



Trying to follow the money

Possibilities and limits of investor transparency
in Southeast Asia's rush for "available" land

Michael B. Dwyer



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Center for International Forestry Research (CIFOR)

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Executive summary

Half a decade into the global land rush, land-intensive investment throughout Southeast Asia continues to confront social and environmental issues such as land conflict and improperly regulated forest conversion. A central challenge hindering better regulation and accountability in both the public and private sectors is the shortage of good data about where land-based investment and trade actually take place. Despite a range of research and other efforts to systematically track large-scale land deals, basic questions about who is developing what kinds of projects, where, and who is investing in them, remain difficult to answer with any degree of certainty.

This study uses publicly available financial and spatial data to examine the geography of land-intensive investment in Southeast Asia, and to identify the limits imposed by problems with data availability. It focuses on three regions where land has been widely seen to be available for new investment: Indonesia's outer islands; the "development triangle" where Cambodia, Laos and Vietnam meet; and the Golden Quadrangle region which comprises the borderlands of northeastern Myanmar, northwestern Laos, southern and western Yunnan, and northern Thailand. These areas are examined in three chapter case studies, each of which uses currently available spatial data to evaluate trade and investment dynamics in the area – including the processes used to *make* land available – and combines these, where possible, with specially commissioned research on investment in key commodity crops to evaluate transparency with respect to financing. In a global and regional context where regulatory change is increasingly being driven by transnational concerns – by consumers, retailers and investors – information systems capable of tracking particular investments' spatial targets, and thus their likelihood of various social and environmental outcomes, are increasingly desirable. This study describes current capabilities and challenges to realizing a more complete picture of investors' roles in the development of "available" land.

Indonesia's outer islands have seen an explosion in oil palm production over the last decade and a half, and a proliferation of oil palm concessions that dwarfs areas currently under production. Using the case of Kalimantan, Chapter 2 examines the available

evidence to quantify both the magnitude of this expansion and the significant land bank that exists in the gap between plantations and concessions. This excess is substantially larger than would be the case based on economics alone, suggesting the importance of subnational governance issues related to jurisdiction over land. These issues, including the de- and (partial) re-centralization of control over Indonesia's forest estate, and specifically the role that oil palm plays in facilitating local authorities' roles in developing *non-forest-estate* areas, help explain both the large fraction of undeveloped concession holdings and the low quality of existing data. Chapter 2 also reviews available information on financing in the oil palm sector, finding significant transparency at the large end of the corporate spectrum, but much less at the smaller and middle ends. Despite significant information about funding sources, it is difficult to link much of this data to particular concession locations, although new research shows the potential to close this gap significantly.

The CLV development triangle, examined in Chapter 3, represents an exporting of Vietnam's model of Central Highlands-style agribusiness development into the adjacent "underdeveloped" regions of Laos and Cambodia. This case focuses on the rubber sector (among the largest and best-studied in Laos and Cambodia), and notes the ways in which differences in the land allocation process are reflected in the concession inventory systems available to the public. The distinction between point- and polygon-based inventories (see Figure 1) becomes significant here, as does the issue of company names (as in Chapter 2). In the financing arena, the CLV region's rubber sector is less legible than the outer islands examined in the previous section, but is nonetheless partially transparent due to the public listing of a few of the major players. Ultimately, the presence of many unlisted companies and the lack of spatially disaggregated information provided by companies that *are* listed create major barriers, but also openings for engagement. As in the previous case, the CLV region exemplifies the study's finding that land availability is often created *through* concession making, and that the gap between investment dynamics and regulatory visibility keeps this process largely hidden from public view.

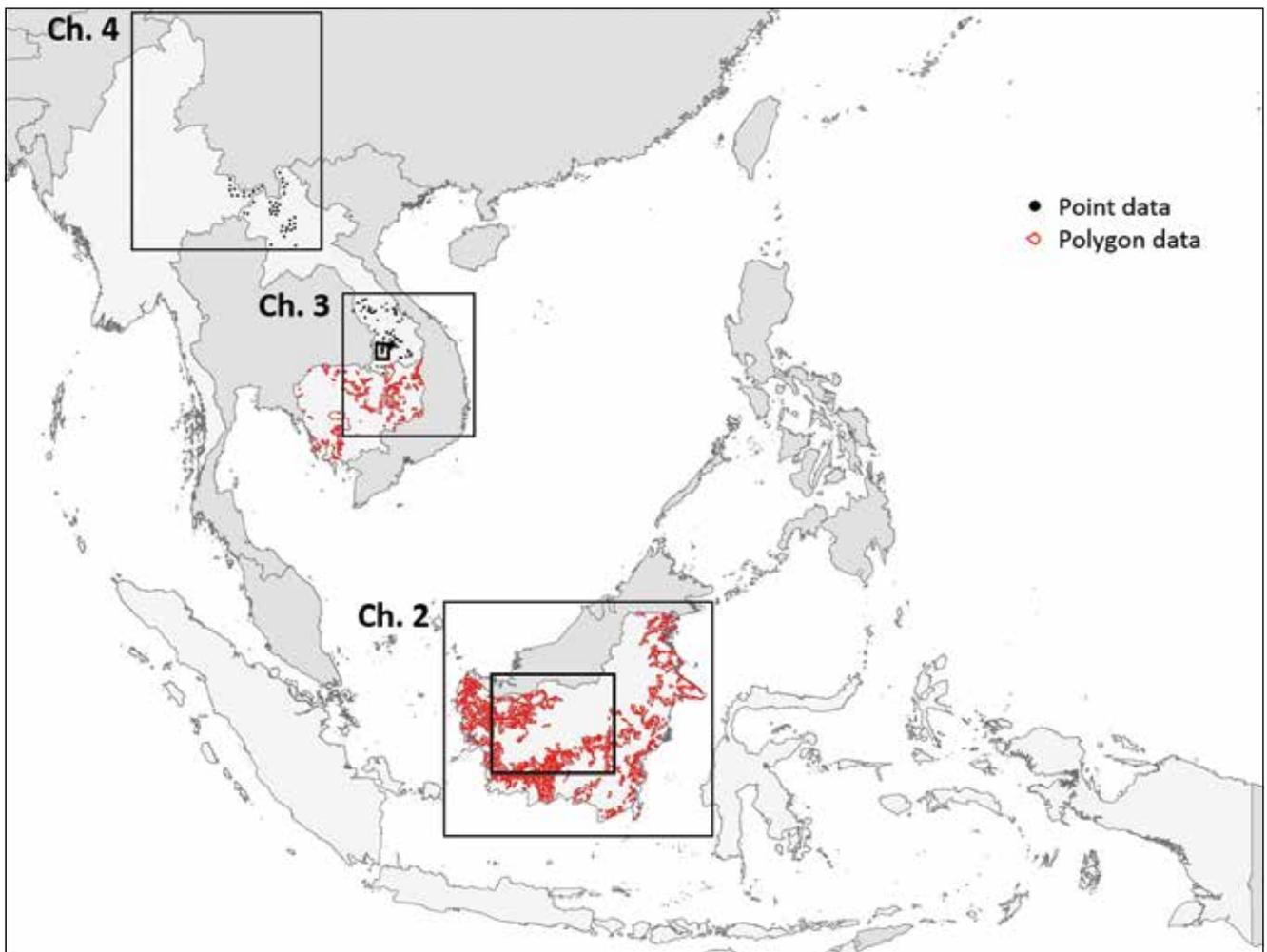


Figure 1. Case study areas and spatial data systems examined in this study.

The borderlands of northern Myanmar and northwestern Laos, the focus of Chapter 4, have been the target of significant trade and investment efforts over the last two decades, and increasingly provide the basis upon which the so-called Golden Quadrangle development region is identified. A reframing of the older (and distinctly Cold War-esque) Golden Triangle, the Quadrangle's inclusion of China as an explicit member reflects China's economic influence, as well as its increasingly visible role as a regional geopolitical hegemon. Chapter 4 focuses on a data set created and posted online by Chinese prefectural-level authorities that describes Chinese state financing of agribusiness investment in northern Laos and northern Myanmar. In a regional context of very low spatial transparency of investment, the data represents an example by which an *investing* country has created publicly available data about its own projects abroad. While this data set suffers from incompleteness in both time and space, its existence gives geographical precision to the

findings of other researchers, and creates openings for dialogue about spatial transparency related to land-intensive investment and development cooperation.

Chapter 5 concludes by reflecting on a number of opportunities for engagement. It argues that the ascendancy of State legitimacy in the regulatory context demands that market-based approaches to sustainable development be complemented by and integrated with more "traditional" regulatory measures, albeit on a transnational level. Seven specific areas for engagement are discussed:

1. *Concession opacity and "high opportunity costs"*: This section argues that the high opportunity costs associated with more sustainable land uses are not simply the result of objective market demand, but of the *de facto* subsidies built into governance processes that produce available land at artificially low costs. This section discusses opportunities for engaging with this issue in countries throughout the region, including

- Cambodia, China, Indonesia, Laos, Malaysia, Myanmar and Singapore.
2. *REDD+ at landscape scale(s)*: This section highlights issues that connect trade and investment in land-intensive commodities to current and future efforts to develop REDD+ at both the project and the landscape scales. In addition to outlining ongoing research on REDD-related economic choices and tradeoffs in Laos, this section emphasizes the importance of considering the economic linkages between landscape-scale REDD and “tele-coupled” landscapes where land-intensive commodities such as palm oil and rubber are consumed.
 3. *Global linkages and implications*: This section generalizes the previous example to landscapes beyond REDD+, proposing the example of food security-based linkages to oil palm regulation. It also addresses issues of translation and contextually different interpretations of “public” access to information, and proposes opportunities for expanded transnational research cooperation – especially in China and Vietnam.
 4. *Beyond informed consent: Cultivating public debate*: This section describes the need to influence debate about concession-based development and sustainability beyond the boundaries of particular project interventions. Active debates exist within Cambodia, Indonesia, Laos, Myanmar and Thailand, although the extent to which these overspill specialist conversations and enter the public sphere varies.
 5. *Spatial transparency*: This section notes that the currently low levels of spatial transparency throughout the region suggest that both legal and other opportunities exist to enhance public knowledge about development efforts targeting public resources such as state-owned land. Noting the prevalence of gazette-based legal disclosure related to the WTO, this section suggests that gazetting concession areas could be a policy solution that goes some way toward addressing the currently low levels of spatial transparency.
 6. *Financial transparency*: As tenure-related financial risk emerges as an increasing concern for investors (for both ethical and performance reasons), investors – whether private, state or institutional – may demand more from companies in terms of spatial targeting information. This section reflects on this possibility, and identifies Vietnam and Indonesia as two places of potential engagement.
 7. *Land titling: Why, where, when and what else*: This section concludes by noting that property formalization provides an important arena for engagement, as conservation and development interests (including REDD+) converge on long-standing debates about how, where and why to pursue land titling. In addition, this section concludes by questioning whether titling is sufficient to address land governance problems; noting the rise in concession moratoria throughout the region in recent years, the study concludes by suggesting that more expanded forms of regulation could provide an opportunity for engagement as well.

1 Trying to follow the money in Southeast Asia's land rush

Questions of scale not only involve extensions of land, but also the application of capital to that land ...

Marc Edelman, "Messy hectares" (2013, 488)

1.1 Introduction

Since late 2008, researchers have been interrogating a raft of often conflicting evidence about growing transnational access to arable land. The labels mobilized to describe the phenomenon – rising global interest in farmland (Deininger and Byerlee 2011), a new global land grab (Grain 2008), even the denationalization of state territory (Sassen 2013) – testify to the high stakes and normative debates involved. But they also highlight the uncertainty. The defining feature of the new global land rush, indeed, is arguably the uneasy tension between the growing conviction that something new, expansive and dangerous is at work within the global networks that govern the production and trade of agricultural and forest commodities, and the fact that the evidentiary basis upon which recent changes are understood remains thin (Anseeuw et al. 2013; Oya 2013; Scoones et al. 2013). Borras and colleagues thus begin a recent review by noting the “consensus that land grabbing is underway and that it is significant”, but also flagging the lack of agreement “as to how much land has been changing hands and [even] on the methodologies of identifying, counting, and quantifying land grabs” (Borras et al. 2013, 161). Other researchers (e.g. Cotula et al. 2009; Deininger and Byerlee 2011; HLPE 2011; Edelman 2013) make a similar point.

Numbers have long been at the heart of the land rush debates: about what is happening and where, who is involved and how, and what might be done about it (Anseeuw et al. 2012; Scoones et al. 2013). More than anything else, the mega-hectare announcements of 2007 and 2008 – the ZTE deal for millions of hectares in the Democratic Republic of Congo (DRC), to name but the largest (also see von Braun and Meinzen-Dick 2009) – helped launch the global land grab as a recognizable issue. As the *Economist* put it:

A big land deal used to be around 100,000 hectares (240,000 acres). Now the largest ones are many times that. In Sudan alone, South Korea has signed deals for 690,000 hectares, the United Arab Emirates (UAE) for 400,000 hectares and Egypt has secured a similar deal to grow wheat. An official in Sudan says his country will set aside for Arab governments roughly a fifth of the cultivated land in Africa's largest country
(*Economist* 2009)

But the numbers always came with caveats. The opacity of many government bureaucracies has placed the burden in tracking land deals on civil society actors; the media, NGOs and international organizations have thus provided the bulk of the data about transnational land deals thus far (Borras et al. 2013, 161). But as Oya (2013, 506) notes, these “various forms of crowdsourcing” are a recipe for imprecision, or worse: “Media reports do not necessarily report facts, even if they try, as their capacity and willingness to verify reliability and sources are constrained. Sometimes numbers are misunderstood, inflated or simply misreported.” Moreover, “by combining different [information] sources with very different degrees of reliability and verifiability, large-scale ‘land grab’ databases fall into the trap of mixing apples with bananas, driven by a willingness to report as much as possible as quickly as possible.” Global land deal estimates now range between tens and hundreds of millions of hectares (HLPE 2011), and often mix “facts, rumors, lies and mistakes” (Oya 2013, 510). Even when they get their facts right, many purport to measure significantly different things under the same heading (Edelman 2013).

This mixing is especially pernicious when it comes to the status of reported land deals. Some are floated as mere possibilities; others are actually signed off as formal concessions; still others are actually developed on the ground. As Edelman notes, these essential distinctions are often elided:

The [literature's] almost obsessive focus on hectares, while no doubt effective in attracting the attention of major media, foundations, policymakers and civil society organizations, leads analysts to downplay other dynamics and to assume a commensurability that is likely spurious. Questions of scale do not only involve extensions of land, but also the application of capital to that land, the availability of water, and the types of accumulation and social reproduction that these factors facilitate or impede.

(Edelman 2013, 497)

This study attempts to address some of the data-related challenges of the land rush at scales beyond local case studies by following the money rather than just the area numbers. This is difficult to do, and the approach pursued here is undertaken as much to highlight the uncertainty inherent with the currently available data – and thus to argue for the advancement of transparency-creating processes – as to make definitive claims about what is actually going on. Nonetheless, by using data that public companies provide their investors, and combining this information, where possible, with spatial data on land deals that is available at the national level, this study contributes to ongoing discussions about the right balance of state- and private sector-led regulatory reform. Focusing on three key growth landscapes in Southeast Asia, the analyses of financial and spatial transparency presented below begin to resolve the gap between large and uncertain *area* numbers and the actual financial flows that have gone into developing (some of) these hectares into actual investments. Following the money helps avoid the problem of “mixing apples with bananas” mentioned above, and points the way toward a series of opportunities for science-based policy engagement discussed in the concluding section. Despite the methodological challenges, the efforts pursued here elaborate the uncertainties that remain, and help sharpen the focus of ongoing discussions.

1.2 The approach: Fixed assets as a proxy for land development

Following the money is easier said than done. The corporate structure in general is oriented toward limiting liability, and this often means limiting risk through restrictions on information flow. Complex webs of ownership and the business-friendly regulatory environments of many host

countries often select *against* following the money from investor to investment site rather than *for* it. Nonetheless, companies do have to tell their investors how they are using their money, and the degree to which they explicitly address the question of *where* this is happening is increasingly open for debate. As tenure- and deforestation-related risk becomes increasingly important to investors (Munden Project 2012; Brinkley 2013; Global Witness 2013; Leon et al. 2013), location and all that it implies are an increasingly essential part of the corporate due diligence process.

This paper uses financial data released by public companies to assess investment trends in three plantation landscapes in Southeast Asia. The data on which the analysis is centered comes from what companies refer to as “fixed” or “non-current” assets, which can be extracted from company financial statements and accessed through databases aimed at servicing institutional investors (e.g. Reuters Thomson ONE). As explained by the research firm on whose work we draw, “companies usually report the value of their investments as ‘non-current assets’ on their balance sheet;” for example, a firm’s “non-current rubber assets” in a given country “is seen as the best proxy for the total investments of the company in rubber plantations and rubber processing factories” within a given time period (Profundo 2013, 4). By scouring successive annual reports, financial statements and investment databases, it is thus possible to provide rough estimates of new investment through fixed or non-current asset totals, as well as to describe qualitative changes in investment patterns by both particular companies and, if the data is good enough, entire commodity sectors.

A key challenge with use of this approach is that many companies do not disaggregate their fixed asset data by sector or location. For companies that work in a single country and sector, this is not a problem. But for companies that work in multiple countries and/or multiple sectors, various forms of sector- or country-specific (“segment”) data is required in order to focus on fixed assets within the area of interest. Where this type of data is missing but needed, plantation area as reported by companies or in the wider literature can be used as a proxy. As Profundo explains, again with the example of rubber:

For companies which are ... active in [multiple] sectors and/or [multiple] countries, the “non-current rubber assets” are as much as feasible

derived from segment data in the company's annual report, where necessary complemented by [available] data on rubber acreages or production volumes per country. If, for instance, a company's rubber activities represent 80% of its total assets, but no breakdown is given per country, the acreages per country are used as a proxy. If for instance 75% of the company's acreage is located in the selected country, it is estimated that $80\% \times 75\% = 60\%$ of the company's non-current assets are "non-current rubber assets" in the selected country.

(Profundo 2013, 4)

These sorts of calculations are risky, however. Each replacement of stated asset numbers with a proxy represents an assumption, which, while perhaps not unreasonable, can be difficult to evaluate. Echoing the mix of high magnitude and high uncertainty discussed above, using segment or other proxy data makes reported fixed asset data usable for the purposes of estimation, but highlights particular areas where transparency could be improved in the future.

A second key challenge with using fixed assets to describe sector behavior stems from the issue of coverage. Public companies comprise a variable portion of the sectors in which they operate: sometimes a lot, sometimes minimal. The problem is that entire sectors are often difficult to characterize, since some portions are highly opaque or even unknown. It is thus often difficult to evaluate the extent to which public companies *cover* a given sector; and even if they do – as in the Indonesian palm oil sector – they may be skewed in a particular way. Interpretations of available fixed asset data thus tend to be tentative, and highlight the need for additional transparency, whether from traditional or non-state regulatory mechanisms. The analysis below thus relies on secondary literature and data, as well as roughly two dozen key informant interviews conducted in 2013 and 2014, to characterize as best as possible the relationship between the sample available and the sector as a whole.¹

¹ Secondary literature and data covered issues of land governance, land conflict, plantations development, transparency and related issues. Key informants were selected for their experience working on the issues listed above in Laos, Cambodia, Indonesia and Myanmar.

1.3 Geographic and temporal focus: Three growth landscapes

This paper aspires to be regional in scope, but balances breadth and depth by focusing on three Southeast Asian landscapes where plantation development has been particularly dynamic over the last decade. These landscapes are: (1) the outer islands of Indonesia (i.e. excluding Java); (2) the so-called "CLV Development Triangle" region where Cambodia, Laos and Vietnam intersect; and (3) the "Golden Quadrangle" region comprising the borderlands of northeastern Myanmar, northwestern Laos, south western Yunnan, and to a lesser extent, northern Thailand (Figure 2). Over the last decade, Indonesia's outer islands have seen an oil palm boom unrivaled in modern history; this landscape thus provides an important window into investment dynamics that span Indonesia and Malaysia, and that are poised to expand into mainland Southeast Asia (Bangkok Post 2012; Vientiane Times 2014; Woods 2015). The CLV triangle and the Golden Quadrangle, while smaller in the scale of their plantation expansions, are nonetheless major areas of transnational investment in plantations. Between them, they have attracted a great deal of interest, both regionally and nationally, due to the dynamism of the land acquisition processes there.

This report takes a deliberately landscape-based rather than a country-based approach. Many of the processes examined below are transnational in nature, and some – rubber development in Laos, for example – conform to transnational patterns that result more from cross-border influence than from national policy (note that Laos sits in *two* of the landscapes examined here). Moreover, like the concept of sustainable development, "landscapes" provide a useful framework for broaching important topics of debate without foreclosing possibilities via the very act of framing. It is hardly surprising that landscapes have come to prominence as a response to emerging-economy agribusiness, which has boomed in recent years and, in the process, frustrated forest conservation efforts across the global South. Landscapes thus create a framework for deliberation about the costs and benefits of various land use and governance choices (Sayer et al. 2013), while also remaining theoretically neutral about key issues such as sectoral complexity, geographic scale and the role of policy and law.

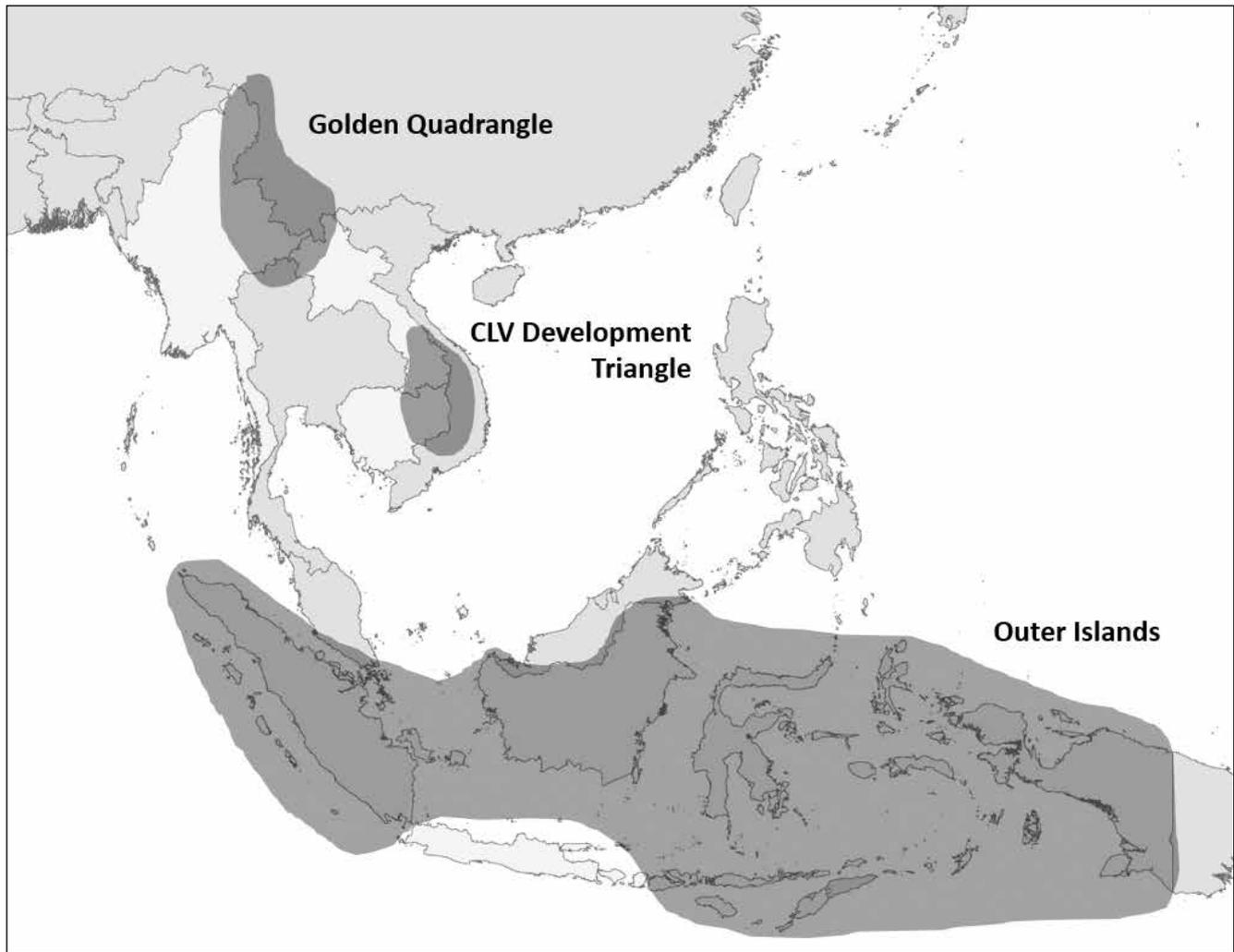


Figure 2. Three growth landscapes.

Where possible, investment data is examined in a transnational context. Two of the three landscapes described above are explicitly transnational, comprising interconnected border regions and involving companies that work across national borders, often in the name of development cooperation. The other landscape (Indonesia's outer islands) is treated transnationally from the perspective of the companies examined below (a number of which are registered in Malaysia or Singapore), and with additional analysis could be expanded to include adjacent landscapes in Malaysian Borneo. Focusing on adjacent areas in neighboring countries helps illustrate the land-connected character of the production networks involved in producing commodities such as rubber and palm oil, as well as related commodities such as timber, which emerge from upstream land allocation and conversion processes. Similarly, treating transnational landscapes

as single areas of analysis helps highlight the need for increased spatial transparency and place-based data disaggregation.

In order to allow longer term patterns to emerge and manage holes in the data, this paper uses a 10-year time scale to assess the available data on investment. In Indonesia, given that the oil palm boom stretches back into the 1990s, this means looking at the *change* in companies' fixed assets over the course of a decade (usually 2001–10 for reasons elaborated below). In the CLV Triangle and Golden Quadrangle landscapes, financial statements older than 10 years are unavailable via the English language sources used here. The analysis is thus based on fixed assets *per se*, rather than fixed asset change. This is assumed to be of minor importance given that most of the growth in the rubber sectors examined here occurred within the last decade.

2 The outer islands

Interest in oil palm, particularly among district governments, is undoubtedly linked to the fact that their [role] in the licensing and regulation of agro-industrial estates is greater than that which they now hold in forestry.

Barr et al. (2006, 106)

2.1 Introduction

The fall of the Suharto regime in 1998 ended the system of tightly controlled forest concessions that had formed the backbone of economic development since the late 1960s. A decentralized system of land allocation has emerged in its place, to significant effects. In contrast to the New Order's heavy-handed simplification of the forest as "an uninhabited dipterocarp stand" (Tsing 2005, 16), land allocation during the *Reformasi* period has been a more complex and negotiated process. The shift, however, has not been entirely democratic: "special interests" have persisted, with corruption, collusion and nepotism – so strongly established that they have their own Indonesian acronym (KKN) – still widely prevalent (Colfer and Resosudarmo 2002, 10). Brockhaus et al. summarize a number of other well-known scholars in asserting that "the democratic nature of the Indonesian state and the associated reforms have never challenged the entrenched economic oligarchy and 'collusive democracy' pervading all levels of the government and industry" (Brockhaus et al. 2012, 32).

Indonesia's forest estate has dominated land politics on the outer islands since at least the early 1970s. The history of the forest estate (*kawasan hutan*) has been widely studied, and plays a central role in the process by which the colonial model of extractive and paternalistic-bureaucratic resource governance was passed on to the postcolonial nation-state (Li 1999; Peluso and Vandergeest 2001). Despite Indonesia's populist interlude under Sukarno, the 1967 Forestry Law, passed in Suharto's first year in power, reflected the imprint of Dutch colonial forestry, whose "domain theory" of state ownership was "embedded in the minds of the Indonesian foresters who prepared the [l]aw" (Fay et al. 2000, 2). Over the three decades that followed, state jurisdiction over the forest estate provided the legal basis for

economic development and the consolidation of political power. Indonesia became a global leader of raw log exports in the 1970s and plywood exports in the 1980s, but the *national*-scale development this period brought was counterbalanced by local underdevelopment on the outer islands (Tsing 1993; Li 1999). Variants on this "bad old days" narrative are common. Early in the *Reformasi* period, Colfer and Resosudarmo (2002, 8) described the outer islands as plagued with separatist movements. Even scholars working in areas that were relatively secure described local authorities who were "quite clearly tired of being exploited by outsiders and the central government," and were taking steps to make sure earlier forms of exploitation did not repeat themselves (Casson 2001, 28).

This history of centralization and initial steps at its undoing are reflected in the forest estate's legal geography. Problems began with the effort to update the TGHK maps created in the early 1980s as part of the Ministry of Forestry's "Consensus-Based Forest Land Use Planning" (*Tata Guna Hutan Kesepakatan*) process. These maps exemplified the hegemonic aspirations of Suharto-era forestry. Despite being based on "scientific" (i.e. biophysical) criteria, the land category definitions they used were "heavily biased toward justifying most anywhere as state forest" (Fay et al. 2000, 12). But they were blunt instruments; they rendered wide swaths of territory as state land, but did so at a scale (1:500,000) which was just zoomed-out enough to make them difficult to actually use. A new zoning map was produced in the late 1980s at twice the scale (1:250,000), and was widely thought of as a "new TGHK," becoming "the country's standard for practical application" even as the original TGHK remained the *legal* standard (Brockhaus et al. 2012, 33).

A third round of mapping introduced additional confusion in the late 1990s, as the political strains of centralization that ultimately brought down the Suharto regime began to take full force. This was an effort to produce "integrated" maps (*peta paduserasi*), which attempted to harmonize the earlier TGHK maps with the newly devolved decision-making power to provincial and district authorities. The *peta paduserasi* process was essentially an effort to allow

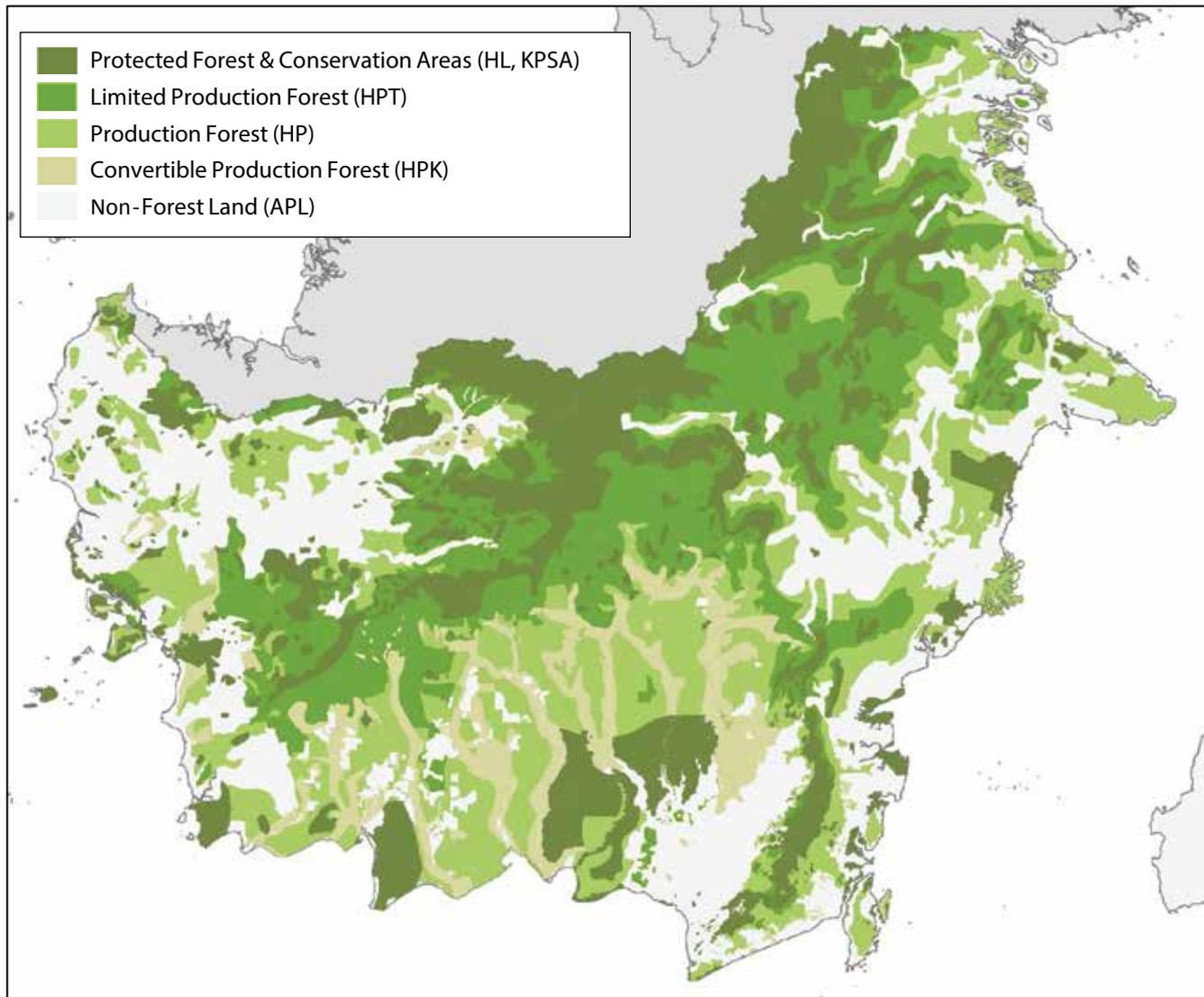


Figure 3. Forest estate, Kalimantan. Map by the author using data from the World Resources Institute's Forest Cover Analyzer; see text and note 3 for details.

decentralization – a political necessity, given the overwhelming strains of centralization – while also managing the process by anchoring local government empowerment in the geography of the TGHK. Given the stakes and sensitivities involved, it is perhaps not surprising that this strategy was only partially successful. Some provinces never went through the harmonization process (a situation that would later impact REDD+ implementation efforts, for example, in Central Kalimantan, where provincial authorities “respect customary tenure but there is no resolution of [the] basis for ownership” (Sunderlin et al. 2014)). Other provinces (e.g. Riau) went through “harmonization”, but still “refuse to accept the *peta paduserasi* and continue to refer to the TGHK” as their legal land map (Brockhaus et al. 2012, 33).

Maps of the forest estate such as the one in Figure 3 thus need to be read cautiously. On the one hand, they show the extent of previous efforts to define the forest estate's extent, categories and particular claims on places. On the other hand, local authorities and Indonesian citizens have contested the forest estate's *current* boundaries through a mix of legal and extra-legal means. The resurgence of demands for customary rights to land and forest began in the early 2000s (Colfer and Resosudarmo 2002, 10), and has since generated a growing campaign of land occupations, as well as a pair of potentially transformative constitutional court decisions in 2013. In the last 2 years, the Indonesian Government has launched a “One Map” initiative in an effort to settle a range of competing claims to the national

landscape.² Taken together, these efforts highlight the importance of interpreting maps such as the one shown in Figure 3 as indicative claims rather than actual use or present legal status.³

The struggle over the forest estate has opened the possibility for more equitable resource distribution, but it has also facilitated a new type of land rush that is much less legible than the one that preceded it. Whereas the earlier land rush was regulated from the center, the current one is not. The blurring of the lines in Figure 3 is thus only the tip of the iceberg; decentralization has opened the door to a series of struggles between the state and its citizens, as well as within the state itself. When taken together, these have made the land allocation process increasingly opaque. Given the necessity of intra-state coordination for the production of accurate statistics, this proliferation of interests in a context where intense institutional coordination is required (Barr 2002, 212; Brockhaus et al. 2012, 33) has proven to be a regulatory nightmare. This is nowhere more the case than on the outer islands' oil palm frontier.

2.2 The oil palm frontier: Investment dynamics and spatial transparency

Indonesia's outer islands sit at the heart of a network of land-intensive commodity production centered on the conversion of forest and agricultural land to oil palm and, to a lesser extent, to other plantation crops like acacia and sugarcane. Over the last decade, the economics of oil palm production have loomed large as a challenge to would-be forest conservation efforts (Karsenty 2012, 41). While this is often framed in terms of the high opportunity costs of preventing forest conversion to oil palm, the factors involved are not strictly economic. Cheap land access and timber rents play a key role in deferring the costs of plantation establishment, while tensions over concession regulation (including the management

² <http://blog.cifor.org/13716/mapping-indonesias-future-integrating-indigenous-claims-to-land>

³ WRI cites the data used to create Figure 3 as "Legal classifications based on Ministry of Forestry categories (Ministry of Forestry, year unknown, 1:250,000 scale)" (WRI 2012, 5). The scale – 1:250,000 rather than 1:500,000 – suggests that this is not correct, and that the data is one of the newer (nonlegal) maps such as the land status map or the *peta paduserasi*. Visual inspection also suggests that it is not the original TGHK map (see http://borneo.live.radicaldesigns.org/img/original/tghk_kal.jpg), pointing to the challenges of ascertaining what is actually legal versus what is merely taken as such.

of associated taxes and royalties) make oil palm both attractive to local governments, but also difficult to capture statistically. Locating the oil palm within the wider context of Indonesia's decentralization efforts thus helps to show where high opportunity costs come from – and why they persist – as well as why keeping track of plantations for regulatory purposes is so consistently challenging.

Indonesian palm oil output has more than doubled over the last decade, with production rising steadily from just over 10 million tonnes in 2002–03 to roughly 3 times that in 2013. About a quarter of this has been consumed domestically, with the rest being for export, making Indonesia both the world's largest palm oil producer and its largest palm oil exporter (see IndexMundi.com and Annex 1). If the available numbers can be believed, only about 9% – a small fraction of this increase in production – has come from increased yields;⁴ the rest has come from new plantations, which increased roughly twofold between 2001 and 2010 (Table 1), and which currently occupy roughly 9 million hectares (BisInfocus, *in* Casson et al. 2013, 7). State-owned plantations have figured negligibly in this growth; almost all of it has come from private large-scale plantations (concession-holders) and smallholders, many of the latter being in contract-based ("outgrower") relationships with larger producers. Of the current 9 million ha, about half are believed to be owned by large-scale, private concession holders, with 10% (about 800,000 ha) held by state-owned plantation enterprises, and the balance owned by smallholders (Casson et al. 2013).

The expansion of oil palm plantations charted in Table 1 presents only an aggregate picture of the land rush – and to some degree the forest rush – that has unfolded over the last decade and a half on Indonesia's outer islands. Many of the details are beyond the reach of available data; this is significant in itself, as the gathering and sharing of statistics is a key part of state-territorial practice, and questions of data have thus become embedded in domestic politics of centralized versus decentralized land control. We focus here on the provinces of Kalimantan, which have a degree of spatial transparency due to the availability of data on land concessions. Kalimantan exemplifies the transition dynamics that characterize Indonesia's oil palm frontier as a whole; the crop has an even longer history in Sumatra, and has taken off

⁴ See Annex 1, "Yield versus area increases."

Table 1. Estimated oil palm area per province, 2001 and 2010.

Province	2001 (ha)	2010 (ha)	Increase (ha)	Increase (%)
Riau	740,150	2,111,086	1,370,936	185
North Sumatra	747,200	794,272	47,072	6
South Sumatra	310,200	643,212	333,012	107
Jambi	296,100	612,096	315,996	107
West Kalimantan	338,300	456,880	118,580	35
Bengkulu	98,700	410,648	311,948	316
West Sumatra	162,150	347,534	185,384	114
Aceh	239,600	300,106	60,506	25
Central Kalimantan	126,800	269,022	142,222	112
East Kalimantan	70,500	231,570	161,070	228
Lampung	59,925	160,434	100,509	168
South Kalimantan	137,475	112,120	-25,355	-18
West Sulawesi	0	106,840	106,840	n/a
Kepulauan Bangka Belitung	0	85,312	85,312	n/a
Papua	56,400	52,872	-3,528	-6
Central Sulawesi	28,800	34,892	6,092	21
South Sulawesi	95,075	21,588	-73,487	-77
Other	17,625	24,020	6,395	36
Total	3,525,000	6,774,504	3,249,504	92

Source: Profundo (2012), which cites Indonesian Commercial Newsletter, "CPO industry still open for new investment," Indonesian Commercial Newsletter, 11 March 2003; Directorate General of Estates, "Luas Areal dan Produksi Perkebunan 2010," Directorate General of Estates, viewed October 2012.

in recent years in provinces such as Papua (Table 1; also see Casson et al. 2013; Obidzinski et al. 2013). Kalimantan thus sits not just literally in the middle of the archipelago, but also figuratively in the middle of the outer islands' forest transition; it is more forested than Sumatra, but less so than new frontier areas like Papua. This logic of triage – high forest cover coupled with rapid deforestation – is likely to explain the existence of the data examined below.

Figure 4 shows the extent of the concession landscape that has been created over the last two decades or so in Kalimantan; this includes oil palm concessions, as well as concessions for logging and timber plantations.⁵ Oil palm concessions are shown in grey, and track closely with land that is outside the forest estate – a detail that will be important

⁵ We refer to timber plantations and tree plantations interchangeably, unless otherwise noted. "Timber" thus does not refer to the ultimate commodity, but to the intermediate one: many timber plantations are pulped for paper and other wood products (Dauvergne and Lister 2011).

below – although they also occur on production forest and convertible production forest to a lesser extent (see Table 2 and Figure 4). One of the most striking features of the available data on concession locations in Kalimantan is that the amount of land included in oil palm *concessions* is roughly ten times the area estimated to be under oil palm *production*. As Table 2 shows, over 10.5 million ha of oil palm concessions have been allocated in Kalimantan; by comparison, the Kalimantan provincial numbers shown in Table 1 total to just over 1 million ha. This is a substantial fraction of undeveloped concession land.

Two additional factors suggest that this fraction of unused concession land is even higher. First, as noted above, roughly half of oil palm production is estimated to be done by smallholders rather than concession holders, suggesting that the amount of unused concession land in the numbers given above may be closer to 95% (that is, double the above ratio of 10:1). Second, the concession data shown in Table 2 and in Figure 3 is at least half a

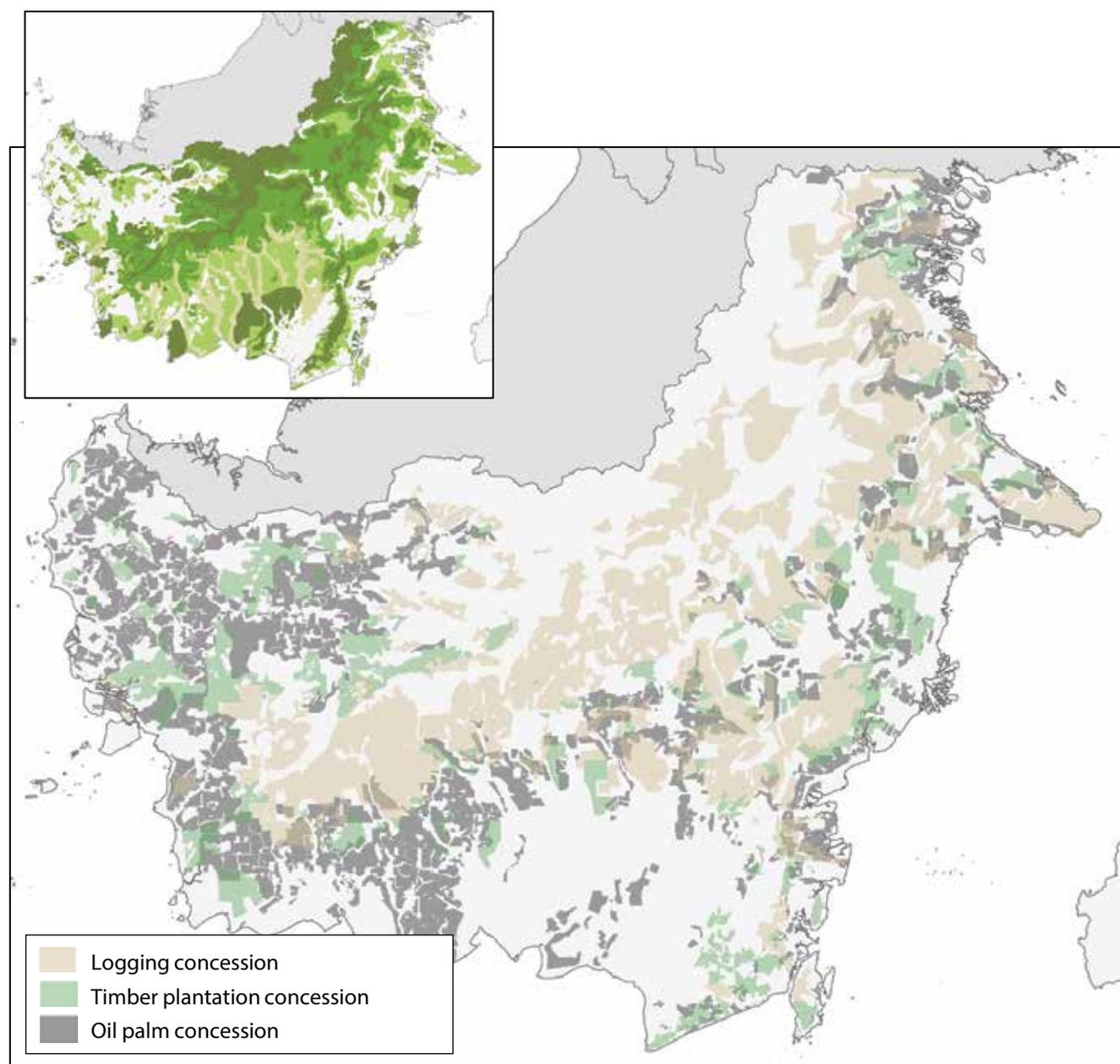


Figure 4. Oil palm, timber plantation and logging concessions in Kalimantan, date uncertain (map by the author using online data from WRI's Forest Cover Analyzer [FCA]); inset from Figure 3.

Table 2. Details about concessions shown in Figure 4.

	Oil palm	Timber plantation	Logging
Number of concessions	1,220	241	242
Dates concessions issued	Unknown	unknown	unknown
Median size (ha)	6,264	12,469	41,778
Mean size (ha)	8,678	21,616	51,789
Maximum size (ha)	89,780	243,729	330,349
Total area (ha)	10,587,517	5,209,510	12,532,959
Predominant forest zone*	APL	HP	HPT
Secondary forest zone(s)*	HP, HPK	HPT	HP

Source: Author's analysis of WRI FCA data.

* See Figure 3 for explanation.

decade old.⁶ The fact that oil palm concessions have expanded significantly in Kalimantan over the last half-decade means that the fraction of unused oil palm land is likely to be even higher. Oil palm thus mirrors the pattern observed recently in Kalimantan's logging sector, where much of the land allocated for concessions has yet to be used for actual production (Gaveau et al. 2013). In the oil palm sector at least, this is unlikely to be simply because plantations take a long time to develop; the largest firms in the sector have a ratio of concession land to production land that is less than 2:1 (Casson et al. 2013). This discrepancy of two to three orders of magnitude or more (less than 2:1 compared to greater than 10:1) suggests that something else is going on.

This something else is, in a word, decentralization's aftermath. The earliest years of the millennium brought a struggle over the details of what regional autonomy – a rhetorical pillar of the post-Suharto transition – would actually mean in practice. Politics and economics were closely interlinked, with separatist tensions dominant in places such as East Timor, Aceh, Maluku and Papua, while “a tug-of-war between the center and the regions, focusing on timber concessions and revenues” (Colfer and Resosudarmo 2002, 9) was the prevalent expression of the struggle in places such as Sumatra and Kalimantan. Field research from various parts of the latter, conducted around the turn of the millennium and focused on changing forest resource distribution patterns, noted a substantial localization of control. Anne Casson, for instance, estimated that one Central Kalimantan district had managed to generate USD 6.2 million in resource-based revenues in 2000 alone, and “[had] already taken a number of steps to ensure that [the district would be able] to control its own finances” well into the future. One way this was being done was via the passage of “a district regulation that enable[d] the district government to obtain revenues from ‘illegal’ logging activities” (Casson 2001, 28).

⁶ These data are taken from data originally collected by Greenpeace from the Indonesian Government and posted online by WRI as part of its Forest Cover Analyzer (FCA). WRI's technical documentation lists all three concession types as “year unknown” (WRI 2012, 14, 15). Oil palm concessions nonetheless track very closely (although not identically) with data reported by Carlson et al. (2013, supplemental information, p. 6) as being from 2005 for South and East Kalimantan, 2007 for Central Kalimantan, and 2008 for West Kalimantan. Similarly, the Indonesian Ministry of Forestry maintains an online metadata portal, which returns a number of hits, all dated 2006, when the keyword “Perkebunan” [WRI's source for “Agricultural Plantations” data; (WRI 2012, 15)] is searched. Accessed August 2013 <http://appgis.dephut.go.id:8080/%20geonetwork/srv/id/main.home>

This pattern was observed elsewhere, too. John McCarthy, who conducted fieldwork just two districts to the east at around the same time, also found that local authorities had begun to “experiment with a new district regulation that validate[d] timber harvested outside the official forestry regime.” This new regime focused not on *where* timber had been harvested, but on the payment of taxes to both central authorities and “a newly created district levy on forest products.” By “taxing the network of exchange already operating in the district, ... in effect legaliz[ing] illegal logging” (McCarthy 2001, 26), this approach ushered in a mode of land allocation based not on zoning, but on the post-hoc regularization of land allocations via the sharing of resource rents with local authorities. In recent research, Obidzinski et al. (studying the oil palm frontier in Papua), describe this process as having been essentially institutionalized: timber rents from land clearing now function as “one of the most important sources of tax revenue from the development of oil palm plantations” (Obidzinski et al. 2013, 956).

The importance of oil palm to local authorities – and particularly of oil palm *concessions* – seems to have solidified in the mid-2000s, when the sustained boom in global commodity prices coincided with the Indonesian central government's efforts to reclaim some of the territorial control it had ceded in the “reforms” of a few years earlier. Barr et al. explain:

Since mid-2002, in particular, the [Indonesian Ministry of Forestry] has adopted legal-regulatory measures designed explicitly to rescind much of the authority over forest administration that had earlier been transferred to district governments. Ministry officials have generally argued that such steps are necessary to curtail – in their words – the ‘excesses’ of decentralization, which they claim have had highly damaging effects on the country's forest resources. ... Many [district heads] and [provincial] Governors have responded ... by expressing keen interest in the development of oil palm estates and other types of agro-industrial plantations. This interest in oil palm, particularly among district governments, is undoubtedly linked to the fact that their respective roles in the licensing and regulation of agro-industrial estates is greater than that which they now hold in forestry. This has, in turn, led [district heads] and [provincial] Governors in some forest-rich regions to look for ways to have forested areas reclassified as either Conversion Forest, or Areas for Other Uses (*Areal Penggunaan Lain*, APL), so that it can be freed for conversion to oil palm.

(Barr et al. 2006, 2, 106)

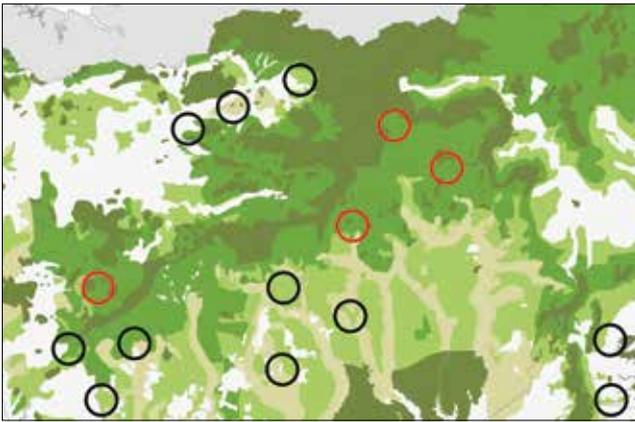


Figure 5. Oil palm frontier as illustrated through the case of GAR plantations, part 1: GAR plantations in central Kalimantan overlaid with forest zones. See text and Annex 2 for details.

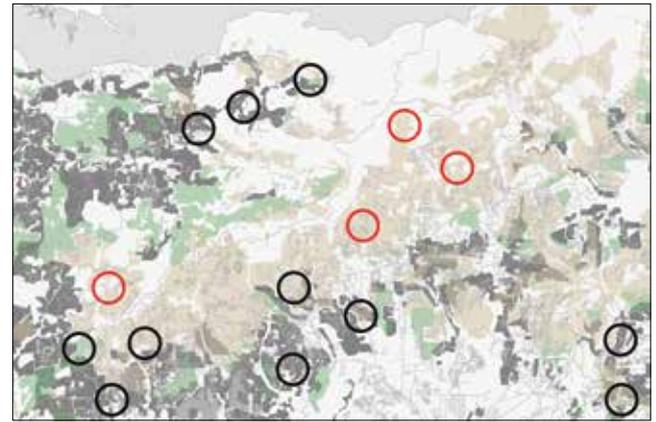


Figure 6. Oil palm frontier as illustrated through the case of GAR plantations, part 2: GAR plantations in central Kalimantan overlaid with WRI/GP concession data. See text for details.

This effort to reclassify pieces of the forest estate is an important dimension of the limits to the data shown in Figure 4, and a key reason why up-to-date maps are hard to find (Casson et al. 2015). Given the shift toward taxation as a mechanism of formalization and regularization, there is a strong conflict of interest between local governments, for whom concession transparency means greater potential scrutiny (and greater likely obligations for sharing tax revenues upward), and central government and civil society actors for whom transparency creates a range of regulatory capabilities. The relative power of local authorities has thus meant that current data on concession locations are fairly difficult to come by. As Figure 5 and Figure 6 show, the data shown in Figure 4 and Table 2 are seriously out of date: the oil palm frontier has moved inward into Kalimantan's interior. It now occupies lands formerly classified as limited production forest (Figure 5), as well as areas that had not been allocated as oil palm concessions when the WRI/Greenpeace data was compiled in the mid-2000s (Figure 6).

Figure 5 and Figure 6 illustrate the expansion of the oil palm frontier and highlight the corresponding limits to spatial transparency by drawing on a map published by Golden Agri-Resources (GAR) in 2012. The GAR map, published in a company sustainability report (GAR 2012b), shows approximate locations of GAR oil palm plantations throughout the Indonesian archipelago: 16 in Sumatra, 20 in Kalimantan, and 1 in Papua (see Annex 2, which geo-references the Kalimantan portion of this map and overlays it with the WRI oil palm concession data to produce the red and black circles shown in Figure 5 and Figure 6). Black circles represent GAR plantations that could plausibly correspond with the WRI data; red circles,

in contrast, show GAR plantation locations that could not, and thus indicate locations where the oil palm frontier has expanded into the interior of Kalimantan. Figure 5 shows this in terms of the zoning snapshot shown in Figure 3: the red circles fall almost entirely in areas that were formerly (and may still be) classified as production forest, highlighting the importance of the reclassification and post-hoc regularization processes described above. Figure 6 tells a similar story, but shows the expansion of oil palm into areas that were formerly allocated as logging concessions.

In highlighting the limits to public sector data – in this case, data provided to Greenpeace by the Ministry of Forestry and then put online by WRI – the GAR case points to a more general issue: namely, the public's increasing dependence for timely access to information on voluntary disclosure by the private sector. While certainly welcome, voluntary disclosures are often partial and strategic. GAR, for instance, published much more detailed spatial data only a month before it released the report cited above, but only for four of its concession sites. This earlier publication was a collaboration with The Forest Trust (TFT) and Greenpeace to identify potential areas for conservation (GAR 2012a). While perhaps laudable, the case highlights the extent to which transparency, having been selected *against* by intra-governmental struggles over territorial control, is increasingly governed by private sector decisions rather than public sector ones.

The next section turns to the issue of private sector transparency in more detail, and then examines the possibility of cross-referencing the spatial data presented above and the financial data presented below.

2.3 Investors and financial transparency

Financing in Indonesia's outer island oil palm sector exhibits a mix of transparency and opacity that is comparable to the spatial situation examined above. Although certain opacities are highlighted in the next section, when the cross-referencing of spatial and financial data is attempted, it is nonetheless possible to understand a significant amount about the sector's financing through the analysis of financial statements and other forms of publicly available information. The transparency afforded by this method, even if modest in some respects, will become more apparent in later chapters when other land-intensive commodity networks in Southeast Asia are examined.

By analyzing shareholder reports and financial statements, Profundo estimated that 14 major companies invested roughly USD 17.2 billion in the oil palm sector between 2002 and 2011 (Table 3). This number is possible to disaggregate in various ways, as the tables in this section elaborate. First, however, it is worth asking how much of the entire sector this figure of USD 17.2 billion is likely to capture. The figure excludes state-owned plantation enterprises, although this is likely to be relatively insignificant; although they comprise roughly a tenth of the sector's overall plantation area, their growth – i.e. their new investment – in the last decade has been relatively minor (Casson et al. 2013). The figure also excludes a number of smaller, private companies, although the extent to which this is the case is difficult to infer without better access to information about large companies' subsidiary holdings – an issue that will also appear in the following section. While the USD 17.2 billion captured in the Profundo analysis comes from only 14 firms, these companies have many subsidiaries, which are included in the investment numbers but difficult to otherwise pin down. Characterizing the extent to which the Profundo analysis reflects the sector as a whole is thus forced to rely on other sources of information. One is plantation area. Because plantation area *is* reported (in this case by the Indonesian Government) for the sector as a whole, and because the companies listed in Table 3 report their plantation holdings, plantation area can be used as a proxy for investment. It is an imperfect proxy, especially for vertically integrated companies, which invest large sums of money in other forms of infrastructure, but it is likely to be indicative nonetheless.

The Indonesian Directorate General of Estates reports that from 2001 to 2010, the amount of plantation area developed by private companies was 1,350,928 ha (Indonesian Directorate General

of Estates, *in Profundo* 2012, 47). During roughly the same period (2002–11), the 14 companies listed in Table 3 reported their increases in oil palm plantations by a total of 1,067,517 ha.⁷ While it would be pushing the data too far to suggest that the investment figure disaggregated in Table 3 captures 79% of the sector (1,067,517 is 79% of 1,350,928), it is nonetheless safe to conclude that the figure captures a significant fraction.

Table 3 shows the amounts of financing, disaggregated by category, reported by the companies that release financial statements to investors. All of the companies shown above are from the immediate region; eight are Indonesian, while the rest are either Malaysian or Singaporean (see Annex 3). The figures shown above suggest that although recent investment in Indonesia's palm oil sector came from a combination of shareholder investment, bank lending, and bondholding, the first of these was dominant over the last decade, averaging 68% of the total. Most of the companies shown above rely heavily on private shareholders; six have shareholding fractions above 75%, and only four have fractions below half (and of these, three are in the mid-to-high forties). Bank loans were also a significant source of financing, representing 26% on average. Only one of the companies listed in Table 3 has bank loans representing over half of its fixed asset growth, with the rest spread relatively evenly around the mean.⁸ Bondholding represents the least transparent column in Table 3; Profundo reported that it is likely to be of minor significance (as reflected in the numbers shown above), but also noted that bonds are the most opaque of the financing instruments they attempted to analyze (see note a for Table 4 below). Bonds thus appear to be of single-digit relevance to palm oil financing, but this could be simply due to a lack of disclosure.

Building on the above analysis, Profundo also attempted to disaggregate the first two of the financing categories shown in Table 3 (shareholders and bank loans) by the *type* of financier involved.⁹ These results are shown in Table 4.

7 See Annex 3, which gives additional information about 17 major private companies, including the 14 in Table 3.

8 Author's calculations based on Table 3.

9 Profundo did not analyze bondholders "for two major reasons. First, the relative importance of this financing category is much smaller than the other two categories – shareholders and bank loans. Second, information about bondholders is not transparent. Only for one of the companies researched, the percentage of bondholders which is known is higher than 5%" (Profundo 2012, 51).

Table 3. Fixed asset growth in the legible portion of the Indonesian palm oil sector, disaggregated by financing category. All figures in million USD.

	Company	Fixed Asset Growth 2002–11	Financed by...			Source (see Annex 4)
			Shareholders	Bank loans	Bondholders	
1	Golden Agri-Resources	8,105	6,348	1,757	0	1
2	Wilmar International	2,493	1,471	983	38	2
3	Indofood Agri Resources	1,945	933	631	380	3
4	Bakrie Sumatera Plantations	987	441	352	193	4
5	First Resources	939	571	101	267	5
6	Astra Agro Lestari	692	618	31	44	6
7	BW Plantation	330	154	152	24	7
8	Kencana Agri	327	211	116	0	8
9	Kuala Lumpur Kepong	320	277	33	10	9
10	Gozco Plantations	263	89	173	0	10
11	Genting Plantations	245	240	6	0	11
12	Sampoerna Agro	233	198	34	0	12
13	Sime Darby	169	130	31	8	13
14	Tunas Baru Lampung	151	76	61	14	14
Total (million USD)		17,197	11,757	4461	978	
Percent		100%	68%	26%	6%	

Source: Profundo (2012); individual company sources provided in Annex 4.

Profundo described the first three types of financiers shown in Table 4 in the following terms:¹⁰

1. “**Governments:** [While] the role of the Indonesian Government [as a shareholder] is very minor, [other] Southeast Asian governments do play a substantial role, investing USD 216 million in the Indonesian palm oil sector in the period 2002–11. These investments especially came from the Malaysian Government, through several investment companies including the *Kumpulan Wang Persaraan Dipertanggungjawabkan*, the government super fund *Permodalan Nasional Berhad* and the Employees Provident Fund. Not surprisingly, the Malaysian Government has especially invested in Malaysian companies. The Singaporean Government, through the Government of Singapore Investment Corporation, has also invested in a range of palm oil companies, but its role is minor compared to the Malaysian Government.”
2. “**Banks:** By providing loans to the companies with the largest investments, banks played a very important role in the expansion of the Indonesian palm oil sector in the period 2002–11. The largest role is played by [Indonesian] banks, which

invested USD 2.0 billion. [These] banks especially play an important role for smaller Indonesian companies, like BW Plantation and Gozco Plantations. Larger multinational companies, which are based in Indonesia, like Indofood Agri Resources and Golden-Agri Resources, have more diversified funding sources, but Indonesian banks still play a dominant role for these companies. [Indonesian] banks do not play a (significant) role for Malaysian companies like Genting Plantations, Sime Darby and Kuala Lumpur Kepong. Very important Indonesian banks, which have financed the palm oil sector include Bank Mandiri, Bank Rakyat Indonesia and Bank Central Asia. Foreign banks, which are based outside Southeast Asia, also play an important role in the expansion of the Indonesian palm oil sector, investing USD 1.7 billion. In most cases, these banks act through a local subsidiary in Indonesia. The most important foreign banks are European. The Dutch Rabobank, for instance, plays an important role for several companies. Other important European banks include Credit Suisse (Switzerland), Raiffeisen Zentralbank (Austria) and Standard Chartered (United Kingdom). Southeast Asian banks play a smaller but still significant role. Important banks include CIMB (Malaysia), DBS (Singapore) and OCBC (Singapore).”

10 Bullet point text quoted from Profundo (2012, 52, emphasis added).

3. “**Institutional investors:** As shareholders of the companies with the largest investments, institutional investors have invested an estimated USD 3–4 billion in the Indonesian palm oil sector in the period 2002–2011. While USD 1 billion of investments was reported [see Table 4, Institutional investors section], the role of these types of investors is much larger, as the category ‘unknown’ [Table 4, bottom] (USD 3.6 billion) also mainly includes institutional investors. Especially in Indonesia and other Southeast Asian countries, it is not mandatory for institutional investors to report their share- and bondholdings. Of the identified institutional investments, the largest amount (USD 967 million) comes from foreign investors (based outside Southeast Asia), but *this is partly caused by the fact that foreign investors are best covered by our information*

sources. Major foreign institutional investors, which own shareholdings in several palm oil companies, include the American asset managers Fidelity, BlackRock, Vanguard Group and Van Eck Associates Corporation. Major European institutional investors include the British Schroder Investment Management and the Norwegian Government Pension Fund, Global. Not many investments from [Indonesian] and [other] Southeast Asian institutional investors were identified. However, we expect especially Southeast Asian investors based in Singapore and Malaysia to be an important constituent of the category ‘unknown’.”

The single biggest group in Table 4 is Indonesian entrepreneurs, which at USD 5.9 billion is more than twice as large as the second category, (Indonesian banks). Indonesian “entrepreneurs” refers

Table 4. Types of financiers in the Indonesian palm oil sector’s two main financing categories, 2002–2011. All figures in million USD.

	Financier		Investment (million USD)	Total
Shareholdings	Governments	Indonesian	3	8,071
		Foreign (SEA)	216	
		Foreign (other)	0	
		Subtotal	219	
	Entrepreneurs	Indonesian	5,908	6,802
		Foreign (SEA)	859	
		Foreign (other)	35	
		Subtotal		
	Institutional investors	Indonesian	13	1,050
		Foreign (SEA)	70	
Foreign (other)		967		
Subtotal				
Bank Loans	Banks	Indonesian	2,026	4,461
		Foreign (SEA)	713	
		Foreign (other)	1,711	
		Multilaterals	11	
		Subtotal	4,461	
Total of above				12,532
Unknown (but likely Southeast Asia-registered institutional investors)^a				3,686
Bondholders (not researched)				978
Total (cf. Table 3)				17,196

Source: Profundo (2012)

a According to Profundo, most unknown financing within the USD 17.2 billion of investment examined here is from Southeast Asia-based institutional investors, who are not required to disclose shareholdings and bondholdings (see paragraph on institutional investors below).

Table 5. Key private entrepreneurs invested in the Indonesian oil palm sector.

Entrepreneur(s)	Nationality	Shareholder of...	Investments 2002–11 (million USD)	Net worth in 2011 (million USD)
Widjaja family	Indonesian	Golden Agri-Resources	3,824	8,000
Salim family	Indonesian	Indofood Agri Resources	678	3,600
Kuok family	Foreign (SEA)	Wilmar International, Kencana Agri	672	12,400
Fangiono family	Indonesian	First Resources	503	1,100
Bakrie family	Indonesian	Bakrie Sumatera Plant'ns	193	890
Martua Sitorus	Indonesian	Wilmar International	150	2,700
Budiono Widodo family	Indonesian	BW Plantation	138	Unknown
Sampoerna family	Indonesian	Sampoerna Agro	138	2,400
Lee family	Foreign (SEA)	Kuala Lumpur Kepong	127	1,100
Maknawi family	Indonesian	Kencana Agri	121	Unknown
Gozali family	Indonesian	Gozco Plantations	77	Unknown
Lim Goh Tong family	Foreign (SEA)	Genting Plantations	51	6,500
Sungai Budi group (Santoso Winata, Widarto)	Indonesian	Tunas Baru Lampung	40	Unknown
Keswick family	Foreign (other)	Astra Agro Lestari	35	2,100
Total			6,747	> 40,790

Source: Profundo 2012. Annual reports and other publications, all companies; Forbes, "Indonesia's 40 richest," Forbes, 23 November 2011; Webster B. and Kennedy D., "Tories accused of hypocrisy over destruction of orangutan habitat," The Times, 27 April 2010.

to the private shareholder-owners associated with many of the sector's largest palm oil companies, both in Indonesia and, to a lesser extent, Malaysia and Singapore. Given the size of this group's financing efforts, Profundo also attempted to disaggregate the "entrepreneur" category, and to link the results back to the companies listed initially in Table 3. These results are presented in Table 5, and show that many of the key private investors are Southeast Asian business families, often investing tens to hundreds of millions (and in one case over USD 3.8 billion) in the companies listed above.

2.4 Linking financial and spatial transparency

This moderate level of financial transparency is useful for some types of non-state regulation, including the corporate campaigning that has recently led certain banks and producers of consumer products to try to cut their ties to companies engaged in "land grabbing" (Brinkley 2013; Deutsche Welle 2013). But connecting – or rather, trying to connect – the financial transparency shown here with the spatial transparency examined above shows just how opaque the sector remains

when it comes to important issues like social and environmental performance *in particular locations*. The main limits identified here are two: first, the difficulty of relating different companies, since many concessions are held by subsidiaries (e.g. to limit financial risk); and second, age of the available data, which as shown in the previous section makes tracking recent plantations (say, over the last 5–10 years) especially difficult.

Figure 7 illustrates these challenges cartographically (top), but also shows how the first can be overcome as new data becomes available (bottom). The top map shows the low number of "hits" that result from cross-referencing the oil palm concessions shown in Figure 4 and Figure 6 with the companies listed in Table 3. The highlighted (red) polygons represent the 12 concessions belonging to the four companies in Table 3 whose names also appear in the WRI/Greenpeace data. This yields a cross-referencing fraction of less than 1%: just 11 hits out of 1220 concessions. The bottom map takes the same approach, but draws on additional research that WRI has conducted on subsidiary ownership to link concession companies to wider investor *groups* (WRI 2014). Using this additional information provides a much greater number of hits (152), and raises the

cross-referencing fraction to 12.5% in Kalimantan. Nationally, the picture is similar but a bit less clear, both using the Profundo data alone and using WRI's additional research. Compared to Kalimantan's cross-referencing rates of 0.9% and 12.5%, respectively, the national rates using the same data are 0.6% and 9.7% (11 and 179 out of 1845 concessions total).

Overall, the paucity of "hits" in Figure 7 testifies to the sector's relatively low legibility when it comes

to tracing investment to particular locations. At the same time, Figure 7 shows that a better understanding of subsidiary ownership – something that could be attained through additional regulation as well as the type of research WRI has conducted already – can improve financial-to-spatial transparency substantially. As suggested in the previous section, however, this only addresses one aspect of the problem, given the challenges of ascertaining an up-to-date concession map.

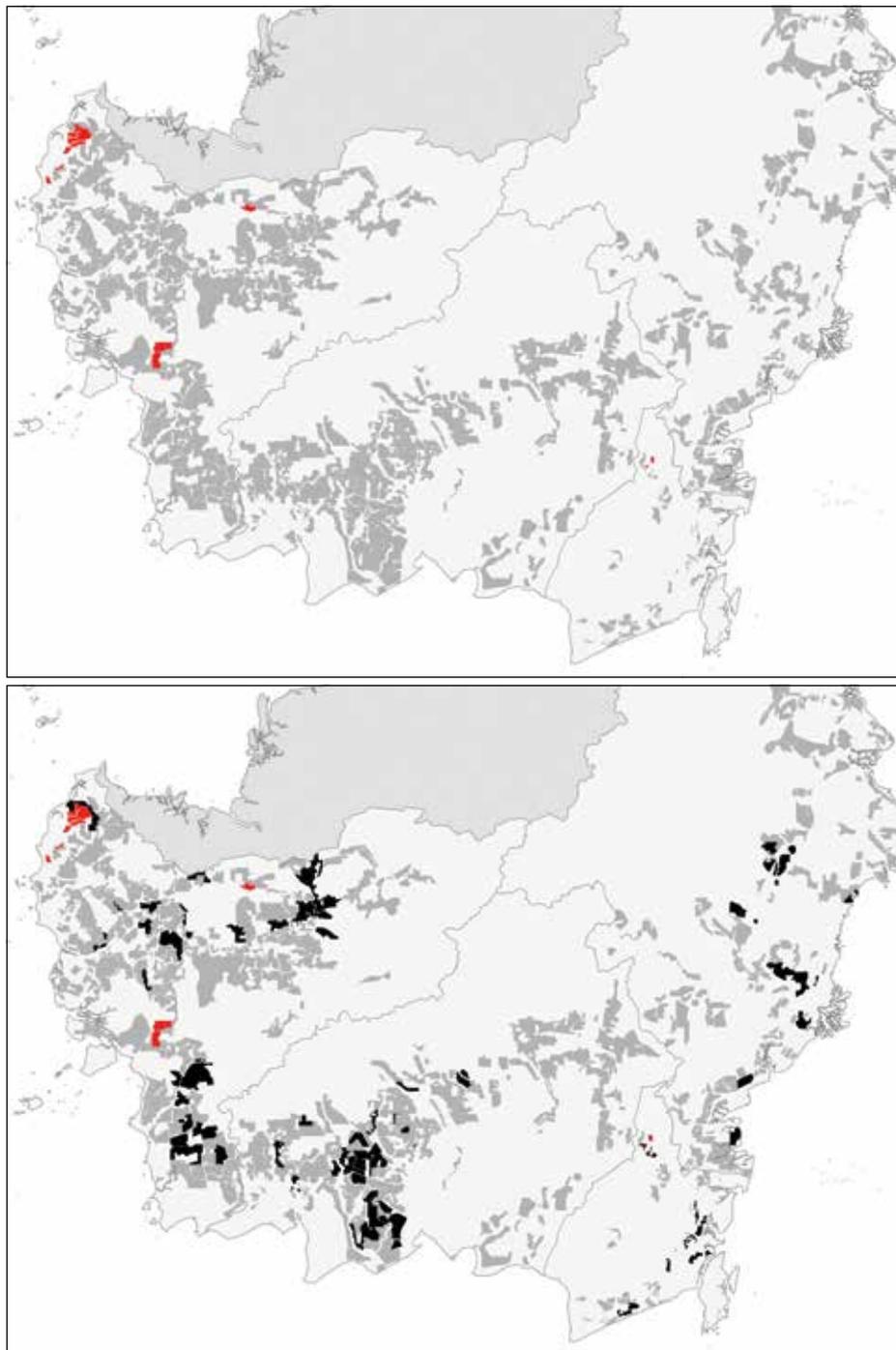


Figure 7. Cross-referencing of Profundo data with WRI/GP oil palm concessions data (top) and with additional WRI data on subsidiary holdings (bottom). See text for details.

3 The CLV Development Triangle

We accept that there will be some problems with villagers initially, but if we don't change today from local production to industrial production, when will we do it?

Director of Provincial Agriculture and Forestry
Department, southern Laos, 2007¹¹

3.1 Introduction: Agricultural enclosures and economic development

Some of the most intense debates about Southeast Asia's current development trajectory center on a region that, since 1999 has been referred to officially as the CLV Development Triangle (Nguyen 2012). Comprising the tri-border region where Cambodia, Laos and Vietnam (CLV) meet, the area has long been seen as remote, poor and ethnically diverse. Since the end of the Indochina Wars, this region has been targeted – first from the Vietnamese side of the border, and more recently on the Cambodian and Lao sides as well – as a priority development area. Given its substantial resource wealth (forests, minerals, rivers and arable land) and the perceived success in the Vietnamese experience of bringing prosperity and stability to the country's insecurity-prone uplands (Salemink 2013, 246), the greater “CLV triangle” region has emerged in the last decade as a major focus for transnational, resource-centered development.

Since the mid-2000s, a combination of extractive and land-intensive investment, low transparency, and growing land conflict have made the CLV triangle region a hot spot for development debates in the greater Mekong region. The tension between the history of official solidarity between the three countries, which began in the 1930s and peaked in the anti-imperialist struggles surrounding the Second and Third Indochina Wars, and the increasingly uneven manifestations of development as Laos and Cambodia become hinterlands for Vietnamese agro-industry and wood processing have contributed to tensions. Rhetoric about transnational cooperation abounds, emphasizing cultural exchange, the

modernization of agriculture, and the building of a new prosperous countryside.¹² But lurking in the background is the specter of economic necessity. Vietnam is a global leader in rubber, wood products and pulp and paper exports, and a mix of demographic and socio-historical factors have made it easier for Vietnamese companies to go abroad for their timber and land supplies than to find them at home (Nguyen 2012; Sikor 2012). With an estimated 80% of its raw logs and sawn wood imported, Vietnam relies heavily on Cambodia and Laos for its timber.¹³ In the rubber sector, Vietnam's reliance on its neighbors to the west and south is even greater, with Laos and Cambodia providing much of the area for Vietnamese rubber companies' plantation expansion in recent years. Given the linkages between agro-industrial development and deforestation, as well as intense state involvement in creating space (literally) for forestry and plantations, many have wondered whether the costs are worth it – whether the CLV triangle exemplifies the difficult, but putatively desirable path of agrarian “modernization,” or whether it is simply part of the latest round of global wealth concentration and resource control.

Major concerns identified by scholars include the simplification of heterogeneous landscapes, both materially (Baird 2010, 14) and legally (Kenney-Lazar 2012), by the arrival of rubber concessions, and the poor communication and lack of adequate

12 One rubber company with a presence in both Laos and Cambodia, for example, describes itself in the following terms: “Our motto is to grow rubber trees where ethnic minorities are the local owners. Along with building infrastructure to create cultural exchange between economic regions, and we promote knowledge in order to stabilize their lives, creating the new countryside, contributing to hunger elimination along with local poverty reduction, economic development towards industrialization, and modernization of agriculture and rural development.” http://chupaco.com.vn/index.php?n=c&a=view_dm&id=81&root=r (translated by Google, edited and corrected by the author). Also see http://clv-triangle.vn/portal/page/portal/clv_en.

13 On the forestry sector, see To and Canby (2011, 14), who cite Nguyen 2009 (should be 2010, personal communication from To and Canby, December 2013) for the 80% figure; EIA/Telapak 2008, 2011, 2012; Wadley 2014; and *Vientiane Times*, 6 March 2012, “Illegal logging persists in Laos.” On rubber, see Baird 2010, 2011; Kenney-Lazar 2012; and Global Witness 2013.

11 Quoted in the *Vientiane Times*, 23 April 2007, “Reducing poverty, or perpetuating it?”

compensation that accompany their development (Hicks et al. 2009; Baird 2010; Laungaramsri 2012). The coercive dimensions of the process are especially prominent, in particular the heavy-handedness of modernization-laden official narratives which equate development with the transition from “natural” or subsistence economies to “modern” market-based ones. This definition of development is widely shared, not just among officials like the one quoted in the epigraph above, but also by many development professionals, foreign advisors and private sector actors.

Unfortunately, it can also become a tool to classify concession landscapes retroactively as spaces of subsistence production when land conflicts arise. This is especially likely when data about livelihood and property systems is thin or lacking altogether. One way this occurs is through what the sociologist Pinkaew Laungaramsri (2012, 470) calls “the fictive frontier.” In the Vietnamese rubber development projects she has studied in southern Laos, Laungaramsri recognizes a version of what Bowie calls the subsistence myth (*in* Walker 1999, 62) – the representation of complex, market-integrated landscapes as spaces of subsistence production only. Laungaramsri thus goes to great lengths to emphasize that land conflicts in southern Laos’s Bachieng and Lao-Ngam districts are struggles “not in the sense of capitalist disenfranchisement of a subsistence economy, but rather the deprivation of one form of capitalism by the other” – in this case, the dwarfing of the smallholder coffee and teak economy by the burgeoning rubber sector (Laungaramsri 2012, 475). She emphasizes the link between this so-called frontier and the shortage of empirical evidence: “there has been very little information regarding the preexisting local economy, particularly its various layers of market connections, [and] the presumed image of an isolated economy of the frontier prevails” as a result (Laungaramsri 2012, 475).

This point has broad implications in the CLV triangle region. By glossing much of the land use in the CLV region as subsistence-based, state authorities have attempted to justify the lack of adequate surveying that has preceded many concessions, and that has in turn led to many land conflicts. The extent of spatial opacity that currently exists in the area thus results not just from the limited disclosures that have accompanied land concessions, but also from the ways in which the limits on recognition of private property have been managed and, as elaborated below, maintained.

3.2 Spatial transparency and concession making: Two paths

It is common to hear the CLV region discussed as a frontier space, as for example in Hodgdon’s reference to Laos as a “frontier country,” a perspective informed by extensive experience in the CLV province of Xekong (Hodgdon 2008; Barney 2009). The triangle region’s frontier quality is due partially to the prevalence of primary commodities like timber, rubber latex and various agricultural crops, which are produced locally and shipped to processing centers elsewhere; frequently in Vietnam. But it is also a function of the low reliability of official data, and here the timber sector plays an outsized role. Although long a concern of internal state affairs throughout the region, timber has become an increasingly public issue in the last few years, as legality-based transnational governance regimes threaten to restrict CLV states’ access to European and North American markets, and governments compete to show that they are taking the problem of illegal logging seriously.¹⁴ In late 2012, Prime Minister Hun Sen announced a campaign against illegal logging, after “thousands of cubic meters of luxury wood, as well as lower grade timber, [were] stripped from Cambodia’s forest and exported to China in recent years, much of it likely traveling across the border with Vietnam.”¹⁵ Central-level authorities in Laos have also been attempting to crack down on illegal logging in recent years, prosecuting “257 cases related to the illegal trading of timber” in 2013, and “removing officials from a certain [unidentified] border checkpoint after they conspired with traders to smuggle timber out of the country.”¹⁶ Although it is widely acknowledged that timber is a major cross-border commodity within the CLV region (e.g. Nguyen 2012), official statistics have been slow to catch up. The figure, cited above, that 80% of Vietnam’s raw timber supply is from imports comes from the General Secretary of the Vietnam Timber and Forest Product Association

14 Much of the attention in the last five years is the result of undercover research by the Environmental Investigation Agency; see EIA/Telapak (2008, 2011, 2012).

15 *Cambodia Daily*, 17 Dec. 2012, “Hun Sen Agains Orders Stop to Illegal Logging.”

16 *Vientiane Times*, 6 Mar. 2014, “Illegal logging persists in Laos.”

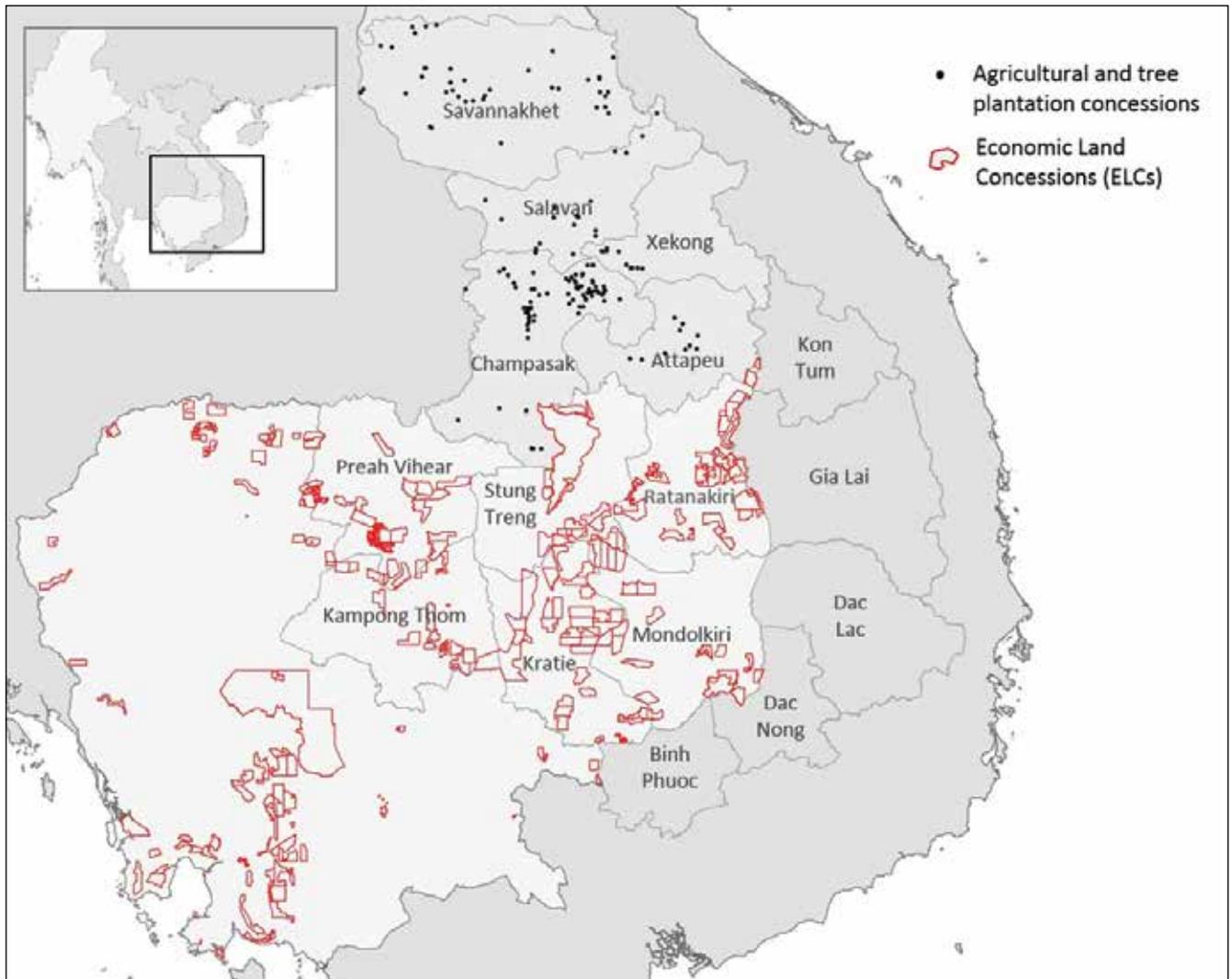


Figure 8. Concession locations and associated national representation systems in the CLV Development Triangle region.

Note: Map by the author based on mid-2013 data from Lao Decide Info and Open Development Cambodia.

(VIFORES), and contrasts markedly with official data from the same year, which put the figure at a mere (and unbelievable) 14%.¹⁷

Outside the timber sector, notwithstanding Laos and Cambodia's reputations for opacity on land-related matters, both governments have mechanisms for releasing information about concessions to the public (Figure 8). Cambodia's disclosure process consists of information about Economic Land Concessions (ELCs), which is released on a project-

by-project basis. Initially, this took place via a website maintained by the Ministry of Agriculture, Forestry and Fisheries (MAFF), which until going offline in 2012 or 2013 provided information such as geographic coordinates, name and registered address of the concessionaire, and intended commercial products. More recently, disclosure has occurred via periodic releases of the prime ministerial decrees issued for each concession project, which contain similar information. Since mid-2011, both sources of information have been assembled, digitized, geo-referenced and overlaid on Google Earth's base map by a civil society project called Open Development Cambodia, which maintains copies of the original MAFF and sub-decree files, along with other information,

¹⁷ Compare Nguyen, cited in To and Canby (2011, 14), and clarified as reported in note 13, against FAOSTAT (which reports official statistics), which lists 5.8 million m³ out of 6.7 million m³ as coming from domestic supplies (Profundo 2013: 62).

in an online portal.¹⁸ The red polygons shown in Figure 8 were downloaded from the ODC website in early 2014, and show the type of spatial transparency facilitated by this combination of state disclosure and civil society data processing. The Lao Ministry of Natural Resources and Environment also maintains an online inventory of land concession projects. Unlike Open Development Cambodia, the Laos site is hosted by the government rather than by a civil society organization,¹⁹ and is based on time-bound inventory efforts rather than a continuous update process. As elaborated below, both inventories – as well as the differences between them – reflect important features of the concession-making process in both countries.

While both inventories suffer from incompleteness with respect to individual projects,²⁰ each is far better than what exists for most countries where large-scale land deals are part of the development landscape (Heinimann and Messerli 2013). On first examination, the Cambodian inventory appears to be better in a few ways, showing full polygons for concession locations in contrast to the Lao inventory's mere points (Figure 8). This impression continues if one visits the websites and accesses concession area and company name data for Cambodia, but only sectoral and investor nationality data – and nothing about intended or actual project size – for Laos.²¹ But this impression is also misleading, and here the methodology of data creation matters greatly. The Cambodia data comes from digitized versions of the concession maps discussed in the paper's opening section; as noted there, although they have often been interpreted to represent entire areas conceded to developers, this is not actually the case. They are good indicators for where land conflict is likely to occur, but as noted above, the red polygons in Figure 8 actually overestimate the geography of large-scale concessions in Cambodia by an unknown, but likely significant and constantly changing, degree.

18 See, e.g. http://www.opendevdevelopmentcambodia.net/pdf-viewer/?pdf=references/Hong_An_Mang_Yang_K_Rubber__21.06.2011.pdf and http://www.opendevdevelopmentcambodia.net/pdf-viewer/?pdf=references/Sub_Decree_No_41__15.03.2011.pdf.

19 Lao DECIDE info (<http://www.decide.la>) is a partnership between three ministries, the National Statistics Bureau, and two Swiss development partners.

20 See Annex 5.

21 Compare <http://www.opendevdevelopmentcambodia.net> and <http://decide.la>

The Lao data, in contrast, errs in the opposite direction: it underestimates the geography of concession granting, especially in the CLV region, where concession areas have been relatively large by comparison to the rest of the country. It is tempting to view the use of point locations in the Lao concession inventory as an exercise in limiting public disclosure: an effort to improve the government's reputation by being transparent – or perhaps to experiment with “genuine” transparency – while also withholding key details. This is likely to be at least partially true, but equally important is the picture that emerges from the methodological description of the inventory process. Unlike Cambodia, where the central government maintains a stock of the maps that are given out as survey areas for concessions (the Cambodian Government rescinded provincial authorities' rights to grant concessions in September 2008), no such archive exists in Laos. A researcher from the Ministry of Planning and Investment's research institute described the situation in 2009, two years after the inventory effort shown in Figure 8 began, but long before it was finished and available:

[S]pecific information about plantation sector size, location and types of plantations and plantation investors is limited. What information does exist is dispersed across government agencies making it extremely difficult to find. The Ministry of Planning and Investment has information on 123 large-scale plantation projects currently covering a production area of over 165,794 hectares. ... [However, the ministry] does not have investment data on total plantation investment. (Voladet 2009, 3)

The researchers who conducted the inventory described the situation they faced in similar terms:

Because state land can be granted at multiple levels and across different line ministries within the government, land [concessions] 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.

(Schönweger et al. 2012, 19)

The inventory teams thus faced the challenge of needing to collect the locational data about individual concession projects more or less from scratch. In some cases, project locations could be ascertained from available documents, but frequently the teams had to go to the field with GPS units in order to find out where the projects were actually located: working with local government staff, the teams “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” (Schönweger et al. 2012, 14). This took time, forcing the teams to choose between breadth and depth in terms of gathering locational details. Given the purpose and time constraints of the exercise, they tended to gather single sample points for each project rather than trying to map the boundaries precisely. Even this proved arduous; after the initial effort, the project conducted an additional round of data collection during the dry season of 2011-2012 “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” (Schönweger et al. 2012, 15). The results – the CLV portions of which are depicted in the Lao portion of Figure 8 – thus reflect not just the Lao government’s cautious experiments with transparency, but the challenges of the concession inventory process itself.²²

As suggested by Laungaramsri’s account of the village that was visited twice by district officials in their efforts to procure land for two different rubber projects (2012, 463), it is not merely that project data is widely distributed between government offices. Rather than going to the field with pre-made concession maps, companies in Laos seem to have found their land based on a different mode of state assistance: one that is approximate and iterative, and based not on maps per se but on a rough geography of “target” allocation. This entails matching intended concession sizes, target districts, sub-districts (or “village clusters,” as they are sometimes called), and ultimately target villages. While impossible to confirm as a pattern, the lack of maps identified throughout much of the public conversations about land concessions and associated land conflict seems to have had some basis in fact (see Thongmanivong et al. 2010; Dwyer 2011, 2013).

22 GIZ reported in early 2013 that the Lao Government is planning to update the concession inventory (<http://www.rural21.com/english/from-our-partners/detail/article/transparency-on-land-based-investments-in-lao-pdr-0000621>).

In at least one case, it is possible to follow this process one stage farther, digging a layer beneath the points in the northern half of Figure 8 to see how, even in the absence of maps, a concession achieves its actual footprint. The project in question belongs to the Viet-Lao Rubber Company (VLRC), also called the Viet-Lao Rubber Joint Stock Company in reference to its status as a joint venture between member companies of Vietnam Rubber Group.²³ Located just east of the southern Lao city of Pakse and north of the newly paved road to the Vietnamese border crossing at Bo Y, the VLRC project lands – the four distinct concession plots shown in Figure 9 – sit amid dozens of villages, surrounded in the wider landscape by three large state forest zones. Reflecting the multiple levels of land allocation described above – in this case, the concession was allocated by provincial authorities, while the forest zones were gazetted by central-level ones – the concession and the forest overlap in at least one area (the northeastern-most concession plot), although given the official classification of rubber as a type of reforestation, this is not necessarily a conflict. More important, however, is the relationship between the concession plots and the villages in the area. A social and environmental impact study commissioned by the French Agency for Development (AFD) and completed in 2007 documented 33 villages in and around the concessions where farmland and crop loss occurred. These villages are shown with asterisks in Figure 9. The study estimated agricultural land loss at 83%, averaged across all villages; 18 villages lost 90% or more of their farmland, while 4 were “left with no land at all.” Results were similar at the household scale: 40% of the almost 1500 households surveyed lost 80% or more of their agricultural lands (Obein 2007, 23).²⁴

Given this scale of land loss, the dispossession that occurred could not have been unintended. Rather, the farmland in the area – in line with the fictive frontier/subsistence myth described above – seems to have been deliberately targeted for conversion. The AFD study notes the company’s plan to “give the responsibility of 8 ha of plantation to each household” to manage (Obein 2007, 31), and provides evidence that the land allocated to the VLRC concession came entirely from local farmland: the concession was approved for 10,000 hectares, and

23 According to Obein (2007, 8), the initial members were the Dau Tieng, Ba Ria, Binh Long, Phu Rieng, Tay Ninh and Quang Tri Rubber Companies; this later increased to include the Vietnam General Rubber Company (GERUCO) and the Hoa Bin Joint Stock Company as well.

24 The AFD study appears unconnected to the VLRC project.

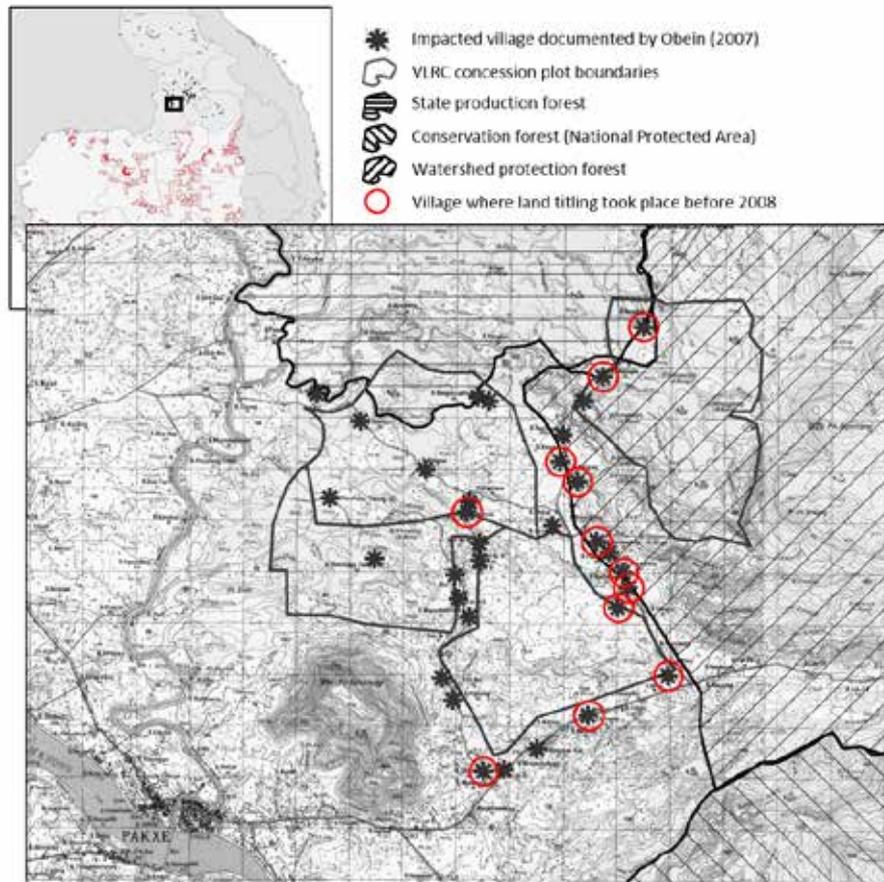


Figure 9. Viet-Lao Rubber Company project landscape.

Note: Figure by the author using secondary data. Concession boundaries and impacted village locations were digitized from Obein (2007). Titled villages were identified by cross-referencing Obein’s village map with village names where titling took place under the first and second Lao Land Titling Projects (data in author’s possession via personal communication with anonymous, August 2011), and represent a minimum number that is likely to be higher (see note 30 for details).

was reported as having developed “around 9700” of these (Hicks et al. 2009, 36); the farmland lost to the company, meanwhile, totaled 10,878 ha (Obein 2007, 23). Local officials, it seems, did not need a map in order to find “available” land; they merely looked for agricultural land.

This case is not exceptional, although it is among the best documented. (The polygons showing the concession locations in Figure 9 come from the AFD report cited above.) The following passage, from the *Vientiane Times*, testified in 2008 to the widespread persistence among at least some state officials of the belief that concession-related land conflicts were simply due to inadequate “coordination” between farmers and investors, and that what was needed were better methods of cooperation:

Farmers are more satisfied with the way land concessions are being granted to investors, National Assembly members told [the] *Vientiane Times* yesterday. In the past, this issue has

seriously concerned the public because farmers protested their farms were among land being granted to investors. [A National Assembly] member for Savannakhet province, Colonel Lamngeun Khampaseuthxaiya, said land concessions that covered farming land were still being granted. Colonel Lamngeun said it was a common occurrence in Savannakhet province for people’s farmland to be in the middle of a large concession area given to an investor. In such cases, the local authority mobilized farmers to work on the project and this method had been a satisfactory solution for both investors and farmers. “At first, people were worried when concessions affected their farmland, but when authorities explained they could make more money by working with the project, they were willing to do so,” he said. ... “I haven’t seen any serious problems at present and this is not a barrier to investment.”²⁵

25 *Vientiane Times*, 18 July 2008, “Progress made on issue of land concession.”

What eventually emerged in the VLRC case had echoes of this description, although without the “win-win” outcome implied by “a satisfactory solution for both investors and farmers.” As Ian Baird related in 2011:

More recently, large numbers of families impacted by [the VLRC] plantations have moved into large organized settlements called ‘*nikhom*’ in Lao. The idea is that the people can live in these rubber plantation company-developed settlements and work on the plantations, thus solving the problem of landless people while providing the company with labor at the same time. As of 2010, the Lao-Viet [C]ompany was planning three ‘*nikhom*’ in the middle of their plantations.

(Baird 2011, 16)

This description resonates with the accounts of state-organized land management described by Kenney-Lazar, Laungaramsri and Baird above, as well as implicit in the “8 hectare per household” allocation plan mentioned in the AFD study. It accords as well with the Champasak governor’s response when the VLRC case erupted into a national controversy in mid-2007. Although subtly shamed by the *Vientiane Times* for having relied on the colonial history of rubber planting in the area rather than reading the company’s feasibility study, as well as for admitting publicly that the company had “destroyed crops and teak owned by villagers to make way for rubber plantations, without informing them first,”²⁶ the governor remained committed to state-planned land use.

[T]he governor [promised to] ensure the proper allocation of land for villagers, which would make it easier for the government to attract foreign investors. Previously, villagers would take over areas of land without informing authorities. “The government needs to centralize the allocation of land for villagers. It’s always a problem when people just take the land for farming purposes,” [he] said.²⁷

Nonetheless, the case highlighted the diversity of opinion within the Lao government, perhaps most importantly by showing public debate within government at both the local level and between provincial and national authorities. The article

26 *Vientiane Times*, 10 May 2007, “Discussions over rubber dispute to continue in Champassak.”

27 *Vientiane Times*, 10 May 2007, “Discussions over rubber dispute to continue in Champassak.”

quoted above appeared the day after the Lao prime minister gathered provincial governors from around the country for a national land meeting, at which he announced the (first) suspension of concessions for mining and agribusiness. (Subsequent moratoria have followed, allegedly extending the moratorium on land concessions through mid-2014.) The 2007 meeting helped launch the national conversation about concessions and their relation to development, airing not just the more familiar opinion that concession-related conflicts are necessary “growing pains” (see chapter epigraph), but also the countervailing belief – expressed by a Champasak provincial authority – that “all investments should change villagers’ lives for the better, and anything with a potentially negative impact should not be acceptable.”²⁸

Given that the VLRC dispute turned so heavily on the loss of already “developed” land, a final dimension of the case helps bring the Lao and Cambodian sides of the CLV triangle region into further conversation. Unlike in northeastern Cambodia, where donor-supported land titling was limited to an exceedingly slow communal titling program,²⁹ individual household land titling took place extensively in the VLRC project area, and indeed throughout the land conflict-heavy district of Bachieng. While the available evidence does not allow the precise timing to be established, titling took place before the end of 2008 in at least twelve (and likely more) of the impacted villages studied by Obein; these are shown with red circles in Figure 9.³⁰ This means that the “systematic” land titling that was allegedly being conducted was, in practice, anything but systematic. Not only did it exclude communal land – by design, since communal land is legally public, and thus, state land. It also missed the smallholder plantations of teak, coffee, durian, and banana that should have been classified as “improved” and thus titled, but were

28 *Vientiane Times*, 23 Apr. 2007, “Reducing poverty, or perpetuating it?”

29 As of October 2014, eight titles had been issued (personal communication from Mark Grimsditch, October 2014).

30 This number is likely to be higher. The author’s data on land titling in the project area (see Figure 9 caption) lists 50 villages in Bachieng district that were titled prior to October 2008, but the administrative consolidation of villages in the district – from 95, as registered in 2005 National Statistics Center data, to 44, as listed in official GIS data from 2007 (both data sets are in the author’s possession; the 2007 data lists official village codes which reflect this consolidation, beginning with 002 and ending with 095, leaving out many numbers in between) – makes direct comparison of names impossible.

instead destroyed by the concessionaire “without informing [villagers] first.”³¹ Such is the strength of the subsistence myth – the imagined “fictive” frontier – that even the so-called developed land was left untitled. As elaborated below, a more comprehensive approach to smallholder protection is needed.

3.3 Financial transparency

This section examines financial transparency in the CLV triangle’s rubber sector. The approach taken here is conceptually similar to that used in Chapter 2, but with a few key differences that reflect the added challenges of working in a context with significantly less publicly available information. The CLV region presented four basic challenges in terms of financial transparency analysis. The first was the limited information about the sector in general, both in the micro sense that relatively few companies tend to release financial statements, and in the macro sense that the information available about the sector as a whole (e.g. the number of companies involved, or the area dedicated to the sector) tends to be both thin and unreliable. Second, the companies that do report financial information often do not disaggregate it by sector: firms which are active in multiple industries (e.g. agricultural production, agri-processing and real estate) may list overall assets and financing information, but not “segmented” data of the sort that is needed to understand specific sectors. Third, the same issue applies to production by location: many of the companies involved in the CLV Development Triangle are, as described in the previous section, involved in two or even three of the countries. Unfortunately, they often do not distinguish assets and activities in one country from those in the other(s). Lastly, joint ventures pose special challenges; although they offer firms a way to share risk with one another in contexts where project-scale cooperating may be advantageous, they cloud the picture further in terms of financial transparency in that they do not necessarily report numerical breakdowns of the companies that comprise them, while the individual firms (in their own reporting) are often not sufficiently specific to make this discernible from *their* financial statements.³²

31 Vientiane Times, 23 April 2007, “Reducing poverty, or perpetuating it?” *Vientiane Times*, 10 May 2007, “Discussions over rubber dispute to continue in Champassak.”

32 This is a summary of the author’s email communications with Profundo (March 2014).

The approach taken by Profundo, and replicated here with some additions and modifications, tries to negotiate these barriers in a few ways. The first is by using production area as a proxy for fixed assets. Production area, as noted in the previous section, is often difficult to gather accurate information on, but the availability of at least limited-quality data allows some indicative calculations to be done anyway. This is done by gathering data first on production area *and* capital invested *at the project scale* for as many projects as possible; then using this data to calculate context-specific estimates of investment per hectare; and then using these estimates as multipliers to calculate fixed assets for firms which make data on production area (but not investment) available. The approach used here thus differs slightly from that employed in the previous chapter: whereas the Indonesian oil palm sector has reliable information on new plantation establishment over the course of the last decade, no such information was available for the CLV region. This section thus proceeds on an even thinner footing, but does so in order to illuminate the boundary zone between opacity and transparency so that it may be further adjusted in the future.

The absence of overall sector data provided the motivation to use per-company area data as a way to scale up, but even this proved challenging – not only because of the challenges of getting good area data (see the previous section), but also because Profundo was only able to gather sufficient data on investment to calculate five investment-per-hectare ratios. These are shown in Table 6. Moreover, out of the five estimates, only the one for Laos is obviously based on production area. The Cambodia data used by Profundo came from Open Development Cambodia and thus represents allocated concession areas; it is thus likely to underestimate costs per hectare since the area on which it is based is overestimated. The “Vietnam” numbers, in turn, are equally difficult to interpret given their lack of definite location. The numbers shown in Table 6 are thus a very thin empirical basis on which to proceed. We do so with caution, as much to show the limits of currently available data as to mine the information contained in them.

Table 7 provides an estimate of fixed assets in the CLV’s Lao and Cambodian rubber landscapes by combining the multipliers in Table 6 with additional data on company- and location-specific production. The data shown in Table 7 are grouped by country; the initial entries in each section, shown in bold,

Table 6. Available investment-per-hectare ratios for the CLV region.

Company	Country	Investment (USD)	Hectares	Investment per hectare (USD)
Lion Forest Enterprises	Cambodia	41,500,000	23,182	1,790
SocfinAsia		25,000,000	4,273	5,851
Viet-Lao Rubber Joint Stock Co. (VRG)	Laos	32,000,000	9,700	3,299
Dong Phu Rubber Company (VRG)	Vietnam/ unknown	67,300,000	17,000	3,959
Phuoc Hoa Rubber Company (VRG)		38,600,000	104,000	371

Source: Profundo (2013: 24, 44, 75).

represent the companies used to calculate the investment-per-hectare multipliers (from Table 6), and are followed by other companies, which are listed in order of greatest to least area/assets estimated. To emphasize their provisional nature, the fixed asset figures that have been calculated using area figures and multipliers are shown in *underlined italics*; in these rows, “source” refers to the area figures only.

The asset values shown in Table 7, as noted above, are subject to uncertainty not only from the risks of extrapolating from a thin “multiplier” basis (Table 6), but also from the uncertainty that results from the lack of spatial transparency in the region. Two of the biggest companies that appear in Table 7, Hoang An Gia Lai and the Vietnam Rubber Group, have been subject to field-based investigation in recent years by Global Witness (see Global Witness (2013) and follow-up debates); Profundo decided to use Global Witness’s area data as the best information available, and we use it as well, although for Cambodia we also present the more conservative result for the Vietnam Rubber Group’s Cambodian landholdings, as reported in Open Development Cambodia. The estimated rubber area in Table 7 thus contains two estimates that *differ* by more than 100,000 ha, highlighting the importance of spatial transparency for this type of analysis.³³

Even with the substantial variation in the totals shown at the bottom of Table 7, the estimate of overall assets in the CLV’s rubber sector in

Cambodia and Laos alone is in the neighborhood of a billion dollars. The uncertainty of this figure is significant, and as should be clear from the above discussions of spatial transparency and the methodological challenges of estimating location-specific investment, the debate about the Vietnam Rubber Group’s landholdings is only the tip of the iceberg. It is thus helpful to bring in additional sources of evidence. One is a data set on Vietnamese investment in the Lao and Cambodian portions of the CLV triangle are listed in a recent book chapter by the vice-general-director of Vietnam’s Institute of World Economics and Politics (Nguyen 2012). This evidence at once supports, yet also challenges – as too *low* – the billion-dollar estimate given in Table 7. Some of Nguyen’s data has already been referenced to gesture to the incompleteness of the Open Development Cambodia inventory (see Annex 5); the rest is presented in Annex 6. It too yields an estimate of roughly one billion dollars of Vietnamese investment in land-intensive projects in the Lao and Cambodian portions of the CLV region, but does so using data that overlap only partially with the sources used in Table 7; moreover, it does so using official sources from the Vietnamese government rather than the potentially unreliable area-based extrapolation method used above.

As in the oil palm sector, the mix of low spatial precision and the proliferation of company names makes cross-referencing difficult; nonetheless, comparing Table 7 with Annex 7 implies significant divergence between the two, and suggests that a billion dollars is on the low end of the actual value of Vietnamese rubber sector assets in the Lao and Cambodian portions of the CLV region. A related implication of the data in Table 7 is that a significant amount of the asset value that is listed by Vietnamese rubber companies but *not* disaggregated by location is likely to be in Laos and Cambodia. This is intuitively clear from the descriptions of Vietnamese concession development in the preceding two sections, and is implied if the numbers in Table 7

33 Although both Hoang An Gia Lai and some of the Vietnam Rubber Group’s member companies report their assets on Viet Capital Securities (<http://www.VCSC.com.vn>), the area-based extrapolation method was used here because HAGL’s involvement in a variety of sectors and lack of “segmented” financial data, as well as the non-listing of a number of the other members of the Vietnam Rubber Group made it impossible to identify fixed asset information for these two companies using the VCSC data alone.

Table 7. Estimated fixed assets in the rubber sector, Lao and Cambodian portions of the CLV triangle region.

	Company ^a	Project location	Hectares developed	Investment per ha (USD)	Fixed assets (million USD)	Source ^b
Lao portion of CLV	Viet-Lao Rubber Joint Stock Co. (V)	Champasak	9,700	3,299	32.0	Hicks
	Vietnam Rubber Group (V)	Southern provinces	29,193	3,299	<u>96.3</u>	GW ^c
	Hoang Anh Gia Lai (V)	Attapeu & Xekong	29,449	3,299	<u>97.1</u>	GW
	Xayana (L)	Champasak	60	3,299	<u>0.2</u>	Hicks
Cambodian portion of CLV	Lion Forest Enterprises (M)	Preah Vihear	23,182	1,790	41.5	CFS, ODC
	SocfinAsia (Lu)	Mondolkiri	4,273	5,851	25.5	CFS, ODC
	Vietnam Rubber Group (V)	K. Thom, Kratie, Ratanakiri	(GW) 161,344 (ODC) 52,654	3,820	<u>(GW) 616.4</u> <u>(ODC) 201.1</u>	GW; ODC
	Gemadept (V)	Mondolkiri	38,057	3,820	<u>145.4</u>	ODC; LM
	Hoang Anh Gia Lai (V)	Ratanakiri	18,592	3,820	<u>71.0</u>	ODC; VCSC
	Eastern Rubber (Cambodia) (U)	Kratie	10,000	3,820	<u>38.2</u>	ODC
	Memot Rubber Plant'n Co., Ltd. (U)	Kratie	9,855	3,820	<u>37.6</u>	ODC
	TTY Corp. (C)	Kratie	9,780	3,820	<u>37.3</u>	ODC
	Kasekam Khmer Angkor (C)	Mondolkiri	9,160	3,820	<u>35.0</u>	ODC
	Rat Sokhorn (C)	Ratanakiri	9,000	3,820	<u>34.4</u>	ODC
	Chhun Hong Rubber Better (C)	Kratie	8,202	3,820	<u>31.3</u>	ODC
Total			(GW) 369,847 (ODC) 261,157		(GW) 1,338.9 (ODC) 923.7	

a Company registered: C = Cambodia; L = Laos; Lu = Luxemburg; M = Malaysia; U = unknown; V = Vietnam.

b GW = Global Witness 2013; Hicks = Hicks et al. 2009; CFS = company financial statements (full citations in Profundo 2013: 24, 44); ODC = www.OpenDevelopmentCambodia.net; LM = www.LandMatrix.org; VCSC = www.VCSC.com.vn (Viet Capital Securities Joint Stock Company).

c Hectare figure adjusted downward from 38,893 ha to exclude Viet-Lao Rubber JSC (9700 ha) in preceding row.

are compared to the (non-location-specific) asset values that Profundo estimated for the Vietnamese rubber sector. This estimate, shown in Annex 8, uses a similar approach to the above: Profundo identified publicly listed assets totaling USD 139 million for Vietnamese rubber companies and used an area-based extrapolation of the type described above (although using the average of the two “Vietnam/ unknown” multipliers listed in Table 6). This yielded an estimate of USD 694 million if company-specific area data are used, and an estimate of USD 1.7 billion if national (but not spatially disaggregate-able) and official (from FAOSTAT) rubber data are used. These numbers, despite their substantial uncertainty, are clearly on the same order of magnitude as the billion dollar estimate given in Table 7. As in the timber sector, a

substantial portion of the economic activity that is often assumed to be taking place in Vietnam is in fact taking place in Laos and Cambodia. While hardly surprising given the interpenetrations of the three countries' economies, this has implications for Lao and Cambodian regulatory efforts (see Chapter 5).

How has the investment shown in Table 7 been capitalized? As in Chapter 2, publicly reported financial information can be used to provide a partial answer, although here the data is much thinner, and thus especially needs to be combined with other sources of evidence. Figure 10 and Table 8 show two different ways of analyzing the available financing information; both are based on the same data, taken from companies' financial statements and the financial

services database Thomson ONE.³⁴ Figure 10 is analogous to the right-hand side of Table 3, showing the fractions of each financing category reported by company, but it has been separated from the magnitude of the fixed assets because of the difficulties involved in estimating these, noted above. Showing the data this way has the advantage of highlighting the prevalence of shareholder-based financing, especially among state-owned companies (in this case those owned by the Vietnamese government). But showing percentages also ignores the differences in asset size between companies, and in doing so underrepresents the extent of bank lending involved in the CLV rubber sector (compare Table 8 below). Figure 10 also puts some numbers on the fact that even *within* the more financially transparent companies, significant opacity exists: the percentages shown along the bottom of the graph quantify the fraction of declared financing for which Profundo could find sourcing information.³⁵

Table 8 presents the non-percentage-based version of the financial data reported by the companies listed in Figure 10; as with Table 4 in Chapter 2, Table 8 disaggregates the available financing category data (shareholdings and bank loans) into specific types of financiers: governments, entrepreneurial shareholders, institutional investors, and banks. These numbers must be treated with caution, not just because they capture only a small part of the sector (see below), but also because they contain a degree of double- or even triple-counting of the same assets as a result of companies' failure to distinguish assets held in different countries. Table 7 above attempted to deal with this problem in the Lao and Cambodian portions of the CLV triangle area by using the area-based extrapolation method. Table 8 avoids the problems with area-based extrapolation, but succumbs to the problem of overcounting. The extent of overcounting is impossible to quantify without better data,³⁶ meaning that the fixed asset magnitudes shown in Table 8 should be taken as an upper bound on company-reported data, and the percentages included in the table's rightmost column taken only as a gross indication. Nonetheless, Table 7 and Table 8, when used together and combined with Profundo's

qualitative findings, highlight the problems of financial opacity in the CLV rubber sector (both in the sector as a whole *and* among companies that release financial data), but can also yield some useful qualitative results.

Table 8 helps to disaggregate the shareholding data that played such a major role in Figure 10. It shows that the Vietnamese government, although the largest shareholder sub-category,³⁷ is hardly alone. Entrepreneurial shareholders are important as well, especially in Cambodia, where HAGL, Socfin Asia and Lion all have a significant presence, but also in Laos, which has a smaller but still significant amount of entrepreneurial shareholding, mostly via HAGL. Similarly, institutional investors are involved in all three CLV countries, reporting overall assets in the low tens of millions of dollars through firms like Deutsche Bank (Germany), Templeton Asset Management (United States), Van Eck Associates (United States), Asia Value Investment (Mauritius), PYN Rahastoyhtiö Oy (Finland), Capital Asset Management (Japan), Citigroup (United States), Korea Investment Management (South Korea), Credit Suisse (Switzerland), J.P. Morgan Chase (United States), Dragon Capital (Vietnam), Saigon Securities (Vietnam), the Overseas Chinese Banking Corporation (Singapore), Fullerton Fund Management (Singapore), and Tong Yang Asset Management (South Korea) (Profundo 2013: 29, 50, 78). In addition to the two Vietnamese companies in this list, Profundo notes that other Vietnamese institutional investors as well are "likely to have played a significant role in financing the remaining investments in the Vietnamese [i.e. CLV] rubber sector" (Profundo 2013, 78).

Banks also figure significantly in Table 8, although as with the "governments" data, there is likely to be some double- or triple-counting of the same financing (counted as "domestic" in Vietnam and "foreign" in Laos and Cambodia), given the role of the Vietnamese government in all of these, coupled with the lack of spatial disaggregation in the available data. Even with the overcounting, the role of bank-based lending is significant, with multiple tens of millions of dollars reported, mostly from Vietnamese banks, as well as from Malaysian ones (Profundo 2013: 27, 49, 77). As with institutional investors, the extent of Vietnamese involvement

34 <http://www.thomsonone.com> (accessed by Profundo, late 2013).

35 These numbers were derived from Profundo's raw data by dividing the total reported financing information by the company's estimated market capitalization according to Thomson ONE (<http://www.thomsonone.com>).

36 Personal communication from Ward Warmerdam, Profundo, March 2014.

37 Profundo explains that foreign government ownership in the Cambodian rubber sector comes "particularly through the Vietnamese state-owned VRG" (2013, 27); and makes a similar point for Laos (2013, 48).

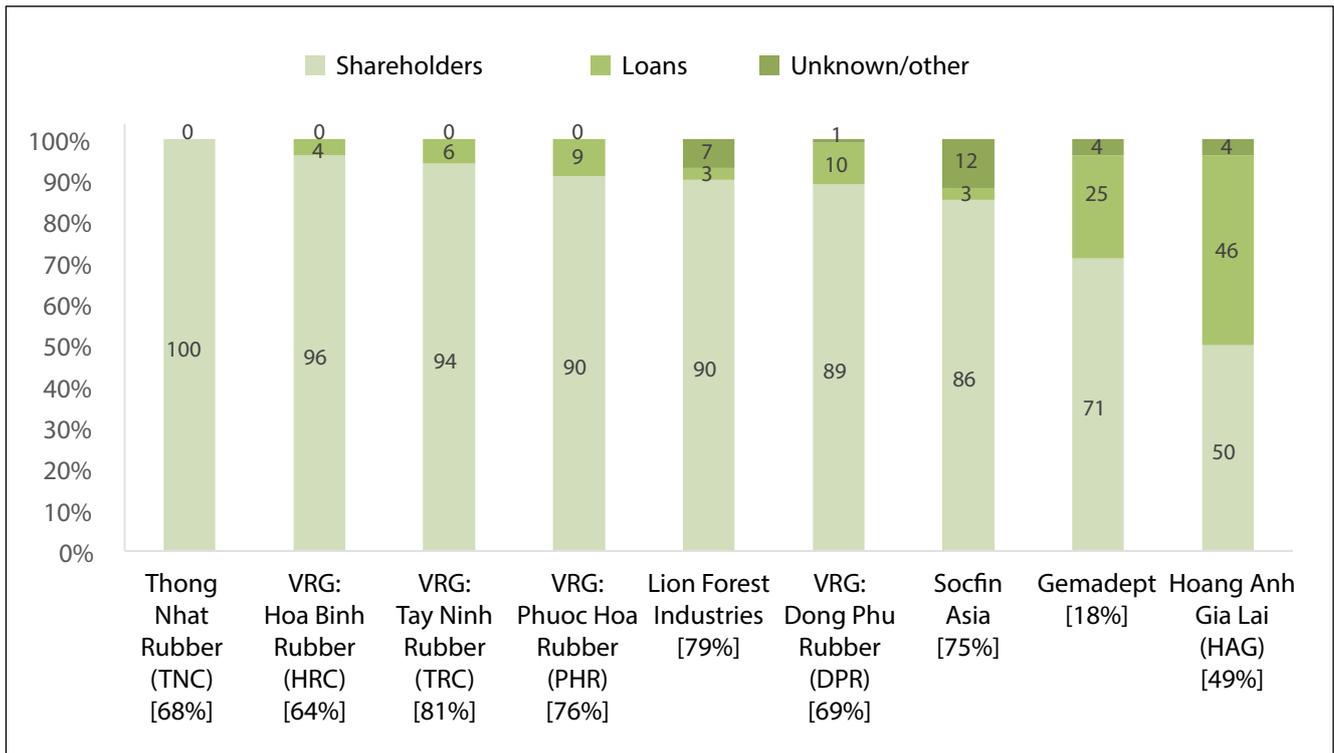


Figure 10. Prevalence of different financing categories in self-reporting companies of the CLV rubber sector, qualified by percentages of total for which data is available.

Note: Specific source data is provided in Annex 8. Three-letter codes after some company names refer to company codes on the Viet Capital Securities website (www.VCSC.com.vn).

in this sector is likely to exceed reported values significantly. According to Profundo, “the actual level of [Vietnamese] bank financing is likely to be much higher [than that shown through reported financing data] given the dominance of domestic enterprises” – notably, non-listed member companies of the Vietnam Rubber Group – “in the [CLV] rubber sector” (Profundo 2013, 77).

The data presented in Table 8 represents an upper estimate (due to the overcounting problem) on what is available from publicly disclosed sources. This contrasts markedly with the CLV rubber sector as a whole, however; as argued through Table 7 and Annex 7, this is likely to contain investment in the range of a billion dollars or more in Cambodia and Laos alone. The ratio of overall investment to reported investment in the Cambodian and Lao portions of the CLV rubber sector, as captured in Table 7 and Table 8, is thus likely to be in the order of 2 or 3:1, if not greater. This is a substantial gap.

As already noted, Profundo inferred some of this “missing” investment to have come from Vietnamese banks and institutional investors, particularly via the

Vietnam Rubber Group member companies that are not publicly listed.³⁸ (And these are not merely “domestic” rubber companies; at least nine of them are involved in operations in the Lao and Cambodian portions of the CLV, and a number of them have been involved in land conflicts of the type described above.³⁹) In addition, financing from the Vietnamese government directly – as a shareholder-owner in state-owned enterprises like the VRG member companies – likely comprises a significant portion of the non-transparent financing in the CLV triangle region. According to Profundo, compared to the shareholder values in Table 8, “the actual level of [Vietnamese] government financing, [from] both central and local [sources], is likely to be much higher” (Profundo

38 These include the Dong Nai, Dau Tieng, Phu Rieng, Binh Long, Ba Ria, Tan Bien, Binh Thuan, Loc Ninh, Kontum, Chu Pah, Krongbuk, Chu Se, Chu Prong, Mang Yang and Eah’Leo Rubber Companies (Profundo 2013: 73–75).

39 Dau Tieng, Ba Ria, Binh Long, Phu Rieng and Quang Tri rubber companies in Laos (note 23); Krongbuk, Chu Prong and Mang Yang in Cambodia (Annex 5); and Tan Bien, also in Cambodia (Open Development Cambodia, “Ta Bien Kampong Thom Rubber Development”).

Table 8. Types of financiers in the publicly reported fraction of the CLV rubber sector. All figures in million USD. Data includes an unknown amount of double- and/or triple-counting; see text for details.

Financiers			Cambodia	Laos	Vietnam	TOTAL	
Shareholdings	Governments	Domestic	0	0	80.4	80.4	< 323.7 (75%)
		Foreign	50.1	71.3	0	121.4	
		Subtotal	50.1	71.3	80.4	201.8	
	Entrepreneurs	Domestic	0	0	3.1	3.1	
		Foreign	52.4	21.8	6.5	80.7	
		Subtotal	52.4	21.8	9.6	83.8	
	Institutional investors	Domestic	0	0	0.4	0.4	
		Foreign	18.8	11.5	7.4	37.7	
		Subtotal	18.8	11.5	7.8	38.1	
Bank Loans	Banks	Domestic	0	0	14.1	14.1	< 107.8 (25%)
		Foreign	39.7	54	0	93.7	
		Subtotal	39.7	54	14.1	107.8	
TOTAL			161.0 (37%)	158.6 (37%)	111.9 (26%)	< USD 431.5 million	

2013, 77). The CLV triangle rubber sector's financial transparency gap, in short, is likely to be made up of sources associated with the Vietnamese state. Notwithstanding significant transparency in some areas, opacity is even more common.

This is not all; the state is missing in another way from the financing story, and here the CLV region has more in common with Indonesia's outer islands than was previously apparent. Financing is not merely the provision of money: it is the provision of operational capital, including land and in some cases timber. Through allocating state land via the concession-granting process, the host governments of Laos and Cambodia have also been involved in capitalizing a number of the investments described above, and thus make up another piece of the financing "gap" outlined above – although in this sense the gap extends well beyond the billion dollars

or so already estimated. Laos's Government makes this connection between state land and financing explicit: among a number of explanations for its much-invoked policy of "turning land into capital," one of the key meanings of this phrase has been the use of state land to "buy in" to joint venture projects with private investors (Dwyer 2007, 2011, Appendix 2). Even when joint-ventureship is not the goal, the use of coercively enclosed state land has provided a way to lower the *real* costs to investors – a *de facto* form of financing – throughout the Lao and Cambodian countryside. The conflicts that have accompanied this process suggest that it has indeed produced real effects. But they also suggest, perhaps, a certain precariousness that could intensify if spatial transparency were to increase, exposing investors more directly to the risks of particular tenure-related conflicts.

4 The Golden Quadrangle

Only the modern state, in both its colonial and its independent guises, has had the resources to realize a project of rule that was a mere glint in the eye of its precolonial ancestor: namely to bring non-state spaces and people to heel. This project in its broadest sense represents the last great enclosure movement in Southeast Asia.

James Scott (2009, 4)

4.1 Introduction: The last great enclosure?

The borderlands of Myanmar, Laos, China and Thailand have seen a rapid rise in development efforts over the last two decades. Spanning both sides of the long frontier of China's Yunnan province, their trade corridors have historically connected East Asia to the Indian Ocean and beyond, circumventing the long and dangerous sea route from coastal China westward. But in the twentieth century, the volatile mix of decolonization and Cold War conflict hit mainland Southeast Asia's borderlands especially hard. Geopolitical tensions, ethno-nationalist independence movements-turned-insurgencies, and the explosion of opium from a small-scale medicinal and regional tribute crop into a major global narcotic commodity combined to create a "Golden Triangle" where Thailand, Laos and Myanmar intersect that, since the early 1960s, has been widely glossed as stateless and ungovernable (Lintner 1999; McCoy 2003; Scott 2009). Although belying the role that various national governments played in creating and maintaining the Golden Triangle as a political-economic space, the "stateless" label nonetheless captures the significant challenges in governing the region, as well as in pursuing development. In the last two decades this has begun to change. With the Burmese ceasefires of the early 1990s and the Chinese Government's changing attitude toward its southern border and toward regional economic engagement more generally (Guo 2007; Kramer and Woods 2012), the Golden Triangle has been increasingly reimagined as – and is slowly being reconfigured into – a development landscape for the post-Cold War period. Straddling the northern reaches of the Greater Mekong subregion, this so-called Golden Quadrangle (i.e. Triangle plus China) has emerged as one of Southeast Asia's most dynamic resource production and trade areas.

The changes of the last two decades are, as in previous chapters, best understood by placing them in a longer historical trajectory; recent events and trends only make sense when seen as the product of both continuity and rupture with the times that preceded them. The singular event through which the Golden Quadrangle's emergence is arguably best understood is the end of the Cold War. Although often imagined (especially in the global North) as a bilateral conflict between superpowers, the Cold War had locally grounded manifestations throughout the global South (Westad 2005). In East and Southeast Asia, it exacerbated long-standing regional tensions, and introduced new forms of patronage and competition; in doing so, it sustained the conflicts of the Burmese border region and dragged out the 1979 Sino-Vietnamese conflict long into the 1980s (Chanda 1986; Lintner 1999).

In the 1990s, boosters for the greater upper Mekong region began to capitalize on the possibilities of increased economic integration. Sino-Vietnamese and Sino-Lao relations had improved markedly with the decline of the Soviet Union, deescalating borderland conflicts and facilitating the refugee returns that brought, among other things, rubber tapping skills from Yunnan's Xishuangbanna region into the upland villages of northern Laos (Shi 2008; Sturgeon et al. 2013). In Myanmar, the Communist Party of Burma, which had been central to the maintenance of conflict throughout Myanmar's periphery, and whose dependence on the opium economy had grown increasingly since the end of Chinese state support in the late 1970s (Le Bail and Tournier 2010), was finally defeated in the 1988 coup that brought the "SLORC" to power.⁴⁰ Within months, the Government of Myanmar opened the border with Yunnan (a bilateral trade agreement would follow in 1994) and began negotiating the ceasefires that, in the two decades since, paved the way for various production and trade regimes – in timber, in minerals and increasingly in agribusiness – that have since replaced opium and jade as the backbones of the border region's economy (Woods 2011).

⁴⁰ Unless otherwise necessary to avoid confusion (as in CPB), this study refers to the country as Myanmar and uses "Burmese" as the adjective form.

This transition has been neither immediate nor continuous. In Myanmar, opium production actually increased in the wake of the ceasefires, both in the newly created “special regions” where its growth was aided and abetted by local officials, and farther afield in areas where military conflict persisted (Le Bail and Tournier 2010, 29). In Laos, opium production took off as well, albeit on a smaller scale; poppy production increased roughly fivefold between 1974 and 1992, and did not begin to decrease until 1998 (UNODC 2005, 27). With growing trade and increasing pacification of the border regions, the late 1990s and early 2000s saw a number of state efforts to reduce opium production in both Myanmar and Laos (Lyttleton 2004; UNODC 2005). This corresponded to a rise in the border region’s timber economy, fueled by first Yunnan, and then nationwide logging bans in 1996 and 1998, respectively, as well as by local dynamics such as the Kachin Independence Organization’s increasing reliance on timber after their loss of key jade mines under the ceasefires. Log exports from Myanmar to China boomed throughout the early 2000s (Global Witness (2005), and only began to drop in the 2005–08 period; they are increasingly being routed through legal channels to Yangon (Woods 2013). Agribusiness investment from China took off in their wake, much of it targeting the special regions where authorities with limited allegiance to Yangon continued to govern (Woods 2011). Complemented by less extreme versions of decentralization both in Laos and China (Dwyer 2011; Kramer and Woods 2012), the borderland economies of the Golden Quadrangle have thus seen a progression of export commodity regimes emerge amid a complex web of governing authorities.

Chinese agribusiness investment in Myanmar and Laos has taken off significantly as China’s booming domestic economy has been directed abroad since 2000 through various formal and informal policy – and especially subsidy – mechanisms (Shi 2008; Dwyer 2011; Kramer and Woods 2012). Provincial officials in Yunnan have played a key role in this, mobilizing connections with neighboring governments (Shi 2008) and, as Xiaolin Guo has described, by playing up the strategic dimensions of Yunnan’s cross-border links:

China’s geo-strategy in the reform era has enabled Yunnan ... to successfully get [China’s] central government involved in local development, in terms of both policymaking and financial support. As was revealed in [the province’s] grand action plan, the provincial leadership came to

emphasize specifically “accelerating economic cooperation in ... sub-regional development schemes [with South and Southeast Asia] to make it part of national strategy, and to bring about corresponding policies of international cooperation.”^[41] ... As the Yunnan economy began to pick up speed [in the mid-2000s], the development of China’s western region brought new opportunities to the province on the periphery.

(Guo 2007, 52, 53)

These opportunities have, perhaps unsurprisingly, produced tensions as well. Despite the hope that Chinese agribusiness investment in northern Laos and Myanmar could offset opium poppy production, poppy growing appears to be on the rise in the years following the Chinese investment boom,⁴² in part due to the displacements caused by poppy-replacement projects themselves (Kramer and Woods 2012). The devil is in the details – whether transnational agribusiness operates as a form of genuine development cooperation, or as a neocolonial land grab, or as a tool for host-state territorial ambitions in sensitive upland areas – depends on how communities are incorporated into or, variously, displaced by, the development schemes in question. This, in turn, depends on a combination of local and general factors – which business models are used, what the details of these models are, and how these details articulate with the particular contexts in which the projects are deployed.

The next section reviews what is publicly known about this mix of factors. Two bodies of information are particularly important: on the one hand, the intensive, mostly case-study-based research conducted by development projects, NGOs and independent scholars, which have described the types of investment deployed, as well as their various social impacts in particular locations; on the other hand, the available government statistics that describe the magnitude and locations of various types of projects, which tend to be less precise in their attention to local context, but depending on their form, can help specify the relationship between investment project

41 Quotations are from Kong Ligan and Li Jiating, *Zhongguo xibu dakaiifa: Yunnan xingdong jibua* (China’s Development of the Western Region: The Action Plan of Yunnan), Kunming: *Yunnan renming chubanshe*, 2001: 22.

42 Bottollier-Depois (AFP/Taipei Times), 8 May 2011, “Villages in Laos struggle as poppy fields eradicated.” AFP, 31 Oct 2012, “Asia drug boom fuels surge in opium cultivation: UN.”

types and particular locations. Together, these two bodies of information create a valuable picture of what one well-known scholar has called Southeast Asia's last great enclosure movement (Scott 2009). The mismatch between them, however, highlights the degree to which much of this process remains veiled behind incomplete and hard-to-interpret statistics. That said, it also points to openings for engagement on what is increasingly, if by no means fully, a terrain of public engagement.

4.2 Spatial transparency

The need for better spatial information about the forms of development that have been pursued in the subnational spaces of the Golden Quadrangle is substantial. To take two examples, both on the receiving end of transnational investments:

1. In Myanmar, the legal doctrine of “wastelands”, inherited from the British (cf. Wood 1984), has been redeployed – but not adequately tracked – as new development frontiers have opened. As Robert Oberndorf explains in a recent legal analysis, the country's Wasteland Instructions, issued in 1991, were part of a package of market-oriented reforms begun in the late 1980s. These sought to create available land by transferring “use rights to designated ‘wasteland’ (or ‘vacant, fallow and virgin land’) – often with no recognition of customary law or actual user-right – to private individuals and companies for development as large-scale export-oriented plantations. Over the last two decades, the implementation of this instruction, the intent of which was largely reaffirmed in the [March 2012] Vacant, Fallow and Virgin Land Law, has significantly increased the scale and scope of land appropriation and conflict across the country and especially in the uplands” (Oberndorf 2012, 3). This expansion of “wastelands” development into Myanmar's upland peripheries has relied heavily on these areas being “reconstituted, in practice, as state-controlled territory” (Woods 2011, 759). But in spite of the fact that this sort of post-conflict development could inflame old tensions rather than move beyond them, neither this outward spread from Yangon nor the “inward” spread of agribusiness plantations from the Chinese border – largely the result of collaborations between Chinese companies and non-state authorities in former special regions – have been mapped with any level of detail (Woods 2011; Kramer and Woods 2012; Buchanan et al. 2013, 31).
2. In Laos, Chinese agribusiness investment has been welcomed by the Lao Government through a series of bilateral efforts launched in the early 2000s, and expanded and renewed subsequently (Shi 2008, 2009).⁴³ Yet, details of development cooperation, especially in the agribusiness sector, have generally not been forthcoming, and have in some cases been the subject of protracted debate (Dwyer 2011). As exemplified by the rubber sector (see Alton et al. 2005), an early push on the part of companies for concession-based development projects gave way to a policy compromise favoring contract farming (Vongkhamor et al. 2007), only to then give way again to a series of “concession-like” contract farming projects that in practice blurred the boundaries between the two business models (Shi 2008; Thongmanivong et al. 2010). This slippage, whose implementation often depended heavily on local conditions, was influenced by how the category “locally owned land” was interpreted. This highlights the importance of how property relations are created in particular locations, and how these are recognized (or not) by local authorities (Thongmanivong et al. 2010; Dwyer 2013). Since Laos's state-mandated effort to inventory and map land concessions dealt awkwardly with the category of contract farming projects (Schönweger et al. 2012), this has left Chinese agribusiness investment in northern Laos at the illegible end of what was already only a partially transparent system (see previous chapter).

Given this setting – arguably a notch or two below the already modest level of spatial transparency seen in previous chapters – it is widely believed that there is virtually no spatial information available about land-intensive development, and Chinese agribusiness in particular, in the Golden Quadrangle region. This is actually not the case, and while it is *almost* so, the exception that proves the rule is an important one. Its importance lies in the fact that the data that *is* available helps explain the regulatory dynamics that govern Chinese plantation investment in northern Laos and northern Myanmar, and that it moreover opens the door for engaging relevant authorities – especially in China – on policy issues that could further public disclosure.

⁴³ Also see, e.g. Xinhua, 28 July 2014, “China, Laos pledge to boost bilateral ties.”

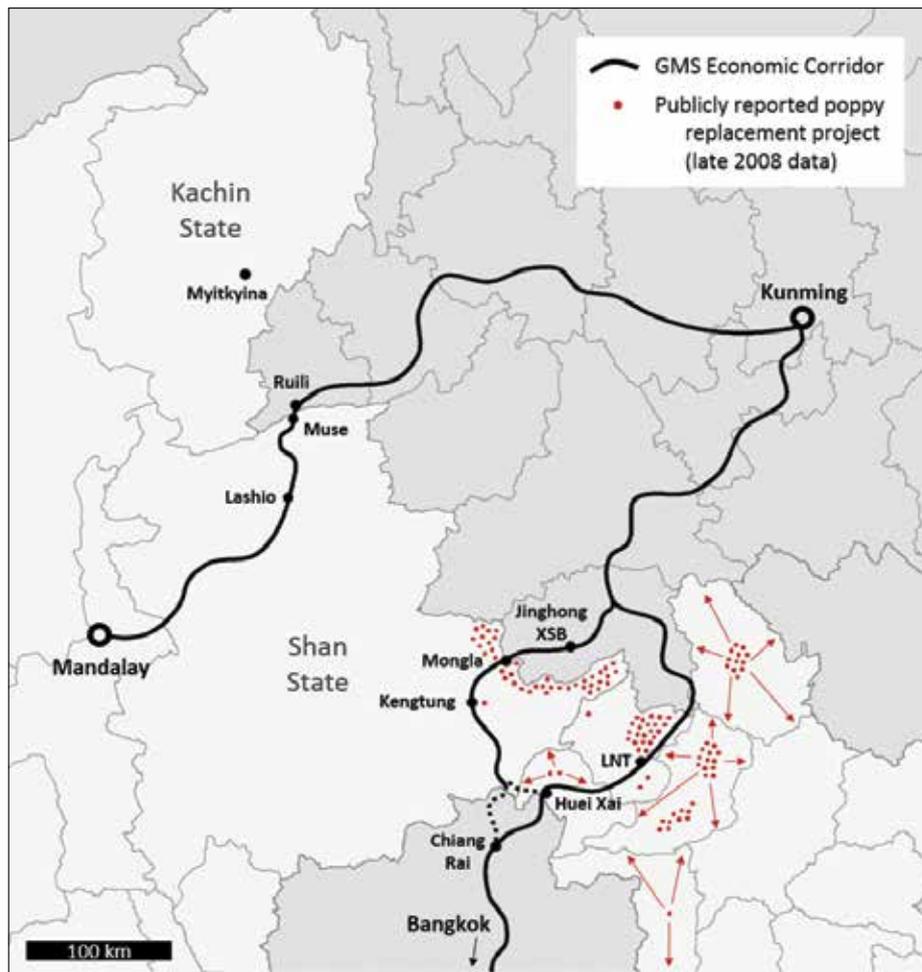


Figure 11. Partial legibility of Chinese agribusiness investment in the Golden Quadrangle area as reported in publicly available data from the Xishuangbanna Commerce Bureau.

Source: Author, using data referenced in note 44.

The data that is available comes from the Commerce Bureau of Xishuangbanna Prefecture, one of the southernmost prefectures in Yunnan Province, and the only prefecture that borders both Laos and Myanmar. Originally provided in tabular format, the data provides statistics about Chinese companies' agribusiness development projects designed to replace opium poppy cultivation in northern Laos and northern Myanmar.⁴⁴ Despite being almost half a decade old and, as elaborated below, being limited to northern Laos and only a small portion of the northern Myanmar regions where Chinese "poppy-replacement" agribusiness is operating, the data provides a number of useful types of information at the scale of projects, including company name, project name, crop type, plantation start date, method of cooperation, area planted in 2008, and location of plantation. While the latter

field is not precise, it can nonetheless be used to create an approximate (low-precision) map showing the reported distribution of poppy replacement agribusiness in northern Laos and northern Myanmar; this is shown in Figure 11.

Figure 11 needs to be read cautiously – in two ways. The first regards precision: in the data reported online, locational information is not given with standardized levels of precision; some projects' locations are reported by province, while some are reported by district. In Figure 11, these differences are reflected by the use of arrows: district-reported data is indicated using dots in the appropriate district (one dot per project; district boundaries are not shown), while province-reported data is shown using dots and arrows that point to provincial boundary lines. In some areas (Laos's Bokeo, Phongsali and Xayabouli provinces), project data is reported only at the provincial scale, while in other areas (Laos's Luang Namtha province and Myanmar's Shan state),

⁴⁴ Accessed 2009, checked 2014. <http://xsbm.mofcom.gov.cn/aarticle/gonggao/200809/20080905777443.html>

Table 9. Area numbers reported by Xishuangbanna Commerce Department for opium replacement agribusiness projects; original data in *mu* (1 *mu* ~ 15 ha).^a Numbers of projects reported are provided in parentheses.

		<i>mu</i>	ha	acres
Laos	Perennial crops (n=24)	800,659	53,377	133,443
	Annual crops (n=46)	484,056	32,270	80,675
	Unknown (n=1)	2,000	133	333
	Subtotal (n=71)	1,286,715	85,780	214,451
Myanmar	Perennial crops (n=16)	195,517	13,034	32,585
	Annual crops (n=23)	101,479	6,765	16,913
	Unknown (n=1)	100	7	17
	Subtotal (n=40)	297,096	19,806	49,515
Total (n=101 projects)		1,583,811	105,586	263,966

a Raw data available at <http://xsbn.mofcom.gov.cn/aarticle/gonggao/200809/20080905777443.html> (accessed 2009, checked 2014). Annual vs. perennial classification has been done by the author (for purposes of comparison with Table 10 below) using reported crop types.

it is reported at district or equivalent administrative scale. In Laos's Oudomxai province, a mixture of both resolutions are found; the graphics in Figure 11 reflect this.

The second caveat for Figure 11 – and indeed one of the map's central points – is what it does *not* show: namely, the Chinese agribusiness projects reported by the Transnational Institute's research located in *other* parts of Shan state, as well as in Kachin state. These are discussed below.

Even with its shortcomings, the data reported by the Xishuangbanna Commerce Bureau provides much useful information. In addition to providing a temporal snapshot of the number of poppy replacement projects in each province – information that can be compared with locally available sources such as Laos's first concession inventory, which was conducted roughly concurrently (Schönweger et al. 2012)⁴⁵ – the data testifies to the prevalence of both annual and perennial crops in both Laos's and Myanmar's mix of poppy-replacement projects. Although the data is incomplete, the ratios reported suggest that perennials – most of which are rubber projects (see original data) – outweigh annuals by a factor of almost 2:1 (Table 9). Even if the project areas stated exceed actual plantation achievements (as with some Lao projects), the large areas reported imply substantial target populations; this in turn suggests that significant numbers of poor households

are or have been facing the challenges of perennials' long lag time between labor investment and harvest. The downward trend in rubber prices since early 2011 is only likely to exacerbate these difficulties.

Even more significant in the reported numbers are their various mismatches – both between Laos and Myanmar, and with earlier periods and data reported elsewhere. While the numbers reported for Laos accord (albeit very roughly) with comparable statistics in the country's recent land concession inventory (Schönweger et al. 2012, 36), the Myanmar numbers stand out as being clearly incomplete. Table 10 shows figures reported by the Transnational Institute, whose research on poppy-replacement agribusiness in northern Myanmar emphasizes the phenomenon's extent throughout Shan and Kachin states (Kramer and Woods 2012; Buchanan et al. 2013); this contrasts sharply with the focus in Mong La (the former Shan Special Region 4) depicted in Figure 11. To quantify this mismatch, the data shown in the top two rows of Table 10 can be compared with the reported numbers given in Table 9. Both refer to activities in 2008; the key difference between them is thus one of spatial extent.

1. Perennial crops: Table 9 lists over 13,000 ha for Myanmar; compare this with the 240,000 ha listed in Table 10. The publicly reported data thus represents in the order of 5.5% of the TNI-reported total.
2. Annual crops: Table 9 lists almost 6800 ha for Myanmar; compare this with the 600,000 ha in Table 10. The publicly reported data thus represents in the order of 1.1% of the estimated total.

⁴⁵ This data can be viewed at <http://decide.la>; a second round of concession inventorying began in Laos in 2014.

Table 10. Miscellaneous agribusiness statistics for northern Myanmar reported in Kramer and Woods 2012 (various sources).

	Kachin state	Shan state	
"Annual and perennial crops substituting for opium poppy in border areas" (2008 data) ^a	Annual crops: 600,000 ha [1.5 million acres = 9 m <i>mu</i>] sown (by 2006–07) Perennial crops: ~76,000 ha [190,000 acres = 1.14 m <i>mu</i>] sown (2005–06 season) ~160,000 ha [400,000 acres = 2.4 m <i>mu</i>] sown (2006–07 season) 240,000 ha [600,000 acres = 3.6 m <i>mu</i>] planned (2007–08 season)		
Agricultural concessions allocated (2010 data) ^b	160,000 ha [~400,000 acres = 2.4 m <i>mu</i>] to 11 companies	16,000 ha [~40,000 acres = 240,000 <i>mu</i>] to 9 companies (northern Shan state)	26,000 ha [~65,000 acres = 390,000 <i>mu</i>] to 12 companies (southern Shan state)
Area targeted for rubber expansion (out of 490,000+ ha nationally) (2010 data) ^c	21,351 ha [53,377 acres = 320,262 <i>mu</i>]	57,838 ha [144,594 acres = 867,564 <i>mu</i>] (original data disaggregated into north, south and east)	

Note: 1 ha ~ 2.5 acres ~ 15 *mu*

a Cited in Kramer and Woods (2012, 35); original data from Myanmar Agriculture Service.

b Cited in Kramer and Woods (2012, 35); original data from Myanmar Dept. of Agriculture and Planning.

c Cited in Kramer and Woods (2012, 41); original data from Myanmar Agriculture Service.

A second indication that a great deal of data is missing from the Myanmar portions of Table 9 and Figure 11 comes from comparing the 2008 numbers shown in Table 9 (and Figure 11) with data from 2003 provided from Yunnan's Provincial Commerce Department (Table 11). The numbers for Laos are more or less consistent with the literature, which describes a boom in Chinese investment, much of it backed by poppy replacement subsidies, in the years between 2003 and 2008 (Shi 2008; Hicks et al. 2009; Dwyer 2011; Schönweger et al. 2012); the numbers in Table 11 are consistent with this boom narrative. In contrast, despite similar dynamics being described in Myanmar (Woods 2011; Kramer and Woods 2012; Buchanan et al. 2013), the Myanmar numbers show a *decrease* by almost half. This suggests that Yunnan's and Xishuangbanna's statistics are roughly comparable for Laos – a suggestion supported by the latter's geographical position as the gateway to much of northern Laos, including Luang Namtha, Oudomxai and Bokeo provinces – but that the same cannot be said for Myanmar. In other words, the mismatches between Table 9 and both Table 10 and Table 11 highlight the importance of Yunnan's *other* border prefectures (in addition Xishuangbanna) in facilitating Chinese investment in northern Myanmar.

Table 11. Comparison between 2003 data on poppy replacement plantations reported by the Yunnan Provincial Department of Commerce (cited in Shi 2008: 23) and the 2008 data summarized in Table 9. All numbers given in hectares (original data in *mu*).

	2003 data	2008 data	Discrepancy	
			Difference	% difference
Laos	4,667	85,780	81,113	+1,700
Myanmar	36,667	19,806	-16,861	-46

4.3 Financial transparency

In comparison to previous chapters, the financial transparency situation for the Golden Quadrangle looks somewhat different from a methodological perspective. On the one hand, Profundo was unable to find *anything* in terms of financial statements or investor disclosure for Chinese companies investing in either Laos or Myanmar. This is in itself instructive.

1. In Laos, Profundo was able to find financing information only for Hoang An Gia Lai and selected member companies of the Vietnam Rubber Group; these operate only in southern Laos and were examined in the previous chapter. Based on its investigations, Profundo concluded that, "although the exact role of the

Chinese state in financing the Lao rubber sector could not be calculated, its role is significant” (Profundo 2013, 49). The evidence that Profundo *was* able to track down all pointed to the Chinese Government’s poppy replacement fund described above.

2. In Myanmar, Profundo found information – both qualitative and financial – about only one foreign company working in the rubber sector. This was Felda Global Ventures, which is currently developing a rubber processing plant in the Tanintharyi region of southern Myanmar (Profundo 2013, 61). Although Profundo notes that Myanmar’s rubber landscape is expanding most rapidly in the northern part of the country (Profundo 2013, 54), the corporate and investor dimensions of this process go unremarked.

On the other hand, it is important to note that the (albeit limited and partial) spatial transparency described in the previous section *comes from a financier* – namely, the Chinese Government. The data has a number of caveats, but it can be combined with other sources, as above, to describe the geography of investment, and the rough magnitude of this investment. While such an exercise has significant uncertainty, as in previous chapters, estimating investment magnitudes can be useful as the basis for further dialogue and research.

The Xishuangbanna Commerce Bureau data described above can be used to estimate investment magnitudes if it is combined with two of Weiyi Shi’s key findings. Studying the Chinese rubber boom in northern Laos in 2007–08, Shi’s research placed less emphasis on the subsidy program as a driver of new Chinese investment in northern Laos and northern Myanmar than Kramer and Woods, but nonetheless noted a few of the program’s significant features. One was that the program offered “subsidies of 10 to 30 Yuan [RMB] per *mu* per year for plantation projects based on actual areas planted” (Shi 2008, 27). When combined with the numbers reported above, these subsidy rates can be used to calculate the subsidies that would have been paid to the companies and projects shown in Figure 11. Shi also reported that only projects that developed more than 10,000 *mu* were eligible to receive these subsidies; the estimates shown in Table 12 reflect this restriction as well, based on area figures reported for 2008.

Table 12’s first two rows for each country show calculations based on reported crop types (see note a, Table 9), using the two values (RMB 10

and RMB 30 per *mu*) reported by Shi. While these estimates are too uncertain to represent anything like minimum and maximum values, respectively, they nonetheless present rough estimates of lower and higher subsidy numbers, depending on the (as yet undescribed) finer details of the program. The third row for each country reflects the fact that the subsidy rates reported by Shi are *per year*. Assuming conservatively that annual crops were subsidized only for the years in which they were reported, and that perennial crops were subsidized between the years for which they were reported and 2012 – the latest year for which the subsidy program was known to be in operation (Kramer and Woods 2012) – generates the estimates totaled at the bottom of Table 12. If these assumptions are plausible, total subsidies distributed under China’s poppy replacement agribusiness program in the areas and projects shown in Figure 11 and Table 9 would have been in the range of USD 10–20 million.

In a follow-up to Shi’s work, Hicks et al. provide some numbers that can be compared with the estimates shown in Table 12. Providing the only other published estimate this author has found of how much money was actually spent on China’s poppy replacement subsidy program, they report that:

The PRSF [Poppy Replacement Special Fund] of 250 million Yuan [roughly USD 36 million] was established by key state agencies in 2006 to be allocated over a period of five years. In 2007, [the] national PRSF dispensed a total of 29 million Yuan [USD 4.2 million] to 82 businesses operating in northern Lao PDR and Myanmar. Yunnan Province contributed additional funding of 30 million Yuan [USD 4.3 million], of which 15 million [USD 2.2 million] was dedicated to subsidizing the development of demonstration areas.

(Hicks et al. 2009, 60)⁴⁶

Hicks et al.’s data about the overall magnitude of the Poppy Replacement Special Fund suggests that, depending on whether companies received RMB 10, RMB 30 or somewhere in between for their plantation efforts, somewhere between one and three-fifths of the fund’s total would have been committed to only the projects shown in Figure 11. Given the wider landscape

⁴⁶ The authors cite this data to the Yunnan Alternative Development Association (pub. 2008). “2007 Replacement crops research report: Basic overview of work in opium replacement; July 2008” [original in Chinese].

Table 12. Subsidy estimates for Chinese poppy replacement agribusiness in northern Myanmar and northern Laos.

		RMB 10 per <i>mu</i> -year scenario (USD)	RMB 30 per <i>mu</i> -year scenario (USD)
Myanmar	Annuals 2007–08 (reported)	84,952	254,856
	Perennials 2007–08 (reported)	226,443	679,329
	Perennials 2008–12 (estimated)	905,772	2,717,317
	Subtotal	1,217,167	3,651,502
Laos	Annuals 2007–08 (reported)	583,370	1,750,110
	Perennials 2007–08 (reported)	1,130,832	3,392,496
	Perennials 2008–12 (estimated)	4,523,328	13,569,985
	Subtotal	6,237,530	18,712,591
Total		7,454,698	22,364,093

of subsidized Chinese investment described above, the actual fraction of the fund used up was likely to be significantly higher. That said, Hicks et al. provide another important piece of information: Yunnan province contributed matching funds, at least in the PRSP's first year, at a rate of just over 1:1. This suggests that the investment estimated in Table 12 could have been partially funded not just from central-level sources, but from provincial ones as well. As Kramer and Woods have pointed out, China's provincial interests are likely to differ from central-level ones in that the former are more narrowly business-oriented, while the latter are more concerned with livelihood replacement so as to stop the flow of opium into China's heroin supply (Kramer and Woods 2012). Co-funding of poppy replacement agribusiness, in this sense, could affect this balancing of various objectives; while the details remain unknown, the magnitude of the money involved accords with the evidence given above that large numbers of people and areas are involved on the ground.

Transnational Institute provides some additional data that can be used to address the question, examined in previous chapters, of how much of the spatially transparent investment can be cross-referenced with financing information. Based on the numbers given above, this would seem to be quite low for Myanmar: as already noted, comparing Table 9 with Table 10 suggest cross-referencing ratios in the range of 5.5% for perennial crops and 1.1% for annuals. But Kramer and Woods, presumably on the basis of various data discrepancies, caution that the crop numbers provided above in the top two rows of Table 10 are not necessarily all Chinese-funded (Kramer and Woods 2012, 35, note 145). As compared to the million-plus hectares of "crops

substituting for opium poppy" listed above (based on Myanmar government data), investment estimates from Yunnan provincial authorities are more modest:

From 2005 to 2008 the Yunnan government administered a total of 1.224 billion Yuan (US\$ 176.74 million) of investments for crop substitution development projects, with a cultivation area of 1.0118 million *mu* equivalent to 67,453 ha ... in Kachin and Shan States. According to the National Narcotic Control Commission (NNCC), by the end of 2007, officially 135 Chinese companies had conducted "alternative development" projects in northern Laos and Burma. They had invested 169 million Yuan (US\$ 26.5 million) to plant 267,500 *mu* (17,800 ha) of substitution crops in Burma.

(Kramer and Woods 2012, 22)

Ultimately, although these numbers cannot be fully understood on the basis of current evidence, they suggest either a substantial expansion of Chinese agribusiness in 2007–08 (cf. 17,800 ha by the end of 2007 versus 67,000+ ha by the end of 2008), inconsistent data not just between countries but within them as well, or more likely both. The fraction of spatially transparent investment that can be traced to project-specific financing information is thus relatively high in the Golden Quadrangle, but this is largely because it is the financier (in this case the Chinese Government) that provides the exceptional bit of spatial transparency. As suggested by the various other statistics on Chinese investment in the region, the larger uncertainty is the fraction of the investment landscape that remains outside the public domain entirely.

5 Conclusion: Opportunities for engagement

In Southeast Asia, industrial agriculture (especially for oil palm) yields a gross margin of around US\$ 2000–5000 per hectare. ... [Given these opportunity costs,] regulation, law enforcement and strong political decisions are needed to stop the development of the more industrial drivers [of] deforestation.

Karsenty (2012, 41)

5.1 Introduction

One of the paradoxes of economic development over the last few decades is that as market-based approaches have proliferated, regulatory opportunities have grown with them rather than shrunk (Walker 1999; Graeber 2015). While strong regulatory approaches have had a long pedigree in more authoritarian states, the financial crisis of 2008 and the persistent shortcomings of *solely* market-based regulation have brought questions of regulation (back) to the fore of debates about environment and development (Nyíri 2009; Ban and Blyth 2013). Karsenty et al.'s call for “regulation, law enforcement and strong political decisions” (quoted above) exemplifies this trend, as do calls for measures ranging from temporary moratoria on concessions (Bolin et al. 2013) to global compliance markets for greenhouse emissions (Brockhaus et al. 2012; Eickhoff et al. 2012; Sunderlin et al. 2014). As concession-based approaches to development have made extensive use of the state, countervailing efforts to rein in their excesses have begun to advocate similar means. A convergence of sorts may thus be emerging around the need for stronger forms of intervention than development orthodoxy has prescribed in the last few decades. Key questions remain, however, about what these might look like. This section examines seven areas where significant engagement opportunities for dialogue and engagement exist on the issues examined above.

5.2 Concession opacity and “high opportunity costs”

One of the key challenges of replacing unsustainable land uses with better alternatives is often said to be the high opportunity costs associated with the latter.

This is true, but only to the extent that “market conditions” – including, crucially, input costs related to land – are taken as pre-given and static. The landscapes examined above showed that land access costs are in fact quite dynamic, and depend heavily on the extent to which “state lands” are accepted as such by the producers who often occupy them, or conversely, whether state ownership is contested through processes that provide compensation to earlier users and, in the process, drive up access costs. The evidentiary base is not presently there to quantify this, but the qualitative dimensions are clear enough: if state lands are *formally* state-owned but *actually* owned – that is, controlled via strongly grounded social relations – by non-state owners, costs to developers who have been promised (or who are seeking) these lands will be on the higher end. On the other hand, if formal state ownership is not merely *formal* but *practical* as well – that is, if state claims are enforced by state authorities regardless of other land uses and occupants – then the input costs associated with land acquisition are likely to be lower, especially if state ownership is defended after the fact as well.

The formalization of state land – a basic premise for most concessions, and the process that in many cases leads to the production of concession maps (e.g. in Cambodia and Indonesia) – is thus closely linked to the economics of land development. On the one hand, exposing state land formalization processes to public scrutiny (e.g. via improved forms of spatial transparency) has the potential to help internalize costs that opaque formalization externalizes, making concession development more expensive and driving down the opportunity costs of more sustainable alternatives. This is a tall order, given the incentives involved, but there may be opportunities to link up with transnational demands from civil society and the investment world to move it in the right direction. On the other hand, such efforts should take care not to simply legitimize the formalization of state land by making it more transparent. Transparency will not automatically create sustainability or accountability, but it can help.

1. **Vietnam, Cambodia, Laos, Myanmar, China, Thailand:** The recent drop of global rubber prices may offer an opportunity to pursue dialogue about the full (including

nonmarket) costs and benefits of different rubber production models. This is especially relevant to the CLV development triangle and Golden Quadrangle regions.

- **Laos** could be especially ripe for such a dialogue given (i) its high dependence on natural resource exports (rubber is the second major “strategic” commodity to be experiencing a price crash, following the decline of mineral prices – and the resulting closure of a major gold mine – in 2013); and (ii) recent interest (and some quite blunt suggestions) about rubber-based livelihoods by the Ministry of Planning and Investment’s National Economic Research Institute.
 - **Myanmar** could also be open to high-level strategic dialogue about rubber given that much of the rubber development thus far has been overseen by regional leaders in the north and northeast. As regional integration proceeds, the adequacy of current livelihood models will be an ongoing and important topic of debate. The land loss and return to opium cultivation by dispossessed producers (Kramer and Woods 2012; UNODC 2013) make this an especially timely topic (also see next bullet point).
 - Research by the Transnational Institute points out the substantial conflict of interest that exists within **China** between progressive drug control policy (based on livelihood replacement away from opium poppy production) and business interests whose main concern is land acquisition for large-scale agriculture (see Chapter 4). This tension is especially prevalent in Chinese state subsidies for cash crop production in opium producing areas of **Myanmar** and **Laos**, and offers opportunities for collaborative research and dialogue.
 - **Cambodia:** The reallocation of pieces of concession land since mid-2012 under Order 01BB (see Rabe 2013; Grimsditch and Schoenberger 2015) makes this campaign an obvious topic of interest, and possibly a “natural experiment” in terms of studying the economics of state land formalization.
2. **Indonesia, Malaysia, Singapore, Myanmar:** Widespread concern with oil palm as a deforestation threat could justify more detailed quantitative research on the extent to which state land regimes effectively subsidize oil palm production, thereby driving up opportunity costs

of other land uses. **Indonesia’s** recent movement on land tenure reform (as exemplified by the country’s 2013 Constitutional Court Decision 35 and ongoing One Map initiative) could make it an appropriate place for such a study.

5.3 REDD+ at landscape scale(s)

The previous point applies to REDD+ in particular, which is often categorized with alternative land uses which must compete with land-intensive commodity production. Internalizing the costs of the latter is a necessary, if long-term and visionary, piece of the REDD+ puzzle; a landscape-based approach to REDD+ which includes *other* land uses within the same land governance regime is thus an important step in making REDD+ work. This means that so-called “jurisdictional”-scale approaches to REDD+ must involve not just carbon accounting at subnational levels, but governance reforms as well. The challenges of this are substantial, given the potentially competing interests involved. There exists an opportunity for engagement in offsetting the interest by subnational governments in land-intensive commodity production (due to the rents that accompany it) by stepping up the potential rents from REDD+. While this is being attempted in the short- to medium- term through various bilateral and multilateral mechanisms, a long-term solution is unlikely to materialize in the absence of an international “compliance” market. Although this market could take a variety of concrete forms, the ability to create effective demand for emissions reductions is a core feature. Demonstrating to faraway policy makers the link between global negotiations and the dynamics of land use in areas at the farm-forest edge is essential.

- CIFOR’s research in **Laos** is examining these sorts of dynamics, focusing on various choices and tradeoffs that are relevant to various pieces of REDD+. These include choices and tradeoffs related to land tenure, investment transparency and spatial planning, engagement with deforestation and degradation drivers, and metrics of landscape change.

A second and related implication of a landscape-scale approach to REDD+ is the need to address the linkages *between* REDD+ landscapes that are created by other commodity markets. These linkages are receiving increasing attention in the land change science community via interest in “tele-connections” (Messerli et al. 2013; Munroe et al. 2014). Studying these, and using transnational institutional connections

to conduct policy work in tele-coupled landscapes (e.g. palm oil producing landscapes in **Indonesia** and palm oil-dependent consumer landscapes in **India**) is a necessary piece of the landscape approach to REDD+. Such an approach could help offset the implications of cost internalizations – e.g. increased costs to consumers of land-intensive commodity products like palm oil – and, in doing so, reduce the potential for conflict at the international level of policy negotiations. It is increasingly recognized that REDD+ needs to “go big or go home” – that it is not the easy (“efficient”) fix that some imagined it to be, but a technically complex pathway for confronting three of the biggest challenges of our time (climate change, deforestation and uneven development). Approaching REDD+ at the local *and* global (i.e. tele-coupled) landscape scales is a necessary piece of operationalizing the commitment to do REDD+ in ways that will actually work.

5.4 Global linkages and implications

The utility of conducting coordinated engagements across different tele-coupled landscapes exists beyond REDD+ as well. As the previous section noted, the linkages that matter analytically are not specific to REDD+ but to the *other* land uses with which REDD+ competes.⁴⁷ Taken with the analysis in Section 5.2, the implication is that market-based linkages – which are often widely transnational and even global – need to be used in formulating policy engagements, rather than just regionally specific approaches (e.g. those focused on Southeast Asia or even the Pacific Rim). In addition to the oil palm example given in the previous section, timber markets could also be used to examine the tele-connections between landscapes of production (e.g. in **Southeast Asia** and **sub-Saharan Africa**) and consumption (e.g. in **Asia**, **Europe** and **North America**).

A global approach that follows commodity production and trade networks also has implications for research collaboration. One thing that came through from the commodity landscapes examined above is that the category of “publicly available”, when applied to information, is sometimes context-specific. Language is one issue, as in Chapters 3 and 4, where data is available in Vietnamese or Chinese, for example, and therefore presents challenges to inclusion and use despite being publicly available. But language is only the beginning, as is clear from the importance

⁴⁷ In this sense, the approach above is not specific to REDD+, although carbon emissions could, in principle, be studied as a tele-coupled commodity as well.

of social context in defining “public”: Indonesia, for example, seems to have a public right to know concession locations (see Section 5.6. below), but this seems to be understood in terms of a *local* right rather than a national or global one.⁴⁸ In Laos, the central government has committed itself to putting information about concession locations in the public domain, but this is accompanied only by general (rather than specific) identifying information – at least in the online public version (see Chapter 3). The data that is available to the global public (i.e. online) thus represents only one sort of public availability; given the privileges that are sometimes accorded to more specific publics (local residents, scientists, etc.), broadening the research collaboration base is part of exploring public access in more detail. The networks of commodity production and trade examined above provide pointers about how to go about this in analytically rigorous ways.

5.5 Beyond informed consent: Cultivating public debate

One consistent theme in land governance debates is the fact that good intentions and positive policy statements often depend on public concern – if not outright support – in order to be operationalized consistently. The need for an active public has been foregrounded especially in democratic contexts, where land governance reforms can become subsumed by the vagaries of coalition politics (Luttrell et al. 2012). But the same is also true in more authoritarian contexts, where issues such as illegal logging and the governance of concessions reflect on the capacity of government to manage development in the interest of the public. (Even in Laos and Vietnam, the principle of democratic centralism calls for vigorous public debate prior to decision making – witness the policy discussions spurred by the recent round of calls to the Lao National Assembly’s public hotline.⁴⁹) In contexts where “special interests” are strongly aligned with the maintenance of the political-economic status quo, the value of public debate is especially strong as a countervailing force.

In both the extractive sector and in the world of REDD+, there has been a lot of focus on the principle of free, prior and informed consent (FPIC).

⁴⁸ Personal communication from Krystof Obidzinski, March 2014.

⁴⁹ See, e.g. *Vientiane Times*, 13 Aug. 2014, “Xekong rubber project: Some affected villagers refuse relocation.”

This is one avenue of bringing public debate into the practice of operationalizing development projects in specific places. One problem with operationalizing FPIC, however, is that the process of *informing* communities about the pros and cons of particular options depends heavily on decisions about what other examples are relevant. In contexts where public knowledge of the competing options is limited, this places immense responsibility on the so-called experts. In the case of REDD+, this has created challenges that are especially acute, given the lack of consensus about what REDD+ will actually look like. Cultivating public debate more widely – beyond the arena of FPIC consultations, but in a way that could trickle into them when they do take place – can help inform project-specific debates by grounding existing knowledge about development alternatives in local conversations and experience.

Significant opportunity exists to support and expand existing efforts to cultivate debate about land-intensive investment and the larger questions that surround “green” development options and transitions. These would likely entail a combination of localized, longer-termed programs and shorter (but still ideally ongoing and supported) approaches that seek to cultivate cross-regional and comparative debate. Significant opportunities exist for both.

1. *Localized longer-termed programs* would focus on collaborative research, capacity building and knowledge transfer to key governance institutions.
 - In **Laos**, we have begun the collaborative research process via our work with the National University of Laos’s Faculty of Forestry. In terms of knowledge transfer, the Lao National Assembly is important in terms of agenda setting. While not necessarily a key decision maker, the National Assembly has been instrumental in bringing land governance concerns into the policy discussion arena during the last few years, notably through its subcommittee on economics and planning. The National Assembly also weighs in on important policy processes, like the (ongoing) development of a national land policy, as well as issues such as legal forest categories, which have important implications for land and forest governance. Preliminary research suggests a possible avenue to the National Assembly via UNDP via the provision of information briefs (format: flexible and to be determined) to National Assembly members.

2. *Cross-regional and comparative approaches* offer opportunities to connect civil society and other regulatory actors in the region in order to share experiences and coordinate on ongoing efforts (e.g. across countries where the same companies or types of projects are operating). While current conditions differ substantially within national contexts, transnational linkages could, among other things, bring policy recommendations (e.g. based on experience with land titling from **Cambodia**) into **Myanmar**; share experiences with **Lao** civil society about how current policy openings in **Indonesia** have been created; and facilitate comparative research among scientists and policy makers in **China**, **Myanmar** and **Laos** about rubber development throughout the Golden Quadrangle region.

5.6 Spatial transparency

Although results vary by context, this study has found that the spatial transparency of investment in the agribusiness sector was generally quite low. While in some cases this may reflect a deliberate policy choice to protect companies from public scrutiny, this commonly interpreted reason is arguably less important than the struggles for information access that occur *within* many of the states examined here. One dimension of what scholars call “ongoing state formation” (Corrigan 1985; Lund 2006; Eilenberg 2012), control over information and data often translates into control over regulatory authority, as well as accompanying resource-derived rents in the form of taxes, permits and royalties. As the cases of Indonesia and Laos show, and as is likely the case in Myanmar (albeit in different ways), jurisdictional struggles over state authority remain an important piece of the spatial opacity story. Engaging with these more structural issues is likely to be both a necessary and useful dimension of efforts to promote spatial transparency of development. While commitments from governments are worth seeking, it is also essential to support various efforts that make those commitments – if and when they are made – possible to act on.

It is important not to confuse this current lack of spatial transparency with either public *demand* for information about development (see 5.5 above) or with existing regulatory *requirements* for public disclosure about who is doing what, and where. As suggested by the range of concession inventory projects described above, governments across the

Southeast Asian region are experimenting with different modes and degrees of spatial transparency. The extent to which these are accompanied by legal *requirements* to disclose any of this information to the public is unknown. While it would be reasonable to expect that public right-to-know laws are minimal, (i) this may not be true across the board (e.g. in Indonesia), and more importantly, (ii) public interest in transparent development may exist in ways that exceed current requirements. This is especially the case for development efforts – including, notably, land concessions – that make use of public resources, even if public ownership is currently framed as state ownership. Although the current trend toward spatial transparency seems to have emerged from the nonlegal arena (e.g. third-party certification schemes, corporate engagement with NGOs, and government collaboration with donors and scientists), this should not rule out possibilities for “harder” forms of regulation in the future.

1. **Indonesia’s** One Map initiative may already be operationalizing this approach; further inquiry is warranted. Further research into how Indonesia’s public “right to know” relates to land concessions is also needed.
2. The **Laos** National Assembly’s interest in land governance reform could provide a platform for debate regarding public access to information about transparent development. Laos has recently launched a legal gazette in order to facilitate public knowledge and engagement with the drafting and passage of new laws.⁵⁰ Some type of parallel gazette showing the allocation of public resources for development could be worth exploring. In contrast to the existing levels of transparency currently available, the Open Development **Cambodia** initiative could provide a point of comparison, although even here the mechanism by which concession information has been made available (project-specific prime ministerial sub-decrees) are not necessarily in conformance with principles of transparent governance.
3. **Myanmar:** Current policy discussions are examining the issue of spatial transparency of investment. Examples and lessons from around the region (and elsewhere) could be very welcome in the coming months and years.

5.7 Financial transparency

As with the arena of spatial transparency, the research presented above has examined the extent to which currently available data can make the financing of land-intensive investment a transparent process. As with spatial transparency, the results were not only variable and context-specific; they were also explored only in regard to what is available, and were not examined from the perspective of (i) what is required under current regulatory regimes or (ii) what, if any, additional demand there is on the part of the public(s) for financial transparency that exceeds current requirements. A recent line of investigation by the Rights and Resources Initiative and the Munden Project suggests that “markets” may themselves be demanding more spatial transparency than is currently being provided. This demand comes in the form of hidden risk that investors (or the institutions that guarantee their investments) are currently taking on in the form of land tenure conflicts that are not currently known about (Munden Project 2012; Leon et al. 2013).

While this is an important area of research, it is also the case that formal versus informal tenure (also see Section 5.9 below) is a major area of uncertainty when it comes to estimating tenure-related investment risk. As noted by the Munden Project:

[Currently available information] suggest[s] that what we can learn about tenure risk through publicly available GIS data is but the tip of the proverbial iceberg. And such a conclusion would be supported by logic; after all, there has been little political or economic incentive for governments to map local populations’ land and resource claims, whereas the incentive to map concessions [of state-claimed land] is obvious. All of this says that the available data is very likely to skew away [from], not towards, the discovery of overlapping [tenure] claims. We [thus] expect the full dimensions of land tenure risk to become appreciably larger as these datasets are improved.

(Leon et al. 2013, 2)

The line of research described above thus notes a potential for convergence between spatial and financial transparency, but also notes the difficulties in capturing the informal end of the tenure spectrum. While there has already been some effort to use financial transparency in pursuit of better land governance (much of it stemming from land conflict in Cambodia, but having global reach into Europe and North America; see Global Witness (2013);

50 <http://laoofficialgazette.gov.la>

Oxfam (2014)), the extent to which this can effect more systemic change depends heavily on the extent to which investors worry about informal tenure risk, as well as the extent to which informal tenure is formalized (see next section).

1. A significant degree of financial disclosure, yet low levels of sectoral and spatial transparency, make **Vietnamese** agribusiness investment in the CLV Development Triangle region a clear candidate for additional research on financial transparency. Profundo, the economic research firm with whom CIFOR has collaborated on the financial transparency research presented above, has indicated that they are moving forward with efforts to cross the language barrier of Vietnamese investment disclosure. The spatial/tenure angle presented here could provide an area for further collaboration.
2. Corporate structures and subsidiaries in the **Indonesian** palm oil sector also provide significant potential for linking the spatial transparency that is likely to emerge from the One Map initiative there to available financial data.

5.8 Land titling: Why, where, when – and what else?

One of the most significant debates currently underway in the land sector concerns land titling. Titling has been a staple of Western development assistance in the global South since the mid-1990s, and has been increasingly embraced – if also significantly reframed – in the last half-decade since the “global land grab” debate began. While titling operations have, in the past, tended to prioritize areas where land tenure was relatively secure (Biddulph 2010; Adler and So 2012), and where tenure formalization thus offered the potential to provide large numbers of landholders with legal mechanisms for accessing credit (de Soto 2000), discussions about titling are increasingly focusing on its potential to strengthen land tenure in the context of growing demand for agricultural land (FAO et al. 2010; Dwyer 2015). Debates about titling – where, when, for whom and at what scale – have proliferated over the last few years, but have yet to create a policy consensus, let alone a workable solution to the governance issues associated with large-scale transnational land access.

1. **Cambodia’s** experience with the social and spatial segregation of individual household versus communal land titling efforts, and with the associated legal linking of communal land

tenure to indigeneity; with different targeting mechanisms (systematic versus application-based or “sporadic” titling); and with the socio-political tensions that recently drove the Cambodian Government to spatially reconfigure its titling efforts (albeit to highly mixed results) a year before national elections, all hold important lessons for **other countries** in the region. In particular, it is worth investigating whether other mechanisms of titling location selection are possible or desirable – for example, targeting titling operations toward areas based on “triggers” of land conflict rather than latent tenure insecurity.

2. **Laos’s** current foray into communal land titling is worth watching, and possibly worth engaging. Although the original policy impetus came from other sectors (from hydropower-related resettlement and community forestry and natural resource management), various pieces of Laos’s REDD+ policy and project landscape are now pushing communal titling forward in nationally significant ways. Whether these efforts will be adequate to the tasks at hand, whether in relation to REDD-related tenure and benefit-sharing activities or community defense from land concessions more generally, remains to be seen.

Finally, the proliferation of various national moratoria on land concessions in recent years – in Laos in 2007, 2009 and 2012; in Indonesia in 2011 (renewed 2013); and in Cambodia in 2012 – suggest that governments in the region are struggling with the sustainability implications of concessions at a systemic or fundamental level. In this context, notwithstanding the benefits of targeting titling operations to more tenure-insecure areas, tradeoffs exist – for example, involving tax revenues – and the question remains whether titling constitutes an adequate defense against land grabbing. This is likely to differ by context, but given the absence of a reliable rule of law in many countries in the region where land-intensive commodity development is taking place (Laos, for example, aims to be a “rule of law state” by 2020),⁵¹ the need for additional types of regulation is fairly clear. What these will be is hard to say, and will inevitably depend on context, but pro-poor regulation beyond the realm of land titling is also likely to be an important arena for engagement and discussion.

⁵¹ *Vientiane Times*, 6 February 2014, “Laos striving for rule of law state.”

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Annexes

Annex 1. Production, trade and consumption of Indonesian palm oil

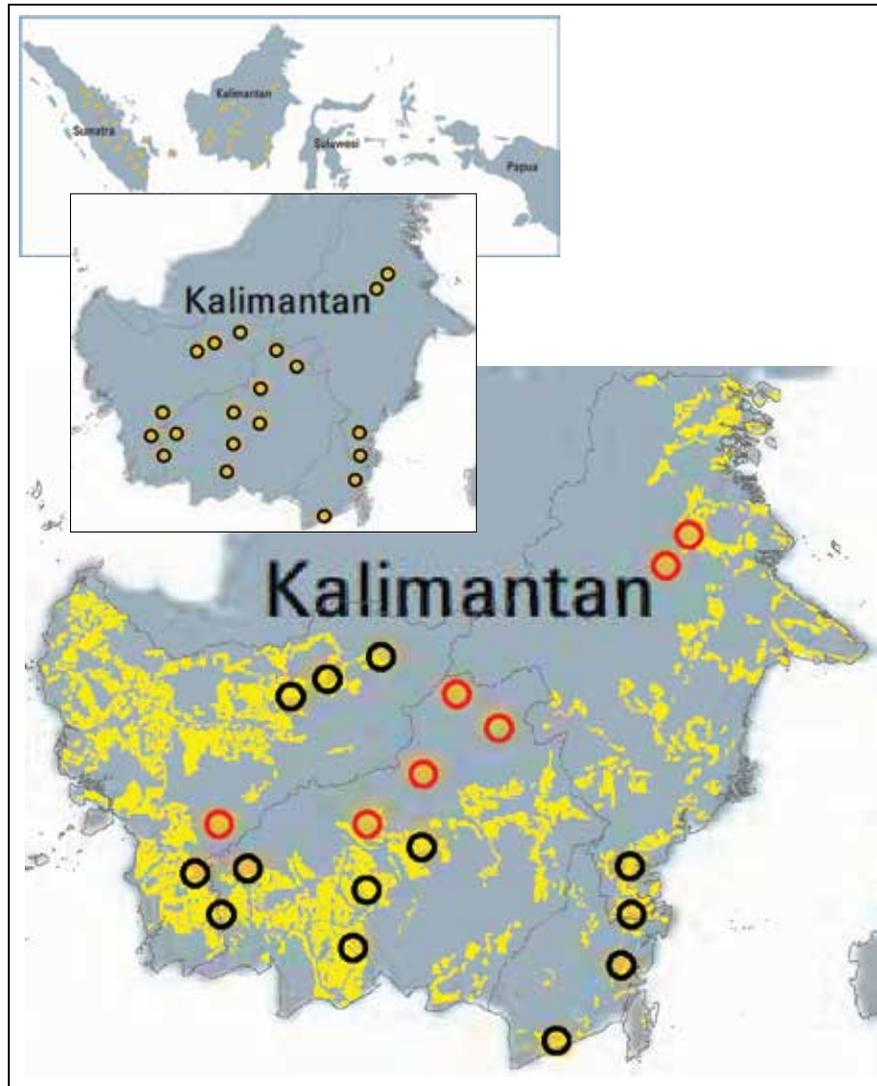
Year	Export (tonnes)	Import (tonnes)	Domestic consumption		Production (tonnes) (exports - imports + domestic consumption)
			Tonnes	% of production	
2002/03	7,166,900	10,400	3,213,500	31	10,370,000
2003/04	8,706,200	13,100	3,276,900	27	11,970,000
2004/05	9,861,900	19,700	3,717,800	27	13,560,000
2005/06	11,589,900	30,300	3,980,400	26	15,540,000
2006/07	12,465,000	25,400	4,410,400	26	16,850,000
2007/08	14,100,000	32,300	5,012,300	26	19,080,000
2008/09	16,208,500	47,900	4,339,400	21	20,500,000
2009/10	16,596,200	79,500	4,993,300	23	21,510,000
2010/11	17,266,900	51,000	6,484,100	27	23,700,000
2011/12	18,100,000	45,000	7,095,000	28	25,150,000

Source: Profundo 2012 (Table 37), which cites ISTA Mielke GmbH, "Oil World Annual 2002-2012," ITSA Mielke GmbH, 2002–2012.

Yield versus area increases:

Profundo (2012: Table 33) reports yield increases of 13% over the same period shown above, from 3.42 tonnes/ha to 3.88; if production had increased only by higher yields, it would have increased by 1,348,100 tonnes (13% of 2002/03 production). Instead, it grew by 14,780,000 tonnes, of which 1,348,100 tonnes is roughly 9.1%.

Annex 2. GAR map geo-referencing



This figure shows the basis for the circles in Figure 6 that represent GAR plantations. The small map at the top (showing Indonesia as a whole) is taken from Gar (2012); the Kalimantan portion is then blown up and supplemented with black circles that emphasize GAR plantation locations (middle map). The bottom map then overlays the middle image with WRI/GP oil palm concession data (yellow) and re-colors those circles without yellow inside as red. This forms the basis for the location and color of the GAR plantations shown in Figure 6. Figure 6 shows only a portion of the area shown above.

It is worth noting that GAR maintains internal data that shows precise GIS coordinates of its plantations. GAR published its 2012 Sustainability Report roughly concurrently with its High Carbon Stock forest study. The latter supports the accuracy of the plantation locations given in the former, but also shows that the company has much more accurate plantation locations – most of which are not published – than what is published in the HCS report.

Annex 3. Largest companies with investments in the Indonesian palm oil sector, 2002–11

Source: Profundo 2012

Type “V” below refers to vertically integrated companies; type “P” refers to specialized upstream (i.e. plantation) companies.

	Company	Country of origin	Ownership	Type	Increase 2002-2011				Source (next page)
					Oil palm area (ha)	CPO refining capacity (tonnes)	Other investments	Fixed palm oil assets (million USD)	
1	Golden Agri-Resources	Indonesia	Listed	V	173,700	540,000	PK crushing	8,105	1
2	Wilmar International	SE Asia	Listed	V	175,227	2,760,000	Oleo, biodiesel	2,493	2
3	Indofood Agri Resources	Indonesia	Listed	V	122,033	624,250		1,945	3
4	Bakrie Sumatera Plantations	Indonesia	Listed	V	83,526	Unknown	Oleo, PK crushing	987	4
5	First Resources	SE Asia	Listed	V	75,088	250,000	Biodiesel	939	5
6	Astra Agro Lestari	SE Asia	Listed	P	76,736	n/a		692	6
7	BW Plantation	Indonesia	Listed	P	58,741	n/a		330	7
8	Kencana Agri	Indonesia	Listed	P	45,501	n/a		327	8
9	Kuala Lumpur Kepong	SE Asia	Listed	V	72,922	n/a		320	9
10	Gozco Plantations	Indonesia	Listed	P	29,975	n/a		263	10
11	Genting Plantations	SE Asia	Listed	P	33,921	n/a		245	11
12	Sampoerna Agro	Indonesia	Listed	P	57,663	n/a	PK crushing	233	12
13	Sime Darby	SE Asia	Listed	V	29,013	n/a		169	13
14	Tunas Baru Lampung	Indonesia	Listed	V	33,471	Unknown	PK crushing	151	14
15	Dutapalma	Indonesia	Private	V	113,000	481,040	PK crushing	Unknown	15
16	Asian Agri	Indonesia	Private	V	30,000	Unknown	Biodiesel	Unknown	16
17	Musim Mas	Indonesia	Private	V	Unknown	2,100,000	Oleo, biodiesel	Unknown	17
Total					1,210,517	6,755,290		17,197	

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Annex 4. Source information for Table 3

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Annex 5. Project-scale data incompleteness in the CLV region

Data incompleteness is a very difficult issue and can only be gestured to. In Laos, without company names and/or an independent spatial inventory, it is virtually impossible to assess. This annex uses data from a book chapter on Vietnam's role in the CLV triangle region to assess the completeness of Open Development Cambodia (ODC). The following table was made by cross-referencing company names listed in both, and shows that only 2–3 of 16 Cambodia projects listed by Nguyen appear in the ODC database. The rest of Nguyen's data (which also includes Laos) appears in Annex 6, where it is used for a different purpose.

Company	Origin ^a	Destination	Sector	Investment Details	ODC?
Duc Cuong JSC	Gia Lai	Cambodia	Rubber or iron ore	USD 366 million registered capital	No
HAGL Rubber JSC	Gia Lai	Cambodia	Rubber		<u>Maybe</u>
Mang Yang-Ratanakiri Rubber JSC	Gia Lai	Cambodia-Ratanakiri	Rubber		<u>Yes</u>
Chu Prong-Stung Treng Rubber JSC	Gia Lai	Cambodia-Stung Treng	Rubber		No
75-Ratanakiri Co. Ltd.	Gia Lai	Cambodia-Ratanakiri	Rubber or iron ore		No
Unnamed	Gia Lai	Cambodia	Rubber or iron ore		No
Unnamed	Gia Lai	Cambodia	Rubber or iron ore		No
Dakruco	Dak Lak	Cambodia-Mondolkiri	Rubber	USD 10 million	No
Krong Buk-Dak Lak Co.	Dak Lak	Cambodia-Ratanakiri	Unknown	USD 33+ million (VND 700 billion)	<u>Yes</u>
Duc Nhan JSC	Kon Tum	Cambodia	Rubber	5 plantations	No
Quoc Vy Co. Ltd.	Kon Tum	Cambodia	Rubber	between 4 companies	No
Hung Viet JSC	Kon Tum	Cambodia	Rubber		No
Thinh Phat-Kon Tum JSC	Kon Tum	Cambodia	Rubber		No
3 unnamed projects	Binh Phuoc	Cambodia-Kratie	Rubber	USD 108 million	No
TOTAL				> USD 517 million	2-3 of 16 projects

Source: Data from Nguyen (2012, extracted from text), cross-referenced with online data from Open Development Cambodia, accessed January 2014.

a Company "origin" refers to Vietnamese provinces.

Annex 6. Vietnamese investment: Another billion-dollar estimate

This table lists the Vietnamese companies listed by Nguyen (2012) for the Lao portion of the CLV. Nguyen's data for the Cambodian portion of the CLV are presented in Annex 5, and are summarized at the bottom (here) in order to generate an overall estimate on the basis of his data.

Company	Origin ^a	Destination	Sector	Investment details
7 unnamed projects	Gia Lai	Laos	Unknown	USD 437 million
Dakruco	Dak Lak	Laos: Champasak, Saravan, Xekong and Attapeu	Rubber	developing 10,000 ha
Say Gon-Tay Nguyen Investment JSC	Kon Tum	Laos	Rubber, minerals & coal	none
Viet-Laos JSC	Kon Tum	Laos		none
TOTAL for Lao portion of the CLV region				> USD 437 million
TOTAL for Cambodian portion of the CLV region (from Annex 5)				> USD 517 million
TOTAL for Laos and Cambodia portions of the CLV region				> USD 954 million

Source: Data from Nguyen (2012), extracted from text.

a Company "origin" refers to Vietnamese provinces.

Annex 7. Estimated fixed assets in the Vietnamese rubber sector⁵²

This table presents Profundo's estimates of fixed assets (investments) in the Vietnamese rubber sector. As in Table 7, estimates are shown in *underlined italics*. Estimates for publicly listed companies are the result of scaling back reported values to account for investment outside the rubber sector; see footnote below. Estimates for nonpublicly listed companies are the result of the area-based extrapolation method described in Section 4.3.

Company (* = publicly listed)	Investments [†] (million USD)	Plantation acreage (ha)	Production 2009 (tonnes)	Source
Dong Nai Rubber (VRG)	<u>141.9</u>	37,000	45,280	1
Dau Tieng Rubber (VRG)	<u>111.0</u>	28,944	45,898	2
Phu Rieng Rubber (VRG)	<u>72.3</u>	18,850	27,500	3
Phuoc Hoa Rubber (VRG)*	<u>67.3</u>	17,000	24,092	4
Binh Long Rubber (VRG)	<u>57.5</u>	15,000	24,775	5
Ba Ria Rubber (VRG)	<u>52.1</u>	13,594	6,420	6
Dong Phu Rubber (VRG)*	<u>38.6</u>	10,400	16,802	7
Tan Bien Rubber (VRG)	<u>23.2</u>	6,053	12,241	8
Binh Thuan Rubber (VRG)	<u>17.3</u>	4,500	4,480	9
Tay Ninh Rubber (VRG)*	<u>11.8</u>	7,200	13,211	10
Hoa Binh Rubber (VRG) *	<u>10.6</u>	5,030	5,118	11
Thong Nhat Rubber*	<u>3.8</u>	2,073	No data	12
Loc Ninh Rubber (VRG)	No data	No data	15,048	13
Southeast (subtotal)	<u>607.4</u>	<u>165,644</u>	<u>240,865</u>	
Kontum Rubber (VRG)	<u>38.4</u>	10,000	10,350	14
Chu Pah Rubber (VRG)	<u>31.1</u>	8,100	6,150	15
Krongbuk Rubber (VRG)	<u>10.0</u>	2,619	3,645	16
Hoang Anh Gia Lai*	<u>6.6</u>	11,000	No data	17
Chu Se Rubber (VRG)	No data	No data	9,015	18
Chu Prong Rubber (VRG)	No data	No data	7,600	19
Mang Yang Rubber (VRG)	No data	No data	6,250	20
Eah'Leo Rubber (VRG)	No data	No data	5,230	21
Highlands (subtotal)	<u>86.1</u>	<u>31,719</u>	<u>20,145</u>	
Quang Tri Rubber (VRG)	No data	No data	6,042	22
Central Coast (subtotal)	No data	No data	<u>6,042</u>	
Investment from listed companies	138.7			
Investment (estimated) from all data above:	<u>693.5</u>			
Investment (estimated) based on FAO data	<u>1,746.4</u>	471,900	711,300	23

52 Based on Profundo 2013, Table 33.

† Investments of publicly listed companies are reported fixed assets or, in four cases, reported fixed assets scaled by a percentage to reflect the companies' fixed assets in rubber. These percentages are based on a variety of evidentiary sources (Personal communication from Ward Warmerdam, Profundo, March 2014), and are as follows: Tay Ninh Rubber: 70% rubber; Hoa Binh Rubber: 98% rubber; Thong Nhat Rubber: 80% rubber; Hoang Anh Gia Lai (HAGL): 1.05%. HAGL presented special challenges because so much of its business is not in the rubber sector. Profundo thus estimated its rubber investments based on reported profits (which *were* segmented by sector in available reports) (Profundo 2013: 75, note 352). However, because many of HAGL's rubber trees are still maturing (HAGL 2012: 11), rubber segment profits are likely to be low, and this method thus likely underestimates HAGL's fixed assets in rubber significantly. By comparison, Profundo's estimate of HAGL's assets in Laos and Cambodia, where the company's main activities involve agribusiness, uses the area-based method and produces results that are an order of magnitude higher (see Table 7).

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Annex 8. Source data for Figure 10

The table below draws on Profundo's research (2013: Tables 14, 20 and 34), and provides the basis for Figure 10. It includes additional information about source material and the years used in computing the numbers shown in Figure 10. The three-letter codes provided after some company names refer to company codes on the Viet Capital Securities website.

Company	Shareholders (%)	Bondholders (%)	Loans (%)	Unknown/other source (%)	Source	Data years
Thong Nhat Rubber (TNC)	100	0	0	0	1	2006–12
VRG: Hoa Binh Rubber (HRC)	96	0	4	0	2	2005–12
VRG: Tay Ninh Rubber (TRC)	94	0	6	0	3	2005–12
VRG: Phuoc Hoa Rubber (PHR)	90	0	9	0	4	2006–12
Lion Forest Industries	90	0	3	7	5	2003–13
VRG: Dong Phu Rubber (DPR)	89	0	10	1	6	2005–12
Socfinasia	86	0	3	12	7	2006, 2007, 2008, 2010, 2012
Gemadept	71	0	25	4	8	2010, 2012
Hoang Anh Gia Lai (HAG)	50	0	46	4	9	2006–12

Sources:

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Half a decade into the global land rush, land-intensive investment throughout Southeast Asia continues to confront social and environmental issues such as land conflict and improperly regulated forest conversion. This study uses publicly available financial and spatial data to examine the geography of land-intensive investment in Southeast Asia, and to identify the limits imposed by problems with data availability. It focuses on three regions where land has been widely seen to be available for new investment: Indonesia's outer islands; the "development triangle" where Cambodia, Laos and Vietnam meet; and the Golden Quadrangle region which comprises the borderlands of northeastern Myanmar, northwestern Laos, southern and western Yunnan, and northern Thailand. These areas are examined in three chapter case studies, each of which uses the currently available spatial data to evaluate trade and investment dynamics in the area – including processes that are used to make land available – and combines these, where possible, with specially commissioned research on investment in key commodity crops to evaluate transparency with respect to financing. In a global and regional context where regulatory change is increasingly being driven by transnational concerns – by consumers, retailers and investors – information systems capable of tracking particular investments' spatial targets, and thus their likelihood of various social and environmental outcomes, are increasingly desirable. This study describes current capabilities and challenges to realizing a more complete picture of investors' roles in the development of "available" land.



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