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Problems for the plantations: Challenges for large-scale land concessions in Laos and Cambodia

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Abstract

Large-scale plantation land concessions are causing an array of serious social and environmental impacts in Southeast Asia as well as in other parts of the world. This paper, however, is focused on the many challenges and limitations that plantation developers face in southern Laos and northeastern Cambodia. These include price and market constraints, activism linked to villagers and others actors, management and financial difficulties, environmental and technical limitations, and limited government support. Investor responses to these challenges and limitations have varied. Some investors still hope that their plantations will succeed, while others have variously attempted to cut their losses and withdraw from failing investments. In particular, this paper considers how problems associated with plantation development often emerge due to fluctuating crop prices as well as poor planning that partially stems from investors adopting a "resource frontier" mindset.

KEYWORDS
Laos, Cambodia, plantations, concessions, land grabbing

1 | INTRODUCTION

Over the last decade, the literature regarding large-scale concession plantations in mainland Southeast Asia has mainly focused on their negative social and environmental impacts, and for good reason (Baird, 2010, 2011, 2014a; Dwyer, 2007; Gironde, Golay, & Messerli, 2015; Global Witness, 2013; Hall, 2011; Kenney-Lazar, 2012; Laungaramsri, 2012; Li, 2018; McAllister, 2015; Neef, Touch, & Chiengthong, 2013). A similar pattern can be seen in other parts of the world (GRAIN, 2008; Kachika, 2010; White et al., 2012). Indeed, plantation concessions—granted to both foreign and domestic investors—have frequently led to the significant alteration and homogenization of

ecosystems and have also often resulted in the loss of land and resources that peasants depended upon for their livelihoods; these areas have essentially been cleared, enclosed, and planted (Baird, 2010; Laungaramsri, 2012; Neef et al., 2013). This evokes comparisons with what Karl Marx called "primitive accumulation" and what David Harvey (Harvey, 2003) has referred to as "accumulation by dispossession" (Baird, 2011; Kenney-Lazar, 2012). This phenomenon has also recently been referred to as "global land grabbing" (Borras, Jr. et al., 2011; Borras, Jr. & Franco, 2013; Li, 2018; Scoones, 2009), the "global land rush" (Buxton, Campanale, & Cotula, 2012; Cotula, 2012; Scoones et al., 2013), or simply "land grabbing" (Baird, 2014a; Hall et al., 2015).

In mainland Southeast Asia, the expansion of rubber plantations of various sizes has been particularly significant (Ahrends et al., 2015; Li & Fox, 2012). The expansion of rubber cultivation was initially spurred by high commodity prices and perceived low rents for acquiring abundant fertile lands (Byerlee, 2014), but also occurred because southern Laos and northeastern Cambodia are often imagined—albeit incorrectly—as empty of people and full of fertile land ready for the taking (Barney, 2009).

As significant as the impacts of plantation development on local communities and the environment have been, this paper focuses on something else: the challenges that plantation concession developers often face. I am interested in better understanding why large-scale plantations frequently run into serious difficulties. I agree with Tania Li (Li, 2018, p. 328), who has pointed out that "researchers have paid less attention to what happens *after* the land grab," which is what I am interested in doing, through focusing on challenges that plantation developers encounter, and some key reasons for why they often occur.

This paper develops as follows. First, I explain why fluctuating commodity prices and the resource frontier mindset are particularly important for understanding the various challenges that plantation developers encounter. I then review relevant literature regarding challenges faced by plantation developments, starting with the global context and then with particular reference to northeastern Cambodia and southern Laos. The methods applied in conducting this research are then explained, before turning to the case study material. The types of challenges observed are divided into five categories, with commodity pricing and resource frontier imaginaries being especially crucial for understanding why challenges have emerged.

2 | ROOT CAUSES OF CHALLENGES

As introduced above, it is contended that there are two major underlying causes of the various challenges that large-scale plantation developers have faced in southern Laos and northeastern Cambodia in recent years. First, low commodity prices represent an important challenge, as prices are clearly fundamental to the success or failure of capitalist endeavors. Plantation commodity prices are often unstable (Hall, Hirsch, & Li, 2011). Crucially, plantations are typically developed at times when commodity prices are relatively high. This is clearly demonstrated in Laos in relation to rubber plantation development. As Shattuck (2019) has shown, global rubber latex prices started to significantly increase in 2002, and this led to a major push to develop Vietnamese rubber plantations in Laos beginning in 2004 when a delegation of investors visited Laos, and a number of concession agreements were signed during the same year (Baird, 2010). All the large-scale rubber concession agreements in southern Laos were completed before rubber prices began to decline in 2011 (see Shattuck, 2019). In northeastern Cambodia, the development of large-scale Vietnamese rubber concessions began a few years later, but all the large-scale rubber plantations were developed during the period when rubber latex commodity prices were high. There is other evidence of a similar pattern in relation to eucalyptus concession plantations. In southern Laos, the Indian company, Birla Lao, was enticed by high eucalyptus prices in 2007. The *Vientiane Times* newspaper put it this way:

> The Managing Director of the Birla Lao Pulp and Plantation Company, Mr Sanjay Mahajan, said the price of items made from this type of wood was high this year. He hoped this would enable him to make a considerable profit from eucalyptus plantations in Laos. (Pongkao, 2007)

Indeed, why would a company develop a plantation when prices are low? It would be hard to create a favorable "cost-benefit" statement for attracting investment capital. However, with the understanding that commodity prices tend to fluctuate, it would make sense to develop plantations when prices are low, with the understanding that once the trees planted start to mature, the prices would have risen. However, this rarely happens. The problem then emerges that by the time the plantations become productive—for rubber it is typically 6 or 7 years—commodity prices have declined. This is especially evident when it comes to rubber plantation development, but it has also been a problem for other kinds of plantations, such as eucalyptus. Moreover, it is contended that this is a problem that often affects plantation development, especially for tree crops that require multiple years between planting and when they become economically productive.

Second, it is contended that the resource frontier mindset is a crucial part of the reason why insufficient planning appears to be the norm when investing in large-scale plantation projects in southern Laos and northeastern Cambodia, thus leading to serious problems later on. Barney (2009) argued—using Laos as an example—that it is useful to consider the idea of "relational" resource frontiers when considering how large-scale plantations investments occur. For him, a useful critical approach to adopt relates to understanding the production of frontiers through the geographical extension of capitalist relations of production (Barney, 2009; De Angelis, 2004). Barney (2009, p. 147) writes that "Laos has recently been portrayed by key development banks, private sector actors and Lao state agencies as a 'new frontier' for natural resources and business opportunities." In other words, a neoliberal-inspired discourse portrays Laos as an "untapped resource frontier," and this in turn serves as a legitimating ideology for facilitating rapid development of large-scale plantations (Barney, 2009).

While Barney (2009) was largely concerned with the social and environmental downsides of large-scale plantation development in Laos, I contend that there is another so far insufficiently discussed challenge associated with the resource frontier mindset. That is that developers imagine that they need to develop their plantations rapidly before someone else takes control of the "untapped resources" that they are hoping to reap surplus value through exploiting. This tends to result in hasty development decision-making, poor planning and overly optimistic projections, and as a result, there is a tendency to insufficiently investigate or plan for potential obstacles associated with plantation development. Instead, the focus is to rapidly gain access to resources (for plantations, land in particular). This ultimately leads to serious challenges, which are explained in this paper.

3 | CHALLENGES TO PLANTATION DEVELOPMENT

Large-scale plantation development has faced serious challenges in various parts of the world. Li (2015), for various reasons, considers plantation development to typically constitute "risky business." Illustrative of many possible examples of this, Henry Ford attempted to develop a large rubber estate—dubbed "Fordlandia"—in Brazil beginning in 1928, but faced various significant obstacles, from soil quality problems to disease and insect infestation, and also labor disputes and strong resistance from local people (NPR, 2009).

One of the challenges that frequently affect large-scale concession plantations is fluctuating commodity prices, which are affected by various factors, including political decisions (Hall et al., 2011). For example, a recent decision by the European Union to stop using palm oil to produce bio-fuels triggered steep declines in palm oil prices in Indonesia, and reduced the profitability of plantations (Illegal Deforestation Monitoring, 2018). Moreover, rubber prices in Laos declined significantly in 2013 when China decided to reduce rubber imports from Laos (Vientiane Times, 2013).

Plantation development also frequently faces challenges due to technical issues. For example, in the Canary Islands, banana plantations have experienced significant losses due to *Chrysodeixis chalcites* insect damage, and also as the result of the high costs of pesticide applications to fight the insects (Fuentes et al., 2018). Even in the United States, Lantz (1987) reported on how various technical obstacles to plantation development were initially believed to be "insignificant," actually leading to tree plantation failure. There are also environmental factors that can reduce the potential for plantation success. For example, Ahrends et al. (2015) pointed out that the rapid expansion of rubber

plantations in mainland Southeast Asia has resulted in newer developments being situated on lower quality land with poor soils and a high susceptibility to erosion, and also areas more vulnerable to wind storms, frost and other weather related threats. Kenney-Lazar (2016) usefully demonstrated how a Chinese company (Sun Paper), which initially had big plans for developing eucalyptus plantations in Laos (RISI, 2013), made some crucial management mistakes and has ultimately been unable to effectively establish plantations (Kenney-Lazar, 2016). Many more examples from around the world indicate that concession plantation development often faces considerable challenges.

Commenting on the risk associated with developing large-scale plantations, Hall (2011, p. 852) wrote that "the risks involved, substantial at the best of times, can become overwhelming when diseases, pest outbreaks, fires, or price collapses turn booms into busts." In line with this, Sturgeon (2012a, p. 71), when writing about newly privatized state rubber companies in southern China having little success establishing large plantations in northern Laos and Myanmar, suggested that her findings challenged what she referred to as the "'steamrolling' image," and what we would call the resource frontier mindset, of large-scale plantations becoming established with ease. Li (2015, p. 560) similarly suggests that foreign investment in large-scale tree plantations is not as easy as some imagine. Li focused on "political risk," which she particularly locates in relation to (a) government policy shifts, (b) legal disputes, and (c) protests from local people affected by investment. Finally, McCarthy, Vel, and Afiff (2012) have emphasized that due to various challenges, many planned land acquisitions are only partially implemented, or are not developed at all.

The main message that comes out of this literature is that capitalistic plantation development is not easy, and that establishing commercial plantations has long been challenging, even when conditions were relatively good.

4 | EARLY CHALLENGES TO PLANTATION DEVELOPMENT IN SOUTHERN LAOS AND NORTHEASTERN CAMBODIA

In the early twentieth century, French Indochina (present-day Vietnam, Laos and Cambodia) introduced large rubber estates in Cochinchina (now southern Vietnam) (Aso, 2012) and central Cambodia (Guérin, 2009). The French also considered developing plantations in southern Laos and northeastern Cambodia, but ultimately decided not to due to the region's remoteness. It was only in the early 1960s that the government of Cambodia, via the Preah Sihanouk State Rubber Plantation Company, began establishing an 8,000-ha rubber plantation concession in Ratanakiri Province, northeastern Cambodia (Meyer, 1979). However, the plantation faced labor shortages, which slowed down the French-managed state enterprise. More crucially, however, local armed resistance emerged due to intense dissatisfaction with both land losses, and also because the government was forcing villagers to work on the plantations. Security worsened with the rise of the Khmer Rouge in the late 1960s. Large numbers of ethnic minorities (now considered Indigenous peoples) joined, resistance increased, and in March 1970 the rubber plantations in Ratanakiri Province had to be abandoned. Planting had only been partially completed (Baird, 2008).

In southern Laos, coffee plantations were the first to be developed with French support. They too faced political challenges during the French colonial period and the Cold War that followed (Baird & Shoemaker, 2008). More recently, large-scale plantation developments have faced challenges related to land tenure issues. Illustrative of this, Schönweger and Messerli (2015, p. 94) wrote, in the context of studying the coffee sector in Paksong District, Champasak Province, southern Laos, that "too often, land deals are portrayed as straightforward investments and their success is taken for granted." They went on to remark that "the failure of LSLA [large-scale agricultural land acquisitions] investments is commonplace and deserving of its own investigation." (p. 96)

McCarthy et al. (2012, p. 541), writing about plantation development in Indonesia, also pointed out that plantation failure is normal and has a long history in various parts of the world. However, their particular contribution was to point out that "too often, 'failed' schemes can 'succeed' as they become the basis for the next set of schemes in the ongoing transformation of landscapes." This can be clearly seen in southern Laos, where the first large-scale plantation ever developed in Laos was attempted beginning in 1992. The Thai company, Asia Tech, was granted a 16,000-ha land concession in Paksong District, Champasak Province, and tried to develop eucalyptus, *Acacia mangium*, and later pine tree (*Pinus caribia*) plantations. The company also attempted to raise dairy cows. However, due

to environmental, technical, government policy changes and conflicts over land tenure with villagers, all of these initiatives failed (Baird, 2014b). However, the land taken from villagers to establish the concession was not returned to the villagers, but was instead reallocated some years later to Paksong Highlands Company, another Thai company, which continues to cultivate coffee on a substantial part of the original land concession granted to Asia Tech.

This paper considers everyday challenges that affect projects in southern Laos and northeastern Cambodia today. These are divided into five categories: price and market constraints, management and financial difficulties, technical and environmental problems, challenges associated with villager conflicts and associated activism, and the lack of government support at various levels. Key structural reasons why these difficulties frequently arise are also considered.

5 | METHODS

This research is part of broader investigations regarding the development of land concession-based plantations in southern Laos and northeastern Cambodia since the 1990s. I particularly concentrated on this work between 2014 and 2017, due to support provided by a NASA-funded project designed to investigate the circumstances of large-scale plantation land concessions in various parts of mainland Southeast Asia. My own fieldwork has been focused on investigating the circumstances of a number of large-scale plantation concessions in Savannakhet, Xekong, Salavan, Attapeu and Champasak Provinces in southern Laos, and in Ratanakiri and Stung Treng Provinces in northeastern Cambodia. I visited the field during the summers of 2014 and 2015, and during the 2016–2017 academic year I conducted four field visits, in November 2016, and February, April and June, 2017. I traveled to rural areas affected by plantation land concessions, where I observed the conditions of the plantations, and interviewed workers, local people living near the plantations, and company management and government officials. I also visited urban offices, where I spoke with some senior plantation company management.

There are various ways to conduct research regarding plantations. To a large extent, the methods chosen depend a lot on the connections that researchers have with people working for particular plantations, especially in management positions, and the willingness of people working for companies to provide operations information. Crucially, however, a lot of information about plantations is considered proprietary and is thus not available to researchers. Therefore, researchers are often required to search elsewhere for data, including from people not employed by the companies, from government officials, or from media sources or other publically available documentation. For this study, I had access to some information from concession managers, but this was not the case for all plantations, or for all parts of the same plantations. Therefore, I had to gather information from multiple sources, including villagers.

One major challenge has been to access the relative significance of different problems that plantation concession companies have had. Are they small and insignificant or serious or even insurmountable? Unfortunately, few companies are willing to provide detailed information about their finances. Therefore, it is often difficult to estimate how significant of an impact a particular challenge is having on the bottom-line of companies. This has led to a situation where I have identified various challenges but without being able to pinpoint the exact significance of these challenges for particular companies.

Another serious methodological challenge relates to investigating the resource frontier mindset. Indeed, while the paper does not present much direct evidence of companies actually holding a resource frontier mindset, it shows that the kinds of problems that one would expect plantations developed under such a mindset to have are widespread in southern Laos and northeastern Cambodia.

This paper considers the circumstances associated with various large-scale plantation land concessions established in southern Laos and northeastern Cambodia in recent years, especially over the last 10–15 years. I did not choose plantations that I expected to be having problems. Rather, I mainly investigated plantations in five provinces in southern Laos and the two northeastern-most provinces in Cambodia that were expected to be causing significant social and environmental impacts. These were also mainly concessions that I had already been monitoring for many years. These concessions are amongst the most extensive being developed in my area of interest. In some cases, however, I also chose some of the smaller concessions based on contacts that I had with people connected with them. Table 1 provides basic information about each of the plantations where research was done.

TABLE 1 Plantations investigated in Laos and Cambodia

Locations investigated	Company	Type of company	Crop and size	Year of initial investment
Bachieng District, Champasak Province, and Lao Ngam District, Salavan Province, Laos	Viet-Lao Rubber Joint Stock Company (subsidiary of Vietnam Rubber Group)	Vietnam government-owned	Rubber, 10,000 ha	2004
Bachieng District, Champasak Province, and Lao Ngam District, Salavan Province, Laos	Dak Lak Rubber Company	Private Vietnamese	Rubber, 10,000 ha	2004
Bachieng District, Champasak Province, and Lao Ngam District, Salavan Province, Laos	Kaosouyaotiang Company	Private Vietnamese	Rubber, 10,000 ha	2006
Thateng District, Xekong Province, Laos	Cong Ty Cao Su Nghi Lao-Viet (LVF) company (Lao-Viet Company)	Vietnam government-owned	Rubber, 5,000 ha	2006
Sanxai, Xaysettha and Phou Vong Districts, Attapeu Province, Laos	Hoang Anh Gia Lai (HAGL)	Private Vietnamese publically traded	Rubber, Cattle, Sugar cane, fruits, 40,000 ha (approx.)	Late 2000s
Khong District, Champasak Province, Laos	Ho Chi Minh City Company	Vietnam military-owned company in cooperation with Lao PDR military	Rubber, 2,000 ha	2009
Xayboury and Phalanxay Districts, Savannakhet Province, and Champasak District, Champasak Province, Laos	Birla Lao Pulp and Paper Co., Ltd.	Private Indian Company	Eucalyptus, 50,000 ha concession, 15,000 ha planted	2006
Paksong District, Champasak Province, Laos	Outspan Bolaven Co., Ltd.	Subsidiary of Olam Company, a private publically traded company in Singapore	Coffee, thousands of hectares but size reduced	Early 2010s
Paksong District, Champasak Province, Laos	Paksong Highland Coffee Co., Ltd.	Thai private company	Coffee, thousands of hectares	Late 2000s
Paksong District, Champasak Province, Laos	Anonymous	Canadian-owned private company	Coffee, 300 ha	Late 2000s
Andong Meas District, Ratanakiri Province, Cambodia	Hoang Anh Andong Meas Co., Ltd. (HAGL)	Private Vietnamese publically traded	Rubber, 9,755 ha but reduced in size	2011

(Continues)

TABLE 1 (Continued)

Locations investigated	Company	Type of company	Crop and size	Year of initial investment
Voeunsai District, Ratanakiri Province, Cambodia	S.K Plantation Company (Pte)	Private Singaporean company	Rubber, 8,000 ha but later reduced in size, nothing planted	2012
Sesan District, Stung Treng Province, Cambodia	Sopheak Nika and Sal Sophea Peanich Investment Companies	Private Cambodian companies	Rubber, 19,917 ha for both, bit later reduced	2005 or 2006
Sesan District, Stung Treng Province, Cambodia	Grand Land Agriculture Investment (Cambodia) Co., Ltd.	Private Chinese Company	Rubber, 10,000 ha but reduced	2000s
Sesan District, Stung Treng Province, Cambodia	Siv Guek Investment Co., Ltd.	Private Chinese Company	Rubber, 10,000 ha but reduced	2000s

6 | CHALLENGES FACING LARGE-SCALE PLANTATION DEVELOPERS

In this paper, the challenges to developing plantations are divided into five categories, so as to provide some organization. However, these difficulties are frequently connected and intertwined. Thus, these categories should be conceptualized as heuristic tools, since the boundaries between them are fuzzy, permeable and shifting. In the sections below, the root causes of these challenges, commodity price changes and the resource frontier mentality, are also linked.

7 | PRICE AND MARKET CONSTRAINTS

As already mentioned, among the most important challenges for large-scale plantation developers have long been commodity prices and market constraints. While high rubber latex prices encouraged investment in the 2000s, declines in commodity prices have negatively affected most of the plantations investigated for this study. Rubber prices were quite high in the 2000s, leading to increased wealth for farmers (Sturgeon, 2012b) and a massive boom in rubber plantation development in mainland Southeast Asia. This was true both for large and small plantations (Shi, 2008), but in 2011 world latex prices began a significant decline (Shattuck, 2019), and since then prices have only partially recovered (see Table 2). These price declines have led to financial losses. Challenges related to global rubber prices are, however, not new, and proliferated in Cochinchina (southern Vietnam) during the first half of the 20th century (Aso, 2012).

TABLE 2 Changes in Rubber Prices in Cambodia and Laos

	2011	2013–2014	2015	2016	2017
Price per kg in Cambodia	US$4.50	US$1.80–US$2.00		US$1.20	US$2.40
Price per kg in Laos	US$2.28	US$0.57	Slight increase over 2015 price	US$0.41	Increase in price

Sources: Chan (Muyhong 2014), Khmer Times (2017), Vongvisouk and Dwyer (2016), and Vientiane Times (2017).

There are a few likely reasons for rubber latex price declines. First, prices have historically been highly correlated with petroleum prices, as there is some ability to replace latex with petroleum products, or vice versa (Grant, 2014). Therefore, world oil prices can affect the price of rubber. Another factor may have been the large amount of rubber development that has recently occurred in various countries in Southeast Asia, thus leading to an oversupply of latex (Grant, 2014). While global rubber prices have recovered to some extent, they generally remain low. These circumstances have negatively affected the bottom line for various Vietnamese companies with rubber plantations in southern Laos and northeastern Cambodia. Vongvisouk and Dwyer (2016) pointed out that dramatic declines in the prices of latex led to many rubber plantations going untapped in northern Laos. Crucially, however, they argue that "prevalent wage labour or share-cropping schemes make tapping economically unviable" for large-scale operations, whereas tapping still makes sense for small-holder plantation owners who tap rubber trees themselves.

HAGL's board chairman, Doan Nguyen Duc, was considered in 2008 and 2009 to be the richest man in Vietnam. However, since then his stature has declined considerably (VietNamNet Bridge, 2013). Indeed, HAGL has suffered serious problems due to declines in rubber latex prices and lower than expected productivity. HAGL has had problems making debt payments to its creditors in Vietnam, and at one point Duc even suggested that if its Vietnamese creditors did not provide it with more flexibility, HAGL might have to sell half of its 40,000-hectare land concession in Attapeu to a Chinese company (VietNamNet Bridge, 2016a).

Coffee prices have a long history of widely fluctuating, with prominent boom and bust periods. However, as Schönweger and Messerli (2015) reported, and as recent field interviews and other research in southern Laos have indicated, global coffee prices have declined considerably in recent years, thus leading to serious challenges for investors (Reuters, 2013).[1] When prices were high, a lot of foreign investors invested in coffee. Declines in coffee prices have also negatively affected growers, and even up to 2018 prices have remained low. For example, in August 2016 it was reported that Dao Heuang Company was paying coffee growers in Dak Cheung District, Xekong Province, in southern Laos, only 1,500 kip/kg, whereas they had paid 10,000 kip/kg the previous year (Vientiane Times, 2016). There have also been reports that the introduction of hybrid Catimor coffee, rather than Robusta and Arabica that have a longer history of being cultivated on the Bolaven Plateau, has led to even greater fluctuations in prices. Catimor also needs fertilizer and more water, which has caused other difficulties.[2] Overall, many industrial tree crops, including rubber, eucalyptus, agarwood and coffee have recently experienced low prices (Vientiane Times, 2014b).

Some plantation leaseholders have faced broader constraints related to financing. For example, HAGL's recent financial problems appear to be partially due to lower than expected commodity prices, but also because of the underperformance of many of the company's investments in Laos, which apart from plantations include banks, hotels, and hydropower dams. HAGL began investing in Laos in 2007 (Vientiane Times, 2012; VietNamNet Bridge, 2013, 2017).

The intertwining of plantation and non-plantation business arrangements may bring its own problems. For example, HAGL reported spending US$36.1 million to build an international airport in Xaysettha District, Attapeu Province, one that the Lao government was supposed to repay them for (Ngamsangchaikit, 2017). There were initially no scheduled flights to the airport (Ngamsangchaikit, 2015), but in mid-2016 they began, but just for 6 months before ending in January 2017 (Lao Airlines, 2017), because there were insufficient passengers on flights.[3] This has resulted in no revenue coming to the Lao government from aircraft using the airport, and in turn, the Lao government has been unable to make any payments to HAGL for its debt associated with building the airport. In addition, HAGL does not have money to pay its concession fees. Therefore, the debt payments are effectively canceling each other out.

There is no doubt that commodity pricing has been a serious challenge for large-scale plantations in southern Laos and northeastern Cambodia, as all the large-scale plantations mentioned above were initiated when commodity prices were relatively high. The example of HAGL shows that price development is a problem but that the non-plantation portfolio linked to plantations also carries its own risks.

[1]Somlit, Champasak Province Agriculture Office, personal communication, Pakse, April 29, 2017.
[2]Viravong, Champasak Province government official, personal communication, Pakse, November 24, 2016.
[3]Khamsone, employee of HAGL, personal communication, Phou Vong District, June 18, 2017.

8 | CONFLICTS WITH VILLAGERS AND ACTIVISTS

Villagers living near tree plantations have often been negatively impacted by them. Therefore, locals have sometimes caused considerable problems for companies that infringed on villager farmlands or common grazing and forest lands, whether in southern Laos (Baird, 2017; Baird & Le Billon, 2012) or in northeastern Cambodia (Baird, 2017; Schoenberger, 2017). Indeed, in other parts of the world land conflicts with locals have cost investors billions of dollars (see Provost, 2013). However, it is important to recognize that impacted farmers respond to land grabbing in various ways (Hall et al., 2015; Moreda, 2015), including sometimes seeking greater market integration (Castellanos-Navarrete & Janse, 2015) or individual benefits from land concession developers (Mamonova, 2015).

Baird (2017) reported on some partially or fully successful local resistance efforts in northeastern Cambodia and southern Laos. For example, in Champasak District, Champasak Province, in southern Laos, one villager pulled out a large number of eucalyptus seedlings that infringed on land that he planned to develop for wet-rice cultivation. In Thateng District, Xekong Province, ethnic Katu villagers who lost all their land took control of approximately 120 ha of rubber plantation, stopped tapping from occurring, and announced that the villagers would only return the part of the rubber plantation they controlled once they were relocated to somewhere with sufficient land for farming. This resistance reduced the productive potential of part of the concession, albeit a relatively small part of the 5,000-hectare plantation as a whole (Baird, 2017). In another case, HAGL was pressured into building new houses for villagers in one community in Phou Vong District, Attapeu Province that disputed the company's takeover of much of the village's land.

In northeastern Cambodia, village resistance has also occurred in different ways, and with varying degrees of success. For example, in Talao Village, Andong Meas District, Ratanakiri Province, villagers took direct action to take back a 10-ha piece of upland area that was an important refuge from rainy season flooding, which a HAGL subsidiary had planted with rubber seedlings and fenced in. The villagers uprooted the seedlings and dismantled the fence. However, only a relatively small portion of the land lost by the village to HAGL was taken back (Baird, 2017).

In Voeunsai District, Ratanakiri Province, to the south of the Sesan River, villagers have strongly resisted the establishment of a large rubber plantation planned by S.K. Plantation (Cambodia) Pte. Various tactics were used, from direct action linked to burning down company housing, to indirect threats against developers and their Phnom Penh-based Cambodian government counterparts, to villagers occupying parts of the planned concession to prevent it from being developed, to indirect political pressure being put on politicians. The villagers have so far been successful in keeping the company from moving ahead (Baird, 2017).

Outspan/Olam, in southern Laos, initially thought gaining access to fertile uncultivated land would assure success, but later faced considerable resistance from ethnic Heuny (Nha Heun) villagers from some communities in Paksong District, Champasak Province. The company cleared and took control of a large amount of villager agricultural and fallow farmland, and after a long process the company finally agreed to compensate some villagers for their losses, and also return some of the land (see Cropwatch, 2012; LIWG [Land Issues Working Group], 2012). Although the villagers remain dissatisfied with the low levels of compensation they received,[4] this issue has cost Outspan/Olam a considerable amount of money, as well as taking up a lot of staff time. Outspan/Olam's reputation has also been damaged by bad publicity (see Cropwatch, 2012; LIWG [Land Issues Working Group], 2012; Schönweger & Messerli, 2015). This is a serious problem, as Olam has operations in various parts of the world, and also receives financial support from the World Bank's private sector support body, the International Finance Corporation (IFC), particularly for its plantation work in the People's Democratic Republic of Congo. Therefore, the scandal threatened the company's worldwide operations.[5] In response, Olam hired a consultant originally from Australia to support its Corporate Social Responsibility (CSR) work. Seven missions were made to the project area between September 2012 and February 2013 in support of this work,[6] which constituted yet another unexpected Outspan/Olam

[4]Nha Heun informants, personal communication, Paksong District, June 2017.
[5]Anonymous, personal communication, 2017.
[6]Stuart Ling, personal communication, June 19, 2017.

expense, not to mention the negative impacts on local communities who lost their land and have also had to spend considerable time trying to resolve the land conflict. The previous CEO of Outspan reportedly gave a luxury vehicle and paid a large amount of money under the table to Lao government officials, who acted as land brokers for the company and helped to get operations started. However, they later found it difficult to resolve problems with villagers.[7] In April 2014 Olam released a statement claiming that all land conflicts with 132 families had been resolved, including returning 281 ha to villagers (Olam, 2014), but it appears that problems remain. Nevertheless, it has been reported that it cost Outspan US$3-4 million to return the productive coffee land to villagers, and also to provide compensation for some of the land not returned. This would certainly put a significant dent in the bottom-line of the company, at least in terms of its operations in Laos.[8]

Apart from facing direct challenges from villagers, some plantation owners, particularly HAGL and the VRG, have experienced challenges from advocacy organizations concerned about the social and environmental impacts of plantation development. This is not surprising, as these are the two Vietnamese companies most involved in rubber plantation development in Laos and Cambodia. For example, in 2012 the VRG and its subsidiaries had 24 rubber development concessions between the two countries, 15 of which were in Cambodia and another nine in Laos, with a total area of over 70,000 ha (Giai Phong, 2012). They were highlighted by the British environmental group, Global Witness, in a report entitled *Rubber Barons: How Vietnamese Companies and International Financiers Are Driving a Land Grabbing Crisis in Cambodia and Laos*, which was released in 2013 and attacked the companies for their rubber investments in both southern Laos and northeastern Cambodia (Global Witness 2013). According Global Witness, HAGL and the VRG acquired more than 200,000 ha of land through a series of non-transparent deals with the Lao and Cambodian governments (Bangkok Post, 2013; Global Witness, 2013).

Global Witness also campaigned to influence the IFC, since HAGL had previously received financial support from them through Vietnamese equity funds. In April 2014 HAGL reportedly stopped expanding its plantations in Cambodia, due to rubber price declines and allegations leveled against it, and taken up by the IFC. These allegations have undoubtedly cost HAGL considerable time and money (Khemara, 2014). The Global Witness campaign also drew some attention from VRG in Laos, which claimed after the Global Witness (2013) report was released that it would resolve all outstanding issues with villagers affected by their plantations in Laos and Cambodia (Vientiane Times, 2012), although it is unclear if any significant changes have actually occurred since the announcement was made.

Since then the NGOs Equitable Cambodia and the U.S.-based Inclusive Development International have been working in northeastern Cambodia to support the facilitation of a complaint filed against HAGL in 2014 by about 2,000 families. They have operated through IFC's Compliance Advisor Ombudsman (Seangly & de Bourmont, 2017; Khemara, 2014). This resulted, in November 2015, in US$1,700 being paid to each of 11 villages in Andong Meas District by the company to buy water buffaloes to sacrifice and other food and drink needed to conduct a ritual to appease local spirits, although it was not considered to be compensation (Narim & Blomberg, 2015). More recently, in July 2017, it was announced that negotiations had resulted in a tentative agreement between impacted villages and HAGL. The agreement was expected to result in the communities regaining nearly 20 “spirit mountains” from the company, which also agreed to restore streams filled or polluted by its activities and repair roads and bridges (Seangly & de Bourmont, 2017). If this is actually done, the cost would be significant.

Another example of NGOs supporting villagers to gain land back from companies relates to the Sopheak Nika and the Sal Sophea Peanich concessions in Sesan District, Stung Treng Province. In 2006, the NGO Development and Partnerships in Action (DPA) started working with the ethnic Brao people living in Kadot Village to help them obtain some of their land back. Ultimately, they were able negotiate the return of 30% of the land that each company had been granted, so that it could be used to establish community forests, and also so villagers would have some land for swidden agriculture.[9] This undoubtedly cost the companies a considerable amount.

[7]Stuart Ling, personal communication, June 19, 2017.
[8]Stuart Ling, personal communication, May 2, 2018.
[9]Saveuan, village headman, personal communication, Kadot Village, June 12, 2014.

The point is that opposition from villagers, in various forms, and from other activists supporting them, has led companies to lose land, incur considerable expenses in hiring expertise, experience reputational damage, lose equipment due to vandalism, and lose time. The root cause of these problems has often been poor planning, including insufficient consideration of local concerns. Instead, these are the types of problems that can be expected to occur due to a resource frontier mindset, in which investors imagine that there are vast areas of unused land available for the taking, provided that action is taken soon. This greatly contributes to insufficient efforts being made to address villager concerns and to prevent villager resistance.

9 | MANAGEMENT DIFFICULTIES

Another important and generally underreported challenge that many plantation companies encounter are "management difficulties," which includes corruption. Management problems often emerge when plantations are being developed, and are often associated with poor management decisions, some of which can be attributed to a frontier mentality. Three examples are provided below: two involve lower and mid-level employees, and one relates to a high level partner. These challenges and how companies are dealing with them are also discussed.

Outspan/Olam International began to develop its coffee plantations on the Bolaven Plateau in southern Laos in the early 2010s. Company management did not initially provide sufficient oversight over lower and mid-level employees hired to apply chemical fertilizers to the hybrid Catimor coffee (a dwarf Arabica variety) bushes planted. Although a company representative interviewed in 2016 was unwilling to acknowledge that this occurred,[10] a number of people living in ethnic Heuny villages in Paksong District, adjacent to the plantations report that they knew the fertilizer was not all (or at all?) getting onto the coffee bushes because company employees had offered to sell them large quantities at discount prices. Nobody believed the money being paid for the fertilizer was making it back to the company.[11] A consultant who was hired to help resolve the land conflicts with villagers in the Outspan/Olam concession also heard that the previous Lao managers working for the company had stolen some fertilizer and sold it.[12]

This corruption problem is intertwined with coffee bush growth. Since the senior management of Outspan was apparently unaware that this was happening, they did not—at least initially—understand why their coffee bushes did not grow nearly as well as expected. Ultimately, Outspan stopped maintaining large parts of the plantation as they deemed the variety of coffee planted to be incompatible with the soil, even though the main problem may actually have been caused by fertilizer not having been applied. Thus, large areas of coffee bushes were replanted, which resulted in a lot of lost company time and money. There is now apparently much closer staff supervision than previously, which indicates that the company has adjusted it practices to address the problem.

In Attapeu Province, Laos, lower to mid-level Vietnamese employees of HAGL have created serious problems through embezzling equipment and supplies, including the selling of company gasoline to private citizens at a discount. To address this problem, in 2014 HAGL started contracting Lao police to stay with different groups of employees. These policemen are paid 1,500,000 kip (US$1 = 8,000 kip) per month on top of their regular government-paid salaries. Their job is specifically to prevent company assets from being stolen. The police officers rotate to different groupings of workers within the concession every three months to ensure that the police do not develop close relations with regular company employees, which might result in collusion or a lack of law enforcement.[13] This has added to the company's payroll, but has apparently largely been successful in stopping the rampant employee embezzlement that previously occurred. Another way that HAGL is trying to improve the management of

[10]Ananda Kumar, personal communication, Outspan, November 24, 2016.
[11]Ethnic Nha Heun villagers, personal communication, Xe Nam Noi Village, June 16, 2017.
[12]Stuart Ling, personal communication, June 19, 2017.
[13]Khamsone, employee of HAGL, personal communication, Phou Vong, June 18, 2017.

company assets is through strengthening Party units within the company,[14] since Laos is a one-Party communist country.

A dramatic example of stealing by plantation management occurred with regard to a private company[15] owned by Canadians who partnered with a Lao person. They were granted concessions for three one hundred-hectare coffee plantations, and the Lao partner was assigned to manage field operations. Project development happened when coffee prices were high, and when Paksong was attracting more attention as a sort of coffee frontier. This person had, however, a serious gambling addiction, and transferred significant company assets to himself, through selling machinery and absconding US$600,000 in cash. He even went as far as to put a US$500,000 mortgage on the property and the coffee processing mill constructed on it, and gambling away all the proceeds. The losses directly from stealing amount to about US$1,300,000.[16]

When the foreign partner realized what had occurred, steps were taken to collaborate with the Lao government to secure the remaining assets and attempt to get back as much of the lost money as possible. The Lao government, rather unconventionally, allowed the remaining assets to be transferred into the names of the foreign investors, but attempts to get the stolen money back have not been successful. The foreign owner indicated to the provincial government that he agreed to try to resolve the problem "the Lao way" (which means quietly and behind the scene), although the matter remains unresolved. Not surprisingly, this problem triggered other challenges for the company. In particular, the corruption led to the plantations being neglected, and many coffee bushes died. Moreover, much of the company's cash flow was stolen, which has stifled the company's ability to buy coffee from other farmers in order to increase the productive use of its coffee production machinery, which was purchased as part of the initial investment, but which is now being greatly underutilized. Low coffee market prices also remain a considerable challenge. Not surprisingly, investor confidence has been shaken, but since the company still has assets estimated at over US$10,000,000, they are not ready to walk away from the investment. There appears, however, to be little chance of being able to use legal means to resolve the problem. The foreign owners have taken over most management and accounting duties. The company is also trying to attract more outside capital.[17]

There are many other examples of management difficulties similar to the ones described above, but these types of impacts have not been sufficiently considered in the plantation concessions literature. Once again, it is postulated here that problems are largely due to poor planning, which often comes with the type of rapid project implementation associated with high commodity prices and the resource frontier mentality.

10 | TECHNICAL AND ENVIRONMENTAL PROBLEMS

Plantations face a wide array of potential technical and environmental challenges. As indicated above, these problems include everything from choosing the wrong type of machinery to unexpected equipment breakdowns, and from choosing the wrong types of seedlings and inputs to difficulties maintaining transportation routes and other essential infrastructure. Other potential environmental challenges relate to weather events and poor soils. These challenges are often linked to poor planning associated with the cyclical crisis of capitalism.

Birla Lao's eucalyptus plantations in Savannakhet Province have faced considerable technical and environmental problems. Although eucalyptus is generally considered to grow well on poor soils, the reality is that growth is very much affected by soil quality, as is indicated by past attempts to develop eucalyptus plantations in southern Laos (Baird, 2014b). Thus, it should come as little surprise that eucalyptus plantation growth varies considerably from place to place.

[14]Khamsone, employee of HAGL, personal communication, Phou Vong, June 18, 2017.
[15]I do not name this company due to a request from the interviewee.
[16]Western Foreign Investor, personal communication, Paksong District, June 17, 2017.
[17]Western Foreign Investor, personal communication, Paksong District, June 17, 2017.

Birla Lao has also had to deal with "edge effect" challenges, as the company's 15,000 ha of eucalyptus plantations are included within an astounding 800–900 separate plots in 79 villages, with plot sizes ranging from as small as two hectares up to 80 ha.[18] This represents an even more extreme fragmenting of the concession than what Diepart and Sem (2018) describe from northwestern Cambodia. Therefore, the company has experienced considerable difficulties trying to prevent destructive seasonal forest fires from damaging their concessions. Observations of many of these plots indicate that fire damage has been extensive in some locations.

In addition, in April 2017 it was observed that large portions of Birla Lao's Phalanxay District plantations have died or are dying due to tree trunk damage caused by *Leptocybe invasa*, a gall producing insect, a topic that Birla Lao published on. Indeed, the insect has reportedly caused "severe damage" and Birla Lao reports that "no effective control measures for this problem are currently available." (Patil,)

Birla Lao also experimented with over 700 different types of eucalyptus trees,[19] with some adapting better than others. Although the management of Birla Lao claims that 80–90% of their plantation is in reasonable condition,[20] field observations suggest that tree damage is much more extensive.

Overall, Birla Lao's plantations have experienced considerable damage due to soil type, fire and insect damage, thus leading to uneven plantation performance and less than expected success. As elaborated more below, Birla's efforts to sell their plantations to other investors have so-far failed although potential Australian and Vietnamese investors have inspected the plantations. They apparently did not, however, find them to be in as good condition as expected.

In Paksong District, Champasak Province, the Paksong Highlands Company has suffered serious coffee bush losses due to a borer beetle, which apparently caused 200 ha of coffee bushes to die. Later insecticides were used to address the problem.[21] However, reportedly 85–95% of the large coffee plantations in Paksong District have been affected by insect damage.[22] Borer beetles are especially problematic for plantations developed without shade trees, so some plantation owners are planting more of those, which aligns well with local knowledge in the area about the importance of shade trees.

Paksong Highlands Company has also had other technical and environmental problems. For example, while the leaves of its coffee bushes are very green and lush, bean production has reportedly been disappointing, resulting in highly reduced yields.[23] In line with this, Schönweger and Messerli (2015, pp. 9–10) reported, also with regards to Paksong District, that "large-scale [coffee] plantations have failed to produce yields expected for modern, high-input coffee operations in such an environment." Schönweger and Messerli (2015) also reported that many of the coffee land concessions granted in the Bolaven Plateau have been underutilized. In addition, in Nongmek Village authorities told Schönweger and Messerli (2015) that in 2012 a Vietnamese company had serious problems with coffee pests, apparently because they planted Arabica coffee instead of Robusta, which grows better at lower elevations in Paksong.

HAGL has also encountered serious technical problems related to the operation of its US$100 million state-of-the-art sugar processing factory in Phou Vong District, Attapeu Province. Although the factory is able to produce ethanol and fertilizer along with sugar (Viet Nam News, 2011), HAGL did not correctly process the sugar, thus leading to it not meeting European health standards.[24]

A related problem was the release of polluted water into the Keo Stream, which caused serious water quality problems downstream,[25] including the death of fish in the stream and the Xekaman River, into which it flows, right

[18]Sreedhar Damodara, Birla Lao, personal communication, Savannakhet Town, June 8, 2014.
[19]Sreedhar Damodara, Birla Lao, personal communication, Savannakhet Town, June 8, 2014; Shailendra Sithi, Joint President, Birla Lao, personal communication, Savannakhet Town, July 15, 2015.
[20]Sreedhar Damodara, Birla Lao, personal communication, Savannakhet Town, June 8, 2014.
[21]Somlit, Champasak Province Agriculture and Forestry, personal communication, Pakse, April 29, 2017.
[22]Western Foreign Investor, personal communication, Paksong District, June 17, 2017.
[23]Western Foreign Investor, personal communication, Paksong District, June 17, 2017.
[24]Khamsone, HAGL employee, personal communication, Phou Vong District, November 26, 2016.
[25]Bounthanh, former Attapeu Province government official, personal communication, Attapeu Town, November 25, 2016.

down to its confluence with the Xekong River.[26] This emerged partially as a result of not having enough water to wash the sugar cane before processing,[27] and has resulted in the company having to build an originally unanticipated water treatment facility.

Ultimately, due to these and other financial problems discussed below, HAGL had to give up the sugar processing factory and about 6,000 ha of plantation land for cultivating sugar cane to another large sugar-producing company from Vietnam, Thanh Thanh Cong (TTC), in October 2016 (VietNamNet Bridge, 2016b), although the factory and the concession land are still officially owned by HAGL.[28]

Some of HAGL's sugar cane plantation land is rocky, which is also reducing production.[29] Some sugarcane has also been damaged by flooding each rainy season. Thus, TTC does not have enough land, and only enough raw material is being produced to operate the factory three months a year. TTC has to, however, pay salaries to base employees year round and has thus incurred financial losses.[30] To partially address this challenge, TTC is considering cultivating some sugar cane in flood-prone areas during the dry season instead of in the rainy season, although it is not yet clear how effective this plan will be.[31] Still more, the sugar cane fields were previously burned after harvesting, but it would have been advantageous to have ploughed the remaining vegetation into the soil in order to improve soil quality.[32]

HAGL has had serious problems raising Brahman beef cows imported from Australia. This might not seem to relate to plantations, but it does because (a) the cattle are being raised on concession land and (b) the grasses and other crops are being cultivated on concession land to feed the cattle. According HAGL employees, at least 5,000 head of cow were initially imported to southern Laos. The plan was to cultivate fodder grasses and corn to feed to the penned cows. However, soon after the cows arrived in Attapeu, they started becoming ill, and many died. One employee reported, in November 2016, that "2,000–3,000 [of the original 5,000] cows are left."[33] Initially, the cattle were kept at six locations, three in Phou Vong District, one in Sanxai District, one in Samakhixay District, and one in Xaysettha District.[34] However, at one point 20–30 were dying each day, which forced HAGL to bury a large number of carcasses in large holes. Indicative of the dramatic drop in population, the remaining cows were eventually consolidated into a smaller number of farms, with cattle raising stopping in Xaysettha District in 2015. Corn is also no longer being grown to feed the cattle.[35] As late as June 2017 cattle pens were far from filled to capacity. Veterinarian expertise was imported from Thailand. One Lao government official in Xaysettha District commented that "the cattle raising is not going well, not well at all."[36] Moreover, a Lao HAGL employee reported that "the cows are not making any profit. All the company is getting from the cows is manure to use as compost."[37]

HAGL reportedly moved large numbers of cows around at night between days when representatives of foreign investors inspected them. It appears that there have been attempts to inflate the number of cows still alive.[38] One has to wonder why HAGL did not try raising Australian cows in small numbers before moving ahead with such a large operation, as the methods used were previously untested in southern Laos. It appears that HAGL developed a resource frontier mindset and thus was overly confident in its ability to successfully raise imported cattle with cut grass.

HAGL planted some oil palm on its land concession in Attapeu Province, and while the trees look healthy, there are not any processing factories nearby. This is a crucial challenge, as harvested fruits need to be processed within a

[26]Khamsone, HAGL employee, personal communication, Phou Vong District, November 26, 2016.
[27]Khamsone, employee of HAGL, personal communication, Phou Vong District, November 26, 2016.
[28]Khamsone, HAGL employee, personal communication, Phou Vong District, November 26, 2016.
[29]Bounthanh, former Attapeu Province government official, personal communication, Attapeu Town, June 17, 2017.
[30]Khamsone, employee of HAGL, personal communication, Phou Vong District, June 18, 2017.
[31]Khamsone, employee of HAGL, personal communication, Phou Vong District, June 18, 2017.
[32]Khamsone, HAGL employee, personal communication, Phou Vong District, November 26, 2016.
[33]Khamsone, HAGL employee, personal communication, Phou Vong District, November 26, 2016.
[34]Khamsone, HAGL employee, personal communication, Phou Vong District, July 22, 2015.
[35]Khamsone, HAGL employee, personal communication, Phou Vong District, June 18, 2017.
[36]Somchai, Xaysettha District government official, personal communication, Attapeu Town, November 25, 2016.
[37]Khamsone, employee of HAGL, personal communication, Phou Vong District, June 18, 2017.
[38]Bounthanh, retired Attapeu government official, personal communication, Attapeu Town, November 25, 2016.

short period.[39] Moreover, there are not enough oil palm trees in the area to justify building a factory. A HAGL employee commented that "oil palm here may not be able to compete with southern Thailand."[40]

At HAGL's concession in Phou Vong District, Attapeu Province, sizable areas of rubber trees have died, apparently due to poor quality rocky soils existing about 1 m below the surface, thus leading to serious growth constraints. Of the company's 20,000 ha of rubber in Attapeu Province, one HAGL manager estimated that 15% have had to be cut down.[41] Moreover, even the rubber trees that are producing latex for HAGL are not yielding as much as expected, thus constituting another serious challenge for HAGL.[42] HAGL is trying to use more fertilizer to increase production, but it is unclear if they will be able to overcome these environmental problems.[43]

HAGL is presently trying to increasing its profits by developing new durian, passion fruit, dragon fruit, banana, and orange plantations, both in Laos[44] and Cambodia (Sokhorng, 2017). It is, however, unclear how successful these efforts will be.

One of the most significant technical and environmental problems observed during this research relates to using inappropriate land and soil for planting rubber trees. Indeed, it appears that many rubber plantation investors assumed that rubber trees could grow almost anywhere, and that growth and latex production would be essentially equal regardless of where plantations were developed. This crucial assumption has turned out to be terribly inaccurate. A good example of this involves the Ho Chi Minh City Company rubber plantation in Khong District, Champasak Province, Laos, where less than 1,000 of the original 2,000 ha of planted rubber trees are alive,[45] with these surviving but undersized trees unlikely to produce much latex, even though in 2017 tapping was expected to begin for part of the plantation in 2018.[46] A Ho Chi Minh City Company rubber plantation in Sanxai District, Attapeu Province is facing similar problems due to poor tree growth. Even though the trees were planted in 2009, in 2017 they were not large enough to tap.

Initially, two other foreign investors also attempted to establish rubber plantations in Khong District. All were part of the "rubber rush" of the 2000s that was associated with high commodity prices and the frontier mentality. One company was Thai-owned and the other was Malaysian-owned. However, according to local government officials, once the managers of those companies realized the serious environmental constraints, they cut their losses and withdrew.[47]

The Vietnam Rubber Group's plantations in Bachieng District, Champasak Province, southern Laos, have experienced challenges due to strong wind storms, like the ones that Ahrends et al. (2015) reported to be a threat to rubber plantations in some parts of mainland Southeast Asia. In 2014, for example, a storm in Bachieng destroyed 259 ha of rubber trees valued at 184 billion kip or US$23 million (calculated based on the amount of latex the area was expected to produce over a 15-year period) and partially damaged another 298 ha (Vientiane Times, 2014a). The strong winds broke the trunks of many trees, making them unproductive. According to the English-language *Vientiane Times* newspaper, the Lao government agreed to allow the VRG a 7-year land lease fee exemption for the area which was completely destroyed. The authorities also agreed to waive import tariffs for equipment, seedlings, fertilizer, and other items needed to reestablish the destroyed plantations (Vientiane Times, 2014a). To reduce the chances of this happening again, VRG has lopped off some of the high branches of mature rubber trees, so that the upper parts of the trees are lighter and thus less susceptible to wind damage.[48] This was observed in June 2017, although it is unclear how successful this strategy is likely to be.

In Paksong District, Champasak Province, Outspan/Olam and other coffee plantation operators have been impacted by cold-season freezing. Schönweger and Messerli (2015) reported similar problems for farmers in the

[39]Khamsone, employee of HAGL, personal communication, Phou Vong District, June 18, 2017.
[40]Khamsone, HAGL employee, personal communication, Phou Vong District, November 26, 2016.
[41]Khamsone, employee of HAGL, personal communication, Phou Vong District, June 18, 2017.
[42]Bounthanh, former Attapeu Province government official, personal communication, Attapeu Town, June 17, 2017.
[43]Khamsone, employee of HAGL, personal communication, Phou Vong District, June 18, 2017.
[44]Khamsone, employee of HAGL, personal communication, Phou Vong District, June 18, 2017.
[45]Vietnamese local manager of Ho Chi Minh City Company, personal communication, Khong District, June 20, 2017.
[46]Vietnamese local manager of Ho Chi Minh City Company, personal communication, Khong District, June 20, 2017.
[47]Vixay Inthaphaisy, Khong District Deputy Forestry Unit chief, personal communication, Khong District, June 20, 2017.
[48]Vietnam Rubber Group Employee, personal communication, Bachieng District, June 19, 2017.

same general area. The Bolaven Plateau, which is between 1,100–1,300 m above sea level, has long been subjected to occasional cold spells, with temperatures plummeting to as low as −10 °C, which can kill coffee bushes. However, freezing does not occur to the same degree every year, and during some years is not a problem. The risk is apparently higher on the southeast part of the Bolaven Plateau.[49]

One way that small-scale coffee plantation owners on the Bolaven Plateau have historically dealt with freezing difficulties has been to intersperse coffee bushes with short-lived leguminous trees (*kok thong* in Lao) that help to provide some cover from cold weather, but some of the coffee companies felt that such measures were not conducive with modern farming, as planting shade trees would make it difficult or even impossible to use bean harvesting machinery. However, Outspan/Olam suffered heavy coffee bush die-offs during the winter of 2014/2015, especially at higher altitudes, and after these devastating losses, they began following the villagers' example of planting other crops interspersed with coffee, such as *Crotalaria* herbaceous bushes, in order to reduce the potential for cold spell damage, improve the soils by fixing nitrogen, maintain moisture, and suppress weed growth.[50] However, it is unclear whether such measures have or will be effective in preventing freezing damage. In 2013–2014 Outspan/Olam also reportedly lost a considerable amount of coffee bushes due to drought, which was partially associated with not growing shade trees with the coffee.[51]

Flooding and fire have destroyed some rubber plantations in Sesan District, Stung Treng Province. For example, part of Sopheak Nika's concession was lost due to unanticipated flooding. The company has since investigated other possible replacement tree crops and has planted some teak, a crop that generally tolerates flooding better than rubber.[52] Grand Land Agricultural Development attempted to develop teak plantations in the same district but forest fires, which are common in the dry season, have destroyed most of the trees.[53]

There are many examples of how companies have been badly affected by poor planning, whether it is related to threats by pests, land quality considerations, the assessment of weather conditions, or other technical and environmental problems. This lack of planning relates to companies being overly optimistic about their circumstances, and this is the type of problem that could be expected to be associated with the resource frontier mindset.

11 | LACK OF GOVERNMENT SUPPORT AT VARIOUS LEVELS

Some plantation developers have experienced difficulties due to a lack of government support for ensuring that they are able to implement the agreements they have signed, something that has also been reported elsewhere, such as for jatropha development in China (Li et al., 2014). Government support or lack of support is indeed crucial.

Birla Lao's experiences represent a good example of what happens when government support is not forthcoming. In 2007 Birla Lao signed a concession agreement with the government of Laos to develop 50,000 ha with eucalyptus. The plan was to develop the plantations and then add a paper processing factory to process the fiber from the plantations (Pongkao, 2007). The total investment was expected to be US$350 million, including the cost of building a dissolving grade pulp and paper mill (Birla Lao Pulp and Paper Company Limited, 2017). The concession agreement for the project is not publically available, but the concession agreement was apparently for 75 years.[54] This is crucial, as all of Birla's eucalyptus processing operations in other countries rely on contract farming rather than estate plantations, but in this case the company imagined that there was a lot of open land, following a frontier mentality, and so for the first time they adopted a large-scale plantation concession model. Birla Lao initially identified 166,000 ha of land suitable for growing eucalyptus, but during the second survey 27,000 ha of suitable land in 200 villages was identified, but this was already not enough to meet the minimum requirement for constructing the pulp and paper

[49]Western Foreign Investor, personal communication, Paksong District, June 17, 2017.
[50]Ananda Kumar, personal communication, Outspan, November 24, 2016.
[51]Stuart Ling, personal communication, June 19, 2017.
[52]Saveuan, village headman, personal communication, Kadot Village, June 12, 2014.
[53]Villagers, personal communication, Phluk Village, July 11, 2014.
[54]Josh John, Birla Lao Company employee, personal communication, Xayboury District, Savannakhet, June 7, 2014.

mill.[55] However, to make matters worse, Birla Lao was only able to develop 15,000 ha in both Savannakhet and Champasak Provinces before running out of land to develop. They had to negotiate with government officials and villagers for every hectare of land they acquired. However, as time passed, they gained a poor reputation with villagers and local government officials, who felt that they were not providing sufficient benefits to communities or government officials. Although some "bonuses" were paid to senior district officials early on (i.e., US$5 for every hectare obtained by the company),[56] over time officials became less enthusiastic about the company, and villagers became increasingly unwilling to give their land away. When Savannakhet Province, where Birla Lao started, had no land to provide, Birla Lao developed 2,000 ha in Champasak and Mounlapoumok Districts, Champasak Province, but not nearly enough to raise their concession holdings up to the level that would justify developing the pulp and paper factory. Finally, by 2012, they were unable to plant anymore. They became frustrated, and in mid-2015 they began trying to sell their plantation holdings and withdraw entirely from Laos.[57] They heavily criticized the Lao government for not finding them more land, but it may have been their own bad practices with villages and local officials that ultimately led to a lack of government support. By mid-2014 the company had reportedly invested more than US$40 million,[58] but had not generated any revenue, and they may only be able to regain a small portion of their investment, and even that will depend on whether they can sell their plantations to another investor, a prospect that is far from certain.

Another good example of the importance of government support relates to coffee plantations on the Bolaven Plateau in Paksong District, Champasak Province. Some coffee companies have been hurt by increased tariffs on coffee exports. According to one investor, he has to pay a 90% tariff to export raw coffee, whereas previously he only paid 10–20%. However, if exports are linked to a government quota for Thailand, there is no tariff, but not all coffee exports are included in the quota.[59]

Another problem related to government policy implementation that has negatively impacted Vietnamese rubber companies, especially HAGL, was that when they started operations in Laos, labor laws existed, but were hardly enforced. Therefore, HAGL developed their business model with the expectation that they could get away with not buying workers' insurance. In the last couple of years, however, those laws have been enforced. Therefore, companies must now pay about US$30 per employee for health insurance. Previously, the company often bought insurance and developed proper paperwork for about half its Vietnamese employees, while illegally hiring the other half. However, once the Lao government began enforcing the labor laws, HAGL was forced to incur significant unexpected expenses (Baird et al., 2019).[60] This lack of government support would appear to be a product of poor planning related to the resource frontier mindset.

12 | CONCLUSIONS

This paper has considered the reasons why many plantation companies operating in southern Laos and northeastern Cambodia are facing significant challenges. Indeed, the problems are so serious that some companies have withdrawn from their investments, or seem likely to do so in the near future. This includes the Thai and Malaysian companies that attempted to develop rubber plantations in Khong District, Champasak Province, and Birla Lao, which attempted to develop eucalyptus plantations in Savannakhet and Champasak Provinces. In addition, government officials in various provinces in Laos and Cambodia have become skeptical of the value of developing these sorts of concessions in the future. Illustrative of this, one Lao government official stated that "the [Champasak Province] government doesn't want to give out new [concessions]. The province has learned many lessons," particularly about the

[55]Shailendra Sithi, Joint President, Birla Lao, personal communication, Savannakhet, July 15, 2015.
[56]Former employee of Birla Lao, personal communication, Savannakhet, June 7, 2013.
[57]Shailendra Sithi, Joint President, Birla Lao, *pers. comm*., Savannakhet, July 15, 2015.
[58]Josh John, Birla Lao, personal communication, Xayboury District, Savannakhet, June 7, 2014.
[59]Western Foreign Investor, personal communication, Paksong District, June 17, 2017.
[60]Also, Khamsone, HAGL employee, personal communication, Phou Vong District, June 18, 2017.

problems that large-scale plantation concessions can cause for local people and the environment.[61] Indeed, the Lao government has become increasingly skeptical about the effectiveness of investments in rubber and eucalyptus plantations, and a few years ago it decided to prohibit the establishment of any new rubber and eucalyptus plantations in the country (Vientiane Times, 2014a), a moratorium that was reaffirmed in July 2015 (Vientiane Times, 2015).

In 2012, the Council of Ministers of the government of Cambodia also put an indefinite moratorium, affective on May 7, on new plantations, and ordered the review of existing land concessions (Di Certo & Sokchea, 2012). The regulation stated that "for the companies that have already received permission in principle from the royal government, but have not … developed the land, have been doing commercial logging, invaded additional land, sold off parts of their concession land, conducted illegal exploitation [for minerals], or grabbed additional land off people and communities, the Royal Government will seize back all those economic land concessions."

Many scholars and activists have argued against developing large-scale plantations in southern Laos and northeastern Cambodia due to the serious social and environmental impacts these developments have caused. As indicated by this paper, however, there is also a need for careful consideration of the extent to which investment companies and the governments are benefiting from the development of these plantations. The findings support research results from elsewhere that indicate that plantation development is often fraught with difficulties. It is hard to pinpoint just one or two challenges that are particularly problematic, as each circumstance is different, and what may constitute a significant problem for one plantation may not be nearly as problematic in another context. Nevertheless, this paper indicates that many companies are facing considerable challenges, including suffering serious financial losses as a result of price and market constraints, conflicts with villagers and activists, management difficulties, environmental and technical problems, and a lack of government support at various levels, Moreover, government revenue from these plantations has generally been well short of expectations due to the lack of success of the companies, and local people have not benefited either. Overall, the circumstances fit quite well with Li's (2015, p. 560) statement that "transnational farmland investments in much of the Global South are risky for all parties involved: agribusiness firms and their financial backers; host-country governments; and the people on the spot." Some might argue that the companies deserve these problems, considering the lack of concern that they have typically shown toward the welfare of local people or the environment.

Finally, it is contended that the various challenges to plantation development identified in southern Laos and northeastern Cambodia especially emerge due to two "root causes": (a) plantations that take years to develop are usually developed when commodity prices are high, but are only mature enough to harvest years later when prices have declined, and (b) the resource frontier mindset, which is difficult to address methodologically but causes rushed and inappropriate planning that eventually leads to serious problems.

Thus, we can see the types of challenges plantations developers are facing, but we can also better understand how and why these land concessions are being developed, and how and why they often fail to benefit investors or governments. Finally, it seems appropriate to ask why these plantations—if they are not benefiting locals, governments, or investors—are being developed at all. Indeed, they appear to be frequently constituting "lose-lose-lose" scenarios for villagers, thegovernment and investors, thus raising serious questions about the overall value of developing large-scale tree plantations in places such as southern Laos and northeastern Cambodia.

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[61]Khamphet, Champasak Province official, personal communication, Pakse, November 24, 2016.

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