

Towards equitable and secure access to land and natural resources for family farmers in the Mekong region



Thematic Study

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After the Boom: Responding to Falling Rubber Prices in Northern Laos



Cleared rubber trees stacked as firewood, Luang Namtha

Thematic Study

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List of acronyms

CNY	Chinese Yuan (Renminbi)
DAFO	District Agriculture and Forestry Office
DFO	District Finance Office
DICO	District Industry and Commerce Office
LAK	Lao Kip
MAF	Ministry of Agriculture and Forestry
NAFRI	National Agriculture and Forestry Research Institute
PAFO	Provincial Agricultural and Forestry Office
PDPI	Provincial Department of Planning and Investment
PICO	Provincial Industry and Commerce Office
PTO	Provincial Tax Office

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Executive summary

Rubber prices in northern Laos have fallen significantly over the last few years, eroding much of the initial enthusiasm of both farmers and government officials about rubber providing a way out of poverty for poor upland farmers. The drop in prices, both globally and in northern Laos, has been precipitous (Figure 1). From highs around CNY 14/kg of lump rubber in 2011, prices paid to Lao farmers fell by *half, then by half again*, reaching a low of around CNY 3.5/kg in 2014. Prices during the fieldwork period for this study were just slightly higher and have since fallen even lower.

This study examines responses to this price drop by Lao rubber growers and state institutions in northern Laos. It also examines the reasons that prices are what they are, given that price volatility was identified as a risk during the mid-2000s, and that in at least some cases, steps were taken to protect contract farmers from falling prices. Drawing on 20 days of fieldwork in mid-2015 in five districts and seven villages of Luang Namtha and Oudomxai provinces, this study is one of the first efforts to connect an earlier body of research on the rubber-planting boom of the 2000s with the subsequent fall in prices. Its focus is on qualitative changes that have taken place – and are currently continuing – in northern Laos. These were captured through 33 key informant interviews with 68 participants at the provincial, district and village levels, complemented with a review of available scientific literature, media reports and online sources as well as consultation with a small group of expert researchers.

Rubber remains a significant smallholder crop in the north, and the fall in prices has placed a serious strain on rubber-based livelihoods. This has prompted a range of responses by both state institutions and rubber growers.

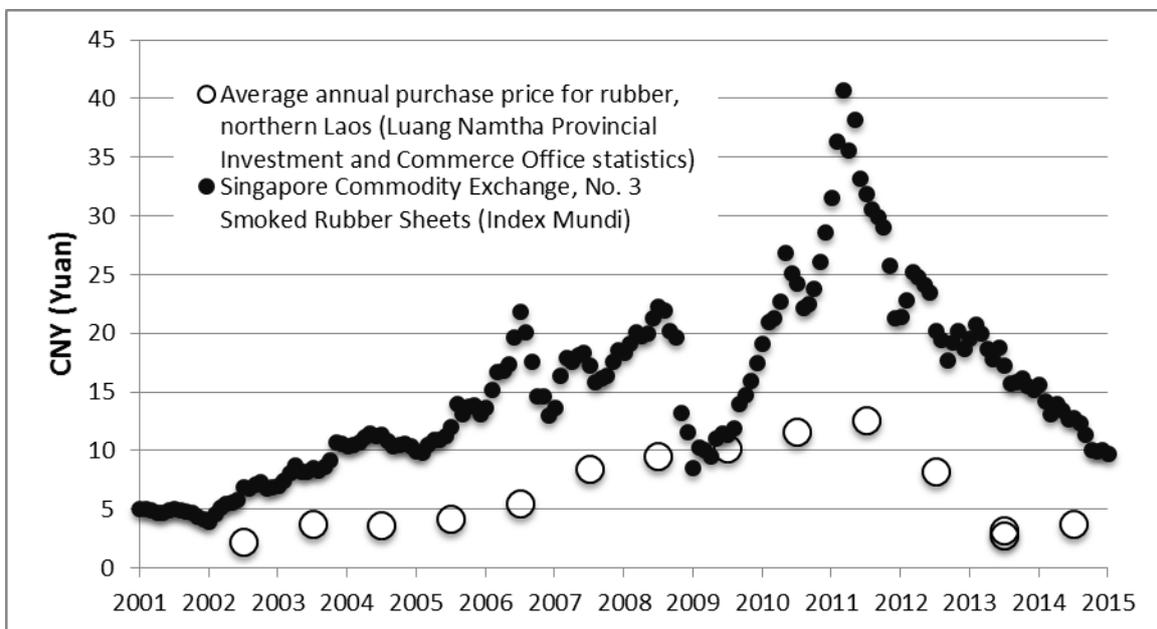


Figure 1. Global versus “farm-gate” rubber prices, Luang Namtha, 2000–2015
Source: Index Mundi (SCE data) and Luang Namtha PICO (annual purchase price data)

Responses by government institutions include forming provincial- and district-level committees on rubber; using these committees to broker rubber sales at prices (slightly) higher than those being offered by rubber-purchasing companies (in some cases waiving of companies’ tax requirements in return); and encouraging smallholders to work hard and “stick it out” until prices rose again.

These encouragements happen both informally and via policies aimed at preventing conversion to other land uses (e.g. bananas). Despite the effort expended by these committees, their impact remains limited due to low leverage over companies' ability to dictate rubber prices to Lao rubber growers and, in the absence of substantial regulatory intervention, the ongoing power of Chinese markets to drive land use decisions in Laos.

Among the most important responses to falling rubber prices by government officials has been a decision to not enforce minimum ("floor") prices that were, in at least three of the districts we studied, allegedly written into company contracts. This is especially notable given the limited leverage in the brokered rubber sales mentioned above, and it highlights the fact that the extreme exposure to global price swings currently being faced by Lao rubber growers is, at least in part, the result of policy decisions rather than simply a lack of planning.

Responses by growers include waiting for prices to rise (i.e. not tapping); continuing to tap but relying largely or only on household labor; taking collective action to attract (slightly) higher prices; and selling or leasing plantations to wealthier actors who either maintain them in rubber or convert to current boom crops such as banana. The widely discussed phenomenon of land conversion to bananas is occurring in multiple districts where we conducted fieldwork, but is difficult to measure, in part because state efforts to ban land conversion to banana probably selects for under-reporting by growers and state officials alike.

Especially notable, we argue, is the fact that many rubber plantations are going un-tapped because they have been sold out of the smallholder arrangements under which they began, and are now in "large-holder" production arrangements where prevalent wage labor or share-cropping schemes make tapping economically unviable. In such a context, only smallholders who use household labor "can afford" to tap, although this reflects their precarious situation. Smallholders we spoke to who continue to tap would like to see prices in the range of 50–100 percent above current values, and explain their choice to continue tapping by noting the need to recoup their earlier investments even while markets are poor.

With Chinese companies basically dictating prices to Lao growers, falling global demand has brought more localized issues of market power into view. Many of the key informants we spoke to – both rubber growers and state officials – noted that control over rubber imports into China by a limited number of companies (probably just three) is an important factor in setting prices. The prices that Lao growers receive are substantially lower than what Chinese growers receive; while good data is difficult to get, Lao prices seem to be roughly half what Chinese growers command (although with substantial variation). While some of this difference may be due to quality, monopoly control over the border trade – and in particular access to quota-based import allowances – seems to be a major factor. Growers and government staff in Laos thus note the need to have more discussions with Chinese authorities about opening the border to Lao rubber, as well as pursuing other options for its sale.

Although rubber was widely imagined during the 2000s as a strategic crop for northern Laos, efforts to scale up the successful experience of Ban Hat Nyao did not materialize. While the Chinese companies charged with scaling up the smallholder model received significant subsidies from the Chinese government, Lao farmers did not significantly benefit from these arrangements and thus rejected or sold many of the plantations that resulted. This, combined with a price crash that occurred just as rubber was coming into production (unlike in Ban Hat Nyao, which had seen prices rise), selected for the emergences of larger plantation holders and undermined the conditions under which a smallholder model could prosper.

Rubber can still become a strategic smallholder crop in line with the vision of the agriculture sector that is often put forward by Lao ministerial officials, but the consolidation of rubber holdings that has occurred in the last few years must be recognized and addressed.

If rubber is to become a strategic commodity, it needs to be actively treated as such; this means actively regulating the market rather than letting rubber behave like a classic “boom crop” that follows globally dictated cycles of boom and bust. Experience across Southeast Asia (and China) suggests the possibility of protecting smallholders from the swings of global markets and the opportunistic behavior of the private sector, for example through regulating prices via a mix of contracting and state-based price supports (see details below), and pursuing a mix of diplomatic and local efforts. Such an approach would need to recognize that current conditions are not simply the result of global market forces, but local factors as well, and address the latter through coordinated institutional and policy efforts.

Such efforts might include: (1) enforcing contracted floor prices where they already exist, requiring reasonable floor prices in new contracts, and investigating legal possibilities for renegotiating existing contracts to include reasonable floor prices and other protections; (2) creating a state price support (subsidy) mechanism that would purchase rubber from farmers at a higher and more stable guaranteed price, as is currently done elsewhere in the region; (3) providing other (e.g. land-based) subsidies to poorer and/or smaller-scale rubber growers, so as to target support to growers who need it most; (4) changing government policies to further incentivize value-adding within Laos, so as to take power away from actors who control the export market; and (5) undertaking diplomatic efforts to place rubber (both processed and unprocessed) on the list of freely exportable goods.

Current government efforts focus largely on getting farmers to self-organize in order to enhance their collective bargaining power, and using negative policy instruments like conversion bans to influence land use decisions. The tools suggested above are based on a more active approach to regulation. This approach would be more expensive to implement – simply put, regulation costs money – but given the limits to current policies, it is likely to be more effective at helping Lao rubber growers in both the short and long term.

Our work identified a number of areas for further research. These include (1) quantifying the distribution and dynamics of rubber holdings, given the substantial but unmeasured shift from smallholding to “larger-holding” in recent years; (2) studying the strategic dimensions of Chinese agribusiness so that Lao farmers are better able to benefit from transnational commodity chains (this include the need for much better data on rubber prices than is currently available); (3) studying the household-level and social implications of smallholders’ continuing to tap their rubber using household labor at very low prices; and (4) understanding the role that indebtedness – including but not limited to debt accumulated from smallholder plantation establishment – plays in current decisions about land use, land conversion and land transactions.

1. Introduction

1.1. After the boom

Rubber plantations in Luang Namtha province are increasing rapidly, with growers keen to get a share of the lucrative rubber export market. Growing rubber trees is seen as an excellent investment because there is a permanent market for rubber, especially in China, which shares a border with the province.

The Vientiane Times (2005b)

It seems like another era. Ten years ago, passages like the above appeared regularly in Lao newspapers. This optimism was typical of the mid-2000s, when many in government and the private sector believed that China's demand for rubber would be sustained indefinitely, and that Laos's northern uplands were highly suitable – both ecologically and socio-economically – to be the next frontier for the expansion of the Chinese rubber sector. During these boom years, the Lao uplands were widely imagined as an investment opportunity for rubber that was too good to be missed, both for poor farmers and wealthy investors alike.

In the last few years, much of this optimism has disappeared as rubber prices have fallen steeply, both globally and throughout northern Laos in particular (VT 2013, 2014a, 2015a). The drop has been a big one: from highs around CNY 14/kg in 2009-2011, prices paid to Lao rubber growers *fell by half, and then by half again*, to a low in 2014 around CNY 3.5/kg; in 2015, prices rose slightly to around CNY 4/kg (mid-year) and have since fallen even lower.¹ The price crash has put a serious strain on rubber-based livelihoods, prompting a range of responses by both growers and government officials. These responses, examined below, are consistent with rubber being a classic “boom crop” whose price rises and falls with the unpredictable whims of global markets. This contrasts significantly with the more actively regulated approach to markets that often accompanies commodities of “strategic” importance, and thus raises important policy questions.

The crash in rubber prices has also highlighted an additional factor whose causes are unrelated, yet with major implications for policy discussions about how to respond to falling prices. This is the consolidation of rubber plantation holdings by wealthier growers and town-based elites, which began a few years before the price crash and actually seems to have slowed in recent years. As we explain below, this consolidation – clearly evident in the different responses to falling prices between household-scale production and larger plantations reliant on wage labor – means that rubber is not simply a “smallholder” crop, as is often imagined in the north. As a crop that is held increasingly by larger private landholders, rubber exemplifies the pattern of agrarian differentiation that is taking place across the region. This has implications for policy efforts to deal with falling prices, especially if rubber is to be treated as a crop of strategic national importance like timber or hydropower.

Can the negative effects of falling prices be mitigated, and if so, how? Do all growers demand the same protection from the uncertain future of the market? Can rubber become the “strategic” crop that was envisioned during the boom decade of the 2000s – alleviating poverty, replacing opium, preserving forest – or is it destined to follow the ups and downs of the global economy?

¹ In this study, we use the currencies reported in our interviews whenever possible. Because northern Laos's rubber market is closely linked to China's rubber sector, prices are often reported in Yuan/Renminbi (CNY).

This study contributes to discussions about these and related questions by describing responses to falling rubber prices by both growers and government officials in northern Laos. In doing so, our work helps connect recent reports about land sales, land conversion (e.g. to bananas), and government efforts to manage the rubber price (VT 2014a–f) with an earlier generation of research on the *establishment* of rubber plantations (Alton et al. 2005; Diana 2006; Shi 2008; Manivong and Cramb 2008; Cohen 2009; Kenney-Lazar 2009; Thongmanivong et al. 2009; Dwyer 2011; Sturgeon et al. 2013, among others). Examining multiple locations, our work expands the inquiry beyond Luang Namtha (the usual focus of discussion), and allows a range of experiences – especially in areas where rubber planting was more recent, as in much of Oudomxai province – to be considered. As explained below, this issue of plantation maturation *timing* has special importance in the context of policy efforts, both past and present, to make rubber a more strategic crop through the creation of a more stable price environment.

Our report is organized as follows. The rest of the Section 1 provides essential background on the rubber landscape in northern Laos, highlighting the rocky trajectory of the smallholder model over the last decade. Section 2 then explains our research methods and approach. Section 3 presents our results, explaining first how government institutions and rubber producers have responded to the recent drop in prices, and then examining the qualitative and quantitative dimensions of Lao rubber prices in greater detail. In Section 4, we discuss our results in terms of the overall theme of *regulation*. We contrast rubber’s current “boom crop” behavior with the ideal of a “strategic” commodity that is more tightly regulated, and thus more suitable for large-scale cultivation by a class of smallholder producers. In the absence of such regulation, however, we see the current concentration of rubber in the hands of larger producers as a pattern that is likely to continue. We conclude in Section 5 by summarizing the recommendations that emerge in Section 4.

1.2. Background: The rise and fall of smallholder rubber in northern Laos

Rubber is planted extensively in northern Laos, and is officially recognized as a priority commercial crop in both Luang Namtha and Oudomxai provinces.² While its returns from export tax revenues are impressive (VT 2014a), details about the distribution of plantation areas are harder to come by. During our fieldwork, we collected a range of statistics that, when taken together, suggest that (1) the area under rubber is in the range of 60,000 ha in Luang Namtha and Oudomxai, divided roughly equally between the two provinces; (2) that these plantations are mostly independently owned and contract-farming-based operations (as opposed to the concession model, which predominates in the south); and that (3) a substantial but unknown portion of this rubber, especially in Oudomxai, is either recently mature (possible to tap) or will be ready for tapping very soon.

Some of these statistics are presented in Annex I, but these should be taken with extreme caution. As elaborated below, in both Luang Namtha and Oudomxai, there has been substantial movement both *between* and *within* business models. This means that figures for various categories of rubber plantations – independent holdings versus contract farming, smallholdings versus larger-holdings, different types of contract farming (so-called “2 plus 3” and “1 plus 4”), and immature versus mature plantations – should be assumed to be out of date and used only as a general typology. This uncertainty notwithstanding, certain core characteristics – rubber’s prevalence in the landscape of northern Laos; its concentration in business models other than concessions; and the dynamism both between and within various non-concession business models – are well established. These features are the result of processes summarized in the remainder of this section.

² Interviews, Luang Namtha and Oudomxai provinces

The smallholder (Hat Nyao) model

Government efforts to support the development of a rubber sector have been very different in the north of Laos than they have been in central and southern parts of the country. Unlike the south, where a concession-based model has underpinned the establishment and (substantial) growth of the rubber sector (Baird 2010, 2012; Laungaramsri 2012; Schoenweger et al. 2012; Kenney-Lazar 2013), northern Laos's rubber sector has been based on a smallholder model. This is not to say that all, or even most, of the rubber that has been planted and cultivated there has been by smallholders; as described below, it has not, and especially today, it *is* not. But the *ideal* of smallholder production has been instrumental in shaping the way that the rubber sector has emerged in the north.

As others have noted (e.g. Alton et al. 2005; Shi 2008, 2015) and our interviews confirmed, this ideal is largely modeled on the success of Ban Hat Nyao. Ban Hat Nyao is a Hmong village located just north of the provincial capital of Luang Namtha (see Figure 2) that almost single-handedly put rubber on the map as a priority crop for provincial poverty alleviation and shifting cultivation stabilization efforts. The story of Ban Hat Nyao is widely known, and has become a standard part of the narrative of rubber development in northern Laos. We heard many different versions, but the “Hat Nyao story” is told so often that it has become relatively standardized, focusing on themes of poverty alleviation, opium replacement, shifting cultivation, proximity to China, and local initiative:

Rubber planting began in 1994 in Ban Hat Nyao. Rubber was initially planted to replace opium cultivation. As the Hmong have traditionally cultivated opium for household income, and some of the villagers in Ban Hat Nyao had migrated from China, they noticed that rubber is also cultivated for latex, which [is] similar to opium. Since provincial and district authorities introduced the policy on elimination of opium cultivation and reducing shifting cultivation, people in Ban Hat Nyao discussed among themselves and decided that rubber would be a good potential for growth in this area, as the village is close to China and rubber grows well there. The main aims of rubber plantation are thus to implement the government policies on opium elimination, reducing shifting cultivation and poverty [alleviation].³

Ban Hat Nyao's expansion into a policy model was due to its location and its connections. While it was not alone in planting rubber in the mid-1990s – a number of villages in Sing District did this as well (Diana 2006; Shi 2008; Sturgeon 2010) – the village was located in the interior of the province and was close to the provincial capital. It also had an important patron in the former vice-governor of Luang Namtha province in the mid-1990s, and who helped the village secure an interest-free loan that helped finance the establishment of the village's rubber plantations (Alton et al. 2005). When the village began to tap their rubber trees in 2003, after a few years its success had become widely known, and it did not take long for provincial authorities to try to replicate the Hat Nyao model elsewhere.

Scaling up, with a twist

The success of Ban Hat Nyao, in combination with an early negative experience with the concession model (just south of the Luang Namtha provincial capital, in Ban Sop Duut) helped establish contract farming as the preferred alternative for creating the necessary conditions for rubber development in areas with previous little experience or assets.

³ Government interview, Luang Namtha province

Although the Ban Hat Nyao story tends to emphasize community cohesion and self-initiative, especially in maintaining land as a communal asset that was re-allocated each year (Chanthavong et al. 2009), the village's success in establishing plantations also turned on its ability to secure a substantial amount of low-interest credit. As Alton et al. note, "All producing households [in Ban Hat Nyao] received subsidized loans from the province for the cost of seedlings and some fencing. Each producing household received between LAK 1-3 million in credit" (2005: 51). Scaling up this substantial outlay of credit is no small undertaking, given the expenses involved. As contract farming was embraced as the business model through which to up-scale smallholder rubber, the question of credit came to the fore.

Most contract farming projects are distinguished on the basis of the percentage split between the company and the grower. This split refers to the percentage of either raw (lump) rubber or, as elaborated below, rubber *trees* that companies receive in exchange for providing credit up front in the form of rubber seedlings, tools and anything else that is needed to establish a plantation. The substantial fractions allocated to companies – even at the low end, 30 percent of a rubber harvest over *two to three decades* of production – suggests the substantial amount of capital involved in establishing a plantation. During 2004-2006, just after Ban Hat Nyao's first successful rubber harvest had led to bilateral (Lao-Chinese) discussions about scaling up rubber development cooperation, proposals focused on (and implicitly debated) the value of various inputs into a rubber plantation (labor, seedlings, tools): these were estimates of what the different "sides" brought to the arrangement. In turn, they shaped the splits that companies offered to Lao contract farmers (Dwyer 2011). These splits varied, and in at least some locations changed over time as companies tried to entice more farmers to participate.⁴

But as Vongkhamhor et al. (2007) note, the terms on offer by Chinese companies in the mid-2000s failed to attract significant numbers of Lao farmers. Many smallholders were either not interested in going into the rubber business, or if they were, they preferred to organize their own credit rather than give up such a substantial percentage of their crop in perpetuity. (Companies were generally offering farmers between 50 and 70 percent of the product, meaning that farmers who joined these projects would have been trading 30 to 50 percent of their harvests, in perpetuity, in exchange for inputs.) Weiyi Shi (2008) found something similar in Luang Namtha: widespread lack of smallholder interest in the new contract farming schemes. One of the main reasons that farmers gave was that they could not afford what scholars of agriculture call "the long pay" (Mann 1980) – in this case the seven-year wait between investment (of labor and capital) and harvest.

Rubber companies, in collaboration with provincial officials, adjusted their offer: they agreed to pay villagers daily wages for planting and weeding rubber, effectively trading the contract farming relationship for a wage labor arrangement. But this extra cost of wages was also reflected in the terms being offered: under the new arrangements, companies took at least 50 percent, and in some cases up to 70 percent (Shi 2008; Dwyer 2013). Even more importantly, they also changed the object being valued and shared: rather than splitting rubber itself at the time of harvest (*beng nam yang*), this shift also brought an agreement to split *the plantation itself* (*beng ton*). Noting the "concession-like" nature of this arrangement, Shi (2008) implicitly questioned its label as contract farming at all, since it essentially involved companies enclosing common lands into private plantations rather than working with farmers on their own land. Rubber companies, in collaboration with provincial officials, adjusted their offer: they agreed to pay villagers daily wages for planting and weeding rubber, effectively trading the contract farming relationship for a wage labor arrangement. But this extra cost of wages was also reflected in the terms being offered: under the new arrangements, companies took at least 50 percent, and in some cases up to 70 percent (Shi 2008; Dwyer 2013).

⁴ Interviews, Luang Namtha and Oudomxai provinces

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This whole process was buried under a policy language that, while perhaps not deliberately, hid the fundamental shift from the division of rubber to the division of land. The “2 plus 3” policy model was developed in late 2005 as a way to formalize the agreement between Luang Namtha, Oudomxai and Bokeo provinces to pursue rubber development cooperation with Chinese companies outside of a concession-based business model (Vongkhamhor 2007). The phrase “2 plus 3” referred to five factors of production, of which farmers would provide two (land and labor) and companies three (capital, inputs and guaranteed access to markets); “2 plus 3” was thus essentially a classic contract farming model (Little and Watts 1994). When the adjustment above took place – roughly 2006-2008, and involving multiple companies in Luang Namtha and Oudomxai – the “2 plus 3” terminology was often changed to “1 plus 4” (Shi 2008), although this terminology has been applied differently in different provinces. The shift acknowledged the fact that farmers were no longer providing the labor input, since wages were being paid by the company. What it hid, however, was that the one thing farmers were “providing” in both models – land – was being provided in a very different way.

Consolidation of plantations

This was unfortunate. What the new terminology hid was not only a glaring departure from the Ban Hat Nyao model, which had emphasized communal control over land allocation.⁵ It also made the contract farming model seem so dissimilar that few thought to compare one of the key things that both shared: public financing. Most of the Chinese companies that offered “2 plus 3” and “1 plus 4” plantation arrangements benefitted from generous subsidies from the Chinese government aimed at eliminating the production of opium by upland smallholders. Unfortunately, the deals on offer turned out to be highly unstable.

Under the “1 plus 4” model, villagers were supposed to receive a fraction of the plantation holdings, generally in the range of 30-50 percent, usually a year or two after planting when it would be clear that the trees had survived the first few growing seasons, when frost risk is highest (Shi 2008; Dwyer 2011). Few researchers have studied what actually happened after the fact – most of the research on “1 plus 4” took place before plantations were actually divided (e.g. Shi 2008; Kenney-Lazar 2009; Dwyer 2011). In her recent revisit, Weiyi Shi became one of the first researchers to report on what actually transpired in the years *after* the division. She found that the partitions tended to be short-lived: “After the split, it is common for villagers to sell their shares of trees ... [this often] occurred *soon after the split* due to villagers not being able to care for their shares of trees. Labor input was one of the biggest problems in 2008, and the shortage is even more obvious today” (Shi 2015: 1-2, emphasis added). Our interviews described similar labor shortages, as in this account from Luang Namtha:

In this province, we have contract farming for rubber plantations, which include “2 plus 3” and “1 plus 4” schemes. However, many households and investment companies have turned the “2 plus 3” schemes into “1 plus 4” because local people cannot afford to maintain their rubber plantations, and they often ask the rubber investor to pay the labor cost when they work on their rubber plantation.⁶

⁵ Thanks to Stuart Ling for pointing this out.

⁶ Government interview, Luang Namtha

Our research also supports Shi's finding that villagers tended to sell their rubber trees even before the price began to fall. As one government official in Oudomxai explained:

Selling rubber plantations is normal in this province – it depends on having buyers. The growers [who sell] are mainly poor households in villages. Buyers are mainly businessmen from the province [capital] as well as Chinese investors. ... However, during the falling rubber prices, no one wants to buy rubber plantations.⁷

Today's landscape of rubber holdings is highly uneven. Smallholders still account for substantial rubber holdings, but increasingly rubber plantations are owned by larger growers as well. (This is difficult to quantify, but some proxy indicators are presented in Part 3.) This is partly a result of how the up-scaling effort described above played out, as efforts to replicate the Hat Nyao model using contract farming devolved into a mix of "concession-like" company holdings and (later) economically unviable plantations which were, over time, sold to wealthier buyers. But there is also another dimension that is often missing from the standard story of what *worked* for Ban Hat Nyao. This missing piece also helps to explain the difficulty of scaling the Ban Hat Nyao model up, and it hinges on the *timing* of changes in the rubber price.

The model that didn't scale

When it came to timing, Ban Hat Nyao got lucky. Rubber prices were fairly low when the village began tapping in 2003, but they were at the beginning of a long and steady rise that lasted until the global financial crisis of 2008. During this period, there were ups and downs – as one resident put it, "prices go up and down all the time"⁸ – but the overall trend was upward. The community cohesion, hard work tracking down buyers, and collective bargaining power that are often emphasized in the Hat Nyao success story are important. But the timing of its early years, when households committed to rubber as a basis of livelihood, getting to know the rhythms of the crop both biologically and economically, is also a key piece of its success. In contrast, many of the newer rubber plantations in Luang Namtha and especially Oudomxai have come into maturity as the price of rubber has crashed. As elaborated in Section 3, this cannot but have impacted how new growers responded to falling prices.

Despite current price conditions, a number of government officials continue to consider rubber as a viable pathway out of poverty for industrious upland communities. As one local official we spoke to put it, "Rubber is [still] the first commercial crop considered for socio-economic development in [our] district. The main reasons for encouraging local people to establish rubber plantation are to replace rubber into to former opium cultivation area, reduce shifting cultivation and encourage local people to practice permanent agriculture, and to reduce rural people's poverty." As another local official put it, "It does not matter if you are rich or poor; whoever has rubber plantations and patience in working them will get income."⁹

In statements like these, one hears strong echoes of the Ban Hat Nyao model – opium replacement, shifting cultivation stabilization, poverty alleviation, and a focus on hard work and self-initiative as a path to a better life. But as explained above, the reality is more complex. The Hat Nyao model has not scaled up, and instead the landscape of rubber holders is now a heterogeneous, hard-to-quantify mix of smallholders and "larger-holders" dependent on non-household labor. The fact that the price drop of the last few years has occurred in this context of mixed-size and particularly larger holdings, rather than one of a homogeneous landscape of smallholders, makes the responses more complex (as elaborated in Section 3) and the policy questions harder (Section 4).

⁷ Village interview, Ban Hat Nyao

⁸ Government interview, Oudomxai

⁹ Government interviews, Luang Namtha

2. Methodology

2.1. Research questions

We began with a basic question focused on local responses to falling prices. Simply put, we wanted to know how Lao rubber growers and local authorities were responding to the price crash, given the earlier mix of widespread investment by growers and companies, and extensive endorsement and facilitation by state authorities, during the rubber boom of the mid-2000s. As our work progressed, additional questions emerged as outgrowths and specifications of our initial question; three stood out in particular: (1) Why were policies designed to protect rubber growers from falling prices, such as minimum price guarantees, not being enforced? (2) In the absence of such protections, how were rubber growers responding, and did these responses vary according to production arrangements and/or plantation size? And (3) what *were* the actual prices paid to Lao rubber producers? What were these based on, and why was price data so hard to come by? The results presented in Section 3 follow this progression from government responses, to farmer responses and relations to production arrangements, to rubber prices.

2.2. Approach: breadth over depth

Our research design chose to privilege *breadth over depth*; we felt this was important since the topic of local responses to falling rubber prices was relatively under-studied and was likely to vary by location (e.g. due to different socio-economic networks of rubber growers, the various business models involved, and different connections to Chinese markets). We thus chose a research design that would allow us to (1) visit areas that have been discussed in recent media articles and research on local state and farmer responses to falling prices (VT 2014a–f; Shi 2015), and (2) also allow us to look explicitly at a range of circumstances both close to and far from the Chinese border, and across a range of years of plantation establishment.

We selected seven villages in five districts of Luang Namtha and Oudomxai to focus our fieldwork on (see Figure 2 and Annex II for details). We chose Luang Namtha and Oudomxai to capture areas of earlier and later plantation establishment, respectively, and we chose districts that (a) covered the spectrum from close to the Chinese border to farther away from it; (b) that were either close to provincial capitals (Namtha, Xai) or farther afield within their provinces (Sing, Viengphoukha, Houn); and (c) that included a range of growing arrangements, including independent smallholding and formalized contract farming.

Within the districts that we chose, we used both our own prior research experience in the area (Thongmanivong et al. 2009; Dwyer 2011) and key informant interviews with government staff conducted as part of our fieldwork to select sites for our village-level research. We chose two villages in the districts closest to the Chinese border (Sing and Namtha) on the basis of their experience with rubber and to reflect a geographic balance (one village close to the border, the other farther away). In the other three districts (Xai, Houn and Viengphoukha), we were only able to visit one village per district; we thought it was important to cover a broad range of locations rather than dig deeply in a single district.

Our approach allowed us to hear about a range of responses and growing arrangements, but it also precluded detailed surveys in any one location. Our results are thus more qualitative than quantitative, although they include some quantitative analysis regarding rubber prices. More importantly, our work points to possibilities for future research on more targeted and quantitative issues such as the distribution of rubber holdings, the household-level impacts of depressed rubber prices, and the relationship between falling rubber prices and land use change.

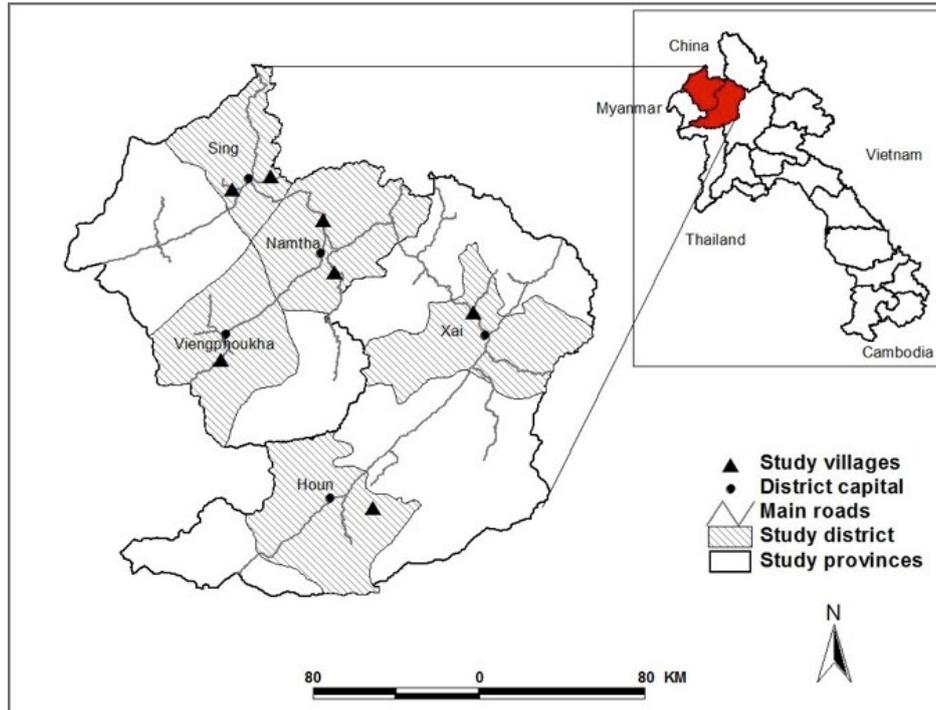


Figure 2. Study area

2.3. Methods

This research is based largely on interviews conducted with rubber growers and Lao government staff in the various locations described above; additional details are provided in Annexes III and Annex IV.¹⁰ Over the course of 20 days, we spoke to 68 participants via 33 interviews; 8 of these interviews were at the provincial level, 15 were at the district level, and 7 were at the village level. Three were with private companies. Most interviews involved 2-3 people, although one village interview was larger. The representatives of the offices at the province and district levels were mostly head and/or deputy head, as well as technical staff working on issues of rubber production and trade (Figure 3). Village interviews were conducted with village heads and/or deputy heads, as well as rubber growers in the village. We used the same set of the questions (Annex IV) for interviewing all stakeholders in order to best assess differences and similarities in responses. At the provincial and district levels, we focused on representatives from Agriculture and Forestry and Industry and Commerce; in some cases, we conducted additional interviews (e.g. with offices of Planning and Investment) based on recommendations from our initial interviews.

We also conducted a review of relevant literature, covering both recent works on responses to falling rubber prices (VT 2014a–f; Shi 2015) and earlier work on the rubber-planting boom (see above). This helped us choose the scope for our research both geographically (Luang Namtha and Oudomxai) and topically, given the reports, on the one hand, of various reactions to falling prices (e.g. land conversions and transactions, official efforts to negotiate prices) and, on the other hand, limited references to the kinds of complexity of growing arrangements documented in earlier literature. Our literature review thus helped with the research design and guiding questions for our interviews, as well as forming the basis of Section 1.2 above and necessary background for evaluating and interpreting our results.

¹⁰ Annexes III lists the institutions we spoke to; Annex IV lists the guiding questions used in our interviews.

In the field, we supplemented our interviews with official documents and statistics where possible. Given the unreliability of many statistics on rubber planting (see above), the ambiguities of some policy texts, and the sheer time it takes to track down documents that are said to exist but are often not immediately available, we focused our limited field time on interviews and immediately available information. One area we *did* emphasize in document collection was data about rubber prices, given their precise nature and the difficulties of remembering details long into the past. As discussed below, however, this helped us evaluate the (often variable) quality of the interview data about prices, but it also highlighted the need for better record keeping and transparency on rubber prices, both in Laos and China.



Figure 3. Sample government interview, Sing district

Data analysis focused on extracting five types of information from our interviews and other sources. One type was empirical data about the history of rubber planting and rubber-based livelihoods within particular areas of interest (province, district or village, depending on context). This helped us interpret four additional types of information: (1) information on the history of rubber prices in a given area; (2) information about responses by rubber growers to these changes in prices; (3) information about responses by government institutions to changes in rubber prices; and (4) any other information reported about the relationship between rubber prices and decisions by rubber growers or state institutions (e.g. as normative statements about what *should* be done, or about price thresholds for behavior change).

2.4. Challenges and limitations

In general, our fieldwork went well and we were able to interview many of the relevant stakeholders at various levels. Authorities at both provincial and district levels provided good cooperation and facilitation during the field study; a few relevant stakeholders at the district level were busy during our visit and were unable to meet with us, including the Planning and Investment offices in two districts of interest. In a third district, we were unable to collect statistics on areas under rubber; these were reportedly available, but two attempts to follow up on the initial promise to deliver them failed, so we put our efforts elsewhere.

We planned to visit Mom or Lo Mue villages in Sing district as representatives of villages that are close to Lao-China border and have good network in China for agricultural investment, including rubber. We were unable to access these villages, however, due to flooding. We chose Phiyer village instead, on the recommendation of district staff at the Sing DAFO and DICO.

We interviewed representatives of the private sector where possible, but did not prioritize these. Dealing with the private sector in general takes more time, given the interests involved – private sector actors often regard information as strategic and are thus unwilling to share fully – and their busy schedules. While this is not a challenge per se, the lack of extensive interview data from private sector actors does represent an important limitation of this study.

3. Results

Rubber was selected as a permanent agricultural production crop for the district. The idea was to reduce local poverty and shifting cultivation. However, we did not analyze what the risks are for selling the product.

Government interview, Oudomxai

In hindsight, there may be a rush to blame the current situation on a lack of foresight. Statements like the above are common; as another government official we spoke to put it, “We went on a study tour in China and saw that people there gain a lot income from rubber plantations, so we thought that local people will gain income from rubber and [thereby] reduce shifting cultivation and local poverty. I think we followed the fashion of the investor, but we forgot to think about the market and prices in the future.”¹¹ These sentiments are common today, and echo statements that were made back in the mid-2000s.

In 2006, at the height of the rubber-planting boom, a workshop at the Lao National Agriculture and Forestry Research Institute (NAFRI) highlighted price volatility at the beginning of its “summary of lessons learned” section:

There is a growing demand and market for natural rubber for the next ten years. However, rubber has “boom & bust” cycles, and farmers need to have coping mechanisms to deal with the inevitable price crashes. Government support is vital to support farmers during periods of rubber price declines. (NAFRI 2006: 1)

Similarly, in their follow-up to Shi’s (2008) report *Rubber boom in Luang Namtha: a transnational perspective*, Hicks and co-authors (including Shi) described the price of natural rubber as “volatile and highly dependent on conditions in the global economy,” and noted the potential for “rapid and significant reductions” in rubber prices to negatively impact producers’ livelihoods, especially when production regimes were tightly linked to rubber exports (Hicks et al. 2009: 22). At the time they were writing, the global financial crisis was underway, and potential implications for rubber growers were an issue of growing concern.

It is therefore worth posing the question up front: didn’t anyone see this coming? Our results suggest a surprising answer to this question. As elaborated below, it is *not* the case that no protections were taken, and that current responses to falling prices are efforts to cope with the lack of planning. Rather, *some* protections *were* in fact taken to protect smallholders from the risk of falling prices. But where they exist – and they are certainly not as widespread as they might have been – these have often been unenforced. Moreover, and perhaps even more important in the context of current policy debates, rubber prices are not simply due to global economic conditions. As elaborated below, the prices that Lao rubber growers receive are due to a mix of global *and* local factors, and depend in multiple ways on public- and private-sector decisions in both China and Laos. Just as it would be wrong to think that price risk was not anticipated and planned for, to say that current prices are due simply to falling global demand misses essential pieces of the story.

Section 3 tells this story more completely as a way to contribute to current policy discussions and development activities.

¹¹ Government interview, Oudomxai

Sections 3.1 and 3.2 first discuss responses to falling rubber prices by government institutions and rubber growers, respectively. Sections 3.3 and 3.4 then turn to rubber prices, looking at how the prices paid to rubber producers in northern Laos are actually determined (Section 3.3), and at what our key informants said about what rubber prices *should* be, and why (Section 3.4).

3.1. Government responses

Since rubber prices began to slip in 2011, government responses have been many and varied; rubber was heavily promoted as a smallholder livelihood option back in the 2000s, and falling prices have caused considerable concern among farmers and officials alike. In our fieldwork, we heard about many types of activities that could be reasonably understood as responses. These ranged from formal and explicit responses such as those undertaken by Luang Namtha's Provincial Rubber Management Committee, to less explicitly reactive but nonetheless significant responses to falling prices. Below we discuss two. The first follows closely from the actions of the Provincial Rubber Management Committee, and entails defending rubber-based livelihoods through various forms of persuasive rhetoric; this extends well beyond the Committee, and draws heavily on what we described above as the Ban Hat Nyao story. The second and final state response is the decision not to enforce contractually specified minimum rubber prices, also called "floor" prices. Even though this may not be seen explicitly as a response to falling rubber prices, we classify it as such given that floor prices were one of the few mechanisms anticipated in advance as a way to protect farmers from price instability.

Response 1: "Managing the rubber sector" in Luang Namtha

As rubber prices fell in late 2011 and into 2012, officials in Luang Namtha received an increasing number of pleas for help from local rubber growers. In response, provincial officials decided to create a Rubber Management Committee in September 2012; this was comprised of members of the Luang Namtha PICO, PAFO, provincial tax (Finance) office, PDPI, PoNRE and provincial governor's office. The Committee's responsibility was "to define new rules to manage the rubber sector in the province," as well as to promote the creation and support the operational activities of farmers' marketing groups (PAFO 2013: 8). Five of the Committee's concrete sets of activities appeared in our fieldwork: the promotion of marketing groups; the calculation of recommended rubber prices; the direct brokering of rubber sales from growers to companies, a process which includes the waiving of taxes on companies and, in some cases possibly, rubber growers; and finally, the attempt to ban the conversion of rubber plantations into other types of land use. We discuss these each in turn.

Promoting marketing groups

One of the Committee's first activities was to try to get rubber producers to organize themselves into marketing groups for the purpose of commanding better prices (PAFO 2013). Our fieldwork suggested that there had in fact been some progress here – rubber selling groups were reported to exist in "some" villages in Luang Namtha – although the lack of quantitative data offered during our interviews suggested that progress was not what might have been hoped for. In one village we visited, rubber growers said they were planning to form a marketing group in the future when prices rose, but that currently only a few households were tapping, so there was no collective bargaining power at current prices. The consolidation of rubber holdings described above in section 1.2 is also likely to select against local interest in marketing groups: these work best when the aggregation of products for sale has an impact on sale price. If and when producers already have sufficient volume to command higher sale prices, marketing groups will provide fewer benefits.

Moreover, given the local initiative involved in both forming and sustaining producer groups, the role of government efforts where marketing groups exist was difficult to assess. In our interviews, we found both a number of examples of successfully operating marketing groups and a few cases where marketing groups were not seen by local residents as desirable. We discuss these together in Section 3.2 below.

Calculating recommended prices

Another of the Committee's activities was to publish recommended rubber prices on the idea that these would help farmers negotiate with buyers. The Committee did this by looking up the price for SCR10 rubber sheets, a standard rubber commodity, on the website of a Chinese rubber company (www.yunken.com). They would then reduce this price by two factors to control, first, for water content, and then for three additional factors together: transportation, processing and "other" (unspecified) expenses. As illustrated in Figure 4, this provided a mathematical way to convert finished commodity prices in China into a raw "farm-gate" price in Laos; this calculation assumed 40 percent water content and 30 percent for "transportation, processing and other expenses" (PICO 2015).¹²

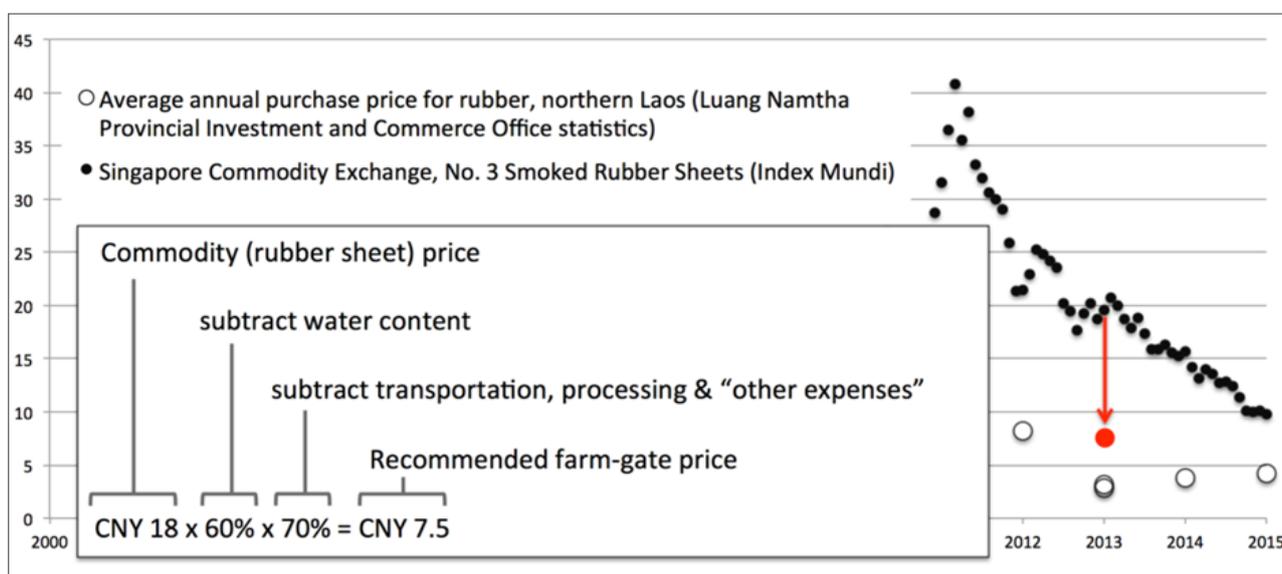


Figure 4. Sample calculation of Committee's recommended rubber price

The values used to illustrate the conversion from finished commodity to farm-gate price in Figure 4 are indicative only: we were unable to collect reliable data on rubber prices in China (see Section 4), and have thus used prices from the Singapore Commodity Exchange in Figure 4. Our interviews nonetheless supported what the red portions of Figure 4 suggest: there was often a significant gap between the Committee's recommended price and the price being actually offered by companies in Luang Namtha. As the prices on offer by rubber-purchasing companies consistently undercut the prices recommended by the Committee, many rubber growers in Luang Namtha province declined to sell their rubber. By mid-2014, this unsold stock of rubber had reached significant levels, and the Committee decided to undertake a third type of activity: brokering rubber sales.

¹² The Committee also included a currency conversion factor from CNY to LAK, although presumably this was only used on occasion, since rubber prices are more often referred to in Luang Namtha in Chinese Yuan. The conversion factor published in a 2015 price recommendation was CNY 1 = LAK 1,288 (PICO 2015).

Brokering rubber sales

In late 2014, the Committee decided to get involved in brokering rubber agreements directly. Lao growers had by this time accumulated a significant supply of unsold rubber due to the low prices on offer by Chinese buyers, possibly compounded by the mismatch between these prices and the Committee's recommendations.

In November 2014, the Committee facilitated a sale of much of this unsold stock; according to our interviews, the Committee's involvement raised the price from CNY 3.5/kg, which was the previous offering price, to CNY 4/kg. Unfortunately, this deal shows the limits on the Committee's ability to "define new rules to manage the rubber sector," at least as far as prices were concerned. This increase of CNY 0.5/kg is on par with the price increase reported for aggregation by farmer groups: while not insignificant, it is nonetheless limited in its impact on farm-gate prices. Moreover, the price increase by the brokered sale was a full CNY 1/kg *lower* than what was reportedly agreed to by the companies involved, as reported in the *Vientiane Times* (2014e), which described the agreement to purchase rubber at CNY 5/kg. Finally, despite the Committee's negotiation efforts, after the one-time bulk sale, the price dropped again to the previous offering price of CNY 3.5/kg; this was the price posted during our fieldwork in mid-2015 (see Figure 8 in section 3.3 below).

Waiving taxes

Perhaps even more importantly, the brokered price increase from CNY 3.5/kg to CNY 4/kg came at a potentially high price: waiving the profit tax (*akorn kamlai*) that would have normally been imposed on the three companies that purchase rubber in Luang Namtha for export to China.¹³ Our interviews referred to two types of taxes imposed on companies that purchase and export rubber: profit taxes and export taxes. The details of these taxes were not made available to us, and would be required to analyze the costs and benefits of waiving profit taxes in exchange for a price increase of CNY 0.5/kg. Calculating the profitability of the three companies involved is likely difficult, given the challenges of gathering data on Chinese government subsidies provided under the opium poppy replacement program (Shi 2008; Kramer & Woods 2012), and more generally, of calculating the profitability of Chinese companies operating in Laos. But given the available evidence about the low increase in prices and the waiving of corporate tax liability that came along with it, the deal struck by the provincial Committee seems to be less the "answer to low rubber prices" announced in the *Vientiane Times* (2014e) and more simply the result of low government leverage over powerful transnational trading companies.

While not apparently an official response, provincial authorities in Luang Namtha also seemed to be quietly waiving (at least partially) a third type of tax. Back in the boom years of the 2000s, the provincial government had announced an annual tax on rubber trees, graduated in accordance with the size of one's plantation holdings: CNY 1 per tree/year for holders of 1–3 ha of rubber, CNY 3 per tree/year for holders of 3–5 ha, and CNY 6 per tree/year for holders of 5 or more ha. Given that rubber tree holdings tend to number about 450 trees/ha, this tax is significant – especially for larger holders. Since prices have been low, however, at least one of our interviewees reported that this tax had been "difficult to implement."¹⁴

¹³ Government interviews, Luang Namtha

¹⁴ Government interview, Luang Namtha



Figure 5. Banana plantation, Sing district

Bans on land conversion

Lastly, the Committee has recently issued a ban on the conversion of rubber plantations to other land uses. The most common target of conversion bans is bananas, a plantation crop which has expanded significantly in Sing and Long districts in the last few years (Figure 5), often in combination with land transactions such as leases to private entrepreneurs (Friis 2015; Satomi 2015). Below, we discuss conversion to other crops as a *producer* response (Section 3.2); from the perspective of government responses, two points are worth making. First, attempts to ban conversion from rubber to other crops without government permission have arisen in Luang Namtha but not, as far as we observed, in Oudomxai.¹⁵ In Luang Namtha, the ban effort arose from the activities of the Committee, so it is perhaps understandable that no comparable effort has arisen in Oudomxai, given the lack of a committee there (as discussed below, conversion to bananas is taking place in Oudomxai). Second, the ban is competing with strong economic incentives in the form of private land rental fees in the range of LAK 15-16 million per ha per year.¹⁶ Coupled with the widespread belief by both growers and at least some officials we spoke to that land use decisions are the responsibility of growers themselves, these incentives may make the ban difficult to enforce, and moreover, may lead to deliberate under-reporting of land use conversions by both farmers and government staff.

Response 2: Defending rubber rhetorically

A second set of responses by government officials has attempted to protect rubber as a livelihood option through the practice of unofficial persuasion.

¹⁵ Government interviews, Luang Namtha; various interviews, Oudomxai

¹⁶ Various interviews, Luang Namtha

¹⁷ Government interviews, Luang Namtha

The is evident in the way that government staff talk about rubber as a livelihood option *despite* the fall in prices, as well as their portrayal of alternatives such as leasing land for bananas as the result of laziness or greed.¹⁷ As one provincial official in Luang Namtha put it, “even if people receive LAK 16 million per ha per year, it will not help people to improve their livelihoods because many families use this money for purchasing motorbike, entertainment tools, mobile phone, and use for drinking; this will not support their livelihood condition.”¹⁸ This type of understanding of farmer decision-making is fairly common among the government staff we spoke to, and reflects the prevalence of paternalism as a way of officials relating to farmers, as well the strength of the Ban Hat Nyao success story as a motivation for hard work and persistence. As one official in Luang Namtha told us, “It does not matter if one is rich or poor; whoever has a rubber plantation and is patient in working in it will get income.”¹⁹

This ideological belief in the link between rubber, hard work and development is significant, but should not be over-emphasized. Many government staff we spoke to genuinely seem to believe that the price of rubber will recover, and that even at currently low levels, rubber is preferable to the various alternatives. This more practical orientation toward continuing to believe in rubber seems to apply not only to government officials’ dealings with their constituents (see both quotes below), but even with their relatives (second quote):

Although rubber prices have fallen to LAK 5,000 – 6.000 per kg, it is still fine for local people to tap rubber, since they gain [more] from rubber plantations than other agricultural activities.²⁰ I informed local people that not to fear about falling rubber prices – they will increase sometime in the future. ... My father-in-law also established a rubber plantation ... in Beng district. ... What I informed [him] is that rubber prices are temporarily dropped, but will increase in next few years.²¹

Response 3: Not enforcing contracted floor prices

Surprisingly, one of the few areas where regulatory leverage *does* exist seems to not be being used. This is in the area of enforcing contractually specified minimum (“floor”) prices. Although floor prices seem *not* to have been, as a rule, written into the contracts that were negotiated and signed in the rubber boom period of the mid-2000s (Alton et al. 2005: 93-94; Shi 2008: 34),²² they were written into at least some of the purchasing contracts signed in the years that followed. While a number of details remained beyond our reach due to informants’ inability to provide the physical contracts they were describing (and in some cases promised), in three of the districts where we conducted fieldwork, we heard that companies had contractual clauses that guaranteed minimum purchase prices to local growers, but that these were not being enforced. Moreover, these represented the only instances of floor prices that we encountered: in other words, we did not hear about any instances of floor prices that *were* actually being enforced.

Viengphoukha (Luang Namtha)

Yunmong Xinxing is the new name of the Chinese company known at the time of its establishment in Viengphoukha as *Bolisat* Seun Hua (or Shen Wa). Beginning in 2005, the company built its operations in and around central Viengphoukha district, including a demonstration garden, contract farming operation (Dwyer 2013, 2014) and, sometime after 2010, a facility for processing rubber lumps into the sheets for which the company has an import quota into China.

¹⁸ Government interview, Luang Namtha

¹⁹ Government interview, Luang Namtha

²⁰ Government interview, Oudomxai

²¹ Government interview, Oudomxai

²² Mélanie Canet (personal communication with the second author, December 2015)

Part of the bilateral opium crop substitution subsidy program (Shi 2008; Kramer and Woods 2011), Yunmong Xinxing is one of three Chinese companies operating in Luang Namtha that have such quotas (see also Section 3.3 below).

According to our interviews, the contract in question was signed between the company and district authorities in the period after the processing facility was built; presumably the contract governed the facility's operations, and built on an earlier one governing the establishment of plantations in villages around the district through a mix of "2 plus 3" and "1 plus 4" operations (Dwyer 2014; also see section 1.2 above). The new contract reportedly specified a price at which the company would purchase rubber from local growers, but after the market for rubber began to decline, the company changed its price to below this level. (We requested a copy of the contract to be able to confirm this and also see what this price was, but were told that the contract was unavailable.) According to our interviews, district officials contacted the company to discuss raising the price to CNY 5.3/kg, but were told that the company preferred to follow the prices set by the market, although they agreed to increase the prices slightly in order to help local people with poverty reduction. This offered price was nonetheless below the price specified in the contract, but the argument was accepted by district authorities on the understanding that because market prices were so depressed, it would be clear to everyone that the company was not cheating producers.²³

Xai and Houn (Oudomxai)

In both Xai and Houn districts, interviewees described situations where some type of minimum price had been written into a contract, but companies were nonetheless setting lower prices based on market conditions. Even more so than in Viengphoukha, however, the details remained difficult to pin down due to a lack of available documentation and various offices referring us to other offices. In Xai district, for example, staff at the DAFO described a floor price of LAK 5,000 that one company had agreed to, and referred us to two other offices to look for the contract since they themselves did not have it.²⁴ One of these other offices said they had nothing to do with rubber prices,²⁵ the other pointed us to the Provincial Industry and Commerce Office, saying that with regard to anything to do with rubber traders, factories or prices, "we have to wait for orders" from above.²⁶ When we inquired at the PICO, senior staff were unavailable to meet due to other commitments; office representatives who were available (from the Provincial Tax Management Office) told us that they had no involvement with the rubber trade,²⁷ while staff at another provincial-level office told us that both their own office and the PICO relied heavily on investors when it came to rubber prices: "We receive rubber prices from investment companies. The Industry and Commerce Office at the province level has not been working on the rubber market – they also heavily rely on investors."²⁸

Despite this dead end, the testimony of our initial informant is compelling:

However, this set price has not been enforced because prices in Oudomxai province are sometimes lower than LAK 5,000 per kg. I would say that rubber prices in our province and district are based on what buyers offer. We used to discuss raising prices with the companies, but they generally prefer to base their prices on market prices. Thus, they could not raise prices for our smallholders.²⁹

²³ Government interview, Viengphoukha

²⁴ Government interview, Oudomxai

²⁵ Government interview, Oudomxai

²⁶ Government interview, Oudomxai

²⁷ Government interview, Oudomxai

²⁸ Government interview, Oudomxai

²⁹ Government interview, Oudomxai

In Houn district, we found roughly the same thing. One of our government interviews there noted a floor price of at least LAK 5,000 per kg, but said “the company could not pay this due to rubber market prices in China.” Again, they referred us to another office – in this case the District Planning and Investment Office – for a copy of the relevant contract.³⁰ Unfortunately when we went to that office, we were told that prices were based on market conditions, as specified in an investment contract signed by the former district governor.³¹

Given the experience described above in Viengphoukha, where two different contracts were signed at different times, it is *possible* that both of these accounts are correct: the floor price may be listed in a second contract, while the “investment contract” referenced above likely refers to the initial contract signed between the company and the district. Again, despite our inability to recover and examine an actual contract, the testimony of our initial informant suggests both the existence of an unenforced floor price and, more generally, a mixture of sympathy with farmers and frustration with bureaucracy:

We do not know the prices of rubber in China and buyers do not tell us how much they sell for in China. We used to talk to the Provincial Industry and Commerce Office, but they do not have price information for us. The floor price set in the contract is LAK 5,000 per kg, but the company still pays less than the floor price – the company is not paying based on the contract. We mentioned this [to] the provincial level many times, but we did not receive any responses. We also proposed a district-level meeting, but again got no responses from the district authorities.³²

In such a context, much of the burden of responding to the fall in rubber prices has fallen on farmers themselves. We examine these responses in the next section.

3.2. Rubber growers’ responses

This section describes a range of producer responses to falling rubber prices, including waiting for prices to rise, tapping at depressed prices using household labor only, transacting plantation land through sales or leases (the latter often with conversion to another crop), and various forms of activity that attempt to generate higher prices through the aggregation of rubber products. In examining producers’ responses to falling prices, it is important to look beyond the most obvious and even sensationalized dimensions (such as conversion to bananas, which has figured centrally in Lao news coverage), and try to understand how the market dynamics of the last few years have interacted with the pre-existing situation. As noted in Section 1.2, the northern Lao rubber sector *prior* to the price drop of 2012 was hardly stable; as the Hat Nyao model failed to scale up for a variety of reasons, rubber holdings began to concentrate increasingly in the hands of larger holders. The responses examined in this section thus are considered in this doubly dynamic context.

As this section describes, the variety of producer responses have continued the earlier trend away from the scaling up of the Hat Nyao smallholder model envisioned in the early and mid-2000s. Nonetheless, as Section 4 elaborates, this model may still be recoverable – as well as both politically and economically desirable – if the current, minimally regulated “boom crop” development model can be shifted to a more tightly regulated model appropriate to making rubber a “strategic” commodity in the meaningful sense of that term.

³⁰ Government interview, Oudomxai

³¹ Government interview, Oudomxai

³² Government interview, Oudomxai

Response 1: Waiting for prices to rise

With prices as low as they currently are, it is perhaps not surprising that many producers have chosen not to invest their scarce labor in rubber tapping, and are simply waiting for prices to rise. But as this and the next sub-section describe, this response is not as simple as it might at first seem.

Across the sites we visited, we heard consistently that waiting for prices to rise was the main way that rubber producers were responding to low prices. Due to the difficulty in quantifying this, our informants were only able to provide estimates, at least at the provincial and district levels; in one village, it was possible to exactly quantify the fraction of producers who had continued to tap versus those who had stopped. In general, the fraction of those who had stopped was high, and it tended to be even higher in Oudomxai, where the rubber was younger. The estimates that we collected are shown by location in Figure 6. Although in some locations we visited, no one provided a quantitative estimate, those that did usually put the fraction of untapped rubber around 50 percent or higher; the one exception was Ban Oudomsin, where villagers invested heavily in the switch to rubber, and where proximity to China has likely facilitated ongoing rubber sales. Although some of the numbers shown in Figure 6 may include a fraction of immature rubber trees (e.g. the 90 percent estimate for Oudomxai), most refer clearly to mature rubber only.³³

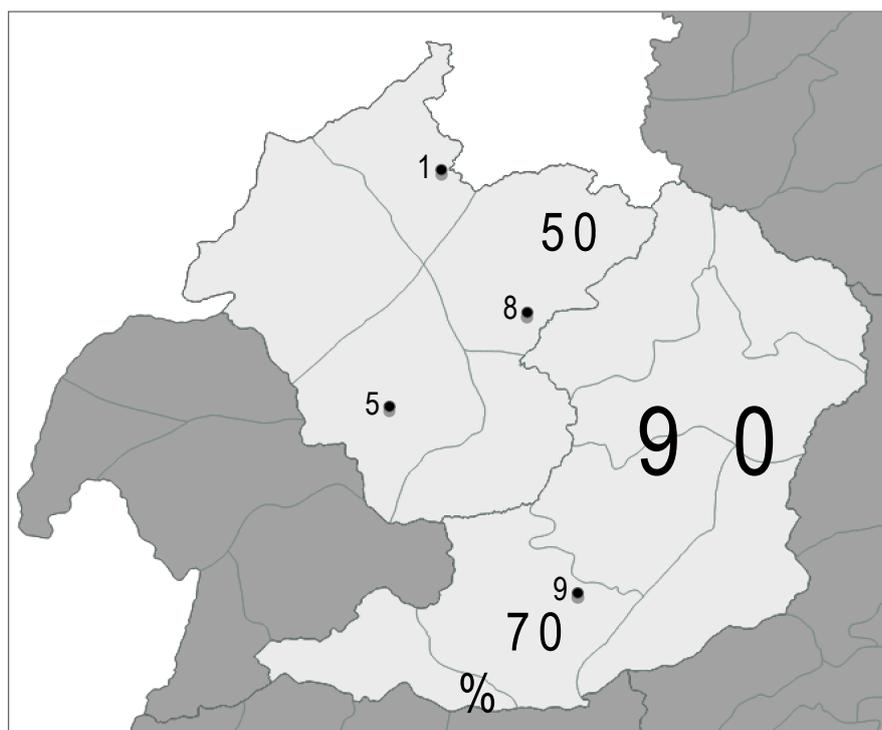


Figure 6. Reported fractions of un-tapped rubber for provinces (large font), districts (medium font) and villages (small font) where estimates were provided (source: field interviews)

Two things are going on here. On the one hand, there is an unfortunate timing problem: prices have fallen just as rubber plantations have matured widely, especially in Oudomxai. This has made rubber plantation *owners* reluctant to embrace the crop as actual *producers*. The difference in tapping rates between Luang Namtha and Oudomxai is suggestive of this, and other pieces of evidence confirm it.

³³ Interviews, Luang Namtha and Oudomxai

One of the villages we visited in Oudomxai exemplifies the Hat Nyao model's failure to launch due to the crash in rubber prices. The village's account of rubber production began with the standard pieces of the Hat Nyao story ("to establish rubber plantation is to replace opium production and to reduce the area of upland shifting cultivation"), and transitioned into an account of contract farming-based engagement with the Sino-Lao Rubber Company (cf. Section 1.2 above). But the intended plan went awry with the crash of the rubber price:

In the beginning, [the] Sino-Lao [company] came to consult with the province and district, and announced that if local people cultivate rubber, we will be able graduate from poverty. [We] followed the advice from the government staff at the province and district. In the beginning (2004–2005) a test plantation was planted on 100 ha of village common land. Land was still available in the village, and the provincial and district staff advised that this pilot plantation would allow local people to learn how to plant and manage rubber trees. But we have not learned anything from that pilot plantation. ... We knew the prices of rubber dropped in June 2014, and then the factory did not buy rubber and local people do not tap their rubber because of low rubber prices.³⁴

Likewise, provincial officials we spoke to noted the difficulties in convincing upland farmers in Oudomxai to enter the market as rubber producers right at the time when the prices was falling.

At present, only businessman and government staff working in the city are benefiting from rubber plantations in rural areas. Rubber belonging to local people has not yet been widely tapped. ... Tapping began in 2012, [but] the main difficulty is that local people do not want to learn how to tap rubber. ... It is not easy to change the ideas of local people from subsistence agriculture to commercial agriculture – local people still like doing shifting cultivation as their traditional practice.³⁵

As another official put it,

Rubber has not really contributed to improving local people's livelihoods because we just started tapping in 2013. Rubber is still new for our district and about 70 percent of growers did not tap their rubber in 2014 due to low prices.³⁶

The other issue involved with high rates of non-tapping is the consolidation of plantation holdings discussed in Section 1.2; this appeared with surprising regularity in explanations of why rubber growers were not tapping their holdings, and pointed to the difference between tapping larger plantations and tapping smaller ones (also see next sub-section). In explaining the reasons why such a high fraction of rubber plantations were not being tapped, many people we spoke to described labor scarcity of the kind that only occurs with non-household labor. While this is not synonymous with larger plantation holdings, it is a good indicator. As one village representative in Luang Namtha explained, the village has a few landholders with rubber plantations larger than 20 ha (and one even with 40 ha). Holdings of this size made the owners dependent on hired labor:

However, we do not have enough money for hiring labor for tapping our rubber. When prices fall to CNY 4 per kg, we have to tap our rubber by ourselves. In the case of households that have large rubber plantations, they tap only a little part of their rubber plantation based on their household labor forces.³⁷

³⁴ Village interview, Oudomxai

³⁵ Government interview, Oudomxai

³⁶ Government interview, Oudomxai

³⁷ Village interview, Luang Namtha

As an interview in another village explained, low prices were preventing a number of growers from tapping at all, on account of their dependence on a share-based form of wage labor:

*[Out of 20 households with mature rubber,] there are only two households that continue tapping – the rest are not tapping because of low rubber prices and no labor for tapping. The reason is that we divide the product 50-50 between the tapper and the plantation owner, but no one wants to tap.*³⁸

We heard variations on this from provincial and district officials in both Luang Namtha and Oudomxai, confirming that this pattern is widespread:

*[Many] rubber growers in this district have stopped tapping their rubber since mid-2014 due to low rubber prices. This is because they find it very difficult to find rubber tappers – even if the owner of rubber plantation provides 50 percent of the income from the rubber to the tapper [instead of 30 or 40 percent, the rate previously offered], nobody wants to tap because they prefer other kinds of work that are more profitable.*³⁹

*During the falling rubber prices, there are about 90% of growers do not tap their rubber because it is difficult to find tappers during the low prices of rubber plantation. [Many of] those who do not tap their rubber [due to this issue] are businessman and government staff.*⁴⁰

*My father-in-law also established rubber plantation for about 30 ha in Beng district. The rubber is ready for tapping – it's 8-9 years old – but we have a lack of tappers.*⁴¹

As these accounts make clear, it is not low prices *per se* that have caused many producers to pull their plantations out of production, but rather the relationship between low prices and the labor regimes necessary to tap the current configuration of plantations – including many larger ones in the tens of hectares and multiple thousands of trees per owner. The next sub-section examines the other side of this pattern, which is the reliance on household labor in the rubber plantations that *are* continuing to be tapped.

Response 2: Tapping with household labor

If we invert the values in Figure 6, they suggest that even with the large numbers of plantations not being tapped, a significant number of rubber owners – perhaps in the range of half of the owners in Luang Namtha and between 10 percent and a third in Oudomxai – are continuing to tap their rubber despite current low prices. Our interviews suggested that those who are continuing to tap are largely doing so with household labor.

This is not necessarily a good thing; household labor is effectively “cheaper” than hired labor, but it is not necessarily more efficient, since it can involve degrees of intra-household disparity such as high dependence on women’s and children’s labor (which are often valued lower by household decision-makers, often men); there can also be significant opportunity costs if, for example, children work rather than going to school. These types of questions were beyond the scope of our study, but the widespread dependence on household labor for rubber tapping as prices drop suggests that they may be becoming increasingly important (see Section 4).

³⁸ Village interview, Oudomxai

³⁹ District-level government interview, Luang Namtha province

⁴⁰ Provincial-level government interview, Oudomxai

⁴¹ Government interview, Oudomxai

Reflecting differences between wage labor and household labor, a number of our interviews described different price thresholds at which each of these would stop being economic. As the previous sub-section described, over the last few years, wage labor has become increasingly difficult to recruit to rubber tapping, given the standard form of payment *in rubber* rather than in cash. While there are data-related challenges of both timing and prices (when *exactly* wage labor stopped being economic, and how that related to prices at the time), the threshold for wage labor seems to be somewhere in the range of CNY 4-5 per kg, and perhaps higher. One village representative put it especially clearly:

*In the case of rubber prices at CNY 4 per kg, local people still gain benefit from their plantations. However, we do not have enough money for hiring labor for tapping our rubber. With CNY 4 per kg, we have to tap our rubber by ourselves.*⁴²

When it comes to the price threshold at which household labor stops being viable, our interviews got vague, however – and probably with good reason. In one of our government interviews, for instance, we heard that “if the price goes to CNY 3.2 per kg, local people can still tap using household labor; it’s only when hired labor is involved that it’s not worth it to tap when the price drops below CNY 4 per kg.”⁴³ But when we interviewed (later) the representative of the village rubber group that was being discussed, they told us that they would not sell their rubber unless they could receive a price of CNY 4 per kg.⁴⁴ The point of agreement here was that current prices had made it such that hired labor was too expensive, and that only household labor could be used under present conditions. But even this was implicitly called into question by another interview, which said that smallholders would only “tap widely” (i.e. at large numbers) if the price reached CNY 5 per kg.⁴⁵ Taken together, this suggests that current prices have pushed rubber tapping squarely into the realm of smallholder production only, and that those who are continuing to tap may be doing so not because the profits are good, but because they have already invested significant capital in their rubber plantations and are left with few other options. As one villager we spoke to put it, “Since we have rubber plantations, we have to earn from them, not just keep them there without doing anything; this is because we already spent a lot money and labor on [establishing] the plantation.”⁴⁶

Ban Nam Ngeun in Viengphoukha is an illustrative exception. According to our interview there, about 10 households have been cultivating rubber since 2000; these are middle-income families – neither the wealthiest nor the poorest – and they started planting rubber after they saw communities in Sing and Namtha districts doing the same. But unlike the “typical” upland rubber village in the north, Ban Nam Ngeun is located in the flatlands around Viengphoukha’s district center, and contains a large amount (58 ha) of lowland rice fields. As rubber prices have fallen, rubber-growing households have increasingly gone back to their earlier livelihood as rice growers, both for subsistence purposes and for sale. While they have continued to tap their rubber plantations – they sold 30 tons at CNY 4 per kg just prior to our visit – they increasingly see rubber as a secondary or “additional” livelihood source.⁴⁷

⁴² Village interview, Luang Namtha province

⁴³ Government interview, Luang Namtha

⁴⁴ Village interview, Luang Namtha

⁴⁵ Government interview, Luang Namtha

⁴⁶ Village interview, Luang Namtha. In a variation on the theme of limited options, one local government staff in Xai district said that villagers were continuing to tap their rubber trees because the company with which they had a contract had told them that this would help maintain high levels of production in future years (government interview, Xai district). This seems suspicious, given the widespread choice by many producers to take their plantations out of production while prices are low, but in any case highlights the need for good agricultural extension so that farmers understand their options.

⁴⁷ Ban Nam Ngeun village interview, Luang Namtha

While villagers were not happy about the falling rubber price, their livelihoods are fairly diversified and, as a result, comparatively resilient to changes in the rubber price. This is in strong contrast to the Ban Hat Nyao model, which emphasizes the *replacement* of (upland) rice production with rubber. Ban Nam Ngeun highlights the fact that rubber can be a secondary source of income even as the price has fallen, but only because additional land resources were locally available to help offset the risk.

Response 3. Land sales, leases and conversions⁴⁸

Sales and leases of rubber plantation land – the latter often in connection with conversion to other crops such as bananas – has been an increasingly common feature of the northern landscape in the last few years. As noted in Section 1.2 and elaborated here, rubber plantations sales are not new in the north, but the fall in prices since 2012 has interacted with them in a few different ways. Land leases, on the other hand, seem to be a newer phenomenon, and possibly a result of the interaction between plantation sales and falling prices.

Land sales

As noted above, officials we spoke to in Oudomxai described a situation that mirrored what Weiyi Shi found in her 2015 revisit to Luang Namtha: land sales by poorer households was described as “normal,” and involved buyers who were described as businessmen from the provincial capital as well as Chinese investors. This situation was described as the background or context within which the fall in rubber prices had taken place; since the drop in prices, demand for plantations had fallen, and increasingly “no one wants to buy rubber plantations.”⁴⁹ We heard about this lack of interest in buying rubber plantations from others as well; one government representative in Xai district put it bluntly: “Many people would like to sell their rubber plantations [now], but no one wants to buy.”⁵⁰

This does not seem to be the full story, however. In the longer term, many people we spoke to believe that rubber prices will rise again; from this perspective, the current slump in prices actually represents a good time to buy plantations, assuming they can be purchased cheaply. Shi reported that this type of strategic economic behavior was happening by the Yunnan Rubber Company in Luang Namtha; she described Yunnan, a state-owned enterprise, as different from other Chinese companies operating in northern Laos in that they were investing for the longer term, buying new rubber plantations (often from other Chinese companies which were more interested in short-term returns) despite not being able to tap the plantations that they already had (Shi 2015: 6). Our work lacked the same focus on particular companies, but we heard from government staff, who had themselves “heard unofficially,” that “some villagers had sold their rubber plantations to rich people in the city” in 2014.⁵¹ Our informants declined to discuss the details, but the fact of plantation sales by villagers to wealthier individuals from urban centers suggests that not *everyone* is uninterested in buying rubber plantations in the current low price environment, and that it is not only the Yunnan Rubber Company that is looking at rubber as a strategic investment.

What is clear is that the already-difficult situation faced by many rubber smallholders has become more difficult as prices have dropped. We heard about continuing sales, both of independently owned plantations and those within existing contract farming relationships; in the latter, the buyer was reported to take over the contractual relationship with the company.⁵²

⁴⁸ Banana conversion is also reportedly occurring on a wide scale in Bokeo province (Stuart Ling, post to LaoFAB discussion forum, 25 September 2015).

⁴⁹ Government interview, Oudomxai; full quote in Section 1.2

⁵⁰ Government interview, Oudomxai

⁵¹ Government interview, Oudomxai

⁵² Government interview, Oudomxai

In a number of instances debt seems to be a driving factor for plantation sales, “when local people need money, for example to pay for a loan or credit taken from bank”⁵³ (also see VT 2015a). In some cases, contract farming companies have crossed over into the practice of cash lending, in contrast to the share-based mode of credit that underlies their business model (see Section 1.2). As this has led to debt and plantation sales, local authorities have begun to see the system as “broken”:

*The “2 plus 3” contract farming scheme has been broken because local people do not have money for necessary livelihoods and they borrow money from the investment companies and do not have money to pay back to the company. Then they sell rubber plantation to the investor.*⁵⁴

This dynamism of plantation turnover and consolidation by wealthier holders has made many of the government efforts to keep track of rubber statistically out of date. Given the risks involved, the same individual continued: “We need to check how many companies still keep the ‘2 plus 3’ scheme and request advice from district and provincial authorities about how to deal with the situation.”

Land leases and conversions

In parallel to the abovementioned sales of rubber plantations, the last few years have also seen a growing incidence of land leases to agribusiness companies, many of them Chinese. Sometimes these leases result in the conversion of the land involved from rubber to other (currently higher-value) cash crops like bananas and sugarcane – although we also heard reports of rubber plantation owners diversifying into other crops in order to offset their losses from low rubber prices.⁵⁶ While detailed data was beyond the scope of our research, these land leases seem to not be limited to the smallest and poorest rubber producers, who are often described as those most likely to sell their rubber plantation to wealthier buyers (see above and VT 2015a). In contrast, leases for bananas and other high-value crops seem to be located in lowland areas (e.g. in Sing and Long districts), often adjacent to water sources, and involve landowners who have larger amounts of land. In one telling interview, a government staffer described having *too much rubber* to manage as one of the reasons rubber-holders were deciding to lease their land for conversion to bananas.⁵⁷

The high cash rents being offered by agricultural entrepreneurs are one reason why landholders are likely deciding to lease their land; our interviews reported lease rates in the range of LAK 15-16 million per ha per year, and in some instances as high as LAK 20 million.⁵⁸ In one case, Chinese investors were reported to have paid not just to lease the land, but also an additional CNY 100 per rubber tree cleared.⁵⁹ This is important not only because of rubber plantation clearing may cause the smallholder to lose their initial investment (assuming the wood is not being sold), but also because in cases of contract farming, smallholders may be fined by companies since the companies own a fraction of the trees. This was being disputed while we were doing our fieldwork in Oudomxai. As recounted by a government interviewee in Houn district:

Just this morning we had a meeting about rubber plantations among related authorities at the district level to discuss the reasons that local people cut rubber trees; this is because the company does not follow the agreement. We agreed to review all contracts and make a report to the provincial level about to the problem of clearing rubber plantations.

⁵³ Government interview, Oudomxai

⁵⁴ Government interview, Oudomxai

⁵⁵ Government interview, Oudomxai

⁵⁶ Cecelie Friis (personal communication with the second author, February 2016)

⁵⁷ Government interview, Luang Namtha

⁵⁸ Government interviews, Luang Namtha and Oudomxai

⁵⁹ Government interview, Luang Namtha

In the beginning the companies planned to fine local people LAK 100,000 per rubber tree, but we negotiated with the company and they agreed to fine at LAK 60,000 per tree. The total fine amount is more than LAK 1.5 billion [since the company has lost] 2,775 trees. Some households have to pay about LAK 40 million.⁶⁰

The economic costs at stake here are significant; even the lower compensation value of LAK 60,000 per tree adds up quickly, since rubber plantations typically contain more than 400 trees per hectare. The potential for debt, whether through the conversion of contract farming arrangements into cash compensation or via bank loans that need to be repaid despite the crash in rubber prices, is thus large. As elaborated below in Section 4, questions of ownership and contractual obligation are likely to be substantial; the only question facing those involved, including government authorities, is how big of an issue this actually is.

This is a difficult question in itself, given the rapid changes in the landscape and the challenges of getting accurate data about the extent of land conversion (in part, but not only, due to the ban discussed in Section 3.1). Our research reported various numbers for two districts in Luang Namtha, including one of the districts we visited (Sing); these are shown in Table 1.

Table 1. Reported conversion from rubber to other crops in two Luang Namtha districts

	Trees	Ha	Households	Villages	Source
Sing district	131,400	292	712	15	PICO
		400			PAFO
Long district	25,650	57	46	1	PICO
	"No good data"				PAFO

Beyond these quantitative figures, conversion from rubber to other land uses was also reported in Viengphoukha, Xai, Houn and Beng districts, where it was linked to smallholder maize production as well as land leases to Chinese banana growers, in one instance after the (also Chinese) rubber company failed to tap as promised. While the conversion in Xai district was described as being limited to "a few households" (and was denied by another source, who insisted that conversion was only taking place in Houn and Beng districts), the lack of "detailed data" was acknowledged; we encountered a similar reticence to provide details in Viengphoukha.⁶¹ In Houn, the extent of conversion from rubber to bananas was described as more substantial, involving multiple villages, multiple years of clearing, and a question of whether rubber had been cleared deliberately or lost to shifting cultivation fires by accident. But the conflict was clearly related to the fall in prices:

The reason local people clear is that they do not have any benefit from rubber plantations. Even when the rubber reached eight years [of age], the company did not tap due to low rubber prices.⁶²

⁶⁰ Government interview, Oudomxai

⁶¹ Interviews in Oudomxai and Luang Namtha

⁶² Government interviews, Oudomxai

⁶³ We use the term *collective action* in a general sense, not intending to imply the legal distinction between "collective" and "cooperative" that is sometimes made in Lao law.

Response 4: Collective action

Collective action among rubber producers in order to create bargaining power and thus command higher prices is a major policy objective of provincial authorities in Luang Namtha.⁶³ While the creation of marketing cooperatives was promoted even before rubber prices began to drop, the formation of marketing cooperatives has been a major pillar of the official response of the last four years (see Section 3.1 above). Marketing cooperatives are now widely known among rubber producers, but with some important exceptions such as Ban Hat Nyao, their establishment remains limited.

Ban Hat Nyao

The push for marketing cooperatives is generally acknowledged to be modeled on the successful experience of Ban Hat Nyao. Representatives of Hat Nyao who we spoke to noted that their cooperative was not formed for marketing purposes per se, but earlier in the plantation process to share technical skills for growing and tapping. The cooperative was formed in 1994, while the power of cooperative marketing emerged later, when the village began to sell its rubber in 2002. Since then, the producers in Ban Hat Nyao's marketing cooperatives have expanded to include not only residents of Ban Hat Nyao, but also other villages in the area:

*At the present, in total, we have 15 units belong to our rubber cooperative; of which, 6 units come from other villages who are our neighbors. These include units of rubber cooperatives from Ban Bouamphieng, Viengthong, Viengkham, Phoxai and Nam Houay; the remaining unit is combined of individual smallholders from other villages in the area.*⁶⁴

The cooperative charges members a fee equivalent to a few percent of the price of sale, and uses the money to run the cooperative and support the village development fund. In return, members get the benefits of cooperative marketing. Reflecting their origins in independent (although state-subsidized; see Alton et al. 2005: 51) financing rather than the share-based contract farming described in Section 1.2, the growers of Ban Hat Nyao do not have a preexisting contract with any particular buyer:

*We have to find buyers every year. We discuss among villagers who should be our buyers – who will give us the highest prices. This is easier than having contract with a particular company, which would mean we don't have much option to negotiate rubber prices. ... Our rubber cooperative works during the period of time of selling rubber product. In order to sell our rubber each year, we have to hold a meeting in order to discuss with all villagers and agree on prices.*⁶⁵

The combination of independence and a substantial membership has helped the cooperative's members in the face of falling prices:

*Many households in our village continue tapping their rubber tree [even now]. Although rubber prices are dropped, we (all villagers in this village) haven't had to sell our rubber lower than CNY 4.1 per kg. Before selling rubber product every time, we discuss and agree among local people and all people in the village sell rubber in the same prices. We, as a cooperative group, can sell rubber at a higher price to the Yunnan Factory [in Luang Namtha] than what is posted at the factory; for instance, when the factory posts at CNY 3.5 per kg, we could get at least CNY 4 per kg.*⁶⁶

⁶⁴ Village interview, Ban Hat Nyao

⁶⁵ Village interview, Ban Hat Nyao

⁶⁶ Village interview, Ban Hat Nyao

Discussing plans for a trip to China to scout potential buyers, village representatives mentioned their own version of a floor price, although in this case enforced by the power of collective action:

We discussed among villagers here in our village, we should not sell our rubber product in prices lower than CNY 4/kg. This price based on the prices of rubber product in China (Meuang La, Meuang Mang and Xieng Houng). ... In case when rubber prices in Luang Namtha drop lower than CNY 4 per kg, we have to cross the border to China in order to find buyers who would pay at least CNY 4. In fact, there are many buyers come to our village and discuss about buying rubber from us.⁶⁷

Scaling up with limited success

Two of the other villages we visited had success with cooperative marketing. In Ban Nam Ngeun (discussed above), residents discussed their success selling their rubber together, and reported a price increase of CNY 0.5 (from 3.5 to 4) per kg in their last rubber sale. In Ban Mokpalai (Oudomxai), where many residents had relatives in Ban Hat Nyao, representatives had replicated the Hat Nyao model's efforts to draw members from surrounding villages:

We have a rubber-buying group in this village that has more than 100 households as members. There are 12 households from this village; from Ban Nathong, 15 households; Ban Nongdin, 25 households; Ban Nong Buadaeng, 10 households; Ban Nafang, 9 households in two villages; Ban Mai, 10 households; Ban Nam Oun, 20 households; Ban Vanglam, 1 household; Ban Na Ngeun, 1 household; Ban Langching, 7 households; and Ban Phonsavan, 2 households.⁶⁸

Unlike in Ban Hay Nyao, however, the cooperative in Ban Mokpalai reported not charging its members, apparently relying on the benefits of increased prices to offset organizing costs.

Beyond these examples, however, government representatives noted that cooperative marketing had yet to scale up significantly, despite the advantages. We heard, for example, in Namtha district:

At the present, a cooperative is only formally established in Ban Hat Nyao, while people in other villages around the district still sell their rubber to the buyers individually. In some village, people also group together and sell their rubber in groups, but these groups are still not cooperatives like in Ban Hat Nyao. The benefit of creation of rubber cooperative or rubber group is that local people will have more power to negotiate with market or buyers in order to buy their rubber lumps in a higher prices than what they sell in individual households, which about CNY 0.5 to 1 per kg higher than selling individually.⁶⁹

Three issues may help explain the lack of marketing cooperatives on a wider scale. One is a lack of understanding about how current cooperatives actually work, and in particular, the extent to which the cooperative head actually makes money. In one village we visited, villagers told us:

If we establish a rubber group or association, we would probably gain higher prices. But local people do not want to be members of the group or association because they do not want to pay a percentage to the head of the group.⁷⁰

⁶⁷ Village interview, Ban Hat Nyao

⁶⁸ Village interview, Ban Mokpalai

⁶⁹ Government interview, Luang Namtha

⁷⁰ Village interview, Oudomxai

A second and more substantial reason is that low prices have driven so many producers out of production that there are not enough of them to act collectively. Residents in one village where all but eight households (out of 50-60) had stopped tapping their rubber explained that, “We assume that we will be able establish a rubber cooperative in our village in the next few years when rubber prices are getting better and when people in this village widely tap their rubber trees.”⁷¹

A final reason may concern the relationship between group-based aggregation and the consolidation of holdings discussed above. Marketing groups work best when the aggregation of products for sale has an impact on sale price. If and when producers already have sufficient volume to command higher sale prices, marketing groups may provide fewer benefits. We were not able to investigate this possibility given the lack of detailed data on plantation holdings, but the evidence we collected suggests that this is nonetheless a possibility.

Response 5: Mobility

In addition to aggregating their rubber prior to sale, a number of rubber producers we spoke to described transporting their rubber themselves in order to find more attractive prices. This was described above in the case of Ban Hat Nyao, but as this section describes, it also occurred more broadly.

According to technical government staff in Oudomxai, “There is not a standard price for rubber in [this] province. Many growers sell their rubber in Luang Namtha; some traders also come to the province for collecting rubber from local people.”⁷² And as villagers from Oudomxai described, prices vary even within Luang Namtha, leading them to make different choices about where to take their rubber to sell:

We know the rubber prices from traders and from [relatives] in Ban Hat Nyao. ... We sometimes travel Na Teuay [near the border crossing at Boten, on the road from Oudomxai to Luang Namtha] to sell our rubber to the Tai Chiang factory, which gives LAK 500 per kg more than prices [offered by traders who come to] this village. Other times, we sell our rubber to the Yunnan [Rubber Co.] factory in Namtha, which offers LAK 500 per kg more than the Tai Chiang and LAK 1000 per kg more than people buy in this village.⁷³

In the absence of widespread cooperative marketing, intermediary companies have stepped into this niche and begun to capitalize on the price difference that comes with aggregation. We met one such buyer on the road from Luang Prabang to Oudomxai. He purchased rubber from local growers at the same price posted at the Yunnan Rubber Co. factory in Luang Namtha, effectively saving growers the cost and time of transporting it.⁷⁴ But presumably he was able to sell the rubber for a price similar to the cooperative marketing prices mentioned above, making roughly CNY 0.5 to 1 per kg extra; this would be offset by his own transportation costs, but it has apparently proven sufficiently reliable as a business model that it is persisting despite the fall in prices (Figure 7).

⁷¹ Village interview, Luang Namtha

⁷² Government interview, Oudomxai

⁷³ Village interview, Oudomxai

⁷⁴ Interview with rubber trader, Luang Prabang



Figure 7. Rubber sale to intermediary company, Luang Prabang Province. Rubber arrives by truck, bicycle and foot (A, B), is weighed and marked (C) and then loaded into company's truck (D) for transportation to Yunnan Rubber Co. factory in Luang Namtha

3.3. The price of rubber

All rubber growers know that rubber prices are based on the global rubber market.

Government interview, Oudomxai

One of the most consistent findings across our fieldwork was the understanding that the drop in rubber prices is caused by changes in the global economy. We heard this repeatedly in all of the places we visited. Sometimes it appeared in the context of farmers explaining their choices – for instance, their decisions not to tap, or to rely on household labor only (see previous section). In other instances, it appeared in the context of local officials explaining to growers that there was nothing that they could do about the drop in prices being offered by traders, except wait. As one district officer told us:

There are some villagers who came to the office to raise the issue of low rubber prices, and the office recommended them to talk to the investment companies directly. However, issue of falling rubber prices is not easy to deal with because it is the issue of global rubber market.⁷⁵

This explanation is repeated regularly at multiple levels. As one informant put it, the former Minister of Agriculture and Forestry had confirmed this explanation on a visit to Luang Namtha, noting that “the problem of rubber prices is not only the issue in Laos, but around the world because of the global financial crisis.”⁷⁶

⁷⁵ Government interview, Oudomxai

⁷⁶ Government interview, Luang Namt

A provincial-level official reportedly heard the same thing from a Lao government representative in Kunming, after asking about the possibility of inquiring with the Chinese government about low rubber prices. “The response from ambassador was that we have to wait until the world rubber price goes up.”⁷⁷

But as our research revealed, as important as the global economy is, it is only part of the story. Low prices *are* to some extent the result of changes in the global economy, but two additional issues are important on a more local scale. The first concerns the relationship between the Chinese economy and the global rubber price, and the second concerns the relationship between prices in China and prices in Laos. We focus here on the second of these, but in order to fully understand where “farm-gate” prices in Laos come from, it is important to start with the first.

The global economy and the Chinese rubber price

One of the notable details about the recent fall in global rubber prices is that it seems not to have been reflected in Chinese rubber prices for at least six months, and perhaps longer. This is difficult to tell, because even though monthly *global* rubber price data is easily available (see Figure 1), monthly data about rubber prices in China or Laos is far more difficult to collect. During our fieldwork and data analysis periods, we were unable to get this information, and in fact we heard from sources who have worked in both China and Laos that time-series purchase-price data in China is not readily available.⁷⁸ But if interview data about price changes in Laos is compared to the global price data, a lag of more than a year – and possibly up to a year and a half – occurs. This is clear from comparing Figure 1, which shows global rubber prices beginning to drop in early 2011 (first in February and then, following a brief rise in March, from April onward), to farmers’ recollections. We heard repeatedly in our village interviews that rubber prices began to fall in 2012, first in Namtha district, then in Sing, and then in Viengphoukha. The first of these, in Ban Hat Nyao, was the most precise, dating the fall in prices to *late* 2012,⁷⁹ whereas the other two just said that prices began to fall in 2012. Despite the imprecision, this is well after mid-2011.

In addition to highlighting the need for better data on local rubber prices, this mismatch provides a reminder that rubber prices in China are likely subsidized by the government. In 2005, Alton et al. wrote that state subsidies, including “national price supports ... at attractive levels” formed the basis for the success of the Chinese rubber sector, and that although China’s membership into the WTO “may have implications for Chinese price supports for rubber” in the future, these price supports were in effect then (Alton et al. 2005: 22, 75). Ten years later, the lag in price changes suggests that some form of Chinese price support may still be in effect; while not a bad thing as such, it suggests that Chinese government policy plays an active role in shaping prices in addition to global economic demand. Unfortunately, this protective dimension of Chinese policy does not carry over into Lao rubber prices.

Rubber prices in China and Laos

Lao rubber producers benefit from Chinese government policies (so far as these exist) which buffer the purchase price for rubber against the uncertainties of the global economy. But there is another way in which Chinese rubber policy does not help Lao growers, and which counteracts any beneficial effects of Chinese price supports: the import quota system. As noted above, most of the buyers of Lao rubber – and all of the *ultimate* buyers, after the middle-men like those shown in Figure 7 have sold their rubber – are a small number of Chinese companies.

⁷⁷ Government interview, Luang Namtha

⁷⁸ Mélanie Canet and anonymous source (both pers. comm. with the second author, December 2015)

⁷⁹ Village interviews, Luang Namtha. Cecelie Friis (personal communication, February 2016) reports hearing about an earlier price drop in August 2012.

(Our interviews identified three such companies in Luang Namtha and four in Oudomxai.) These companies have basic rubber processing facilities in Laos and, more importantly, quotas to import rubber into China. Processing facilities and quotas are related: Lao rubber producers sell rubber lumps (*yang kohn*), but import quotas are for rubber sheets, made from rubber that has been already dried (*yang heng*) and pressed; processing facilities are the key intermediary step for rubber buyers between the farm gate and the further processing steps that occur within China (Shi 2008; PAFO 2013).



Figure 8. Posted price at the Yunnan Rubber Co. factory in Luang Namtha, August 2015

Rubber companies post their purchase prices at their processing facilities (Figure 8). These prices refer to lump rubber sold in small quantities, and are the basis for popular and policy discussions about rubber prices in northern Laos; when farmers or officials or the *Vientiane Times* refer to rubber prices, they generally mean these posted prices. Unfortunately, there does not seem to be a record of these prices that is readily available to researchers. We inquired at the factory where the photo in Figure 8 was taken, as well as with provincial government officers; although the processing facility posts prices regularly and provincial officials monitor prices every month, neither were able to give us detailed data about how prices changed over time; the best we were able to collect were the annual average prices shown in Figure 1.

Given these limitations, we nonetheless thought it was important to try to compare price data for Laos and China. This was because in addition to the comments (mentioned above) that explained current low prices on falling global demand, we heard references to the power that traders exercise over the cross-border trade. These were especially clear in the case of growers who had been to China to try to arrange purchasing of their rubber and who were thus aware of the Chinese price context as well as the Lao one:

[We] try to find the ways to get higher rubber prices as we can. However, the problem is Chinese middlemen do have to quota to import rubber from Laos to China. In fact there are many people in China would like to buy our rubber product, but they cannot import rubber product to China without received provided quota from Chinese government. ... In this case, we would like to request the government of Laos to negotiate with Chinese government in order to freely export of rubber product from Laos to China. If we can freely export our rubber product to China, we will have more options and more buyers and we will get higher prices than what we have sold at the present.⁸⁰

We heard frustrations from government offices as well. One district-level officer we spoke to noted the challenges of relying on companies for price information, even with the recommended prices from Luang Namtha: “However, these information sources cannot indicate whether the traders are cheating local people. We should have official sources of information about the prices of rubber.” The same person expressed frustration with the standard explanation of why prices were so low:

I think the most effective strategy for rubber prices is that the government of Laos should have contract with Chinese government to set rubber prices together. Please do not state that rubber prices are based on prices in the market because we do not know the certain prices of the rubber market – where are the markets that prices have been based on, in China?⁸¹

The limited data that we were able to collect suggests that these suspicions and frustrations were well founded. Figure 9 compares price data for Laos that we collected in our interviews, including the annual average price statistics mentioned above and shown in Figure 1, with data that we found about rubber prices in China by looking in published sources and online. In order to make some of the Chinese comparable with Lao “farm-gate” prices, we had to adjust it for water content, since rubber prices are often reported in China for dry (rather than lump) rubber.⁸² As Figure 9 shows, the years for which comparable data is available – 2003, 2004, 2006, 2014 and 2015⁸³ – imply that Lao prices are roughly half those on offer in China.

While some of this difference may be due to the quality of the rubber being sold, and a small portion (probably between 5 and 10 percent⁸⁴) is attributable to the export taxes levied by Lao customs, the majority of the difference in price seems to be due to the market power exercised by quota holders.

⁸⁰ Village interview, Luang Namtha

⁸¹ Village interview, Oudomxai

⁸² We used a conversion factor based on one of our interviews, which translated into an assumption that lump rubber is 57 percent latex. Most conversions use a factor of 60 percent (anon. pers. comm., December 2015).

⁸³ In 2008, Chinese values represent high and low values and are not directly comparable to the Lao average.

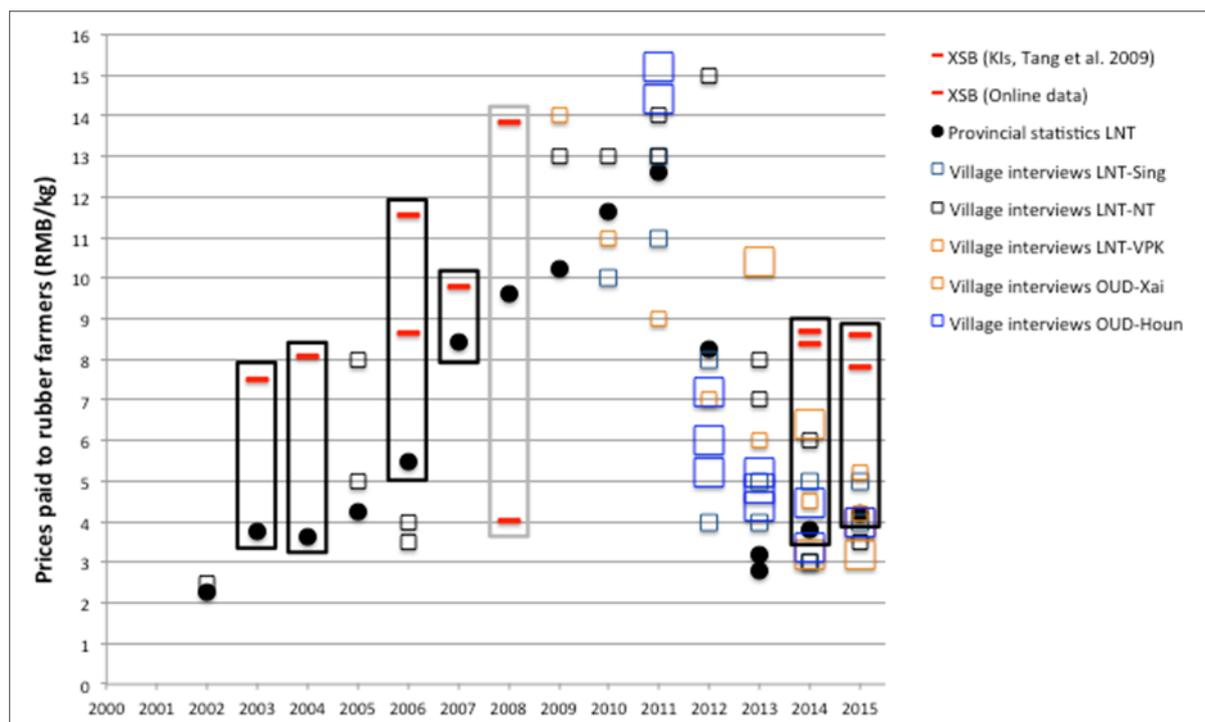


Figure 9. Farm-gate prices in northern Laos versus Xishuangbanna, Yunnan. Source: interviews (Laos data) and secondary and online sources (China data).⁸⁵

Although the data shown in Figure 9 has a number of caveats (and, as above, highlights the need for better statistics about rubber prices), it is supported by not only the qualitative evidence (quotes) presented above, but also this more specific account from one of the villages we visited, which put the price in China almost 80 percent higher than the price in Laos:

*We feel that rubber prices in Laos are still low compared to the prices in China, which they get CNY 7.5 per kg, while we only get CNY 4.2 per kg. ... We talked to our relatives and friends in China, and we know that rubber prices in Laos are not fair for us because prices of rubber in China are much higher than in our village, which is not really fair for farmers like us.*⁸⁶

3.4. What *should* the rubber price be?

During the course of our interviews, we heard many opinions about what the price of rubber *should* be. These statements often simply reflected the fact that prices were far lower than producers had expected, and that good livelihoods based on rubber alone were difficult, if not impossible, in the current context. Although our cataloging of normative statements about rubber prices do not carry the validity of a survey, we believe that they are worth presenting nonetheless, if for no other reason than to encourage follow-up. We present a full list of the normative statements we heard about rubber prices in Annex VI; here we briefly discuss three issues that stood out.

⁸⁴ Village interview, Luang Namtha

⁸⁵ China data comes from Tang et al. (2009); <http://laoban.xianhuo186.com/dongtai/nonglin/59308.html> and <http://www.agri.cn/V20/SC/scjghq/xjhq/sczw/201511/P020151104340014178220.pdf> (accessed Nov. 2015 with translation assistance from Weiyi Shi).

⁸⁶ Village interview

First, there was a relatively consistent finding that a “good” price for rubber was in the range of CNY 7-8 per kg; this was the level at which people we spoke to believed that rubber growers could make a living from rubber, not depend on other sources of livelihood, and actually escape from poverty. In other words, this was the approximate price level at which the initial policy rhetoric about rubber as a priority crop for upland development, poverty alleviation and the elimination of shifting cultivation would actually be valid. It is worth pointing out the geographical bias in this finding, however: price expectations seemed to be, based on our interviews, higher in Luang Namtha than in Oudomxai. The six highest prices discussed all came from Luang Namtha; these ranged from CNY 10 to CNY 6 per kg, clustering in the range of CNY 7-8 per kg. In contrast, the highest normative price mentioned in Oudomxai was LAK 7,000, or roughly CNY 5.6 per kg.

Second, normative statements about prices nonetheless reflected what seems to be a substantial tolerance for lower rubber prices – those in the range of CNY 6-5 per kg, and in some cases even down to CNY 4. This acceptance was expressed more often by government officials than by growers themselves, but in two cases, it appeared in village interviews as well. At this price range, few people we spoke to saw farmers exiting poverty or doing well, but they saw them as nonetheless breaking even, getting by, surviving and so on. While “just getting by” is certainly better than the alternative, this discrepancy between official rhetoric and acceptance of lower prices suggests that expectations for rubber-based livelihoods, while still present, are lower than they were during the 2000s.

Third, as one interviewee from Oudomxai pointed out, the credit-based model of contract farming (see section 1.2) means that rubber producers who are involved in contract farming relationships effectively take a price cut anyway; this person thus suggested that prices be increased by roughly 30 percent *over* the base price, in order to compensate contract farmers for the fact that they have to provide companies with at least some of their rubber “for free” (i.e. as a repayment for the initial loan). While this may not be a realistic policy expectation, it nonetheless highlights the challenges faced by contract farmers who have effectively traded away a substantial fraction of their rubber production up front due to their crediting arrangements. This type of statement, despite its dubious logic, is nonetheless indicative of the frustrations with low prices that currently exist throughout northern Laos.

4. Discussion

4.1. Rubber: Boom crop or strategic commodity?

Rubber is widely referred to in Laos as a strategic crop, but what does it actually mean to *treat* an agricultural crop strategically? Generally, the answer to this question involves state intervention, acting on the premise that some commodity sectors are too important to be left to the private sector alone. Rubber has generally been seen as one such sector due to its size and, in the north, its importance as source of “fixed” livelihood for upland communities who might otherwise be tempted to grow opium. Plantation establishment during the 2000s is often estimated at roughly 300,000 ha nationally, and a substantial fraction of this – maybe a third or so – is located in the north where the smallholder model was dominant. Even as plantation sales in recent years have eroded to some degree the smallholder nature of the rubber sector in northern Laos, rubber is still important to many smallholder livelihoods through both independent production and contract farming.

Under current conditions, however, this may not last – or at least it may not last at a significant scale under conditions that are socially beneficial. The last decade or so has seen rubber behave in the manner of classic “boom” crops, in which producers large and small flock to the commodity when prices are good, but then leave it at varying rates (depending on their vulnerability to market shocks) as prices fluctuate over time. Price fluctuation tends to select for a combination of speculation – buying when prices are low simply for the purpose of selling when prices rise – and long-term consolidation by larger actors who are able to mobilize capital when times are tough (i.e. when prices are low). Although this study did not investigate the rationales for plantation purchases in detail, the limited evidence that we found was consistent with both of these patterns.

What is clear is that smaller producers who have remained in the rubber sector are rapidly becoming dissatisfied with the crop (also see VT 2014e). As one village representative put it, “In the beginning, we thought that we would gain household income from rubber plantation for improving our livelihoods; unfortunately, prices of rubber are now dropped, and we lose our expectation that rubber plantations will improve our livelihoods.”⁸⁷ Another village interview hinted at the potential for villagers to interpret low prices as a function of government decisions rather than just the global economic situation:

*We would like to request to the concerned authorities at both provincial and district level to check why prices of rubber has dropped so much these days; is it because the concerned authorities collect high tax from rubber traders/buyers or is it because the world market for rubber product?*⁸⁸

These types of beliefs among smallholders suggest that the current approach has put authorities in a difficult situation in two ways. As discussed in Section 3.1, one of the responses to falling prices by state institutions has been to *decrease* the taxes that rubber companies pay; this has hurt public revenue collection, which has been less than expected for several years, in part due to companies that “have tried to avoid paying taxes to the government via various means” (VT 2015b). At the same time, however, quotes like the one above from villagers highlight the fact that this may not be widely known, and that some people link low prices with poor government performance. In this sense, smallholder dissatisfaction and discouragement due to low prices is not only an economic issue, but potentially a political one as well.

⁸⁷ Village interview, Luang Namtha

⁸⁸ Village interview

A more regulated, “strategic commodity” approach may thus be warranted. Laos has a long history of identifying certain sectors as strategic, and creating or retaining significant state control in order to influence the behavior of the market more than if conditions were left to private actors alone. Among the most notable areas where this has occurred are the forestry and energy sectors (Walker 1999; Wyatt 2004; MAF 2005). In both cases, state intervention was rationalized as a way to counterbalance the risks of leaving the sector largely in the hands of the market, especially in contexts where commodity values were large, where substantial power was exercised by foreign buyers, and where local conditions required a strong regulatory hand. For reasons described above, the Lao rubber sector is arguably in a similar situation today.

4.2. Regulatory options: Beyond the “on-off” approach

State regulation is hardly absent from the Lao rubber sector, but it has been uneven and, in some cases, hard to see or even counter-productive. As Section 1.2 describes, government support played a significant role in the establishment of the Hat Nyao smallholder model, as well as in subsequent efforts to scale it up. The promotion of contract farming, both in its original “2 plus 3” form and, when this received low uptake, through the more coercive “1 plus 4” variant, relied heavily on state-led efforts to convince upland farmers to become smallholder rubber growers. But an important change also accompanied this model: unlike the publicly subsidized loan that made the Hat Nyao model economically viable, the contract farming model relied on a credit model controlled by the private sector, and that – despite being subsidized by the Chinese government, allegedly to help smallholder farmers transition away from opium production – ultimately claimed much of the future economic value, and thus has proven to be economically unsustainable as farmers either rejected the model or sold their plantations prior to maturity. Both before and during the low-price environment that has occurred since 2012, many of the rubber producers in northern Laos have faced state intervention that was far less supportive of their livelihood needs than the state efforts originally used to help Ban Hat Nyao.

It is essential to learn the right lessons from Ban Hat Nyao. In addition to the lesson that hard work and community cohesion are necessary for success, the need for a stable, decent price environment should by now be apparent; this often goes unrecognized, but the evidence presented in Section 3 should, hopefully, begin to change the story. The importance of addressing the market (and specifically the *price*) context for rubber highlights the limits of current responses to falling rubber prices, which have thus far replicated the “on-off” approach to regulation typical of earlier responses to investment-related issues (e.g. the moratorium approach to land concessions). The findings presented above highlight both the possibilities of, and the need for, a more graduated and multi-faceted approach to regulation – an approach more in line with the “strategic commodity” goal described above. Below we discuss four such options that could be used in combination with one another.

Option 1: Floor prices and other law enforcement

Historically, contract farming has had mixed results for producers, whose commitment to sell their product to a single buyer has often worked to their disadvantage (Little and Watts 1994). But one of the advantages of contract farming is the investor’s obligation to purchase the product, even in times of decreased demand. Contractually specified floor prices are one classic approach to protecting farmers from the extremes of boom-and-bust economies. But in order for floor prices to be effective, they have to be enforced, and that means they have to be understood by farmers and state officials alike. The situation we heard described in our interviews, in which floor prices were deemed to be prohibitively high for the companies involved, indicates a misunderstanding of floor prices both in theory – low price swings are *precisely when* floor prices are relevant – and in

the current situation, where most (if not all) of the Chinese companies involved in the cross-border rubber trade have received a number of subsidies (through the opium poppy replacement program, as well as the de facto subsidy created by controlling a scarce and valuable import quota); in such a context, arguments that companies cannot afford to pay floor prices are questionable at best.

One problem is that rubber was promoted so heavily as a crop with high and sustained demand; in such a context, regulation on behalf of struggling farmers is less likely to be needed. Floor prices – and enforcement of the “fine print” contained in contracts more generally – are more likely to be followed if the risks of an uncertain market are discussed explicitly in advance. This did not often happen, and now the challenge is to switch from a context where prices are negotiated to one where they follow agreements that were agreed when producers had more power – i.e. before they agreed to plant.

Although it was beyond the scope of our work, we heard a number of references in our interviews to the need for more or better law enforcement in relation to rubber prices. It is possible that this referred to floor prices, but other contractual requirements – as well as other legal requirements more generally – could also be relevant. One of the situations described above in Section 3.2, in which contract farmers in Houn district had cut down their rubber trees and planted something else, is instructive: in defending their decision to cut down the rubber trees, villagers gave the reason that the company had not followed its end of the agreement; the company, in contrast, was attempting to fine villagers for the trees, and local officials were caught in the middle. Whether the terms of the contract offered additional protection for farmers than the reduced fines that district officials agreed to on their behalf (see p. 24) is a question very much worth pursuing. Given the protections that such an approach might give to smallholders, it is not unreasonable to expect that a regulatory approach based more on contract enforcement would have helped maintain – and could still help recreate – a smallholder-dominated rubber landscape in northern Laos.

Option 2: Price supports and other subsidies

An even more active approach to regulating the price environment may be necessary if the goal of a smallholder-dominated rubber landscape is to be realized. As noted in Section 3.3, Alton et al. (2005) named “attractive” national price supports as one of the pillars of success for China’s rubber sector; the other pillar they named was state farms, which received substantial subsidies through their entire business model. In the last decade, as Chinese companies have gone abroad, these earlier domestic supports have been replicated in the import quotas and poppy replacement subsidies described at length by other researchers (Shi 2008; Kramer and Woods 2011); the former appeared above in the context of rubber traders’ economic power, while the latter underpin the economic stability of the companies involved (despite their initial intent to help Lao farmers). Lao rubber growers thus face not only the pressures of the global market, but also the effects of Chinese economic protection.

Lao authorities might thus consider the example of Thailand, which announced subsidies to help its rubber producers in late 2014, largely in response to demand from producers themselves. Subsidies targeted both the price of rubber and smallholders directly:

[The] State-run Bank of Agriculture and Agricultural Cooperatives could lend up to 30 billion baht (\$925 million) to the Rubber Estate Organization—under the Ministry of Agriculture—to buy rubber from the market and sell it to the government, said [Thailand’s] Deputy Prime Minister Pridiyathorn Devakula, who is also a vice chairman of the committee.

The government, which already has advanced purchase orders, will be able sell the stocks later to boost prices, Mr. Pridiyathorn said. ... The committee also approved a onetime payment worth a total of 8.5 billion baht (\$260 million) to help 850,000 rubber farmers (Wall Street Journal 2014).

Such an approach could help Lao farmers as well, although the balance of price-based versus area-based support would likely need to be a function of the distribution of plantation holdings. (Price supports help all growers, while area-based supports such as per-ha payments help smallholders in particular.) High-level commitment to regulate the rubber market might also alleviate some of the challenges facing local government officials, who are currently facing dissatisfied smallholders on the one hand and powerful rubber buyers on the other. As one official put it, the government “should not rely [so] heavily on investors” when it comes to setting rubber prices.⁸⁹

Although price supports require significant expenditure, they can be justified on a few different grounds. One is added productivity. Thailand’s rice subsidy policy, which was mentioned by many rubber growers in their demands for state support in the rubber sector, was defended in such terms in a statement released by the Pheu Thai Party in 2015:

The government ... implemented the Rice Pledge Policy by subsidizing the rice price and transferring ... 870,018 Million Baht directly to the farmers. This in turn increased farmers’ purchasing power [and] thus stimulated the economy. As a result, the government was able to collect additional tax for more than 1 trillion Baht per year (Pheu Thai Party 2015).

While statements like these have a political angle – Pheu Thai was trying to defend former Prime Minister Yingluck Shinawatra against corruption charges linked to the rice purchasing policy – it is possible that rubber price subsidies would pay for themselves if directed toward a large enough group of smallholder rubber producers. Given the role that household incomes play in driving local economies, the feedback or multiplier effects of state funds spent on rubber price supports could ultimately outweigh the costs. While some stakeholders we spoke to questioned how “realistic” it was to suggest coordinated regulation across sectors, we argue that this is the very definition of what government is. As economic and agriculture-sector planners continue to discuss ways to manage the Lao economy, inter-sectoral coordination is a recurring theme and a top priority.

Option 3: Expand other markets

During our interviews, we heard a number of requests for Lao authorities to investigate the option of developing other markets for Lao rubber. These statements highlighted the fact that many of our informants suspected there was more to low rubber prices than low global demand. Even if logistical and market conditions ultimately draw Lao rubber to China, the existence of other market options would create competition and, in doing so, decrease the power of current rubber purchasers to dictate prices to Lao producers. Other market options would, in other words, increase the leverage of Lao producers and authorities to negotiate better prices.

The two basic types of other market options are domestic value-adding and other foreign buyers such as Thailand or Vietnam. The advantages and disadvantages of these various approaches were beyond the scope of our study, but would depend on the relationship of costs to leverage gained.

⁸⁹ Government interview, Oudomxai

The development of a purely domestic market for Lao rubber would likely be prohibitive due to various reasons, but it may nonetheless be possible to add at least one more step in the value chain prior to export. This would likely depend on, among other things, supply reliability, which would in turn depend on how many northern producers are independent versus in contracting relationships with Chinese companies (currently unknown), as well as the possibilities for subsequent export of the finished rubber sheets. Foreign export options other than China would likely be influenced by a mix of economic geography and diplomatic relations. Although the plantation boom during the 2000s seemed to demarcate northern, central and southern Laos as Chinese, Thai and Vietnamese focused rubber zones, the future may not be so simple. It is conceivable, for instance, that Vietnam's rubber industry, even though it eventually sells many finished commodities to China, could absorb Lao rubber at higher farm-gate prices than via China directly. Although this is well beyond the scope of our work, the presence of a new Vietnamese rubber project in Oudomxai's Beng district was a notable anomaly. The project, a concession or "1 plus 4" project (depending on sources) which began in 2011, suggests that future exports from northern Laos's rubber sector may be more multi-national than the situation to date.

Option 4: Diplomacy

In our interviews, a number of people who believed that prices were due to more than just global demand suggested that the Lao government discuss prices with its Chinese counterparts. These statements came from villagers, as well as from district and provincial-level officials. One of our village interviews contained this particularly plain appeal for central-level assistance:

We need the government of Laos to negotiate with Chinese government in order to freely allow local people in Laos to export rubber products to China; otherwise, the Chinese traders will be able to control the rubber price in Laos. Thus, the central government is now important for rubber trade in Laos. Without any action from the central government, rubber prices will not be much increased compared to what they are at the present.⁹⁰

It is quite possible that diplomatic discussions have already occurred about rubber prices, and that current prices reflect a relative lack of leverage on the part of Lao authorities, who may not carry as much weight with Chinese authorities as rubber producers in a part of the country where economic development has long been seen as a strategic priority. One of our government interviews hinted at the lack of progress in saying that "provincial authorities proposed to the government to negotiate with the Chinese government, but Chinese government has not considered if rubber is added to the import list of goods from Laos."⁹¹

While it is possible that Laos may have a bit more leverage in its current role as chair of ASEAN (especially with issues like the South China Sea territorial disputes destined to emerge), a different angle may hold more promise for diplomatic dialogue: the threat of Lao farmers returning to opium cultivation. As noted by the United Nations Office on Drugs and Crime (UNODC), opium cultivation in the so-called Golden Triangle area (which includes northern Laos) has grown substantially in the last decade, and is currently "stabilized at high levels" due to a combination of high global and regional demand and relatively few economic alternatives for producers (UNODC 2015; VT 2015c). That this increase has taken place alongside the roll-out of China's opium crop replacement subsidies for Chinese agribusiness highlights the limits of these efforts, as Chinese businesses, including rubber companies with import quotas, have taken advantage of the subsidies without passing the benefits on to farmers (Shi 2008; Kramer and Woods 2011; Dwyer 2014).

⁹⁰ Village interview

⁹¹ Government interview

As appeals to equitable bilateral cooperation come up short, ongoing Chinese concerns about that country's drug trade could prove to be a reason for compromise on rubber import quotas. As implied by the data shown in Figure 9, this would likely go some way toward addressing the present price issues.

4.3. Additional research needs

In addition to policy-level discussion about the various regulatory dimensions discussed above, our research identified five issues that demand additional study. These are discussed below, and listed in order of timeliness. All are timely, but we believe the first two are especially so due to immediate impacts on livelihoods.

Topic 1: Household impacts of low prices

In the current low-price context where a significant fraction of rubber producers have taken their plantations out of production, a major question remains relevant for those households that have continued to tap: what are the effects of sustained low prices at the household level? As discussed in Section 3.2, continuing to tap rubber plantations using largely household labor is a response that is occurring on a fairly wide scale in the provinces we studied, and likely elsewhere as well (e.g. Bokeo, Phongsaly, Luang Prabang, Vientiane, Bolikhamxai). While this livelihood decision may represent the best available choice, at least some households seem to be doing so at least in part because they have invested significant resources in establishing their rubber plantations, and cannot simply walk away from this investment. This demands more research.

In particular, the effects of households' decisions to continue tapping rubber plantations at low prices is likely to have different and potentially adverse impacts among different members of the household, as various compensation mechanisms for lower prices are adopted. Studying specific mechanisms was outside the scope of our research, but these could include increase volume of work (whether in the rubber sector or elsewhere), new forms of work, additional workload among various members of the household, or various combinations of these. The impacts, especially on more vulnerable household members, should be studied.

Topic 2: Indebtedness

Another issue that demands further research is the role that indebtedness plays in causing land use change. In our interviews, we encountered a few references to debt that was taken on by rubber producers as part of establishing their plantations. As noted in Section 3.2, we also heard of at least one instance where a contract farming company had begun lending cash to its producers, in effect creating two types of debt (cash and rubber). Recent research on Savannakhet's sugar sector has revealed some important parallels to the rubber sector in northern Laos, and suggests that debt – rather than laziness or greed, as is often suspected by local authorities – may be a driving factor for the conversion of rubber plantations to high-rent alternatives such as bananas. As Phoumanivong et al. describe:

Many households [in Savannakhet] who had experienced planting more than 10 hectares, got into debt, [and] consequently, they decided to reduce their sugarcane fields to 2-3 hectares, and rented out the rest of their land to the factory or to other businessmen. ... The rent money received for their land was used to cut household debt from the previous season (fertilizer, sugarcane stalk, herbicide, land preparation). Some land had to be rented to the sugar company for 10 years or more, in order to compensate for their debt (Phoumanivong et al. 2015: 25).

This is an important finding in itself – it shows how contract farming can lead to land loss via the pathway of indebtedness – and it may apply to the northern rubber sector as well. In a context where producers have taken on significant debt just as prices have crashed, and where land lease rates have increased substantially as “available” land has become increasingly scarce, land rentals may be a result of households trying to clear their debt, rather than simply being lazy or greedy.⁹² The prevalence of debt is unknown, but the since independent production is widespread in both Luang Namtha and Oudomxai, the unexpected crash in prices makes it likely that indebtedness is fairly common in the northern rubber sector. Its potential to drive land use change and associated shifts in production (labor regimes, chemical regimes, and so on) make it an important and timely topic for additional research.

Topic 3: Distribution of rubber plantation holdings

As discussed above, the extent to which rubber remains a smallholder plantation crop versus a consolidated plantation crop in the hands of larger private holders – of plantations over 10 hectares, for example – remains an unknown and important question. The distribution of rubber holdings has been changing, and as described in Sections 1.2 and 3.2, has been moving from a largely smallholder model toward a much more mixed landscape of plantation sizes. Both the local and the overall quantitative dimensions of this are important, and a number of the government officials we spoke to discussed the need to “update the data” on the different business models in effect. This distribution has important implications for the regulatory choices discussed in Section 4.1: smallholders tend to warrant more and different protections than larger holders, while larger holders may cause a mix of social, environmental and even economic effects due to the way they manage labor and agricultural technologies such as herbicides. As Section 3.1 makes clear, larger holders tend to take rubber out of production more readily than “true” smallholders, which can have wider effects on the Lao economy if, among other things, taxes are not collected or there are not enough rubber producers to form marketing groups. A contemporary survey of rubber plantation holdings at the current moment is thus likely to be useful in informing state authorities of how to move forward in the current low-price environment.

Topic 4: Time-specific rubber price data

In addition to landholdings, one of the major data gaps that proved too large for this project to address was how rubber prices have changed over time in northern Laos, as well as across the border in China. As explained in Section 3.3, more detailed time-specific data about rubber prices would help evaluate just how big the difference in prices is between Laos and China, and thus to what extent market power is responsible for low prices compared to other global and local factors (rubber quality, export taxes and transportation costs).

As noted in Section 3.2 (Mobility), prices *within* northern Laos vary as well, sometimes enough that rubber producers decide to take their product farther than the closest buyer, in some cases taking it all the way to central Luang Namtha from southern Oudomxai. Tracking rubber prices’ change over time would entail recording it on a day-by-day basis in the places where it is posted, either by monitoring it directly or requiring buyers to notify authorities whenever prices change (and keeping a record when this occurs). In the current price environment, good data about rubber prices – over time and in multiple locations – is especially important for protecting Lao growers from unfair market practices locally.

⁹² The land lease rates reported by Phoumanivong et al. (USD 312 per *rai* per year, or approximately USD 1,950 per ha per year) were remarkably similar to those we heard reported in Luang Namtha (see section 3.2).

And in the longer term, whether prices are high or low, detailed price data on both sides of the border will help ensure that Lao growers are not overcharged for things like transport costs and border fees simply because they do not have full information.

Topic 5: Chinese agribusiness

More generally, a better understanding of Chinese agribusiness companies can help Lao producers and authorities substantially. In the last few years, a significant body of research on and experience with Chinese companies and the Chinese government's "going out" policy has been accumulated in the borderlands of northern Laos (see esp. citations in Sections 1.1 and 1.2). But there is much that remains unknown. Two such issues that have appeared here include the extent to which Chinese government policies and subsidies have cushioned Chinese rubber companies against the current slowdown and low-price environment, and whether state-owned enterprises are behaving only in accordance with market conditions and expectations, or whether they are also shaped by Chinese "cooperative" development policies that seek to improve local livelihoods even beyond strictly market conditions.

In the current context of decreased rubber prices and, more generally, an apparent slowdown in the Chinese economy, it is likely that the sort of claims being made by rubber companies about not being able to afford higher purchase prices may not be limited to the rubber sector. Sometimes these claims may be true; plans can change, assumptions can prove unreasonable, and farmers do not always hold up their end of the bargain. But sometimes these claims may be just negotiation tactics used by powerful, opportunistic entrepreneurs. The more Lao authorities and extension agents know about the companies they are working with, the more they will be able to tell the difference, and the easier it will be to work with them, so that negotiations end in productive and beneficial relationships rather than bad feelings and misunderstanding.

5. Summary of recommendations

The following list provides a summary of the recommendations that emerged from the discussion of results presented in Section 4. For further details, please see above.

1. Follow up on reports of the non-enforcement of floor prices.
2. Study the impacts of sustained low rubber prices at the household level, especially on more vulnerable members of the household.
3. Investigate indebtedness to assess its influence on current land use changes, especially the conversion of rubber to other (newer) boom crops.
4. Create an inventory of rubber holdings and production arrangements (business models) in order to assess the extent to which rubber is still a smallholder crop, and how this varies from district to district (and even more locally).
5. Collect better data about past and present changes in rubber prices in various locations in northern Laos and, to the extent possible, in China.
6. Evaluate and discuss the extent to which rubber should be a strategic commodity to be promoted and supported among upland smallholders. Explore various regulatory and diplomatic possibilities to improve the price environment for Lao smallholders, both now and into the future.

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Annexes

Annex I. Reported rubber areas

Statistics on rubber areas collected during fieldwork interviews (all numbers in hectares)

	Production arrangement ("business model")				Total reported	Total calculated	Source
	Concession	Independent ("smallholder") production	Contract farming ⁹³				
			2+3	1+4			
	3,557	16,409	13,298		34,347	33,264	PAFO
LUANG NAMTHA PROVINCE	10,841	"Largest proportion of total rubber plantation area in the province"	Magnitude of shift from 2+3 to 1+4 "has not been assessed"				PICO
Sing	472		1,340		9,720		DAFO
Namtha	Not available within time allotted						DAFO
Vieng Phou Kha		550	"not tapped yet"		3,069 (550 mature)		DAFO
OUDOMXAI PROVINCE	1,000				About 30,000 ⁹⁴		PAFO
Xai	0	Yes	Yes	No	4,172 (150 mature)		DAFO
Houn	0	342	5,548 ⁹⁵	390 ⁹⁶		6,280	DAFO
			4733				DPIO
	0	20%	80%		6,000		DICO

⁹³ See Section 1.2 (sub-section "Scaling up, with a twist") for discussion of "2 plus 3" and "1 plus 4."

⁹⁴ "Larger than paddy rice area, which is about 14,000 and upland rice which is about 11,000."

⁹⁵ Of which 5,430 belong to Jianfong Co.

⁹⁶ Vietnamese company, planting since 2013

⁹⁷ Jianfong ("According to the statistic from DAFO, rubber plantation belong to Jianfong is 5,400 ha (2014). However, data surveyed by planning office in 2013 is 4,733 ha")

Annex II. Villages visited

Province	District	Village	Details
Luang Namtha	Namtha	Hat Nyao	Hmong ethnicity The first successful village in rubber plantation village in Luang Namtha (and in the northern Laos) Located close to capital of Luang Namtha province First rubber cooperative village in Laos
		Sobsim	Khmu ethnicity Located in Namtha district, but distance from Chinese border and it is about 24 km from provincial capital of Luang Namtha New rubber plantation village, compared to Hat Nyao and other villages in the same district Informal urban network-based investment due to its location
	Sing	Oudom-sin	Mien ethnicity or Hmong Mien First rubber plantation village in Sing district Located close to local Lao-Chinese border checkpoint, where only is 3 km to the border checkpoint All rubber plantations are self-investment by local people
		Phiyer	Akha (Ikor) ethnicity Located about 9 km from capital of Sing district, but still having good connection to the Lao-Chinese border First Akha village that have succeed in cash crop production (initiated by sugarcane) Rubber plantation is mainly invested by villagers
	Vieng-phoukha	Nam Ngeun	Lue ethnicity First rubber plantation village in Viengphoukha district Located along the main road (Rte. 3) connection between China and Thailand Rubber plantation in this village is combination of self-investment by local people and contract farming
	Oudom-xai	Xai	Kor Noi
Houn		Mok Phalai	Mixed of Hmong and Khmu Located away from Chinese border Rubber plantation in this village is still young, people in this village started tapping rubber trees in 2014 Rubber plantation is combination of self-investment by local people and contract farming with Chinese investment company

Annex III. Stakeholders interviewed

	Location	Number of Participants
LUANG NAMTHA	Provincial Agriculture and Forestry Office	2
	Provincial Industry and Commerce Office	1
	Provincial Planning and Investment Office	3
	Provincial Tax Office	1
Namtha	District Agriculture and Forestry Office	1
	District Industry and Commerce Office	1
Sing	District Agriculture and Forestry Office	2
	District Industry and Commerce Office	3
	District Planning and Investment Office	1
	District Finance Office	2
Viengphoukha	District Agriculture and Forestry Office	2
	District Industry and Commerce Office	1
	District Finance Office	1
OUDOMXAI	Provincial Agriculture and Forestry Office	2
	Provincial Industry and Commerce Office	1
	Provincial Planning and Investment Office	2
	Provincial Tax Office	1
Xai District	District Agriculture and Forestry Office	1
	District Industry and Commerce Office	1
	District Planning and Investment Office	1
Houn District	District Agriculture and Forestry Office	1
	District Industry and Commerce Office	2
	District Planning and Investment Office	3
Villages Luang Namtha	Hat Nyao Village, Namtha District	3
	Sobsim Village, Namtha District	11
	Oudomsin Village, Sing District	2
	Phiyer Village, Sing District	2
	Nam Ngeun Village, Viengphoukha District	3
Villages Oudomxai	Kor Noi Village, Xai District	2
	Mok Palai Village, Houn District	2
Private sector	Yunnan Rubber Processing Factory	3
	Sino-Lao rubber processing factory	2
	A Rubber Trade Unit in Luang Prabang	2
Total		68

Annex IV. Discussion questions for key informant interviews

1. Can you start by explaining how rubber fits into the range of local livelihoods in this [province or district] area?
2. When did the fall in rubber prices begin to become an issue of concern? (When was this in relation to the beginning of tapping?) Where (from who or what source) did you start hearing about falling prices? How do you understand the reason for the drop in the rubber price?
3. How have rubber holders responded to the fall in rubber prices?
 - *The following questions will also be addressed (if needed):*
 - a. Are some rubber holders clearing their land and planting other crops? If so, please provide details (what, when, whether or not the new crops are producing returns yet and, if so, how they compare to rubber).
 - b. Are some people selling their land, and if so, what types of growers are selling? Who are they selling to? (Who is buying rubber right now? Companies? Wealthier farmers? People from urban centers? Etc.)
 - c. Are people responding in other ways? Please provide details.
4. Are some rubber holders continuing to tap their trees? If so, what kinds of prices are they getting? Is there a range between different buyers, or does everyone pay the same? How many buyers are there in your area [province, district, village]?
 - *Follow-up questions:*
 - a. Are any of the prices offered above the standard market price? If so, is this because of recent agreements (e.g. between companies and local authorities) or because of agreements made at the time contracts were signed (e.g. listed in the contract)?
5. How are purchase prices from farmers (“farm-gate” prices) determined?
 - *Follow-up questions (if needed):*
 - a. Are farm-gate prices set in relation to world market prices? Are they based on prices in China? In somewhere else? Are they set by traders? If so, do you know how? (It’s possible that respondents won’t know.)
 - b. In any of the contract-based production arrangements in this area, are prices discussed in the contracts? If so, how? In any cases are minimum (“floor”) prices guaranteed?
 - i. if so, are these being paid now? Are they adequate to farmers’ livelihood needs?
 - ii. If not, was there any discussion about minimum pricing guarantees back in when projects were starting up?
6. When and how did rubber planting start in this area?
 - *Follow-up questions:*

- a. Was rubber planting started initially by smallholders or by companies? When did companies come in, and what types of arrangements did they offer? What were the key policy issues back then? Was rubber price/demand an issue of concern then? Why or why not?
7. What is the range of rubber-growing arrangements now?
- *Follow-up questions:*
 - a. Are there independent smallholders?
 - b. Are there informal share-cropping agreements? If so, between whom? (One common arrangement is between relatives in different places, but sometimes this also occurs with wealthy “elites” from urban centers.)
 - c. Are there formal contract farming schemes?
 - d. Are there concession schemes?
 - e. Do you have statistics or maps on any of these? Can you share these?
8. [FOR GOVERNMENT STAFF ONLY, INCLUDING AT VILLAGE LEVEL] Do you have a role in managing relations between growers and buyers? If so, please discuss this in general and whether it differs for the different arrangements listed in question 7.
9. [FOR GOVERNMENT STAFF ONLY, INCLUDING AT VILLAGE LEVEL] Are you involved in helping to manage the selling process? If so, how? If not, have there been any requests (e.g. by rubber growers or by companies or traders) for state involvement?
10. Do people talk about appropriate prices for rubber? Is fairness an issue of concern? How should prices be determined?
11. Is sale price an issue/problem for any other crops? If so, how does rubber compare to these?
12. Of the responses that are currently occurring (see question 3), do you consider any of these to be effective strategies for dealing with the problem? (Or are these just coping mechanisms?)
13. What types of action do you believe are needed, and from whom?
14. Do you have any ideas about anything that authorities or experts in Vientiane do to help
15. What do you foresee rubber prices doing in the next 5 or 10 years? Increase? Decrease? Why?
16. This has been very helpful – thank you very much for your time. We are almost finished. we have a few questions about the wider context related to other crops. This will help us understand the significance of our findings. How does rubber compare with other crops in this area in terms of:
- a. importance to local livelihoods? importance to the livelihoods of any particular sub-group (e.g. poor people versus wealthier farmers? people in a certain part of the district/province? people who have lived here longer versus people who have come more recently?)
 - b. area planted? How does rubber compare to other crops in terms of average holding size? Total area of rubber plantation (if available)

- c. length of time it has been contributing to livelihoods in the area?
- d. challenges (e.g. to community land relations)?⁹⁸

ADDITIONAL QUESTIONS FOR GOVERNMENT STAFF AT DISTRICT AND PROVINCIAL LEVEL ONLY:

17. Lastly, I have a few questions about possible solution to address current situation:

- a. Have local people raised falling prices as an issue of concern with your office or other relevant government offices? Have they made any specific suggestions about how to address the issue of falling prices? If so, do you think these are realistic
- b. Have you consulted with national stakeholders (who or which organizations at the national level) with regards to the fall of rubber price? If so, what recommendation did you receive from national level? What is required in order for this to be realistic?

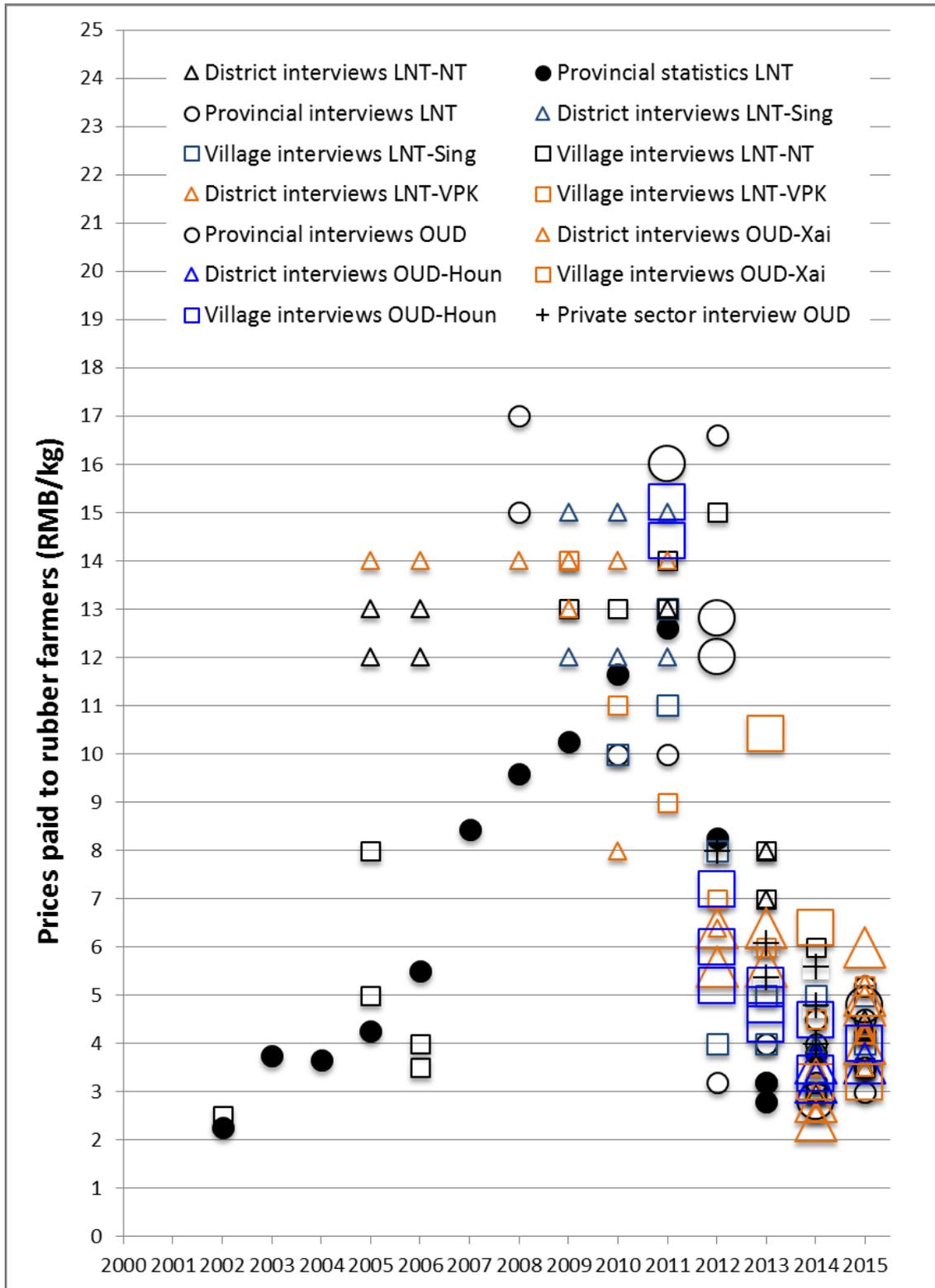
THANK YOU SO MUCH FOR YOUR TIME.

PLEASE PROVIDE CONTACT INFORMATION IF YOU ARE INTERESTED IN RECEIVING A COPY OF OUR FINDINGS EARLY NEXT YEAR.

⁹⁸ These may be useful as follow-up questions: When did rubber plantation start, how and why? Is rubber the only industrial tree plantation in this area? Why not other species or commercial crops? How did rubber expand in the area? How were company terms set, and did this change over time? Were local farmers interested in cooperating with companies, and if not at first, what was done to make them participate more? (Better terms? more involvement of local authorities in land management/zoning? Etc.)

Annex V. Rubber prices reported in fieldwork interviews

Rubber prices in northern Laos, 2000–2015, reported by source. Circles, triangles and squares show provincial, district and village-level sources, respectively. Small shapes represent Luang Namtha, large represent Oudomxai.



Annex VI. Normative statements about rubber price

Price/kg		Details	Source
CNY	LAK		
<u>10</u>		"As we discussed among rubber grower in our village, we should have at least 10 Yuan/kg (lump of rubber), or if we sell 1 kg of rubber lump, we should be able to buy 1 kg or milled rice"	Village interview , Luang Namtha
8	<u>10,000</u>	There is not set price between grower and buyer. However, local people often mentioned that the lowest prices for rubber lump should not lower than LAK 10,000/kg. If local people can get this prices, rubber plantation will be able to feed their livelihoods.	Government interview, Luang Namtha
<u>7-8</u>		"Local smallholders would like to propose that rubber prices should not be less than 7-8 Yuan/kg of rubber lumps. However, it also depends on the capacity of the buyers."	Government interview, Luang Namtha
<u>7-8</u>		"The most appropriate prices of rubber should not be lower than 7- 8 Yuan/kg (lump); if local people could sell their lump rubber in these prices, only base on rubber production, local people will be able graduate from their poverty."	Village interview, Luang Namtha
<u>7</u>		"It hard to say how much should be appropriate price for rubber, but when I talked to local people, they will be happy if they can get at least 7 Yuan/kg of lump."	Government interview, Luang Namtha
<u>6</u>		"We [Namtha DAFO] discussed with the buyers including Yun-nan and Tai Chian to buy rubber lump from local people at least should not lesser than 6 Yuan/kg. However, ..."	Government interview, Luang Namtha
5.6-8	<u>7,000-10,000</u>	"I think, at least should not lower than 7,000 k/kg. However, in the contract farming scheme (2+3) the prices should be at least LAK 10,000/kg because local people will gain only 40% of the benefit, while the investor gain 60%."	Government interview, Oudomxai
5.6-6.4	<u>7,000-8,000</u>	"In 2012 – 2013, local people received about 7,000–8,000 k/kg. This price should be suitable lowest price for local people. If they get this price, they will focus on only rubber plantation and the plantation will be sure contributed to their livelihood improvement."	Government interview, Oudomxai
5.6	<u>7,000</u>	"According to local people, if they can get at least LAK 7,000/kg, rubber could provide [sufficient] benefit and people would not have to work for other jobs -- they could survive just based on rubber tapping."	Government interview, Luang Namtha
5.6	<u>7,000</u>	"The lowest price should not lower than LAK 7000/kg."	Government interview, Oudomxai
<u>4-5.3</u>		"We discussed with local people in many villages, they told us that rubber prices lower than 4 Yuan/kg is not profitable for local people. Local people would like to get at least 5.3 Yuan/kg."	Government interview, Luang Namtha

Statements about what rubber prices *should* be, ranked by order of decreasing price.

<u>5</u>		"We discuss with many people within our village, the lowest prices for rubber products in our village should not lower than 5 Yuan/kg; if prices of rubber lower than this, we cannot rely on rubber plantation for improving our livelihoods."	Village interview, Luang Namtha
4.4	<u>5,000-6,000</u>	"Although rubber prices are falling at LAK 5,000–6,000/kg is Ok for local people to tap rubber, they gain from rubber plantation more than other agricultural activities."	Government interview, Oudomxai
4	<u>5,000</u>	"I discussed with local people, they would prefer to tap their rubber if they can get at least LAK 5,000/kg at least. Otherwise, it is not profitable compared to their labor spend for rubber plantation."	Government interview, Oudomxai
<u>4</u>		"There are about 50% of total rubber growers in Namtha district (whose rubber can be tapped) do not tap their rubber tree during the low prices; they will wait until the prices go up to at least CNY 4/kg. There is no any other options except for waiting the prices of rubber go up."	Government interview, Luang Namtha



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