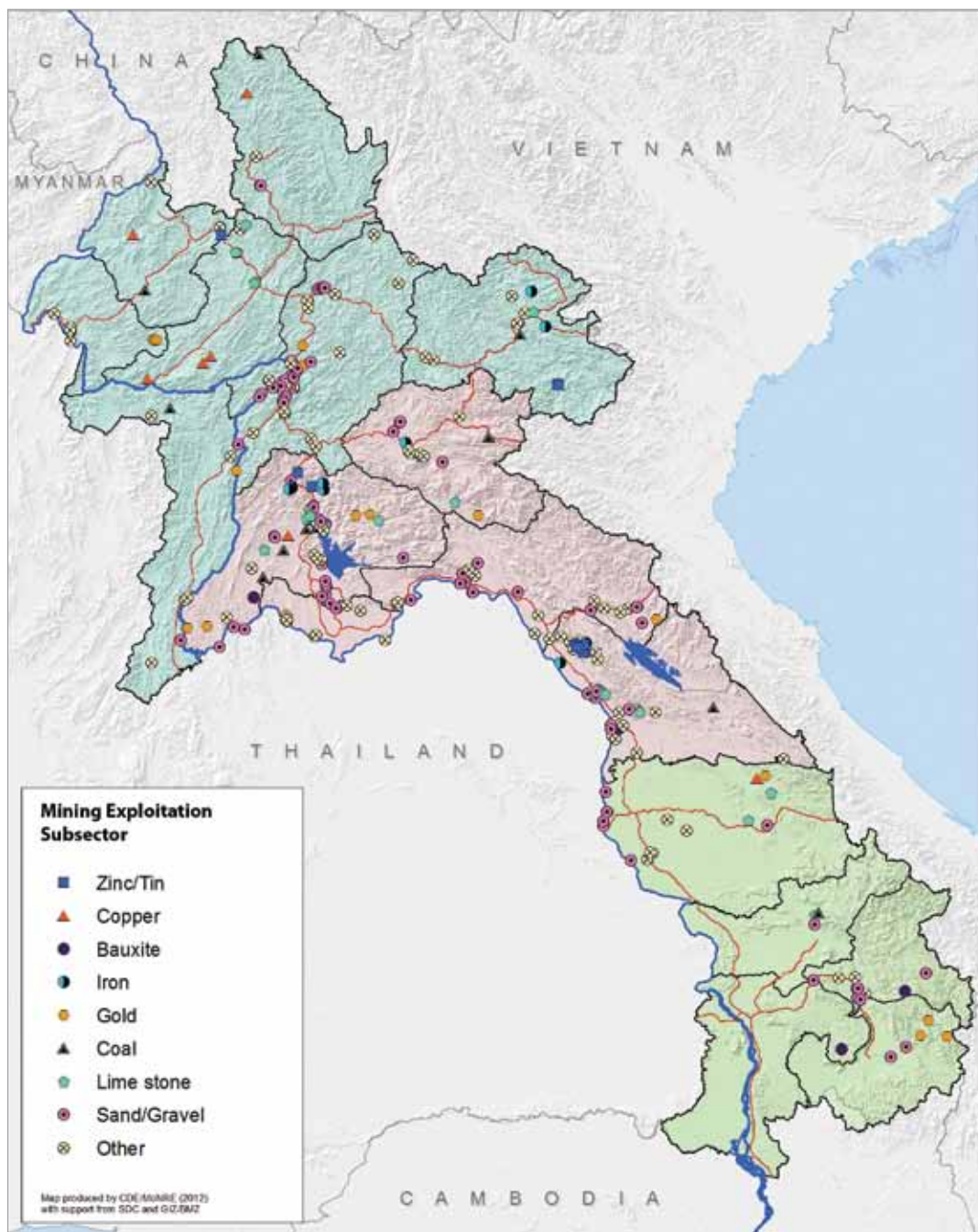
²⁴ At the time of report writing, it cannot be confirmed whether the three projects are under active exploration or not.

as these are key to China's expanding construction, car and electronics industries.

and joint venture based investments are in more remote areas where investment in infrastructure and transport may be greater.

Mining projects are primarily located in the North (51%) and Centre (39%) of the Lao PDR, while a few major projects are found in the Southern provinces (10%). By area, only 6% of areas under mining investment are in the South, 58% in the North and 35% in the Centre. Whereas Chinese mining investments are primarily found in the North and domestic investments tend to focus on the Centre, Vietnamese projects occur almost equally in all three regions. It is striking though logical that most of the small domestic mining investment projects are located along major roads, while the bigger FDI

Map 9: Investment Project Locations and Main Products in the Mining Subsector



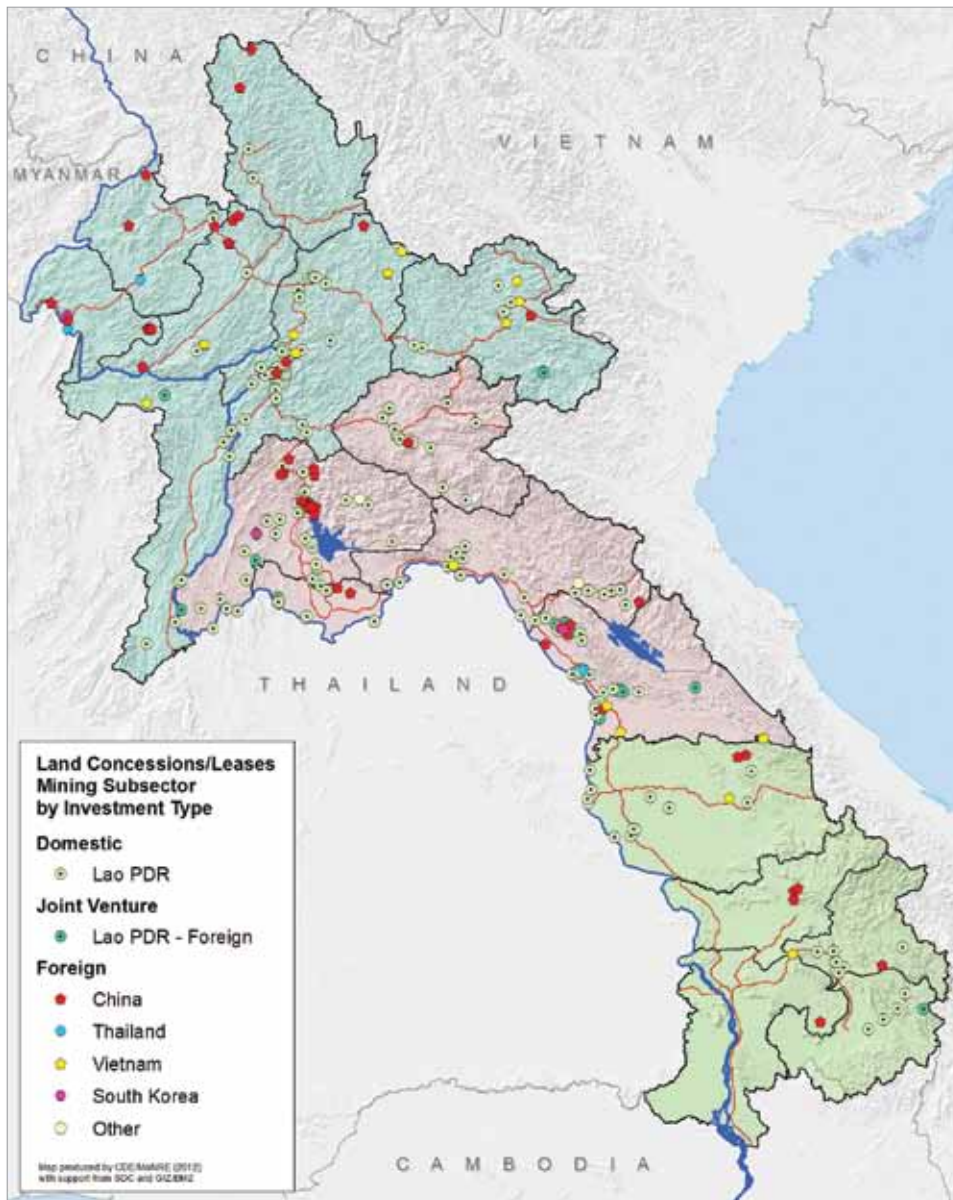


Figure 16: Number and Area of Projects in the Mining Subsector by Investor Type

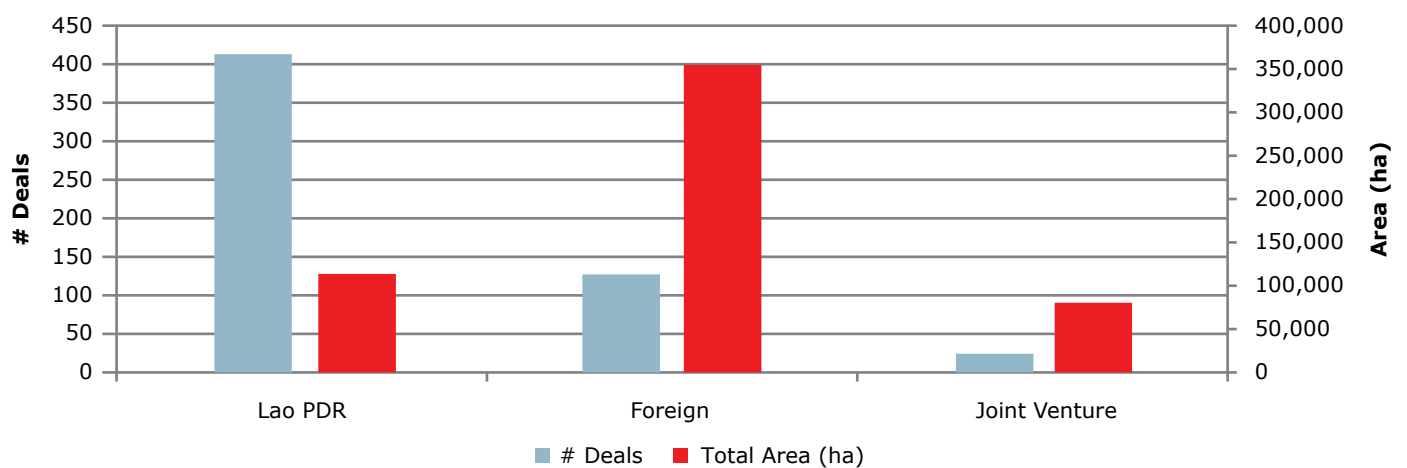


Table 10: Overview of Mining Subsector Projects by Product

<i>Product</i>	<i># Deals</i>	<i>Total Area (ha)</i>	<i>Average Area (ha)</i>	<i>% of All Mining Deals</i>	<i>% of Total Area under Mining Investment</i>
<i>Zinc/Tin</i>	23	189,900	14,608	4%	35%
<i>Copper</i>	16	86,888	9,654	3%	16%
<i>Bauxite</i>	7	35,149	7,030	1%	6%
<i>Iron</i>	22	57,796	4,446	4%	11%
<i>Gold</i>	32	49,806	2,075	6%	9%
<i>Coal</i>	16	33,226	2,373	3%	6%
<i>Other ore</i>	51	21,981	564	9%	4%
<i>Limestone</i>	54	3,377	68	10%	1%
<i>Sand/Gravel</i>	165	2,987	20	29%	1%
<i>Other</i>	178	67,645	431	32%	12%
TOTAL	564	548,756	1,155	100%	100%

Table 11: Overview of Mining Subsector Projects by Investor Country of Origin

<i>Country</i>	<i># Deals</i>	<i>Total Area (ha)</i>	<i>Average Area (ha)</i>	<i>% of All Mining Deals</i>	<i>% of Total Area under Mining Investment</i>
<i>Domestic</i>	413	113,685	319	73%	21%
<i>Joint Venture</i>	24	80,323	3,651	4%	15%
<i>Foreign</i>	127	354,748	2,793	23%	65%
<i>China</i>	69	97,468	1,413	12%	18%
<i>Thailand</i>	9	918	102	2%	0%
<i>Vietnam</i>	32	232,965	7,280	6%	43%
<i>South Korea</i>	6	308	51	1%	0%
<i>Other</i>	11	23,089	2,099	1%	3%
TOTAL	564	548,756	973	100%	100%

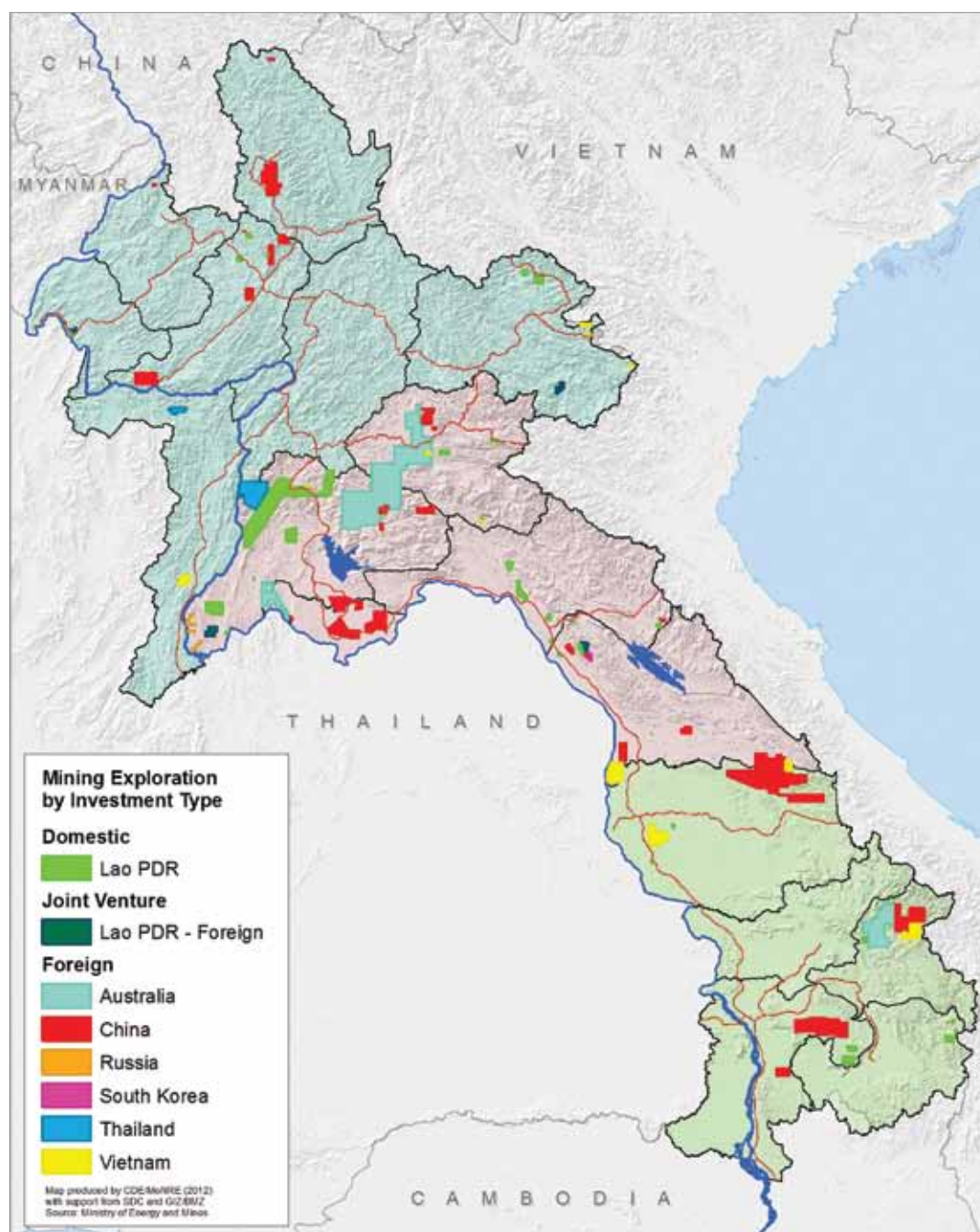
2.2.4 - Investment in the Mining Sector – Exploration

According to data from the Ministry of Energy and Mines (MEM, 2010), there are 111 concessions for mining exploration (and no leases) covering an area of 1,026,873 ha, on which the investors have been granted the right to search for mineral deposits (see Map 11). This amount is almost equal to the entire area of all other land concessions discussed in other sections, and is double the size of mining concessions under exploitation.

Because data on mining exploration is separate from the inventory data, some of the product categories differ from those used in the exploitation section (2.2.3). Across all areas under exploration for mining potential, iron (18 deals), gold (14),

sapphire (13) and copper (12) are the most common minerals which investors are exploring for (see Table 12). In terms of area, copper and gold account for by far the largest exploration area of 373,329 ha, and projects exploring solely for copper cover an additional 108,814 ha. Iron, potash and bauxite follow covering approximately 80,000 ha each, whereas the minerals with the highest average size per land deal are again gold and copper exploration. This is in contrast to exploitation areas, where zinc and tin mines cover the largest area granted and gold only 9%, though copper is one of the most significant products in both exploitation and exploration areas (see Map 12).

Map 11: Investment Project Locations in Mining Exploration ²⁵



²⁵ A number of mining exploration projects were too small to show on this map or are overlapped by larger projects.

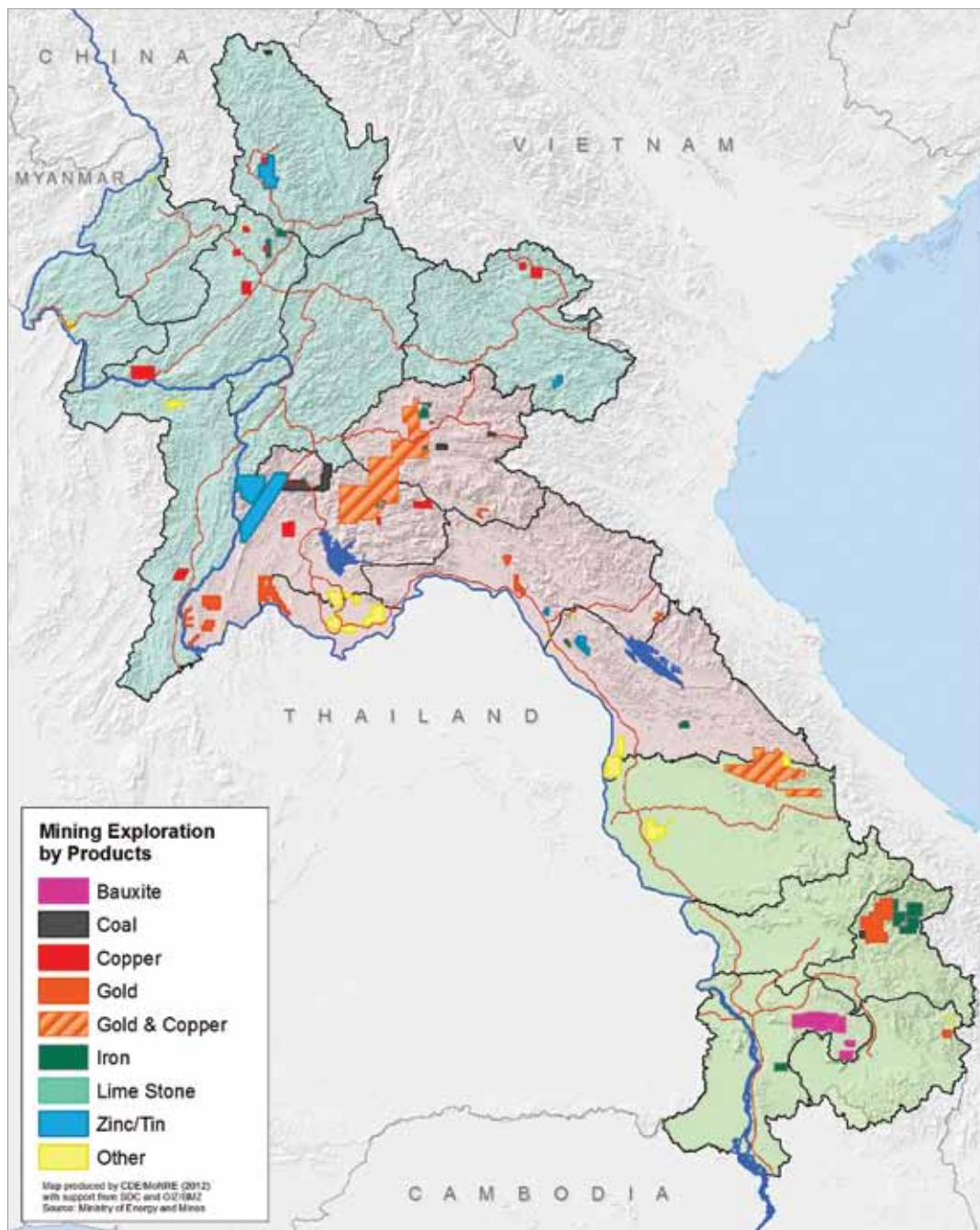
In contrast to exploitation mining projects, foreign exploration sites are only slightly more numerous than domestic ones (56 and 46 projects respectively). Still, in terms of total area, FDI projects cover five times more area than domestic ones (see Table 13). Also, in terms of average size, FDI investment in exploration accounts for approximately four times more land than domestic investment and nine times more than that under JV projects.

This contrasts exploitation projects, where Lao investors hold the largest area for gold mining and joint ventures dominate copper mining. According to the inventory data, Vietnam holds 182,900 ha for zinc and tin mining, but has no land

under exploration for either of these products and is exploring instead primarily for iron, potash and salt. Chinese investors are also actively exploring for bauxite, iron and potash, with smaller but numerous projects exploring for zinc. The most significant products in terms of domestic exploration are coal (42,850 ha) and lead and zinc (72,000 ha), with also 23,300 ha under copper exploration.

With 34 sites and 375,746 ha, China holds the largest area under mining exploration of all foreign investors. Its largest exploration project, is 121,849 ha large and is under exploration for gold, copper and silver, though by project count most Chinese mining exploration is for iron. Meanwhile, China's

Map 12: Investment Project Locations and Main Products in Mining Exploration



mining exploitation projects are primarily extracting iron and copper. In terms of area, Australia follows with 332,900 ha, but that entire area is being explored by just three Australian companies looking for gold and copper, the same two products their exploitation deals are in. Next, the 14 Vietnamese projects cover an area of 73,533 ha and joint ventures of 14,793 ha across nine projects. Vietnamese investors are primarily exploring for iron, potash and salt, while their largest area under exploitation is mining for zinc and tin.

Mining exploitation projects outnumber exploration projects, and there are fewer explorations in the North and there are fewer in the North (30 projects, 91,164 ha) than in the Central Region (58 projects, 573,072 ha). The fewest exploration projects are found in the South (23), though these are larger on average and cover 362,635 ha altogether. It should be noted that the two biggest exploration sites in the Lao

PDR, which are for gold and copper exploration, on their own cover 251,480 ha in the North (an Australian gold and copper exploration project) and another 121,849 ha in the South (Chinese exploration for gold, silver and copper). Thus area measurements of mining exploration projects are skewed by the existence of a few expansive projects.

Table 12: Overview of Mining Exploration Projects by Product

<i>Product</i>	<i># Deals</i>	<i>Total Area (ha)</i>	<i>Average Area (ha)</i>	<i>% of All Mining Exploration Deals</i>	<i>% of Total Area under Mining Exploration Investment</i>
<i>Gold, Copper</i>	1	251,480	251,480	1%	25%
<i>Gold, Copper, Silver</i>	1	121,849	121,849	1%	12%
<i>Gold</i>	14	108,814	7,772	13%	11%
<i>Iron</i>	18	84,340	4,686	16%	8%
<i>Potash</i>	6	83,684	13,947	5%	8%
<i>Bauxite</i>	5	79,033	15,807	5%	8%
<i>Lead, Zinc</i>	2	72,200	36,100	2%	7%
<i>Zinc</i>	2	66,700	33,350	2%	7%
<i>Copper</i>	12	58,025	4,835	11%	6%
<i>Coal</i>	5	43,846	8,769	5%	4%
<i>Salt</i>	2	20,095	10,048	2%	2%
<i>Tin</i>	11	11,945	1,086	10%	1%
<i>Alluvial Gold</i>	4	9,482	2,371	3%	1%
<i>Lignite</i>	1	6,000	6,000	1%	1%
<i>Barite</i>	3	5,007	1,669	3%	1%
<i>Other</i>	24	4373	182	22%	0%
TOTAL	111	1,026,873	9,333	100%	100%

Table 13: Overview of Mining Exploration Projects by Investor Country of Origin

Country	# Deals	Total Area (ha)	Average Area (ha)	% of All Mining Exploration Deals	% of Total Area under Mining Exploration Investment
<i>Domestic</i>	46	178,610	3,883	41%	17%
<i>Joint Venture</i>	9	14,793	1,644	8%	1%
<i>Foreign</i>	56	833,471	14,883	50%	81%
<i>Australia</i>	3	332,900	110,968	3%	32%
<i>China</i>	34	375,764	11,052	31%	37%
<i>Russia</i>	4	3,417	854	4%	0%
<i>South Korea</i>	1	1,857	1,857	1%	0%
<i>Thailand</i>	2	46,000	23,000	2%	4%
<i>Vietnam</i>	12	73,533	6,128	11%	7%
TOTAL	111	1,026,873	9,251	2%	5%

2.3 - Investment in the Secondary Sector

Investment in the secondary sector is far smaller in terms of area than the other sectors. Therefore the sector's impact on land use and land cover change in the Lao PDR is relatively small and most relevant in urban areas. This section provides a broad overview of investment in the secondary sector, though its significance nationally is not analysed in the same detail as investments in the primary sector.

The secondary sector includes 829 projects (31% of all projects), covering an area of 26,966 ha (only 2% of the total area under investment). The sector consists of projects in construction, electricity and manufacturing and processing (see Map 13). The 155 concession projects cover 94% of the total area covered by projects in this sector, compared to the 674 lease projects with only 6% of the total secondary sector area.

Manufacturing and processing is the largest subsector in terms of both projects (427) and area (22,878 ha), followed by construction (392 projects/358 ha) and electricity (10 projects/3,730 ha) (see Table 2 and Table 14).

84% of all projects within this sector are operational; however, the 10% which are non-operational cover 60% of the secondary sector's land area. These results largely reflect just one non-operational Japanese manufacturing project covering almost 16,000 ha.

Most investment in this sector is domestic (70% of all secondary sector projects) (see Table 15). Chinese and Vietnamese investment account for 10% and 7% of secondary sector projects respectively. However, in terms of area, FDI and JV projects cover the majority of the area under investment within this sector (70% and 22% of the area under secondary sector investment).

Investment in this sector is distributed quite evenly across the three regions in terms of number of projects; in terms of area, however, the vast majority (73%) is allocated within the Central region, as most manufacturing and processing industry is based in and around urban areas.



Vientiane New World Construction Site, That Khao Village, Vientiane Capital City

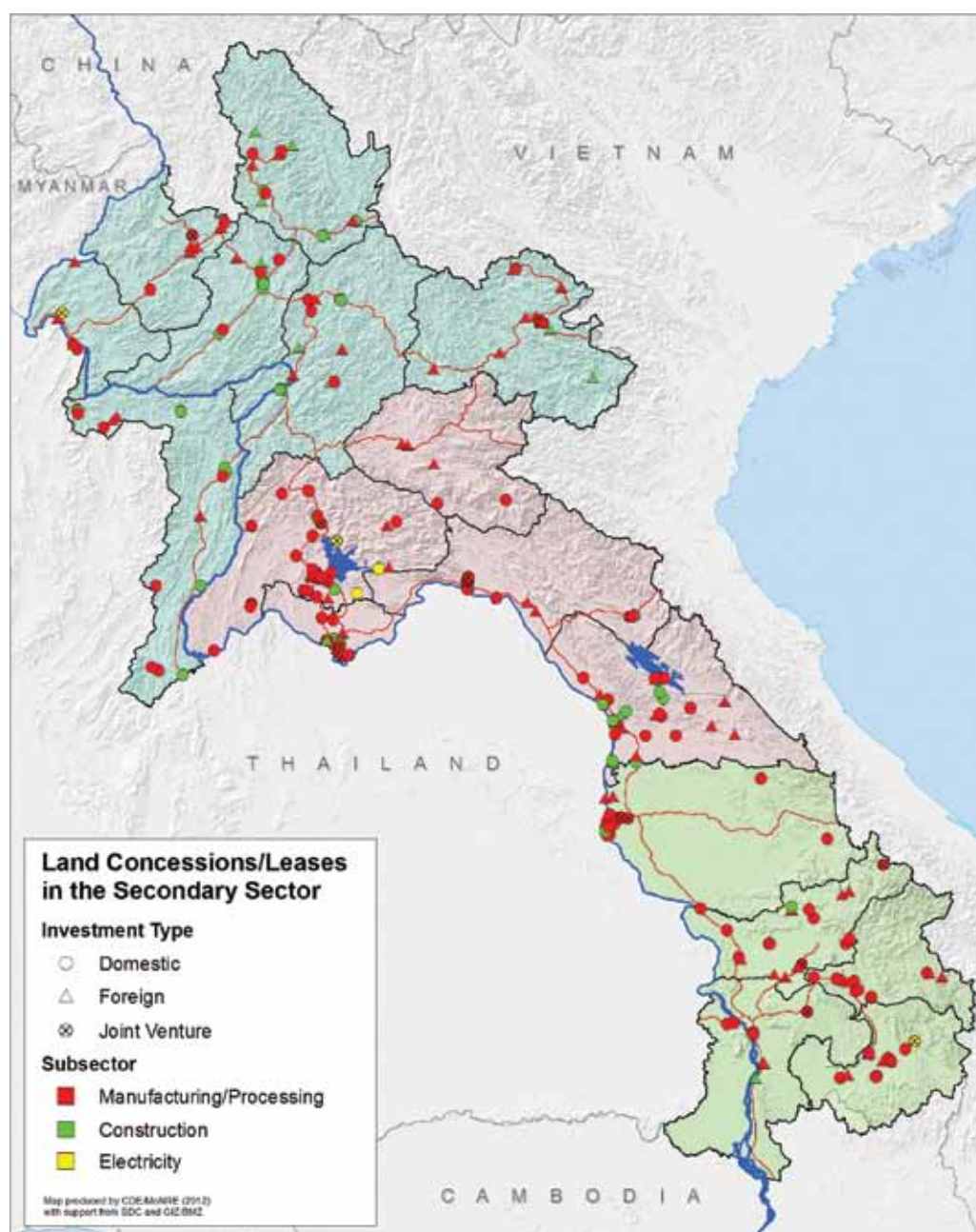


Table 14: Overview of Secondary Sector Projects by Subsector

Subsector	# Deals	Total Area (ha)	Average Area (ha)	% of All Secondary Sector Deals	% of Total Area under Secondary Sector Investment
Construction	392	358	1	47%	1%
Electricity	10	3,730	533	1%	14%
Manufacturing/Processing	427	22,878	63	52%	85%
TOTAL	829 ²⁶	26,966	36	100%	100%

²⁶ 748 of the 829 secondary sector deals have area data (90% of all secondary sector deals).

Table 15: Overview of Secondary Sector Projects by Investor Country of Origin

Country	# Deals	Total Area (ha)	Average Area (ha)	% of All Secondary Sector Deals	% of Total Area under Secondary Sector Investment
<i>Domestic</i>	582	2,162	4	70%	8%
<i>Joint Venture</i>	44	5,979	166	5%	22%
<i>Foreign</i>	202	18,825	115	24%	70%
<i>Japan</i>	6	15,989	2,665	1%	59%
<i>China</i>	86	1,128	17	10%	4%
<i>Thailand</i>	25	618	33	3%	2%
<i>Vietnam</i>	60	315	6	7%	1%
<i>Other</i>	26	776	30	3%	3%
TOTAL Secondary Sector	829	26,966	36	100%	100%

2.4 - Investment in the Tertiary Sector

The tertiary sector, encompassing a range of service related activities, is larger than the secondary sector by area but has fewer projects, accounting for 20% of all investment projects and 7% of the total area under investment (see Table 2 and Table 16).

The tertiary sector has 520 projects, covering an area of 77,557 ha. The 154 concession projects within the tertiary sector cover 77,200 ha, or almost the entire area granted to this sector (over 99%). These compare to the 366 lease projects which cover a nearly negligible area of only approximately 400 ha.

The sector consists of projects in the fields of communications, services, tourism, transport and wholesale/trade. The tourism subsector contains 156 projects covering 75,200 ha, and constitutes the largest subsector within the tertiary sector in terms of both project count and area under investment (see Table 16), however this area is attributable primarily to one single project in eco-tourism which totals 67,600 ha. 88% of all projects are operational and also cover the vast majority of the area granted within this sector.

Table 16: Overview of Tertiary Sector Projects by Subsector

Subsector	# Deals	Total Area (ha)	Average Area (ha)	% of All Tertiary Sector Deals	% of Total Area under Tertiary Sector Investment
<i>Communications</i>	69	37	1	13%	0%
<i>Services/Utilities</i>	144	1,956	17	28%	3%
<i>Tourism</i>	156	75,182	519	30%	97%
<i>Transport</i>	20	275	14	4%	0%
<i>Wholesale/Trade</i>	131	107	1	25%	0%
TOTAL Tertiary Sector	520	77,557²⁷	163	100%	100%

²⁷ 476 of the 520 tertiary sector deals have area data (92% of all tertiary sector deals).

Most investment in this sector is domestic (84%) (see Table 17). Yet in terms of area, FDI with only 61 projects (12% of all tertiary sector projects) covers 89% of the area within this sector. China and Thailand, with 22 and 11 tertiary sector projects respectively, are the two largest investors. Meanwhile, France claims only two tourism projects, one whose area is unknown and one of which covers a significant 67,600 ha.

Investment in the tertiary sector mainly takes place in North (48%) and Central Lao PDR (32%), and fewer deals are found in the South (20%). As accessibility is a key factor in the service sector, it is not surprising that most projects are indeed located along the major roads (see Map 14). Of the total area under investment in the tertiary sector, 96% is in the North, mainly as a result of the single large eco-tourism project.

Table 17: Overview of Tertiary Sector Projects by Investor Country of Origin

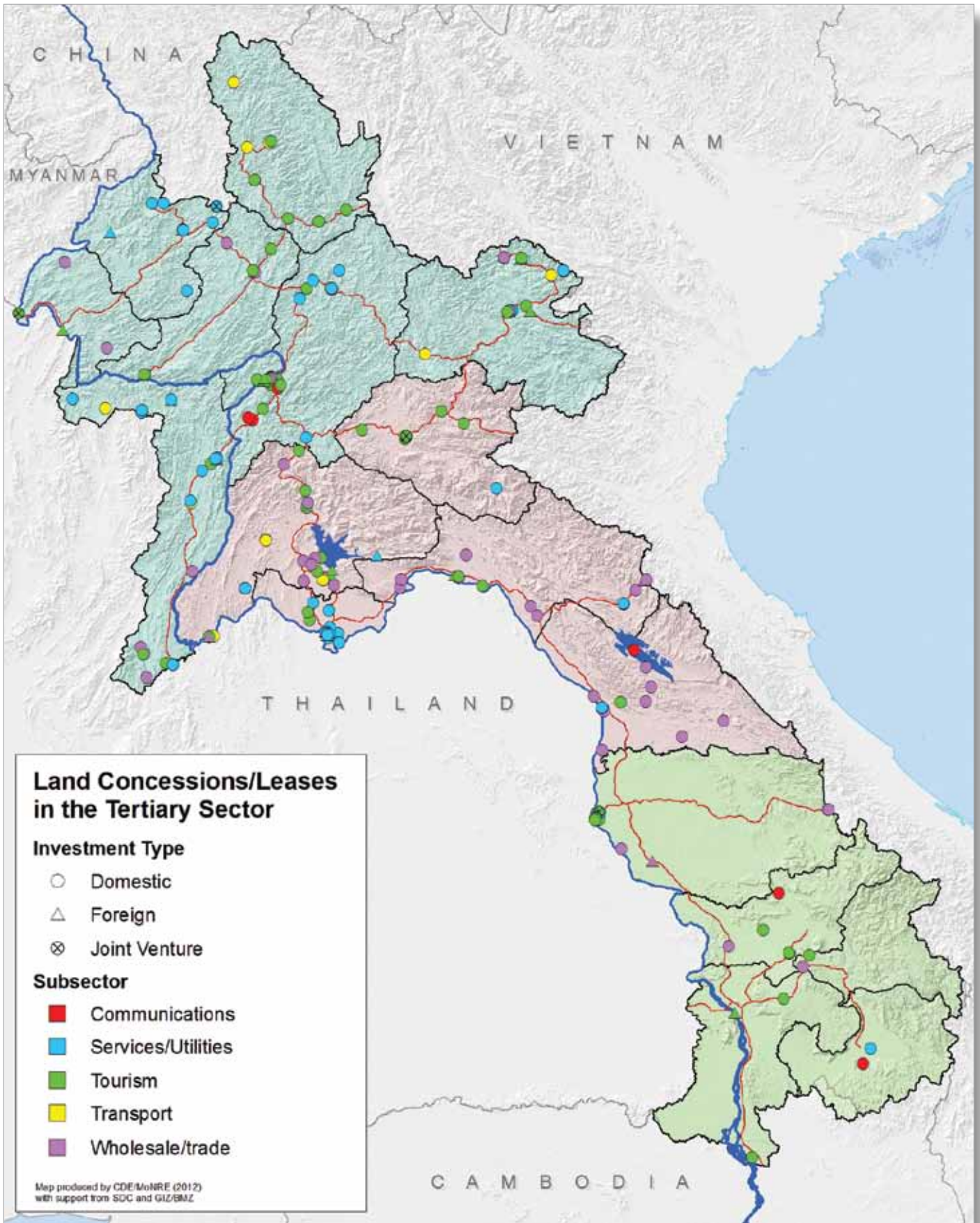
Country	# Deals	Total Area (ha)	Average Area (ha)	% of All Tertiary Sector Deals	% of Total Area under Tertiary Sector Investment
<i>Domestic</i>	435	3,462	9	84%	5%
<i>Joint Venture</i>	24	4,877	287	4%	6 %
<i>Foreign</i>	61	69,218	1,357	12%	89%
<i>France</i>	2	67,600	67,600 ²⁸	0%	87%
<i>South Korea</i>	6	1,197	299	1%	2%
<i>Thailand</i>	11	271	30	2%	0%
<i>Other</i>	42	150	4	8%	0%
TOTAL Tertiary Sector	520	77,557	163	100%	100%



Rubber Plantation, Namtha District, Luangnamtha Province

28 There are two French land deals in total, but only one with a known area, hence the average area being so high (and equal to the total area).

Map 14: Investment Project Locations by Subsector in the Tertiary Sector





Rubber Plantation, Long District, Luangnamtha Province

III - CONTEXT OF INVESTMENT

The granting of concessions and leases in the Lao PDR has increased at an alarming rate over the last decade. In some respects, investment has outpaced regulators' capacity to track and monitor individual projects. Specific projects have come under a critical spotlight, for example the Tong Ly rubber project in Nambak District, Luangprabang Province (Vientiane Times, 2006a & 2006b; Fujita, 2007; Dwyer, 2007), Peter Chan's coconut plantation in Pak Kading, Borikhamxay Province (Dwyer, 2011), and the VRG rubber plantations in Bachieng, Champasack Province and Lao Ngam, Saravane Province (Vientiane Times, 2007a & 2007b; Obien, 2007; Baird, 2010). One of the most recent cases publicized is that of Olam/Outspan Bolovans Limited in Champasack Province, a Singaporean Company with a number of larger coffee plantations said to have negatively impacted several villages (LIWG, 2012). These cases have provided important evidence and insights, showing the concrete impacts of land deals on specific geographical areas and populations, and highlighting the complex relationships – and in some cases conflicts of interest – that exist between different stakeholders. Nonetheless, systematic analysis on a national scale of the geographic characteristics of land-intensive investment has been much harder to come by than isolated case studies. This has been largely due to the lack of systematically collected data on investment projects; individual land deals attracted attention in many cases only by chance after problems gained significant publicity.

This chapter brings additional variables into the analysis presented in chapter 2. Chapter 3 examines the relationship between the inventory data and five key measures of the “context” within which investment takes place. These variables range from the geophysical (in the case of the first variable, elevation) to the socioeconomic (poverty, literacy, and ethnicity); the other three variables (accessibility, land use class and forest category) are a complex mix of both biophysical and land regulatory factors. In examining the local context within which investment takes place, chapter 3 seeks to provide additional insights into the patterns that emerged in chapter 2. By better characterizing where investment takes place, chapter 3 aims to support current debates about land-intensive investment with concrete statistics and spatial analysis regarding the “host” villages (villages with land on which investment projects are located) as well as the relationship between areas under investment and key national resources such as infrastructure, cultivated land and forests.

Chapter 3 thus contributes to an existing set of efforts to move beyond isolated case studies and make sense of the wider context of land investment in the Lao PDR. In the following analysis, the subset of the data containing only spatially referenced land deals was used, meaning 1,258 investment projects with a total known area of 587,564 ha²⁹. This represents slightly under half of the entire area under investment in the inventory – a fact that has to be carefully considered when interpreting the results presented.

²⁹ Out of the 1,258 investment projects, 843 are concessions and 415 are leases, with an area of 585,892 ha and 1,672 ha respectively.

3.1 - Elevation

Due to the Lao PDR's emphasis on natural resource extraction and primary sector activities, the geophysical conditions of land can be assumed to be of central importance to investors. A number of topographical, climatic and location-related issues shape the suitability of economic activities, particularly intensive crop and tree cultivation. Elevation was thus analysed across investment project characteristics, and is presented in this section.

The majority (68%) of all area under investment occurs in the lowlands of the Lao PDR, or below 500 meters above sea level (masl) (see Table 18). Project areas in the North are much more likely to occur at higher elevations than those in Central and Southern Lao PDR. This is partly a result of the fact that the North is more mountainous and on average higher in elevation than other regions, though almost half of all project areas there have elevations above 800 masl.

66% of agricultural projects and 87% of forestry projects occur at 500 masl or below. When examined at the product

level, individual agricultural and forestry products tend to be highly concentrated at certain elevations, likely according to the climatic conditions necessary for their production. The majority of products are located within just one elevation category (e.g. 0-200 masl), and at least 75% of the total area under investment for any given product is found within two adjacent elevation categories. Most agricultural and forestry products are located at low elevations with the exceptions of coffee, tea, agarwood and livestock, which all occur primarily in the 500-800 masl areas. 84% of areas producing eucalyptus are at 200 masl or below, and 93% of rubber is located at 500 masl or below. In contrast, most mining areas are spread across the lower four elevation categories.

The highest concentration of land investments at higher altitudes occurs in Xiengkhuang and Luangnamtha Provinces in the North, and on the Bolaven Plateau in the South (see Map 15). Most investment in the two lowest elevation categories (below 500 masl) is located along the Mekong Plain in Central and Southern Lao PDR (see Map 15).

Map 15: Elevation Map, Investment Project Locations and their Average Elevations

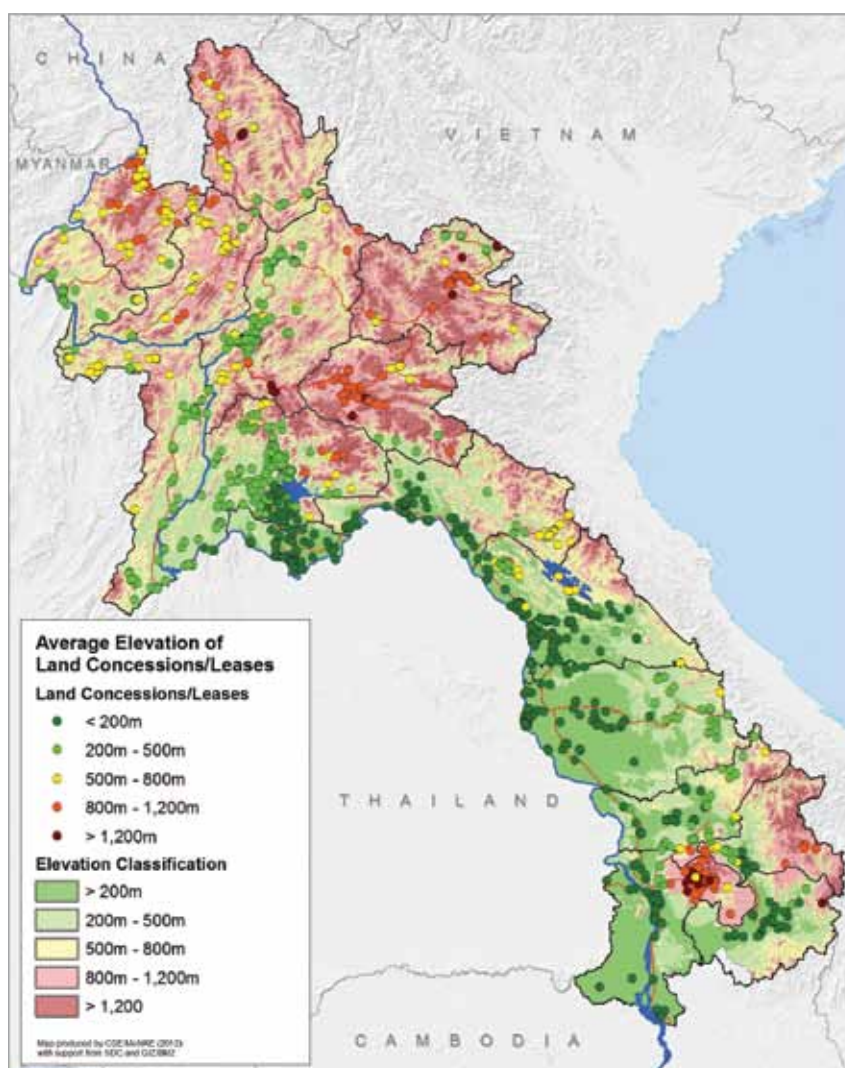


Table 18: Elevation of Investment Projects Compared to All Land by Region

Elevation	North		Centre		South		Nationwide	
	Total Area	Investment Areas	Total Area	Investment Areas	Total Area	Investment Areas	Total Area	Investment Areas
0 - 200	0%	0%	18%	42%	44%	53%	18%	39%
200 - 500	12%	9%	28%	44%	27%	28%	21%	30%
500 - 800	34%	47%	22%	6%	12%	5%	24%	13%
800 - 1,200	41%	39%	20%	7%	13%	12%	27%	16%
> 1,200	13%	5%	12%	2%	4%	3%	10%	3%

3.2 - Accessibility

The geography which dominates most of the Lao PDR is ruggedly mountainous, and issues of accessibility have long shaped the geopolitical importance as well as the socioeconomic position of this landlocked, sparsely populated country. The transportation system is continuously evolving with the construction of new roads, bridges and airports, and the largely rural population is increasingly connected to markets and services. Transportation and access are linked to economic development, but whether and to what degree they shape patterns in land investments and vice versa is explored in this section. The GoL also expects land investments to bring improvements in infrastructure – a benefit which would affect local communities and the wider transportation network across the country. Research on the reality of this in the Lao PDR’s current land investment context is needed, though global studies have shown that while other socio-economic indicators including employment creation do not necessarily improve as a result of major land deals, transport infrastructure often does improve (Anseeuw et al., 2012).

In the Lao PDR, it is important to determine whether large investment projects provide additional infrastructure development or, instead, whether investors tend to select areas where such infrastructure is already in place. The analysis of accessibility across areas under investment will shed some light on this question by looking at the general accessibility of areas where investment projects occur and patterns of investment related to their travel time from the closest district capital.

The estimated travel time from the district capital to the investment area was the measure used in this analysis to quantify accessibility and travel time for each concession was weighted by the area of that project. Considering the range of logistical challenges inherent in the data collection process, a certain level of bias should be assumed in the analysis presented here (especially a tarmac and road bias). **On aver-**

age, investment projects are located around 1 ½ hours from the closest district capital. Almost half of the land granted for investment is within one hour (see Map 16), though there is a significant difference in accessibility between concession and lease project areas as well as across sectors. Almost all areas under lease are reachable within one hour, however 53% of concession project areas are outside of one hour’s reach and 13% of concession areas are not even within three hours of the next district capital (see Figure 17).

Sector-wise, it is not surprising that **land deals in the tertiary sector are located in the most accessible areas, as this sector focuses on the provision of goods and services and is dominated by smaller lease projects in or around urban areas. Primary sector deals occur in more remote areas**, as they are focused on natural resource extraction and often demand larger areas for operation. That said, the agriculture, forestry and mining subsectors follow very different trends in terms of accessibility (see Figure 18).

The majority of agriculture and forestry areas under investment (77% and 62% respectively) are located within just one hour from the district capital, and 97% and 93% respectively are located within two hours (see Figure 18). Mining stands out with 58% of the area under investment over two hours from the district capital. Mining projects are necessarily located wherever significant mineral deposits are regardless of accessibility, and if expected profit margins are large enough and the required infrastructure does not already exist, it will often be developed by the investor. On the other hand, agricultural and forestry investments being less capital intensive, they appear also to be more dependent on pre-existing infrastructure and proximity to markets as well labour.

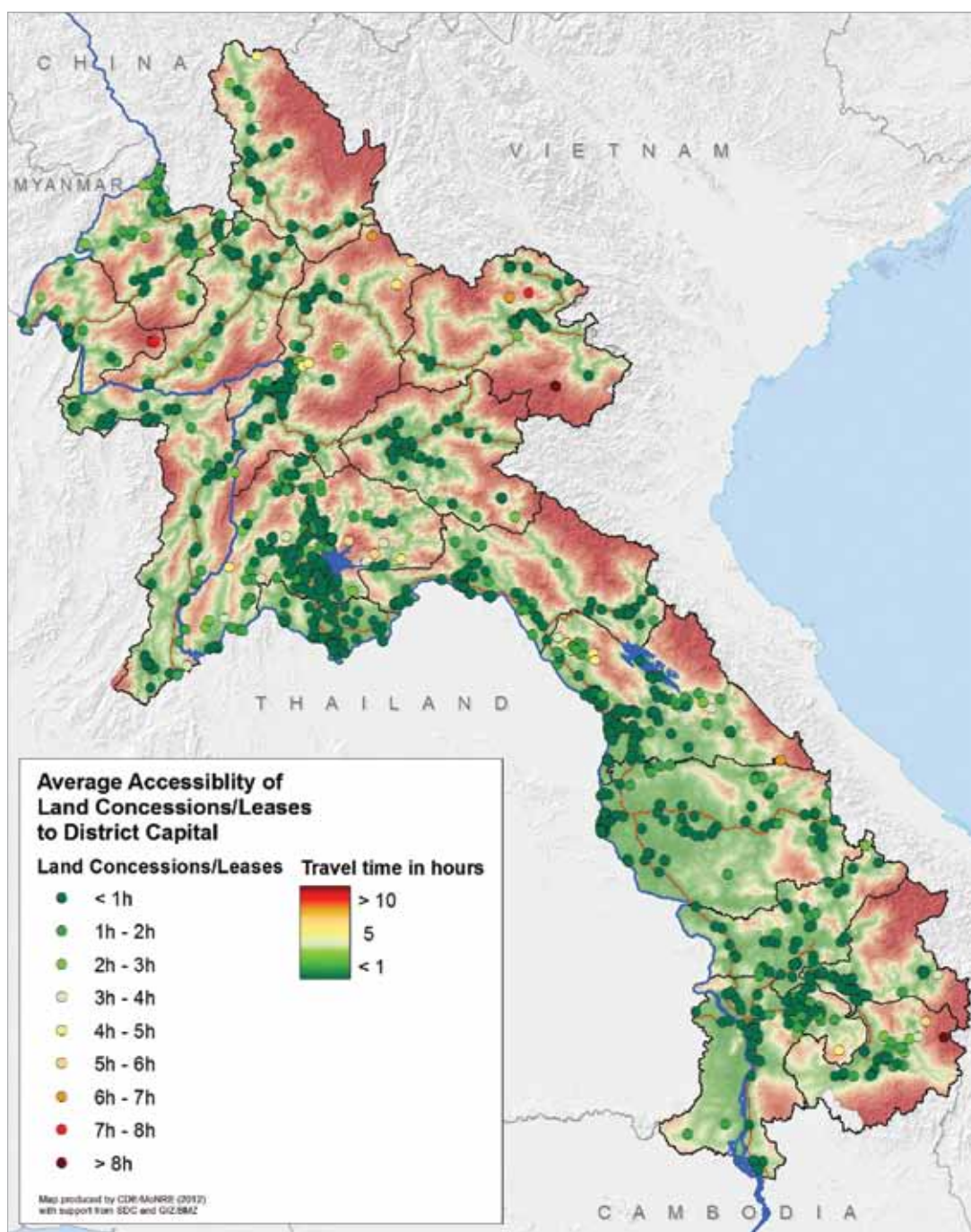
Although forestry and agriculture investments are not found in areas as remote as is commonly assumed, many district capitals can still be considered remote locations difficult to

access from bigger “urban” hubs. In addition, the quality of roads in the Lao PDR varies considerably and not all investment projects within one hour of district capitals have access to paved roads, making accessibility in part dependent upon season. Regardless, these are significant findings as the GoL has prioritized encouraging investment in remote, mountainous areas which have little to no infrastructural development for investment promotion, according to the Law on Domestic and Foreign Investment Promotion No. 02/NA (8 July 2009) Article 50 (see also PM Decree 135 (2 May 2009)). However, our analysis finds that most of the area under investment is relatively close to district capitals, thus it can be assumed that those remote priority zones are not yet where

investment is most commonly taking place. Further research is needed to determine the driving factors behind and implications of this trend.

Concerning the origin of investors, there are significant differences in terms of the average accessibility of the land deals granted. Domestic investors hold projects in some of the most remote regions with 40% of areas under domestic investment located over two hours from district capitals. FDI on the other hand accounts for only 19% of the area under investment outside of two hours travel time from the next district capital, and joint ventures account for 23% (see Figure 19).

Map 16: Accessibility Map (by travel time to district capital), Investment Project Locations and their Average Accessibility



Thai investments take place in regions of greater accessibility (mainly consisting of large sugarcane plantations in the South), and Chinese investments are on average very accessible, with almost 80% of areas granted within two hours from a district capital (see Figure 19). Vietnamese investments are the most remote, as 37% of their area under investment

occurs over four hours away. While beyond the scope of the data available for this analysis, it is also possible that although areas under Vietnamese investment remain poorly accessible from Lao district capitals, they are often located along the border with Vietnam and some may enjoy better access to Vietnam than to Lao PDR administrative capitals (see Map 16).

Figure 17: Accessibility (by travel time to district capital) of Concessions and Leases

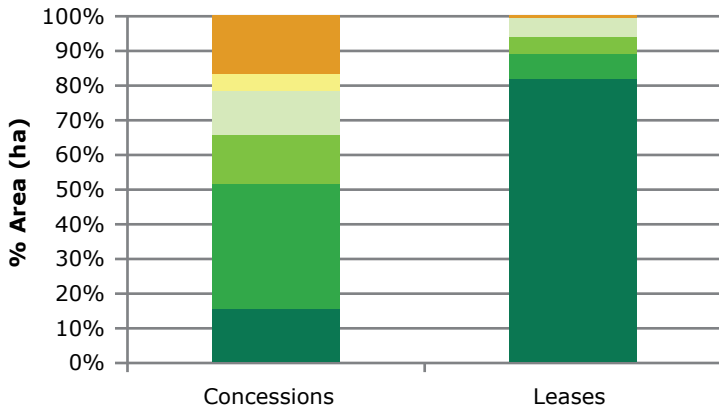


Figure 18: Accessibility (by travel time to district capital) by Subsectors in the Primary Sector

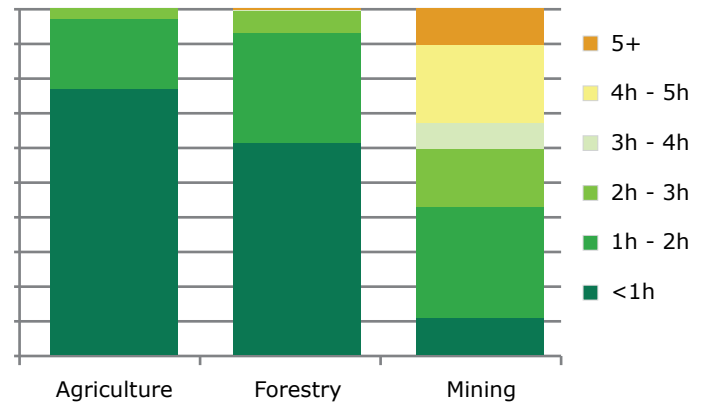
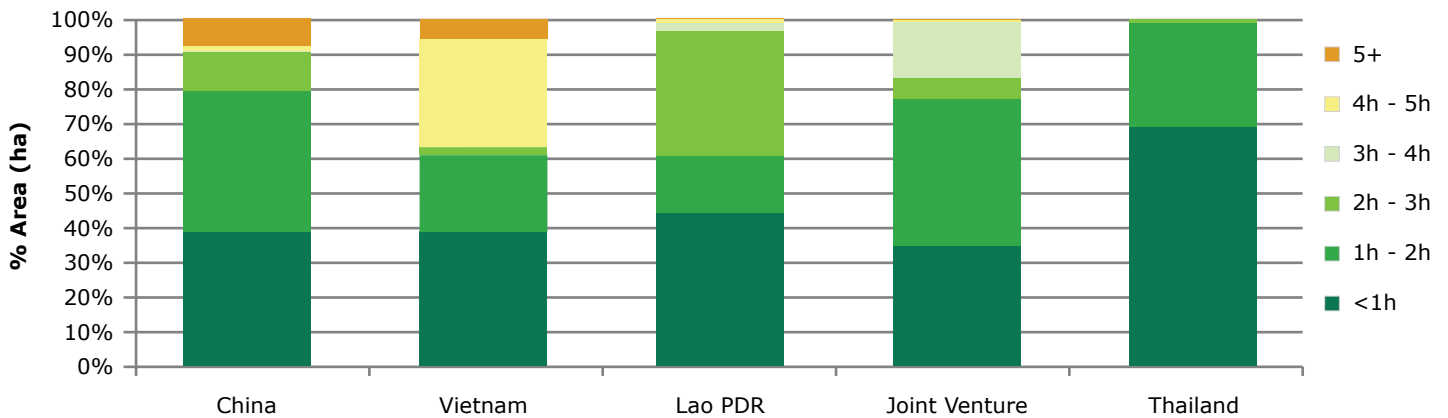


Figure 19: Accessibility (by travel time to district capital) by Main Investor Countries of Origin



Rubber Plantation, Phouvong District, Attapeu Province

3.3 - Socioeconomic Patterns

This section presents socioeconomic patterns across different types of land investment deals. The analysis utilized the inventory in combination primarily with the Housing and Population Census of 2005 as available on the DECIDE info Laos platform³⁰. Most of the socioeconomic data used was aggregated by village, thus socioeconomic characteristics for any villages with land borders falling within concession areas were combined to represent that land deal. The results aim at providing an overview of the wider socioeconomic context in which land concessions and leases are granted in the Lao PDR.

The socioeconomic variables assessed were separated into the categories of poverty, literacy and ethnicity. These variables are analysed across land deals and also compared to national trends as they appear on the DECIDE info Laos platform.

3.3.1 - Poverty in Areas under Investment

There is a multitude of approaches to measuring poverty, often differing across country and regional contexts. Measuring poverty remains a complicated task, especially in the Lao PDR where wealth and earnings cannot be captured solely by cash income or expenditure. In this analysis, poverty was measured using the poverty incidence of a population (calculated as the percentage of poor people³¹ out of the total population in a given area), and the fraction of villages with poverty incidences above or below the national average³².

The national poverty incidence, measured in terms of total population and defined according to Epprecht et al. (2008), is 34.7%, with the highest incidence of poverty found in Southeast Lao PDR along the Vietnam border, and the lowest in many areas along the Thai border, in Vientiane and other urban areas, and in villages with access to national road and river networks. On the other hand, the fraction of villages with poverty incidences above the national average is highest in urban areas and along the Mekong corridor where population density is high. **Within areas where land deals have been granted, however, poverty incidences are on average 27%, which is seven points lower than the average national poverty incidence** (see Table 19). This difference between poverty incidences nationally and in project areas is reflected in Map 17, where it is apparent that very few land deals occur in areas with poverty incidences of over 60%.

There are approximately 1,900 host villages in total and 1,005 of these can be considered poor (having a poverty incidence above the national average of 34.7%). This indicates that just over half of all villages with projects (52%) can be defined as poor, whereas 62% of villages are nationally. Thus while fewer people in areas with investment projects are poor, still roughly one in two villages containing areas under investment have a poverty incidence of over 34.7% - a high proportion of villages but nevertheless fewer than the proportion nationally. The greatest density of villages with poverty incidences above 34.7% occurs along the Western border of the Lao PDR in the Centre and South (see Map 17). High concentrations of projects occur in the South on the Bolaven Plateau, as well as along

the Mekong plain and around Vientiane, and in Xayabury Province, though these areas and thus the populations in areas under investment have low poverty incidences (see Map 17 and Map 18).

The greatest distinctions in terms of poverty in areas under investment occur at the sector and subsector levels, where primary sector activities occur in far poorer areas than those in any other sector (see Table 20). Primary sector projects occur in areas with an overall poverty incidence of 33%, and 58% of villages hosting such projects have higher poverty incidences than the national average (though still, none of the three sectors' average poverty incidences are higher than the national average). Across all subsectors, villages with forestry projects are the most likely to have higher poverty incidences than the national average (62% of villages with forestry projects). Furthermore, **forestry is one of only two subsectors (the other being communications) whose poverty incidence (37%) is higher than the national average.**

The tertiary sector, meanwhile, has the lowest per cent of villages above, or poorer than, the national poverty incidence of all three sectors. This primarily reflects that the location of these projects is often closer to urban areas, as they tend to be smaller in project size and focused on activities related to providing goods and services demanded by more affluent populations.

In terms of the origin of investment, **areas under domestic investment have the lowest poverty incidence of all (22%)**, as well as the lowest per cent of villages above the national poverty incidence (33%) (see Table 21). Particularly interesting is that poverty incidences where Lao investors operate are surprisingly low in agriculture and forestry (both are 8% points below the national rate), especially compared to the average poverty incidences in these subsectors – agriculture and forestry happen to be the two subsectors with the highest incidence of poverty among project areas overall (see Table 22). This is likely related to the lower accessibility of domestic agriculture and forestry areas under investment, as 84% of

30 www.decide.la.

31 The measure of poverty used here is based on Epprecht et al. (2008), which approximates household per capita income (among other indicators), and is in turn calculated based on household expenditure data.

32 Poor villages were defined as those with a poverty incidence above the national average (34.7%).

domestic projects in these two subsectors occurs within an hour of domestic capitals, and only six of the total 120 domestic agriculture and forestry projects are above two hours travel time from district capitals. It also parallels the fact that domestic projects, compared to all other countries investing in the Lao PDR, have smaller average project areas in general, and claim a smaller proportion of primary sector to overall activities by area compared to most other investors.

Meanwhile, **joint ventures and foreign investment both invest in areas with much higher poverty incidence and proportion of villages above the average national poverty incidence**, with foreign projects occurring in the poorest areas by both measures. Again, this may relate to the greater level of access to capital enjoyed by FDI projects, which allows investors to acquire larger areas of land which in turn are more likely to be available in remote, sparsely populated and less affluent areas. Nevertheless, none of the poverty incidences for any of the three investor types reach the national average of 34.7% (see Table 21).

Measures of poverty also differ significantly at the investor country of origin level, though trends may be primarily attributable to the amount of land invested in and the range of investment activities or products cultivated by each investor country. Only five countries have a poverty incidence above 30%, and China, Thailand and Vietnam are among these (see Figure 20). Of the other two (India,

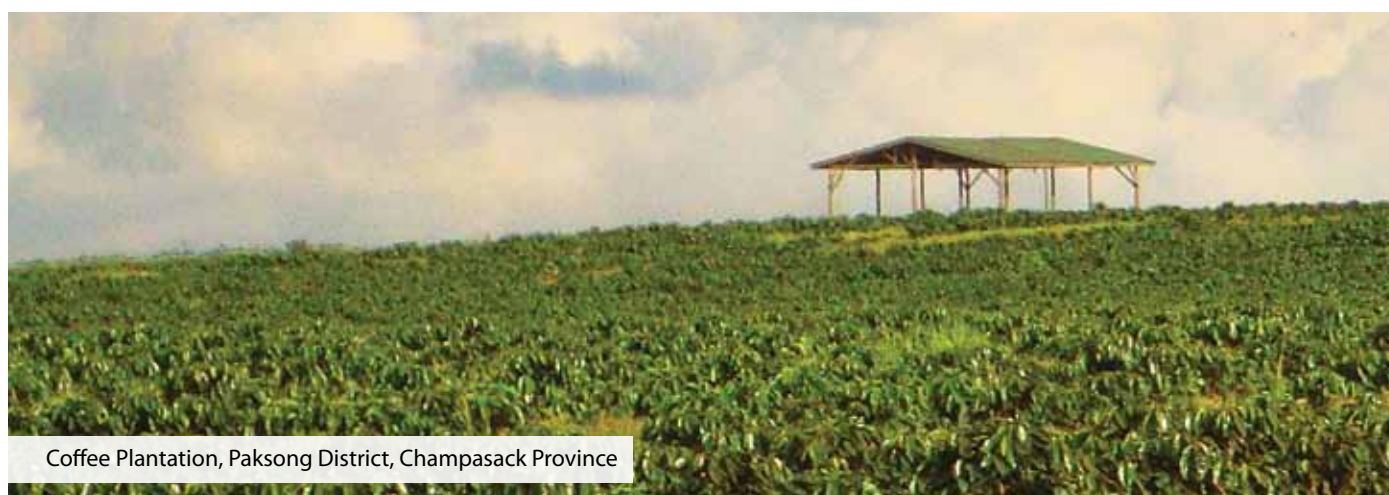
Australia), each holds investment projects of considerable size in the primary sector - the sector which, as stated above, accompanies the highest poverty incidences. All of the six spatially referenced Indian projects, for example, are in the forestry sector, hence the country's holding of the highest poverty incidence and rate of villages with poverty incidences above the national average out of all investor countries (55% and 90% respectively).

A similar picture emerges in the rate of villages with poverty incidences higher than the national average across investor countries. Of the villages with investment projects associated with Vietnamese, Chinese and Thai investors, 68%, 61% and 58% had poverty incidences above the national average (see Figure 20 and Figure 21).

There also exists a wide spread in poverty incidence depending on what is being produced on land under investment. Acacia, copper and sugarcane projects accompany the poorest populations, with poverty incidences of 71%, 54% and 52% respectively. Conversely, tea and coffee stand out as occurring in areas with particularly low poverty incidences of 13% and 14% respectively. Teak, sand/gravel and fish producing investment projects also occur in places of higher affluence. Most other products have slightly higher incidences of poverty, as proves common across the primary sector with, for example, rubber, eucalyptus and livestock raising occurring in communities with poverty incidences of 39%, 37% and 22% respectively.

Table 19: Villages with Poverty Incidence Higher (Poorer) than the Average National Poverty Incidence, Nationally and in Areas under Investment

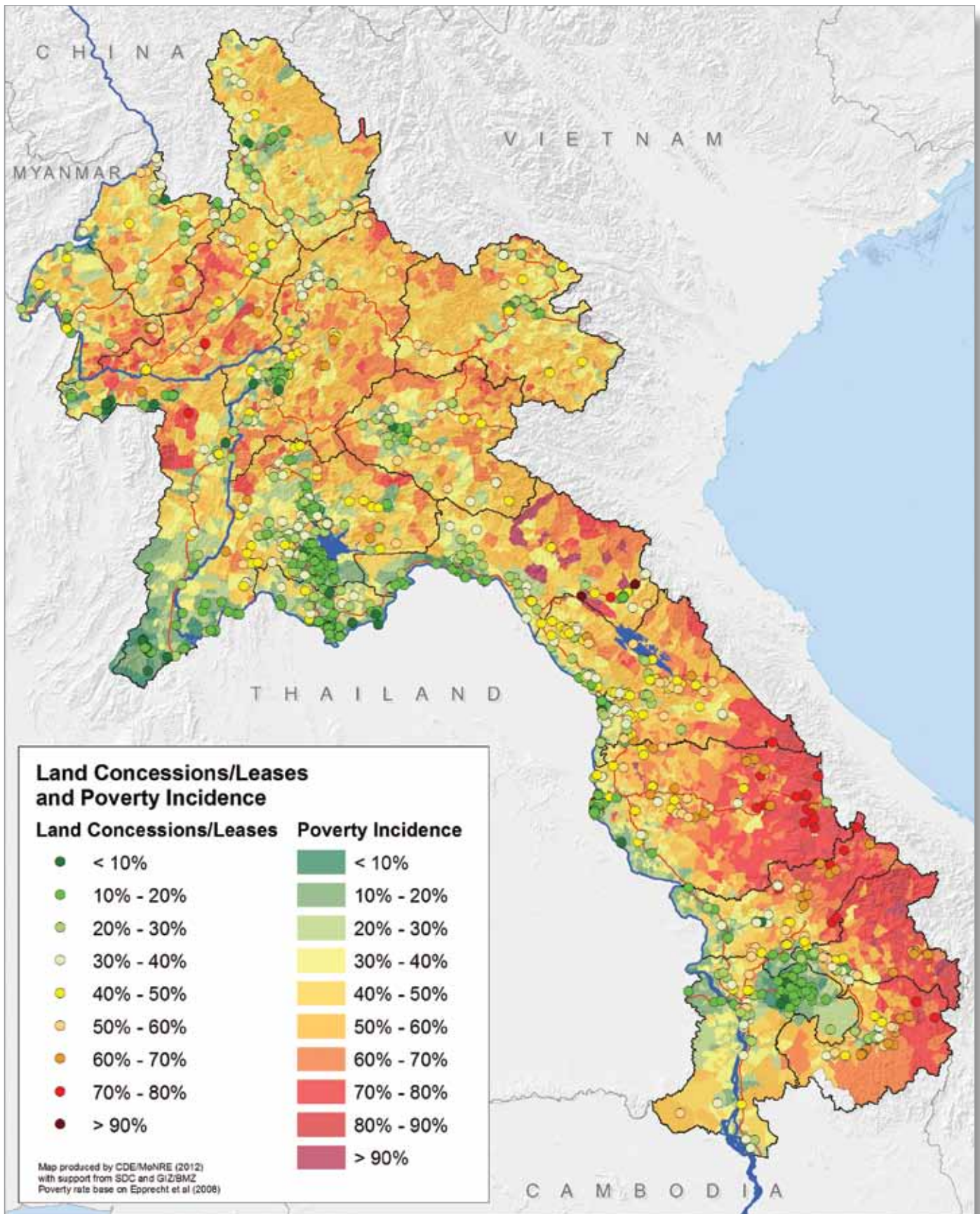
	Poverty Incidence	% Villages with Poverty Incidence Higher (Poorer) than National Average	# Total Villages	# Villages with Poverty Incidence Higher (Poorer) than National Average
National Population	34.7%	62%	10,035 ³³	6,185
Population in Areas under Investment	27%	52%	1,927	1,005



Coffee Plantation, Paksong District, Champasack Province

33 This figure is based on the most current official village location data for the Lao PDR (MPI, NGD, 2008).

Map 17: Poverty Incidence Map, Investment Project Locations and their Poverty Incidence



Map 18: Poverty Incidence Map, Investment Project Locations and Village Poverty Incidence Higher (Poorer) and Lower (Better off) than the National Average

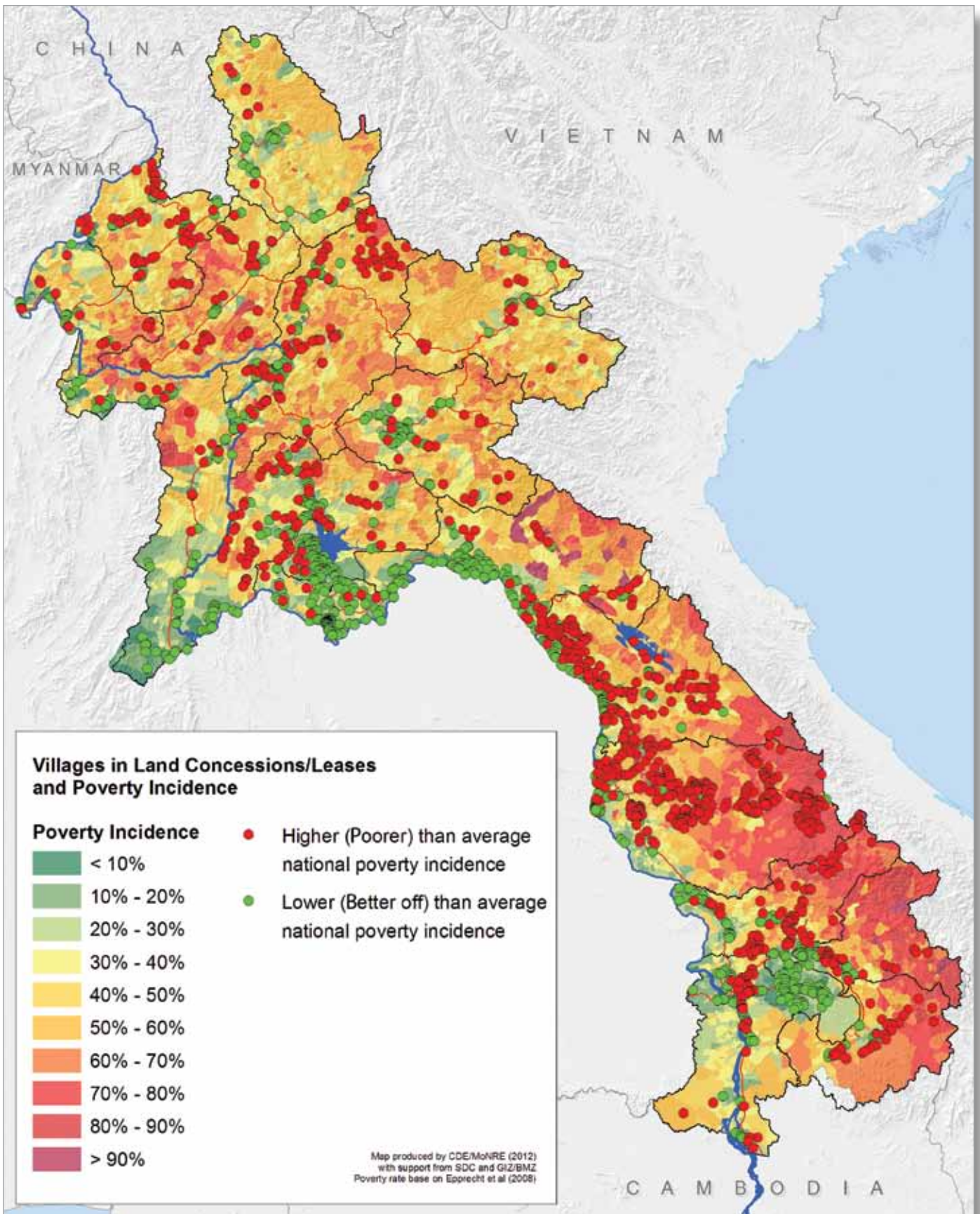


Table 20: Poverty Incidence in Areas under Investment and % of Villages with Poverty Incidence Higher (Poorer) than the National Average

	<i>Subsector</i>	<i>Poverty Incidence</i>	<i>% of Villages with Poverty Incidence Higher (Poorer) than National Average</i>
<i>Primary Sector</i>	<i>Agriculture</i>	29%	55%
	<i>Forestry</i>	37%	62%
	<i>Mining</i>	30%	50%
	<i>Primary Sector Total</i>	33%	58%
<i>Secondary Sector</i>	<i>Construction</i>	17%	21%
	<i>Electricity</i>	16%	33%
	<i>Manufacturing/Processing</i>	23%	33%
	<i>Secondary Sector Total</i>	21%	31%
<i>Tertiary Sector</i>	<i>Communications</i>	35%	39%
	<i>Education</i>	18%	0%
	<i>Services/Utilities</i>	15%	12%
	<i>Tourism</i>	20%	20%
	<i>Transport</i>	26%	13%
	<i>Wholesale/Trade</i>	25%	25%
	<i>Tertiary Sector Total</i>	21%	21%

Table 21: Poverty Incidence in Areas under Investment and % of Villages with Poverty Incidence Higher (Poorer) than the National Average by Investor Type

<i>Investor Type</i>	<i>Poverty Incidence</i>	<i>% of Villages with Poverty Incidence Higher (Poorer) than National Average</i>
<i>Domestic</i>	22%	33%
<i>Foreign</i>	34%	59%
<i>Joint Venture</i>	30%	57%

Table 22: Poverty Incidence by Subsector and Investor Type

Subsector	Poverty Incidence			
	Foreign Investors	Domestic Investors	Joint Ventures	All Areas under Investment
<i>Agriculture</i>	32%	21%	22%	29%
<i>Communications</i>	n/a	40%	19%	35%
<i>Construction</i>	31%	16%	10%	17%
<i>Education</i>	n/a	18%	n/a	18%
<i>Electricity</i>	n/a	13%	34%	16%
<i>Forestry</i>	39%	29%	40%	37%
<i>Manufacturing/Processing</i>	26%	22%	22%	23%
<i>Mining</i>	36%	26%	36%	30%
<i>Services/Utilities</i>	11%	15%	11%	15%
<i>Tourism</i>	21%	21%	18%	20%
<i>Transport</i>	n/a	26%	n/a	26%
<i>Wholesale/Trade</i>	22%	26%	19%	25%

Figure 20: Poverty Incidence in Areas under Investment and % of Villages with Poverty Incidence Higher (Poorer) than the National Average by Investor Country of Origin

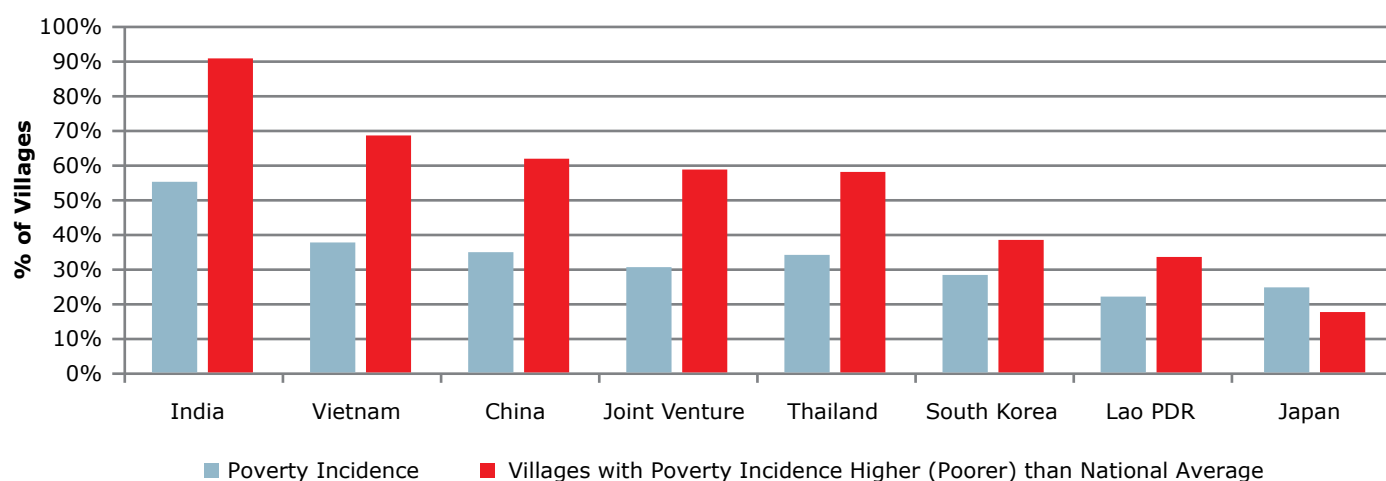
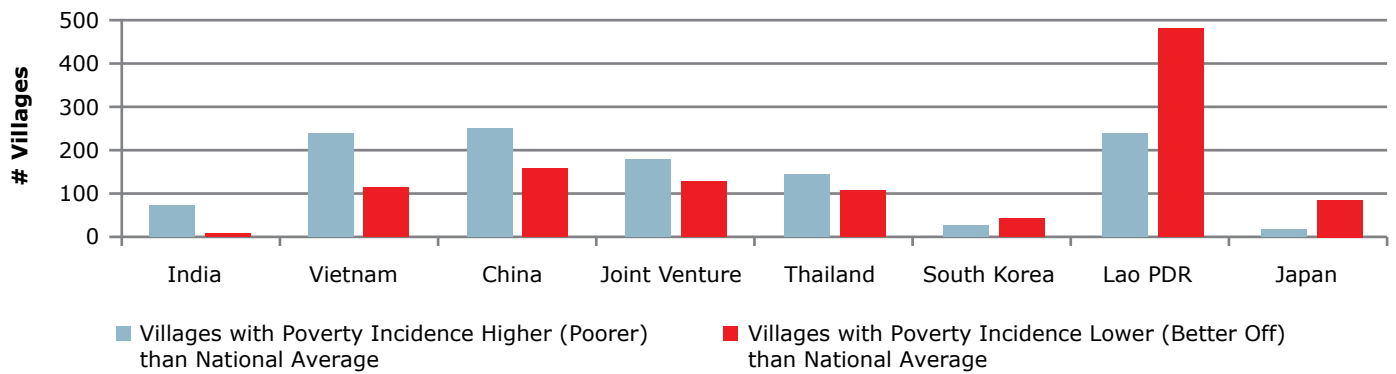


Figure 21: Villages with Poverty Incidence Higher (Poorer) and Lower (Better off) than the National Average by Investor Country of Origin



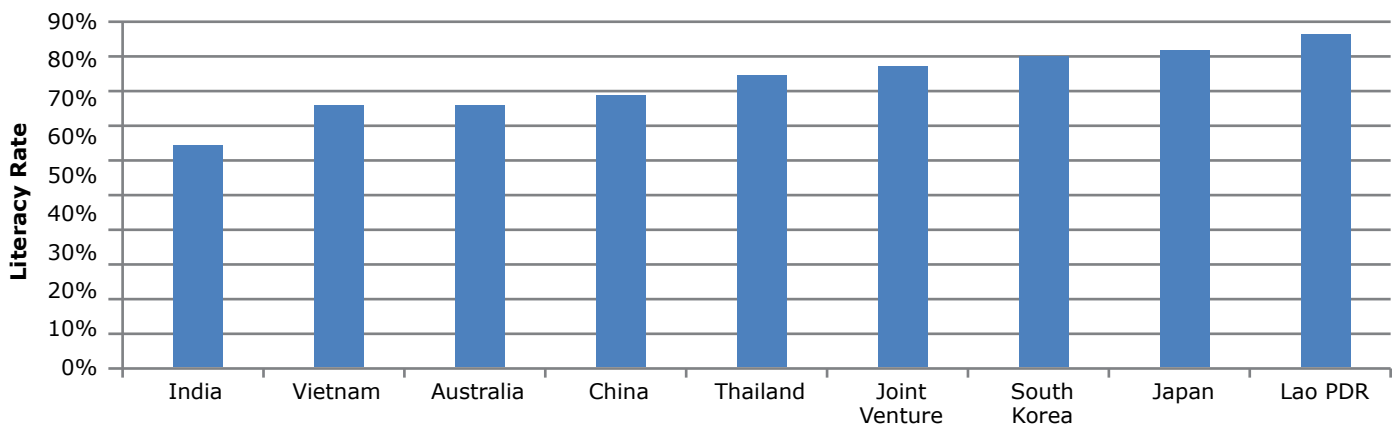
3.3.2 - Literacy in Areas under Investment

Literacy rates are used as a proxy for demonstrating wider trends in education levels among people residing in areas where investment projects occur, and they are found to largely mirror poverty patterns. **Where poverty is highest, literacy rates are lowest, and the literacy rate across areas under investment (80%) remains higher than the national average of 73%.** Thus literacy rates are also lowest in areas with foreign investment (72%, which is only slightly below the national average), and highest by far among those under domestic investment (86%). They are also much lower in the primary sector (74%), which also has the lowest poverty incidence of all sectors and contains the only subsector, forestry, to fall below the national average (with a rate of 70%, three points below the average national rate of 73%).

Within foreign investor countries of origin, India, Vietnam, Australia and China hold projects in areas with the lowest literacy rates (see Figure 22).

At the product level, acacia, copper, corn and sugarcane accompany the poorest populations as well as the lowest literacy rates of 26%, 40%, 57% and 64% respectively. Major products including eucalyptus, Jatropha and rubber also have literacy rates slightly lower than the national average (73%, 71% and 67% respectively).

Figure 22: Literacy Rates in Areas under Investment by Investor Country of Origin



3.3.3 - Ethnicity in Areas under Investment

This section examines the relationship between ethnicity and patterns in land investments using the four ethno-linguistic families found in the Lao PDR. Like literacy, trends in ethnicity often parallel those observed regarding affluence. With its 49 different ethnic groups and 160 subgroups, the Lao PDR is ethnically a very diverse country. Groups are categorized as belonging to four ethno-linguistic families: Lao-Tai (Tai-Kadai), Mon-Khmer (Austro-Asiatic), Hmong-Mien (Hmong-Yao, Miao-Yao) and Sino-Tibetan (mostly Tibeto-Burman)³⁴.

One underlying factor to consider is that ethno-linguistic groups are largely geographically distributed. Thus, for example, products or subsector activities which typically occur in the lowlands and the South will overlap with areas predominantly Lao-Tai and Mon-Khmer, whereas those in Central Lao PDR will be located where Lao-Tai and Hmong-Mien are disproportionately represented, and those based in the North among Sino-Tibetan and Mon-Khmer (see Map 19).

On the national level, Lao-Tai is the dominant group, accounting for 64% of the total population, followed by Mon-Khmer (22%), Hmong-Mien (8%) and Sino-Tibetan (3%)³⁵. **The population in areas under investment is disproportionately Lao-Tai (72%) as compared with their representation nationally.** Meanwhile, whereas non-Lao-Tai groups make up 36% of the national population, they constitute only 27% of the population within areas under investment.

Lao-Tai make up 8% more of the population in areas under investment than their representation among the total national population. Meanwhile, Hmong-Mien, Mon-Khmer and Sino-Tibetans are underrepresented by 2%, 3% and 2% respectively. Leases occur in areas with Lao-Tai populations far larger than

in areas under concessions (82% and 66% respectively). This is not surprising as leases are most often located close to urban areas and in the lowlands where Lao-Tai are the dominant group (see Table 23). A majority of the population in areas with land concessions is also Lao-Tai (66%), but concessions also involve a significant portion (25%) of Mon-Khmer over other ethnic groups.

In comparing country origin of investment, **only 21% of the population in areas under domestic investment projects is non-Lao-Tai, while 35% of areas under foreign investment and 26% under joint venture projects are.** Domestic investors are thus far more likely to invest in Lao-Tai inhabited areas and the proportion of Lao-Tai in areas with domestic deals to other ethno-linguistic families is 14% above the national average. Joint ventures are also more commonly located in Lao-Tai dominant areas, and while foreign investment is also primarily located in Lao-Tai regions, the proportion of Mon-Khmer in foreign deals is 8% above their representation nationally (30% of areas under foreign investment are Mon-Khmer).

In terms of distribution across the economic sectors and subsectors, the primary sector has the highest proportion of non-Lao-Tai to total population in areas under investment (34%) and the secondary sector has the fewest non-Lao-Tai (17%). Agriculture and forestry both occur in areas with significant Mon-Khmer populations of 35% and 32% respectively, likely because projects in these subsectors are located more heavily in the South where Mon-Khmer populations are much larger.

Table 23: Ethno-linguistic Groups, Nationally and in Areas under Investment

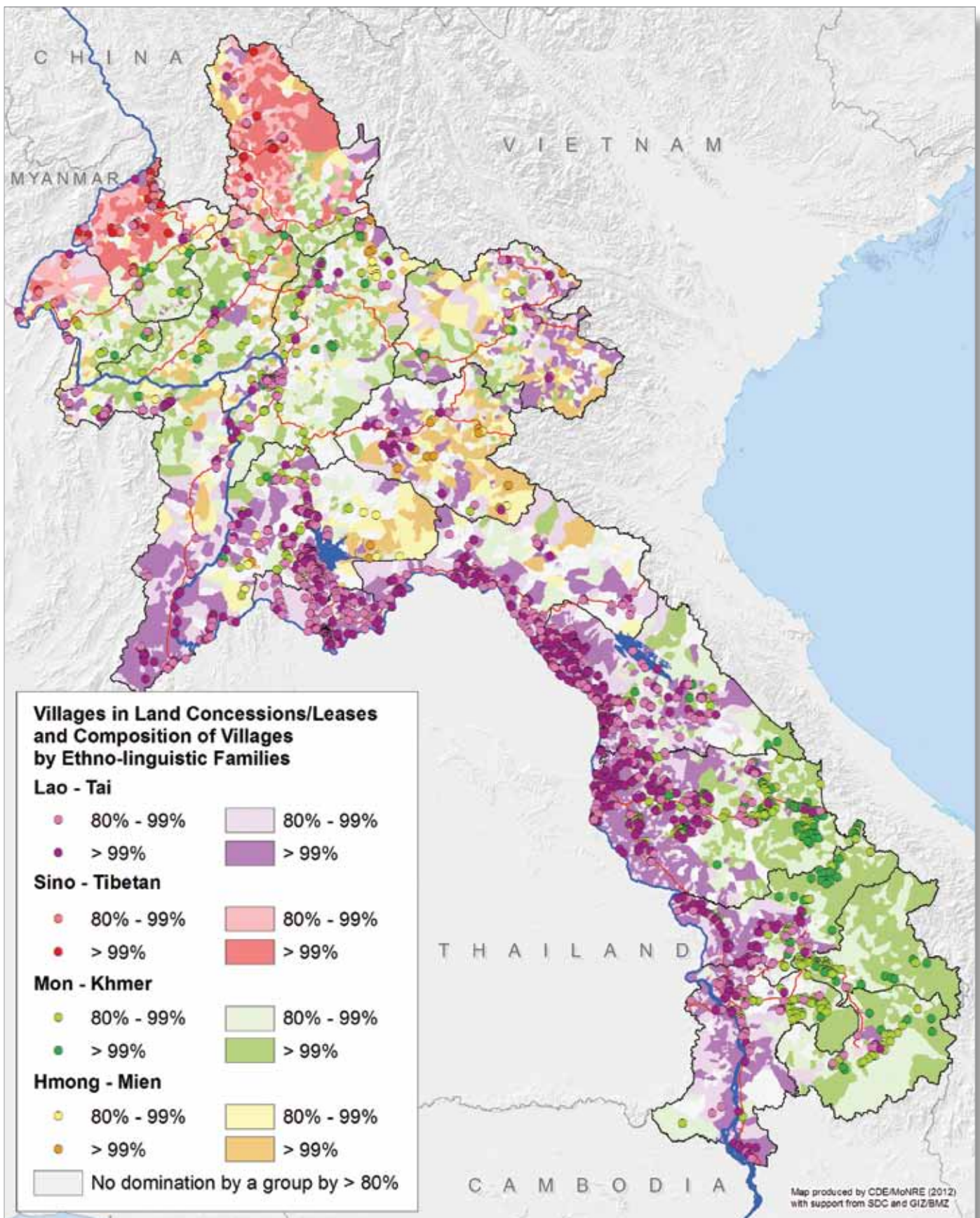
	Lao-Tai	Mon-Khmer	Hmong-Mien	Sino-Tibetan	Non-Lao-Thai
National Population	64%	22%	8%	3%	36%
Population in Areas under Investment	72%	20%	6%	1%	27%



Rubber Plantation, Pathoumphone District, Champasack Province

³⁴ Categories of ethnic groups, subgroups and ethno-linguistic families are based on the Socio-Economic Atlas of the Lao PDR (Messerli et al., 2008).
³⁵ Based on the Population and Housing Census 2005.

Map 19: Ethno-linguistic Families Map, Investment Project Locations and their Dominant Ethno-linguistic Family



3.4 - Forest Categories

The GoL has placed 64% (14,808,991 ha) of the total land cover of the Lao PDR under forest management categories – a significant amount, especially when compared to other countries in the region. These categories do not imply that the current land cover is indeed forest, but sets them aside to be managed as forest and places their governance under the overall forestry policy of the GoL. Thus the term ‘forest land’ used in this section refers to all land categorized as forest by the GoL regardless of that land’s current land cover or use. Despite continuous deforestation and forest degradation in the Lao PDR, the GoL plans in its Forestry Strategy to the Year 2020 to increase forest cover from currently 41.2% to 70% of the country’s total land area by 2020 (MAF, 2002).

The Lao PDR Forestry Law (GoL/NA, 2007) specifies three different categories of forest: conservation forest, protection forest and production forest. Of the total area of the Lao PDR, 16% has been classified as conservation forest, or National Protected Areas (NPAs), 35% as protection forest and 13% as production forest (see Figure 23). Activities legally permitted within conservation forest are the most restrictive of all forest management categories, followed by protection forest, and production forest areas are meant to be the forest category prioritized for tree plantations and other commercial forestry activities. While regulations and stipulations for the distinct management of each category of forest land is typically expected to determine investment trends in such areas, their enforcement remains inconsistent, leaving room for wide debate around the impacts of large-scale land investments and their potential to undermine national objectives in forest management.

A considerable share of the total area under investment (170,048 ha, or 29%), and also of the total investment projects granted (330 projects, or 26% of all projects), occur on land categorized as forest while the other 71% is on non-forest land³⁶ (see Figure 23). The majority of land under investment categorized as forest falls into the management category protection forest (23% of all area under investment), followed by conservation (4%) and production forest (2%).

Looking at the distribution of investment projects within the three categories, 214 of the 330³⁷ total projects containing forest land, accounting for 130,847 ha (77%) of the forest land under investment, occur within the protection category. Areas categorized as conservation forest have the second largest share of area under investment with 61 projects covering 24,828 ha (15% of all forest area under investment). This is a sizeable amount of land considering that national regulations discourage land investment in this forest category, though boundaries for forest categories have yet to be clearly established at the planning level and clearly demarcated on the ground and different state agencies operate using conflicting boundaries. Finally, only 14,374 ha (9%) across 81 projects occur within areas categorized as production forest, which is surprisingly small considering this is the forest category in which investment is encouraged.

Not surprisingly, over 96% of the area under investment in land categorized as forest is within the primary sector. Protection forest has the highest share within all three sectors. Compared to the other sectors, the secondary sector has the highest proportion of total area occurring in forest categories, with the highest share of conservation forest proportionally (28% of land in the secondary sector).

It is also important when discussing the potential impacts and implications of land investment to understand which economic activities occur in these areas. Of the projects occurring on land categorized as forest, the three main subsectors are mining, forestry and agriculture, which cover 51%, 35% and 9% of the total area of forest categories rented out (see Figure 24).

It could be expected that investment in the forestry subsector would occur primarily in areas categorized as production forest, where regulations permit and encourage commercial plantation activities. Instead, only 13% of tree plantation investments fall within this forest category while 71% occurs in protection forest and 17% in conservation forest. Mining, meanwhile, has the largest share of both conservation and protection forest under investment, constituting 57% and 56% respectively. As discussed in previous sections, primary sector deals are larger on average than those of other sectors, hence the extent of primary sector investment in forest land can be expected to greatly impact land use patterns and trends in those areas.

Rubber is the dominant product occurring on land categorized as forest, covering 31,019 ha (18%) of forest land under investment (see Figure 25). Conversely, 28% of the total area under rubber production is within forest areas with protection forest being the largest forest category (21%) under rubber investment. It is also the dominant product in areas categorized as conservation forest, with a total of 6,884 ha, constituting 28% of all conservation forest under investment.

The question of which investors hold the greatest amount of area categorized as forest is also important, as it provides indirect insights into the investment behaviour of certain groups of investors and the reach and efficacy of wider forest management regulations. China holds the greatest overall area categorized as forest (37,145 ha, or 24% of all area under Chinese investment), followed closely by Vietnam (33,484 ha, or 28% of all area under Vietnamese investment) (see Figure 26). Joint ventures hold a slightly smaller total area of forest land (28,780 ha) but this constitutes 41% of the overall area under JV investment. The majority of forest land under investment by each country is protection forest, though domestic investment stands out as having the highest proportion of conservation forest (10,554 ha or 13% of all area under domestic investment) followed by joint ventures (5,882 ha or 8% of all area under joint venture investment).

³⁶ The total here refers to all of the investment projects spatially referenced; out of the 2,642 investment projects in the inventory, 1,258 projects covering 587,564 ha are spatially referenced and are therefore considered in this section.

³⁷ Some deals contain more than one type of forest, therefore the sum of deals in each forest category is not equivalent to the total projects containing forest land.

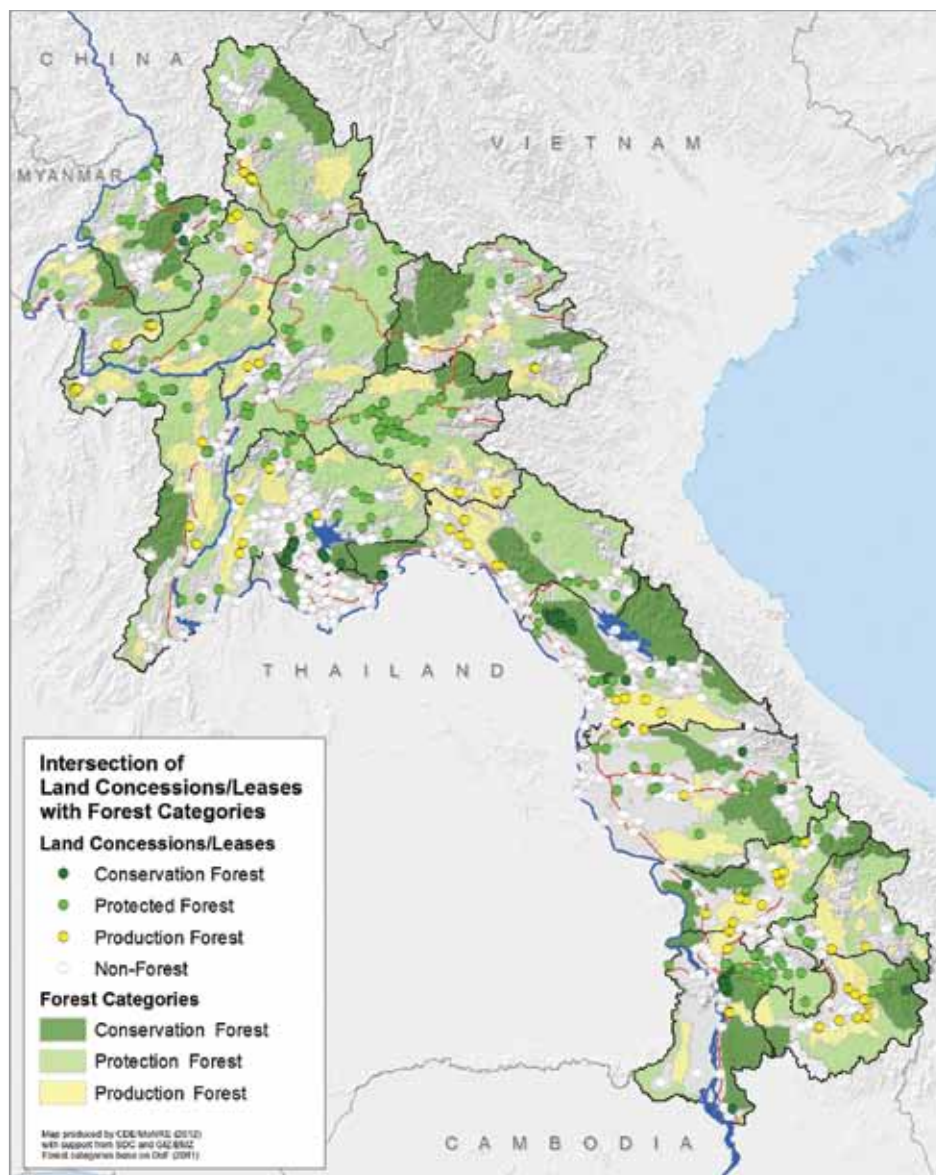
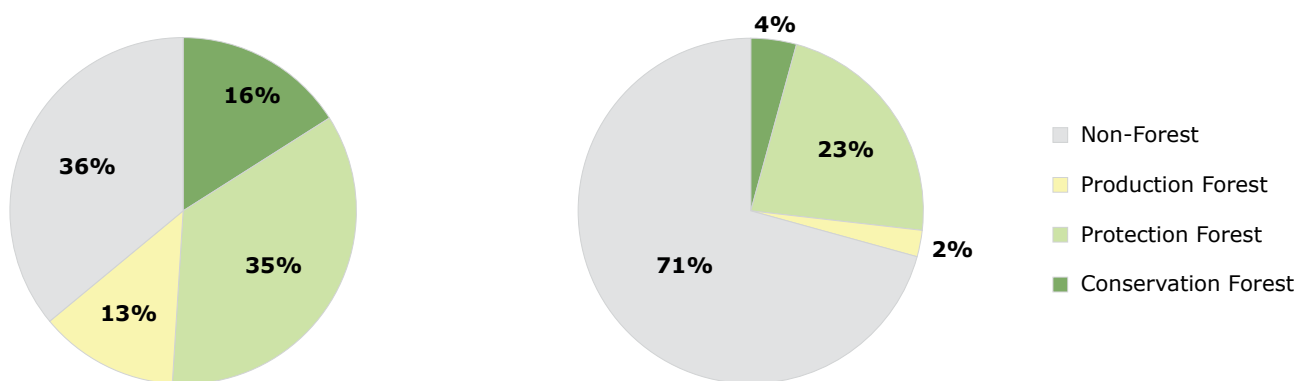


Figure 23a: National Forest Management Categories in the Total Area of the Lao PDR ³⁸

Figure 23b: National Forest Management Categories in Areas under Investment ³⁹



³⁸ Total Area refers to the entire land area of Lao PDR.
³⁹ Total Area refers to the total area under investment.

Figure 24: Area under Investment in Forest Management Categories by Subsector

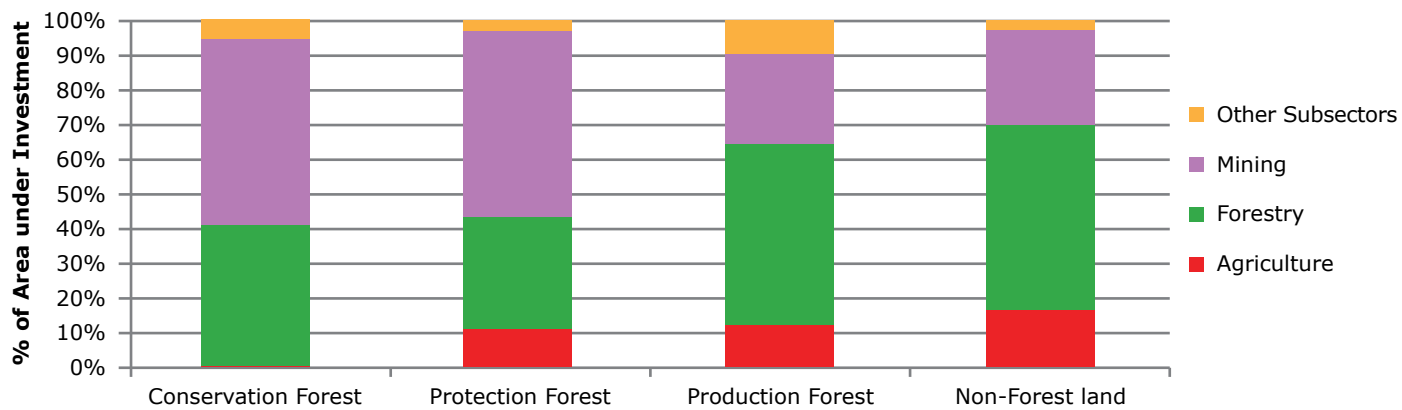


Figure 25: Area under Investment in Rubber by Forest Management Category

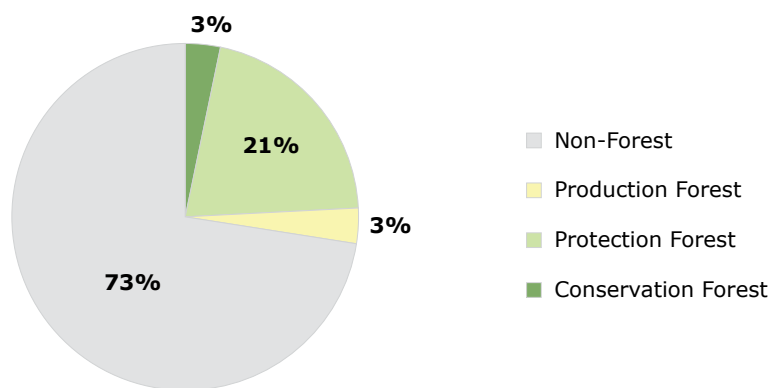
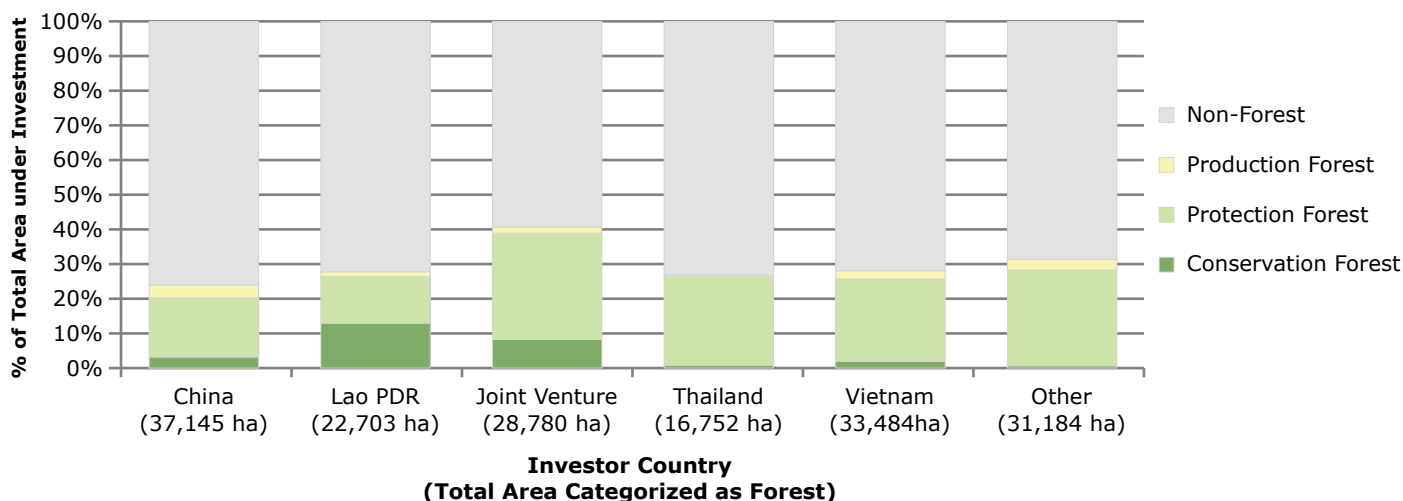


Figure 26: Area under Investment in Forest Management Categories by Main Investor Country of Origin



3.5 - Land Cover Classes

The distribution of land deals across land cover classes is central to debates over the implications of land investments for land use planning, ecosystem services provision and the wider balance between land productivity and sustainable development in the Lao PDR. Due to the limited availability of land cover classification data, however, this remains a particularly challenging area for analysis on the national level. Not only is capacity for data collection limited, but a special set of challenges are faced specific to the Lao PDR and wider monsoon Southeast Asia, where climatic conditions, complex land use patterns and topographic effects present an obstacle to obtaining accurate satellite imagery – a pivotal tool for generating reliable land cover information.

This section seeks to provide insight into the land cover classes of areas under investment in the Lao PDR. This analysis is based on the only official land cover dataset available for the Lao PDR from 2002 (MAF/FIPD, 2002). It must be acknowledged that this dataset has several limitations in terms of accuracy, especially related to forest classes and particularly with the politicized land cover class, “unstocked forest and ray”, which to a large extent represents areas of bush and forest fallows within shifting cultivation agricultural systems. The full set of land cover classes, established by the GoL in 2002, includes

22 land cover classes in total which were combined into eight land cover classes for the purposes of this analysis.

The largest share of one land cover class across all land granted is in unstocked forest and ray, consisting of upland or small scale agriculture at the time of the land cover inventory (see Table 24 and Figure 27). A total of 260,372 ha, or 45% of all areas under investment, is within this class. The unstocked forest and ray land cover class is derived from approximations of where forest fallows lie, which remain difficult to detect and to distinguish from other land cover classes. Hence while the evidence shows that the largest share of investments are in this land cover class, one cannot necessarily conclude a “preference” among investors for this land cover class, as it also covers almost 45% of the territory of the Lao PDR.

The **second largest land cover class where land deals have been granted is in forest (37% of the total area under investment)**. This is, even when keeping in mind the limited accuracy of the national land cover dataset, a rather large share of total land under investment. In both the unstocked forest & ray and forest categories, the average size of an investment is rather large (341 ha and 433 ha respectively).

Table 24: Land Cover Classes Nationally and in Areas under Investment

Land Cover Classes	Lao PDR National Land ⁴⁰		Area under Investment		
	Total area (ha)	% of Total	# Deals	Total Area (ha)	% of all Area under Investment
Agriculture	1,200,000	5%	426	44,444	8%
Bamboo	539,000	2%	49	27,714	5%
Built-up	135,300	1%	57	756	0%
Forest	9,824,700	42%	494	213,650	37%
Grassland	673,700	3%	73	16,412	3%
Scrubland	192,100	1%	39	2,961	0%
Swamp	51,000	0%	16	2,880	0%
Unstocked Forest & Ray	10,613,200	45%	764	260,372	45%
Other	451,000	2%	278	11,493	2%
TOTAL	23,680,000	100%	1,258 ⁴¹	580,683 ⁴²	100%

⁴⁰ Total area nationally is based on MAF/FIPD 2002.

⁴¹ The total number of deals is not the sum of deals per land cover class as a number of deals contain multiple land cover classes.

⁴² As some areas under investment lack land cover class data, there exists a slight difference between the total area cited here and that for all spatially referenced data.

In terms of the land cover classes of areas granted for investment in different subsectors, interesting distinctions emerge. While the unstocked forest and ray and the forest classes constitute the largest portion of area under investment in each subsector, investment in the agriculture subsector has the greatest portion (20%) of lands within the agriculture land category to its overall area under investment (see Map 21 and Figure 28). Similarly, 91% of the area under investment in the forestry subsector is classified either as unstocked forest and ray or forest, both of which are land classes characterized by small scale agriculture and related activities, and therefore heavily depended upon by rural smallholder populations.

The land cover class profiles also differ according to investors' country of origin. These differences often parallel these investors' respective involvement in certain subsectors, such as Thai investors who invest disproportionately in agriculture and therefore claim the highest portion of land classified as agricultural land compared to other investor countries (see Figure 29). On the other hand, the data suggests that Chinese investment covers a mosaic of small scale cropping areas and forest fallows (with 63% of areas under Chinese investment classified as unstocked forest and ray), but also a significant share of land in the forest cover class (28%).



Rubber Plantation, Long District, Luangnamtha Province

Map 21: Land Cover Classes Map, Investment Project Locations and their Dominant Land Cover Class

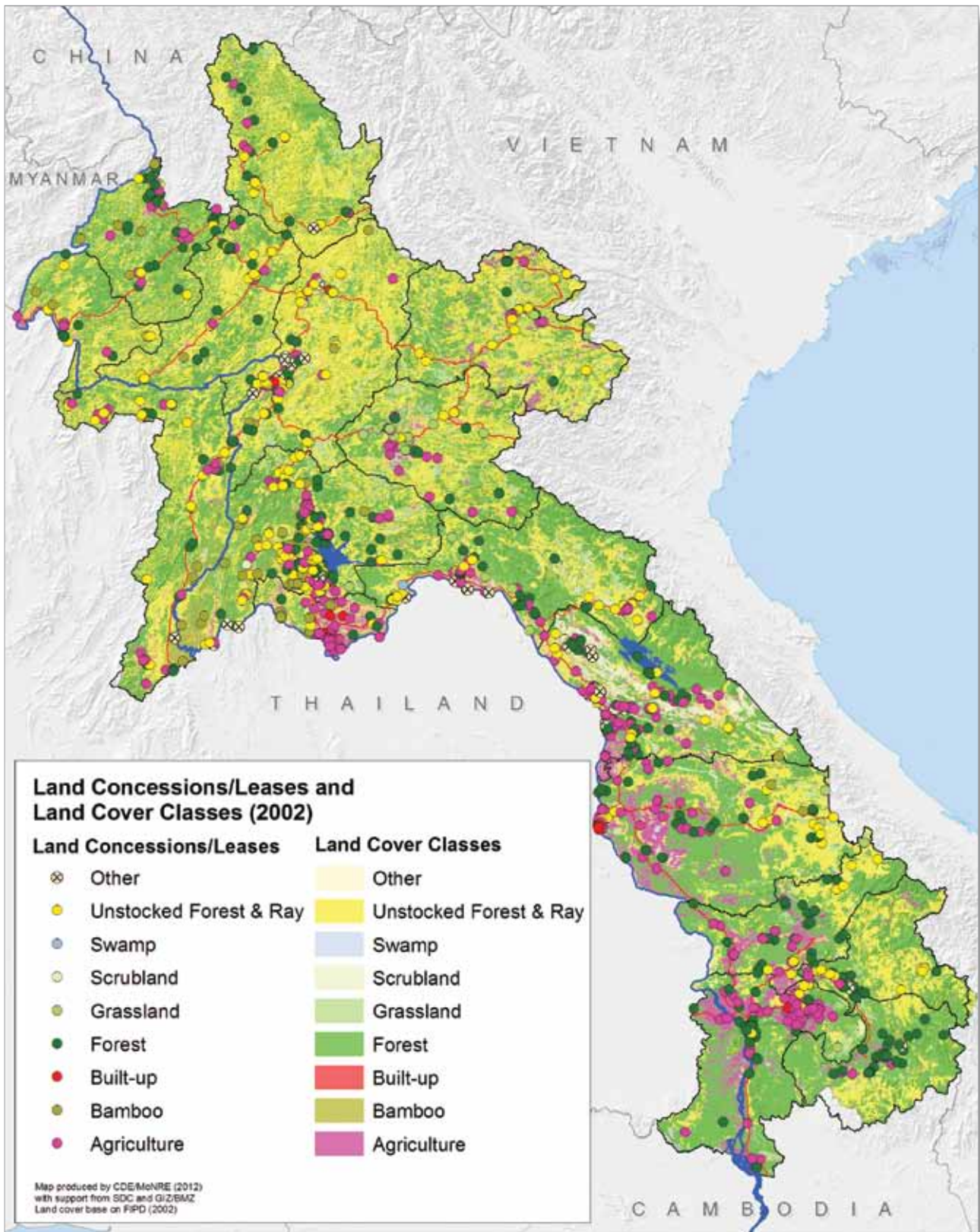


Figure 27a: Area per Land Cover Class in the Lao PDR **Figure 27b: Area per Land Cover Class in Areas under Investment**

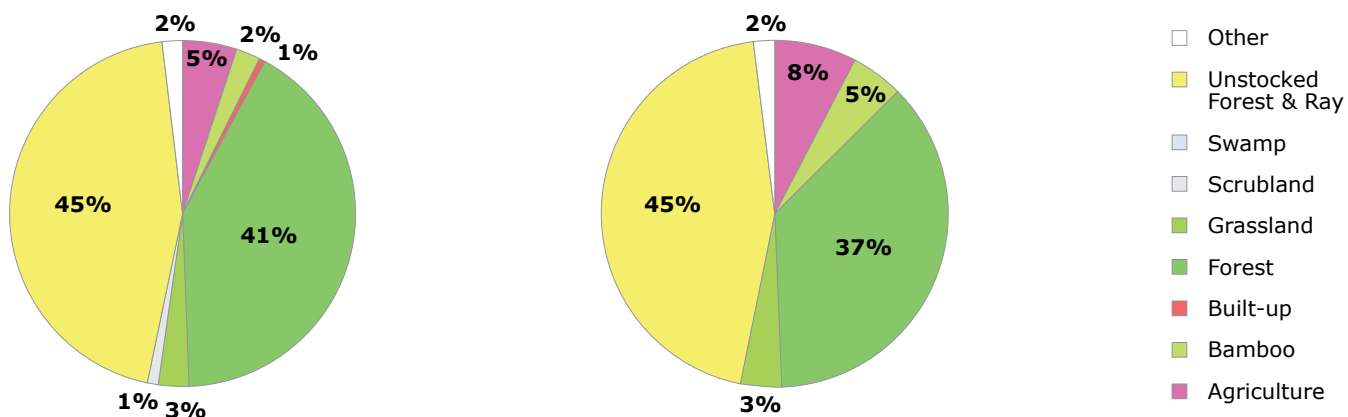


Figure 28: Land Cover Classes in Areas under Investment by Subsector

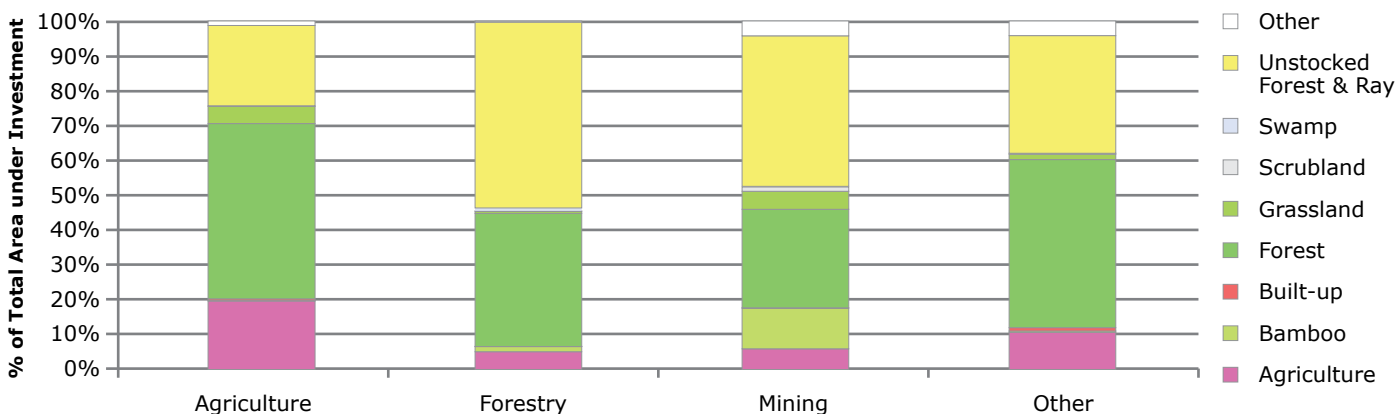
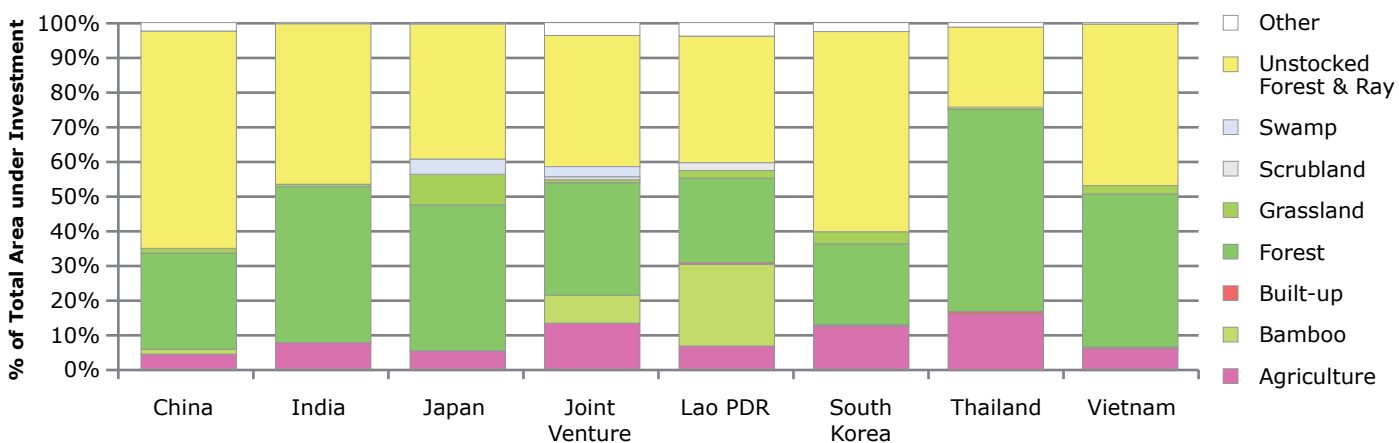


Figure 29: Land Cover Classes by Investor Country of Origin





Rubber Plantation, Luangnamtha District, Luangnamtha Province

IV - CONCLUSIONS

The “State Land Leases and Concessions Inventory” is based on data from an official GoL project and allows for capturing, visualizing and analysing the extent and dimensions of the land investment phenomenon for the entire Lao PDR. It includes spatially referenced data and offers a strong baseline of information essential for the ongoing debate on land investment issues in the country. This publication presents the first analysis of land concessions and leases nationwide.

Since investment in land has expanded so significantly throughout the country, both the GoL and civil society have adopted a greater level of scrutiny regarding the impacts of land investment. The publication thus comes at a pivotal moment in the debate over large-scale land investments in the Lao PDR.

Investment in land, particularly large-scale foreign direct investment, has been championed as an effective development tool by a number of actors. Such a vast expansion of land investment has brought significant transformations in national landscapes. These transformations, in turn, engender drastic socioeconomic and environmental changes, affect food security and traditional livelihoods and could ultimately pose challenges to national sovereignty.

Governance structures and institutions have struggled to keep pace with the expansion in land investments witnessed in the Lao PDR over the last decade. Five per cent of the total land area of the Lao DPR has already been granted to investors for development - nearly ten per cent if concessions for mining exploration are included. Despite the exclusion of mining exploration projects, logging concessions, hydropower projects and contract farming agreements, the analysis includes a substantial 2,642 land deals, covering 1.1 m ha and involving approximately 1,900 villages' land. This 1.1 m exceeds even the total area of 0.97 m ha under rice cultivation (MAF, 2012), the main crop grown nationally.

Areas under investment tend to be fairly accessible and are disproportionately located on forest lands. Foreign investment, particularly from China, Thailand and Vietnam, by far outweighs domestic investment in terms of area. This effectively removes a considerable amount of the country's most valuable land from either state or local communities' use, and could weaken the government's capacity to address wider land management issues. The scale of land already granted therefore calls into question the sovereignty of the GoL, and the extent of its control over the country's most productive lands and resources.

In terms of area, land investment in the Lao PDR focuses overwhelmingly on resource-intensive primary sector activities in the agriculture, forestry and mining subsectors. Mining is the largest subsector with 21% of all investment projects and 50% of the total area under investment, while agriculture and forestry both claim 14% of all projects, or 13% and 28% of the total area under investment respectively. Investment is fairly concentrated on a few key products, particularly in the agriculture and forestry subsectors, reflecting broader trends of commercial, monoculture cultivation replacing traditional production and natural landscapes. Coffee, livestock, Jatropha and sugarcane are the top agricultural crops cultivated, while rubber and eucalyptus stand out as the two main tree crops produced.

Rubber is the largest product (by number of deals) across all subsectors with 225 deals covering 129,614 ha in total. As this number excludes smallholder plantations and contract farming rubber schemes, which are particularly frequent in the North of the Lao PDR, the total area under rubber cultivation nationally can be estimated to be far greater. This increasing concentration on cash crops has raised concerns over economic stability, food security and environmental sustainability. Overemphasis on a single product, such as rubber, increases the national economy's vulnerability to global price fluctuations, and related landscape transformations threaten to displace traditional livelihoods and cultural systems, food production regimes and natural ecosystems. Overemphasis on a single product such as rubber increases the national economy's vulnerability to global price fluctuation and demand. Case studies in the Lao PDR also have shown that the related landscape transformations from multifunctional landscapes to monoculture plantations often displace traditional livelihoods and cultural systems, food production regimes and natural ecosystems.

The potential for large-scale land investments to benefit rural development, poverty alleviation and infrastructure provision efforts has been widely debated. Most land deals (68% of all areas under investment) occur in the lowlands, below elevations of 500 masl, and these areas are relatively accessible with most within one hour travel time to the closest district capital. People residing in villages with investment projects also tend to be more literate and affluent than the national average, and areas under investment are disproportionately dominated by communities of the majority Lao-Tai ethno-linguistic family (72% of people in areas under investment compared with 64% of the national population).

These results suggest that the least developed, least affluent areas are not currently prioritized for investment. If the GoL intends to promote land investment as a development and poverty alleviation tool, impacts on local communities must be carefully considered and addressed through project design, more active inclusion and participation of local stakeholders, regulatory safety nets and well-enforced compensatory policies. These considerations will be greatly supported where decision makers actively utilize the baseline of data presented in this analysis.

Finally, the trends observed in the types of land granted for investment imply a remaining gap between official GoL objectives for land and forest management and regulatory practices surrounding investment. The development of 'unproductive' or 'marginal' lands, in parallel with ambitious environmental goals for national forest cover, have been cornerstones of the GoL's wider land management objectives. It is thus surprising to see that the most common land cover class granted for investment is unstocked forest and ray followed by forest.

Almost one third of all deals occur in areas designated for management as forest land (in one of the three official forest management categories). Most of the area under investment within the three official forest management categories is within protection forest (77%). A significant share of the investment area (15%) is also within conservation forest. This is despite considerable regulatory limitations on development activities in protection and conservation forest areas. The allocation of these areas carries serious implications for forest ecosystems and forest-dependent communities, and detracts from national goals for increased forest cover, sustainable resource use and leveraging land investment to increase land productivity. This gap between regulation and practice can be closed through improved horizontal (across sectors and Ministries) and vertical integration (from central to local levels) of land planning and resource management initiatives.

This publication improves the "spatial legibility", or visual presentation and interpretation, of the current land investment landscape in the Lao PDR. It moves beyond specific case studies to make sense of the wider context of land-intensive investment. This represents a critical step forward considering the current lag in government capacity for regulation, monitoring and enforcement, and the pace of approval of investments in land. Nevertheless, further research is necessary to gain a more precise understanding of key driving factors behind the trends observed here. In order to develop a deeper understanding of these issues, case studies are pivotal tools in providing insights into the drivers of investment, stakeholders' demands and motives, and gaps between policy objectives and implementation outcomes. They also shed light on major obstacles faced in creating and maintaining the inventory. Whereas case study-based research has provided the basis for much of the current debate, this publication provides a new baseline of information within which past and future cases can be better contextualized for contribution to the policy formation process and to more clearly illustrate causal linkages that the inventory and such spatial analysis cannot pinpoint.

The inventory includes spatially referenced data across the entire country, thus its completion and analysis is a major accomplishment. It moves data collection on land investments from the traditionally aggregation-based analysis (provincial and district datasets) to a cartographically representable, spatially queryable landscape of investment projects. Furthermore, the fact that this data has been collected on a national scale, analysed and published in this format represents an

important achievement in transparency. By openly acknowledging and discussing current shortcomings and gaps of the inventory data set, the GoL reveals an awareness of weaknesses in past efforts at monitoring investment and a willingness to leverage the inventory's knowledge for improved, evidence-based decision making. There is a need to continue with inventory work to compliment as well as update data on land deals granted and their implementation status – a responsibility which currently falls on a range of different government ministries. A stronger network for data exchange, a joint database and support for capacity building of relevant actors at the provincial level and below will all be crucial to making continued work sustainable and effective.

The inventory data also needs to be shared, used collaboratively, and constructively critiqued in order to remain viable as a source of knowledge. The more accessible, current and forthcoming data is to the wider public, especially those capable of critically evaluating it, the more it can be improved in its utility and comprehensive scope. Making other comparable data sets publicly available would allow for major improvements and contributions, such as through ground truthing and the outcomes of in-depth case studies.

Currently beyond the scope of this analysis, issues highlighted in the data collection process and through case studies (see Annex), such as stakeholders' misunderstanding of government mandates, "data" ownership, and a lack of transparency in granting land deals should all be further explored.

Investment in land is a cross-cutting issue affecting almost every sector of the economy, most aspects of governance, and a diversity of local level livelihoods in the Lao PDR. As evidence that its implications for national development are a central concern of the GoL, the Prime Minister issued a notification in June 2012 that land concessions for eucalyptus, rubber and mining be suspended with the stated purpose of reassessing current approaches to granting land for concessions (Notification PM/13, 11.06.2012). Responsibilities related to the granting of land, including land surveying, land allocation processing and impact monitoring, are distributed across a number of different Ministries and government agencies. Reforming and simplifying the current convoluted system is an important first step towards improved land investment management. The June 2012 notification provides an opportunity to reconsider sustainable alternatives to the current pace and approaches of attracting capital through large-scale investment in land, and to examine and address negative impacts accrued already.

This publication and the inventory project more generally, have served to establish a more 'legible' baseline of information on the state and trends of land investments in the country. This baseline can serve as a leaping point for scaling up insights and lessons learned, and for inspiring more evidence-based dialogue and decision making when approaching land investments in the Lao PDR. We therefore hope that this publication's findings may shape relevant legal frameworks and contribute to the revision of the forestry and land laws, as well the elaboration of an overarching and



Lignite Mine, Hongsa District, Sayabury Province

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Rubber Plantation, Long District, Luangnamtha Province

ANNEX

Case Studies

Introduction

Despite the volume of investment in land concessions and leases in the Lao PDR, the governance mechanisms and capacities in place for approving, managing and monitoring state land rented out for development remains lacking in a number of areas. As a result of a range of institutional weaknesses in this respect, investing companies and individuals have been able to violate the approval process as well as the conditions agreed to upon approval. These violations often lead to grave social, environmental and economic impacts and a significant loss of government revenues.

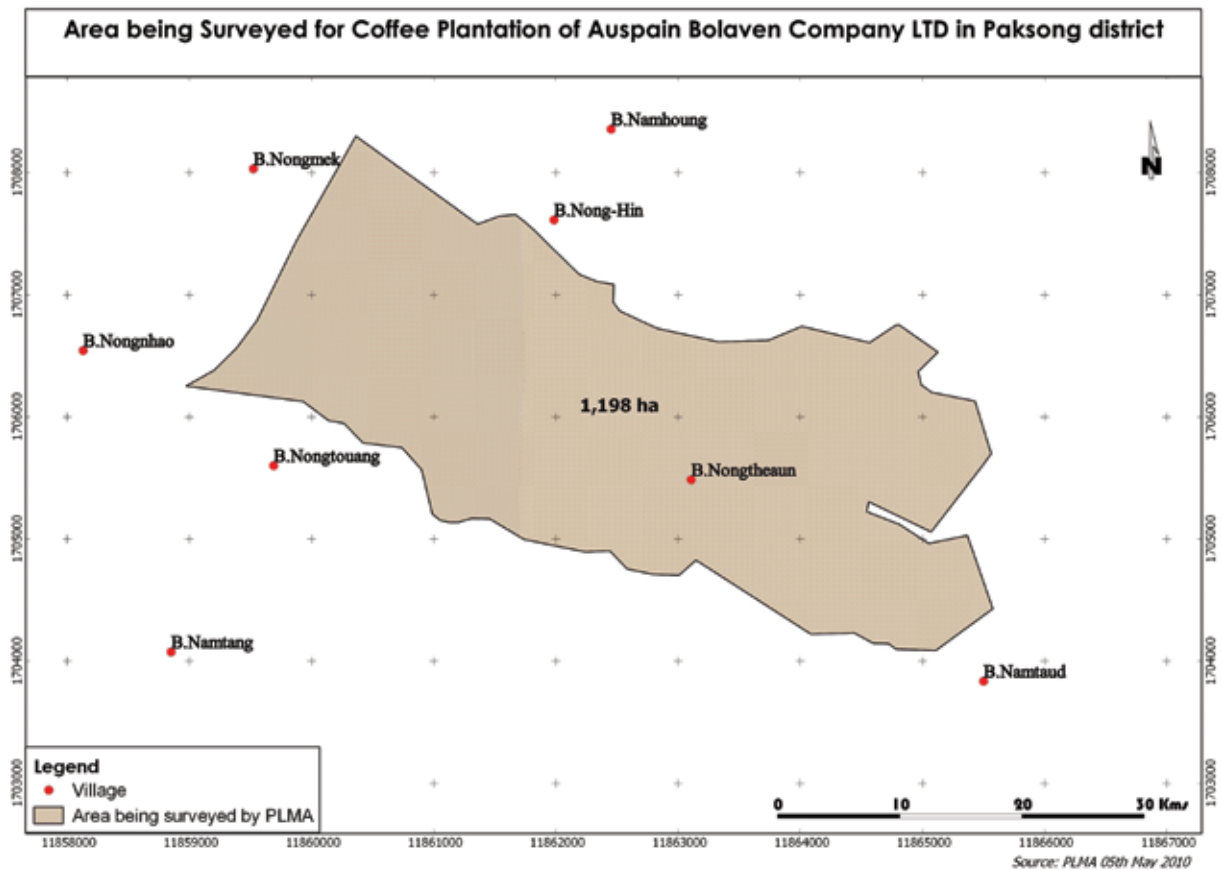
In this annex, several case studies encountered in the process of collecting data for the concession inventory are described

in order to better highlight the current governance issues related to granting, allocating and implementing investment involving state land areas. The cases were encountered during the data collection and are provided in the form presented here by the Ministry of Resources and Environment (MoNRE) of the Lao PDR. Case studies serve to place this publication's results and analysis into a wider context by discussing the process behind land concession and lease approval, the relationships and interactions across stakeholder groups, and the regulatory loopholes which allow for unsustainable natural resource exploitation in the Lao PDR. They also provide insight into potential future trends and highlight areas for improvement in decision making.

Capacity Issues

Case Study 1: Investment related issues begin with the initial process of surveying land and establishing boundaries for land granted to developers. In 2006, Yunnan Rubber Investment Company, Ltd. (Bolisat Yunnan in Lao) was granted a 214 ha concession by the Luangnamtha provincial government in Ban Sobtoud, Luangnamtha District. A survey team from the provincial and district authorities conducted a land survey before granting land to the company. The team used an existing topographic map to demarcate the concession boundary and,

based on the map, calculated a total area of 320 ha available for investment (see picture 1). In 2009, the inventory team found that the actual area the map depicted was an area of 3,411 ha in size instead of 320 ha (see Map A1). Calculations had been performed incorrectly, resulting in an area granted which was ten times the figure stated on the map attached to the contract. Fortunately, the investing company did not develop its concession according to the map. Still, it cleared an area of 345 ha, which is considerably larger than the 214 ha it was granted (see Map A2).



Regulatory Issues

Limitations on Area Granted

Regulations exist for granting land for investment and development, but their impact depends completely on compliance and enforcement. Particularly important for investment projects in the forestry sector approved before 2007 is the Forestry Law of 1996, which established the division of responsibility for approving concessions and leases. It set area ceilings for the authorization of land investments in forest land to be converted into other land uses for different levels of government responsible. District authorities can grant up to three ha, provincial authorities up to 100 ha, the central government up to 10,000 ha and projects greater than 10,000 ha require National Assembly approval. But since newer regulations set in 2009, district level authorities are no longer allowed to grant land for plantations, while province level authorities are allowed to grant only degraded forest up to 150 ha (500 ha for barren land) to investors, and the central government is limited to 150-15,000 ha (500-30,000 ha for barren land); and anything bigger than this must be approved by the National Assembly (PM decree No. 135/PM on Land Leases and Land Concessions 2009).

In many cases, the inventory team found that authorities on provincial or district levels were approving land areas over the limit of their mandate. For example, in Vientiane Province the Lao-Thai Hua Rubber Co. Limited was granted a land area of 670 ha in 2006 by the provincial authority. Other cases show that regulations can be evaded, as in Xayabury Province in 2001, where the provincial governor approved a land concession for a Lao company named "Y & P Agriculture CO. LTD" for Paulownia or Kiri tree plantation on an area of 300 ha in Kenthao District. In order to grant such large concession area at the provincial level, the land was divided in several parcels and the approvals were made in separate documents. Thus ultimately, ceilings on the area granted at different levels of government prove weak tools for regulating large-scale land investments.

There remains a significant gap between land use planning-based restrictions on land investment and practices in granting land for investment. A number of concessions have been granted on land where the activities planned actually violate land use regulations. In several cases, disregarding existing laws and regulations, land deals have been approved for areas such as dense forest and watershed protection areas violating the Forestry Law of 2007⁴³.

Case Study 3: A concession area was granted to the Ra-farm Development Company, Ltd. (a Chinese investor) in Ban Houay-pamak village, Med District in Vientiane Province. 100 ha were granted to the company by the provincial governor in 2008 as a concession for cultivating corn, green beans and dragon fruit for 15 years. Unfortunately, an inventory team only later observed that the land allocated to the company was originally healthy forest, and large trees growing on the land were cut or burned. Villagers said that they had used this forest beforehand for NTFP and timber collection and that it contained considerable amount of large older trees (mai du, mai tae) (see Picture A1).

Case Study 4: For many project sites, land surveys, a feasibility study and to a certain extent some basic social and environmental impact assessments are conducted. Many of the resulting reports, however, are inaccurate or do not even reflect the real state of lands being allocated for investment. Such was the case of the Xeunhua Commerce Company, Ltd.,

which was granted a concession to plant rubber in Lomeu Village, Sing District in Luangnamtha Province on an area of 300 ha. The site survey report done by DAFO stated that the land consisted solely of fallow forest (left after shifting cultivation, 2-7 years old), that no trees with economic value existed within this area and that the company's proposed activities posed no environmental threat to the watershed. However, after another inspection done by inventory team (consisting of NLMA staff in collaboration with the PLMA), it was discovered that the area consisted of some fallow forest as reported within the DAFO report, but that the predominant land cover was healthy secondary and "primary" forest (pa yai, pa kae). According to the village head, villagers have not used the area for shifting cultivation and upland rice production in more than ten years.

Case Study 5: Phongsapthavy Road-Bridge Construction Company, Ltd. was granted 500 ha in Houayteui Village of Xayabury District for rubber cultivation. Despite being granted 500 ha, only 345 ha were actually allocated in the end, as a full 500 ha were not available. Even then, those 345 ha encroached upon village production land (primarily rice paddies and fish ponds) which has been used for more than a decade already. The contract between the company and the relevant government authorities was prepared by the provincial Planning and Investment Department, apparently without a prior site survey and land zoning.

Picture A1: Concession area of Ra-farm Development Company, Ltd. in Ban Houay-pamak



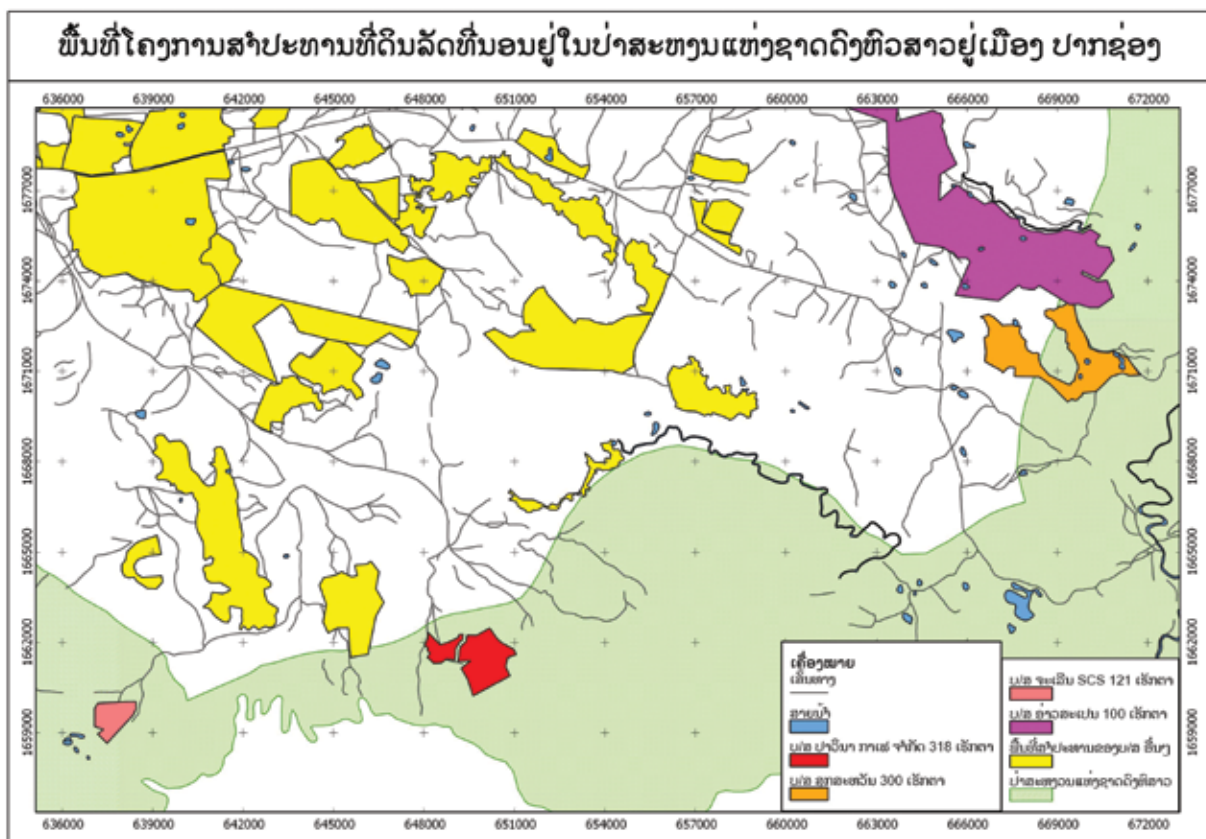
⁴³ Articles 74, 75, and 76 of the Forestry Law of 2007 stipulate that "industrial tree plantations must be carried out on degraded forest and defoliated land".

Case Study 6: Concession areas allocated to several projects fell inside the Donghuasao National Protected Area (NPA) in Champasack Province. The rubber plantation area for Pavina Coffee Company Ltd. (see Map A4, polygon in red) located in Phanouandong village, Paksong District, was found to extend into the NPA by an area of 318 ha. The rubber plantation area of Chaleurn SCF Company Ltd., located in Houaisoi, Paksong District, overlapped with the NPA by a total area of 121 ha. Finally, the rubber plantation of Dakluck Rubber Company, Ltd., located in Namsai-theung village, Pathoumphone District, was found lying within the buffer zone of the NPA.

These three cases reflect the poor quality, or lack thereof, of site surveys and an ongoing failure to adequately consult local villagers before granting and allocating land to investors.

Site surveys, if done at all, do not necessarily include surveying land on site, but rather are often based on information and maps provided by secondary sources. Furthermore, land use plans (if they exist) are often inaccurate, making on-the-ground surveys critical. Such surveys are thus tailored to fit relevant regulations regardless of the site context. On the other hand, some cases may also reflect the pressure of district authorities to allocate larger areas for investment projects, if already granted on a higher level. As already mentioned, monitoring of investment project implementation and land clearing activities is weak or often non-existent. The last cases listing concessions within National Protected Areas underline the lack of communication between line agencies and of various levels of authorities' adherence to the legal and regulatory framework when granting land.

Map A6: Concession areas allocated inside the Donghuasao National Protected Area



Investor Obligations and Agreements

While a range of weaknesses range across the relevant government bodies, there are also a range of cases of investors violating the application process or their contractual obligations once granted land. In many cases it seems companies proactively seek to exploit weaknesses in the land concession granting system, while others simply lack clear directives or strong requirements under which to operate, both regulatory and in their communication with local stakeholders.

Case Study 7: Houfuco Company, Ltd., a Vietnamese investor, was granted 284 ha for growing cassava in Ban Spon and Ban Songkalong villages in Saravan District in 2005. According to the Minutes No. 02 taken of the meeting between the district governor, investor and village authorities, it is stated that the main reasons for granting land in those two villages to the investor was that both areas are considered poor and have no access to roads and facilities. The company therefore, in exchange for the land, agreed to build an access road, provide electricity, and to build a school and a health care centre to those villages. As of 2010 when the inventory team visited the village, the access road and the agreed facilities had not been constructed, thus the investor had still not fulfilled its obligations to the villages. The investor's explanation was that he could not fulfill his obligations, because there was too little profit from the business development.

This case and several others where agreements are made only verbally reveal the severe disadvantages local populations have in land negotiations, especially where they are poorly educated, illiterate or simply under exposed to tenure or business related standards and practices. Government bodies responsible also do not enforce agreements or obligations between the local stakeholders and investors, often to the detriment of local communities and the gain of investors. The unfair balance of power between investor and villagers shown here is a critical issue in the governance of land deals and investment in the Lao PDR.

Investor Violations of the Implementation Process

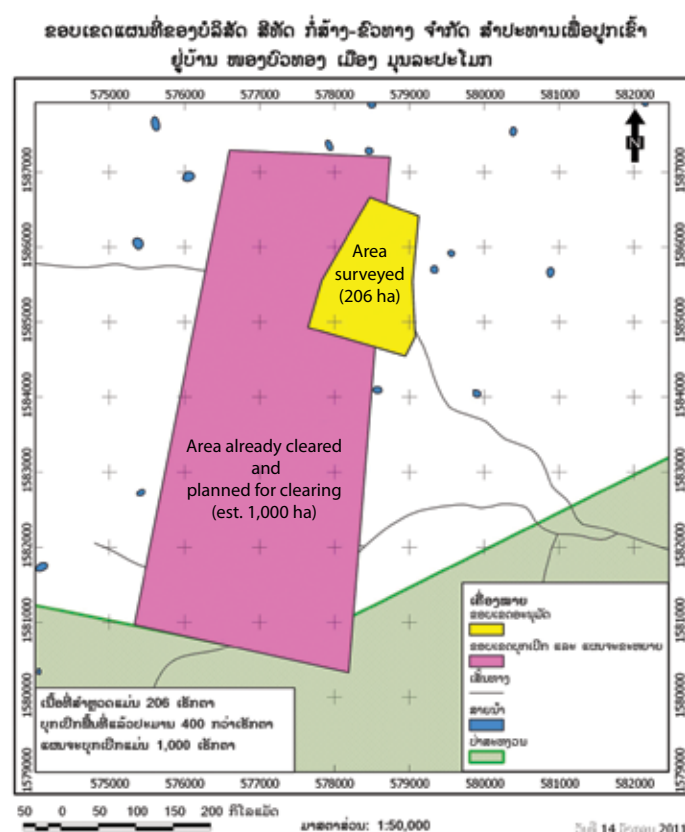
Case Study 8: In Xayabury Province, a number of companies have begun activities before receiving (and sometimes before even requesting) authorization from the relevant government authority. For example, Mr. Somphone Hakpaseuth started clearing land and planting rubber seedlings on an area of 330 ha in 2009 in Ban Nampui and Ban Khounphon village, Phiang District. Those activities began before even submitting the required documents for government approval.

written permission or approval documentation. Both cases again show the lack of a monitoring mechanism and on the ground regulatory enforcement.

Case Study 9: In Champasack Province, the Sithat Road-Bridge Construction Company, Ltd. engaged in commercial rice cultivation in Nongbouathong village of Mounlapamok District. Initially, the investor's proposal was to obtain a land concession for rice cultivation. In 2008, a technical team consisting of staff from the PLMA, DAFO and the district administration was appointed to carry out an initial site survey for allocating potential land for the investor (Refer to the site survey report No. 08/PLMA, dated 8/12/2008). Out of the total 206 ha area surveyed by the team, only 100 ha were granted to the investor. The PLMA then turned the request over to the Provincial Governor for consideration, but in the midst of the process of consideration, the investor started land clearing activities in 2008.

Map A5: Area surveyed for approval versus the area cleared by the investor, Sithat Road-Bridge Construction Company, Ltd., in Nongbouathong village of Mounlapamok District

At the time the inventory team visited the concession area in 2010, approximately 400 ha of land had been cleared by the project investor, who told the team that he planned to clear altogether 1,000 ha as he assumed that his request has been approved. The area cleared, however, greatly exceeded the originally proposed area of 100 ha without having any approval document so far (see Map A5).



These two cases show that there is a general lack of communication between the government and the investor and that as long as investors are not monitored, they may feel free to go ahead with development plans, with or without

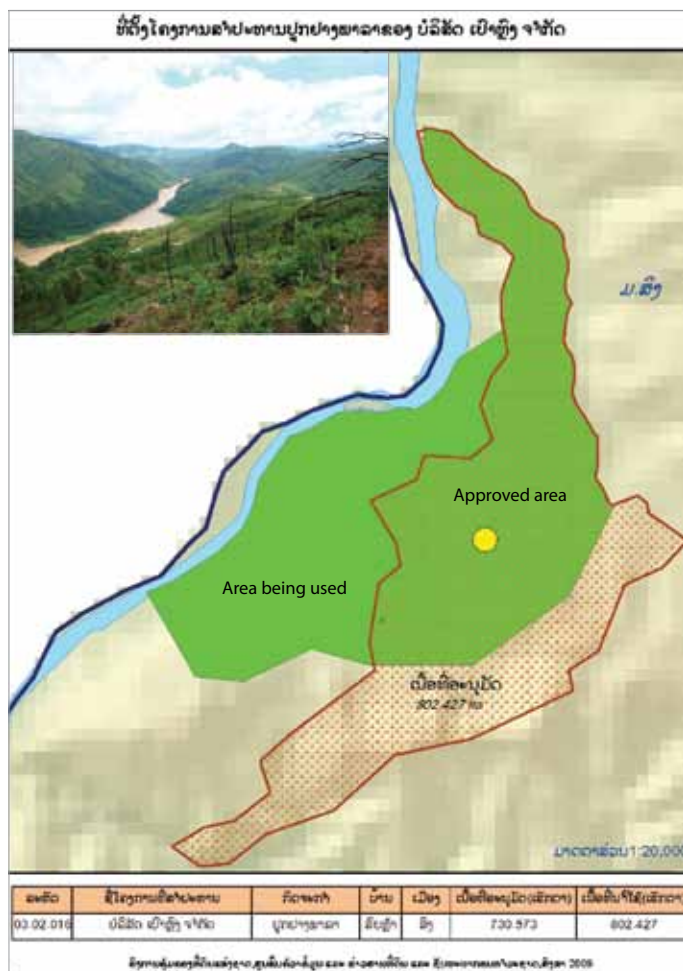
Case Study 10: The Chinese Paolong Rubber Plantation Company, Ltd. was granted a land concession of 100 ha in the Sob-la area of Sing District in Luangnamtha, located along the joint border area between the Lao PDR, China and Myanmar. Within the agreement and survey report, it is stated that the concession area should be located two km away from the Lao PDR-Myanmar and Lao PDR-China borders, and that the areas from 500 to 1,000 m bordering the Mekong River were banned from clearing. However, land was cleared all the way down to the riverside along the Mekong River bank. A total area of 600 ha had been cleared, which was much more than that agreed upon, and this included land outside of the zoning area (see Map A6).

Case Study 11: The Jiasouang Rubber Promotion Co., Ltd. was also found to be using more land than originally approved by the relevant government authorities. The investor was granted a land concession of 20 ha to build a demonstration garden for rubber plantation promotion in Ban Phoutin, Nalae District, in 2008. In reality, the company cleared 329 ha of land and the Provincial Governor issued an order to stop the activities and ban the company from the area in 2009.

However, at the time when the inventory team collected data in Luangnamtha (mid 2009), the company was still carrying out rubber plantation activities.

Case Study 12: In Xayabury, Phongsaphavy Road-Bridge Construction Company, Ltd. is a domestic company which obtained authorization from the provincial authority to operate a rubber plantation business. It was granted an area of 500 ha through a contract signed on 13 March, 2008. The approved land is located in Ban Houaiteui, Xayabury District, which is an area surrounding the Xayabury provincial protected area. After clearing land and planting rubber trees for a period of time, the company built a sawmill on its concession and started logging both in the concession area and in the surrounding provincial protection area. The operation of a sawmill business was not included in the contract and was not approved by any government agencies at all. The PLMA and DLMA of Xayabury District conducted a site inspection and issued notifications to the company to shut down the operation of the sawmill. However, the company ignored the notifications and instead continued cutting trees in the area (as reported by the PLMA).

Map A6: Concession area for rubber plantation of Paolong Rubber Plantation Company, Ltd. in Sob-la area, Sing District



All three cases show again the lack of monitoring during the initial stages of land clearance and project implementation and enforcement of land authorities’ regulations and directives. Investors deliberately clear larger land areas as granted, likely because enforcement or issuing of penalties do not seem to be applied. Often clearance of larger land areas may also be driven by the additional profit from logging high value timber. The last case especially shows that the investor used its concession land as an opportunity to exploit natural resources in the surrounding area, which likely generated even higher profits than its approved activities.

The case studies described here reveal a number of insights gained by the inventory team during data collection which speak to the complexities and challenges defining the current land investment climate in the Lao PDR. These experiences are invaluable tools for identifying driving factors behind the boom in large-scale land investments and weaknesses in the application and enforcement of regulations across varying contexts. Still, deeper and more systematic research into the issues highlighted by case studies is needed to transform isolated experiences into a nationally applicable set of recommendations.



Lignite Mine, Hongsa District, Sayabury Province



This publication provides the first national overview of land concessions and leases in the Lao PDR. It was initiated in response to the rapid expansion of land deals and the corresponding demand for a data-driven assessment on a national scale. The analysis is based on a government database on land investment and includes both statistical and spatially referenced data, in combination with a range of socioeconomic and biophysical variables. This publication gives insight into key issues surrounding the land investment debate, and provides a valuable baseline for further research and informed, evidence-based policy making.



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