“MONEY TREES” IN SOUTHERN THAILAND:

BEYOND THE RUBBER MARKET

by

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Abstract

Over the past two years, Thai- and English-language newspapers have reported on the difficulties facing Thailand's rubber farmers. Newspaper articles focus in particular on the dissatisfactions over low rubber prices that have materialized in the form of protests throughout southern Thailand. In this study I consider these accounts alongside perspectives attributing a much more subdued role to rubber markets. I draw on information from twenty qualitative interviews with owners of rubber plantations in several provinces of southern Thailand. Informants related concerns about the vagaries of increasingly unpredictable weather as well as the shifting employment preferences of younger generations. These issues were discussed at least on a similar footing with price and market fluctuations, and they were often considered to be of greater significance. World systems theory provides a useful heuristic to understand some of the challenges that rubber farmers confront; however, complementing world systems theory by integrating literature from alternative theoretical positions produces a more constructive analytical framework to consider many growers' experiences in southern Thailand.

I. Introduction

On July 15, 2012, the Thai Rath newspaper reported that roughly one thousand rubber farmers in Na Bon District, Nakhon Si Thammarat Province were gathering in protest, blocking both lanes of Route AH2 of the Asian Highway Network. The group prevented access to points north and south, which caused substantial traffic delays along a key corridor connecting to important commercial centers, including Bangkok and Hat Yai. The farmers met to demonstrate against low prices for Grade 3 unsmoked rubber sheets. Prices had fallen to just over 86 baht per kilogram, a marked decline from a price of over 170 baht in February 2011.[1] Among protesters' demands were calls for the Thai government to ensure a price floor of 120 baht per kilogram as well to construct a development plan to manage Thai rubber prices. The next day (July 16, 2012), the Thai Rath followed with an article reporting that the road had been cleared after secretary to the minister of the Department of Agriculture and Cooperatives met with the protesters to negotiate and put an end to the demonstration. One of the protesters attempted to run and hit the secretary, but he (the secretary) got away just in time, the article mentions.

This protest, far from being incidental, is part of a larger series of demonstrations that have been playing out across southern Thailand. Indeed, over the past year Thai newspapers have circulated reports on southern rubber farmers' frustrations over low prices (Figure 1) and the sizable protests that have been staged in response. The Bangkok Post (an English-language daily) ran 145 such pieces from August to mid-September 2013 alone.

[1] All rubber prices cited in this paper refer to Grade 3 unsmoked sheets, unless otherwise noted. In 2013, the exchange rate has ranged between 28 THB/1 USD and 32.3 THB/1 USD (xe.com)

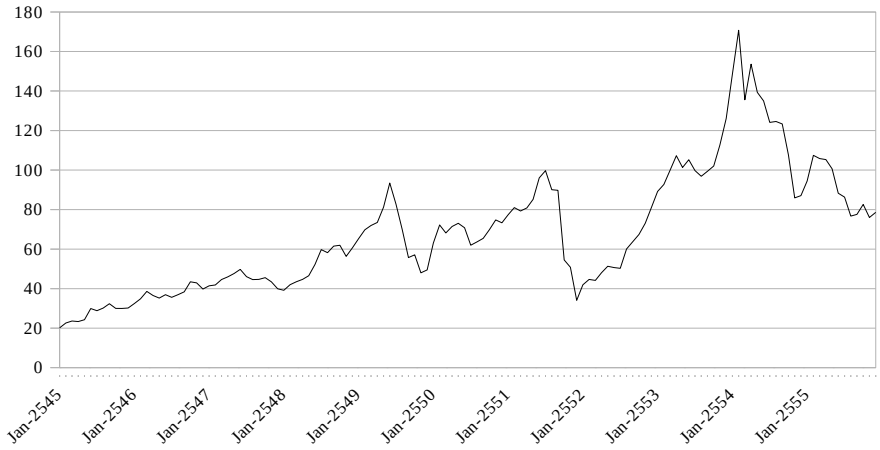

Figure 1: Monthly average prices in baht/kg for Grade 3 unsmoked sheets at which farmers were able to sell in Thailand from January 2002 (พ.ศ. 2545) to December 2012 (พ.ศ. 2555) (***ราคายางแผ่นดิบชั้น 3 รายเดือนที่เกษตรกรขายได้ที่สวน ทั้งประเทศ***) (Source: Thailand Office of Agricultural Economics)

The rubber prices farmers contend with are largely products from transactions occurring outside of Thailand. To a large extent, articles on the protests convey images of livelihoods as imprints (e.g., after Hart 2002), forged from pressures that materialize out of the churns of commodities and futures markets, fluctuating industrial needs, and the pace of the world economy. To compare with analytical instruments from world systems theorists, they appear shaped through uneven relationships in the core-periphery global hierarchy. However, such depictions prompt a critical question: to what extent do the concerns of rubber farmers that are not set within a framework of rubber prices and markets speak to the core issues represented in the demonstrations?

In this thesis I propose a response to this question. Drawing from knowledge gained through twenty qualitative interviews with rubber farmers in several provinces throughout southern Thailand during the winter, spring, and summer of 2013, I argue that for many of these individuals the precariousness of agricultural income depicted from coverage of the

protests is incomplete. While informants did relate that rubber prices are a source of persistent concern, stresses, I learned, are often rooted more substantially in increasingly unpredictable ecological and social growing contexts. Additional information they offered complicates the idea that durable solutions to challenges confronting Thailand's rubber farmers should be found in terms of market rationales, as protest messages urge. Thus, taking measures to ensure that rubber prices are not too low or too erratic (e.g., through subsidies or figuring out ways to mitigate the uneven dynamics of core-periphery processes) does not displace trials brought on from changes in the conditions shaping growers' interactions with their rubber holdings, as well as the shifting geographies of rubber cultivation and market area expansion throughout Southeast Asia.

In the next section, *II. Methodology*, I explain the steps I took while in Thailand to carry out this study. I note whom I chose (and was able) to interview as well as where I carried out interviews. In the section following, *III. Background*, I discuss Thailand's rubber economy in order to contextualize both the protests as well as informants' comments. I include subsections on rubber markets as well as a 'factor of production' that often ranks highly among topics farmers discuss—labor. Empirically, the structure of Thailand's rubber economy reflects a hierarchy of exchange—transactions from farmers to middlemen, middlemen to other middlemen, the latter to factories, and from factories to exports. In 2011, close to 90% of rubber produced in Thailand was exported (faostat.fao.org). In *IV. The Protests* I consider several newspaper articles on recent demonstrations. This also serves as background of sorts; however, I include this review in a separate section, as the demonstrations are central to the arguments I make and warrant an extended discussion. In this section I additionally summarize the contents of a conversation I had with Mr. Perk

Lertphanwong, who is the current head of the Thai Rubber Party (a registered political party in Thailand).

In *V. Conceptual Framework* I review literature to situate the research problem and motivate the forthcoming analysis of interview informants' comments. I critically engage with world systems theory, identifying not only where this theoretical tradition falls short and requires analytical complements, but also how it can serve heuristically to provide a layer of analysis into rubber farmers' concerns. Section *VI. Discussion of Research Findings* begins with discussion of broader, regional trends in the expansion of rubber cultivation in Southeast Asia in light of the start of the ASEAN Economic Community (AEC) in 2015. Drawing inferences at this scale, though perhaps speculative because the AEC is yet to be established, at least probes the logic of the types of securities and guarantees that the protests intend to effect. Following this, I analyze information from qualitative interviews with rubber farmers to consider growers' experiences with respect to depictions of the problems that emerge from the demonstrations. A section of summary, conclusions, and prospects for future research follows. The following map (Figure 2) shows the fourteen provinces of southern Thailand. In addition, it includes the locations of interviews, identified by points and district names.

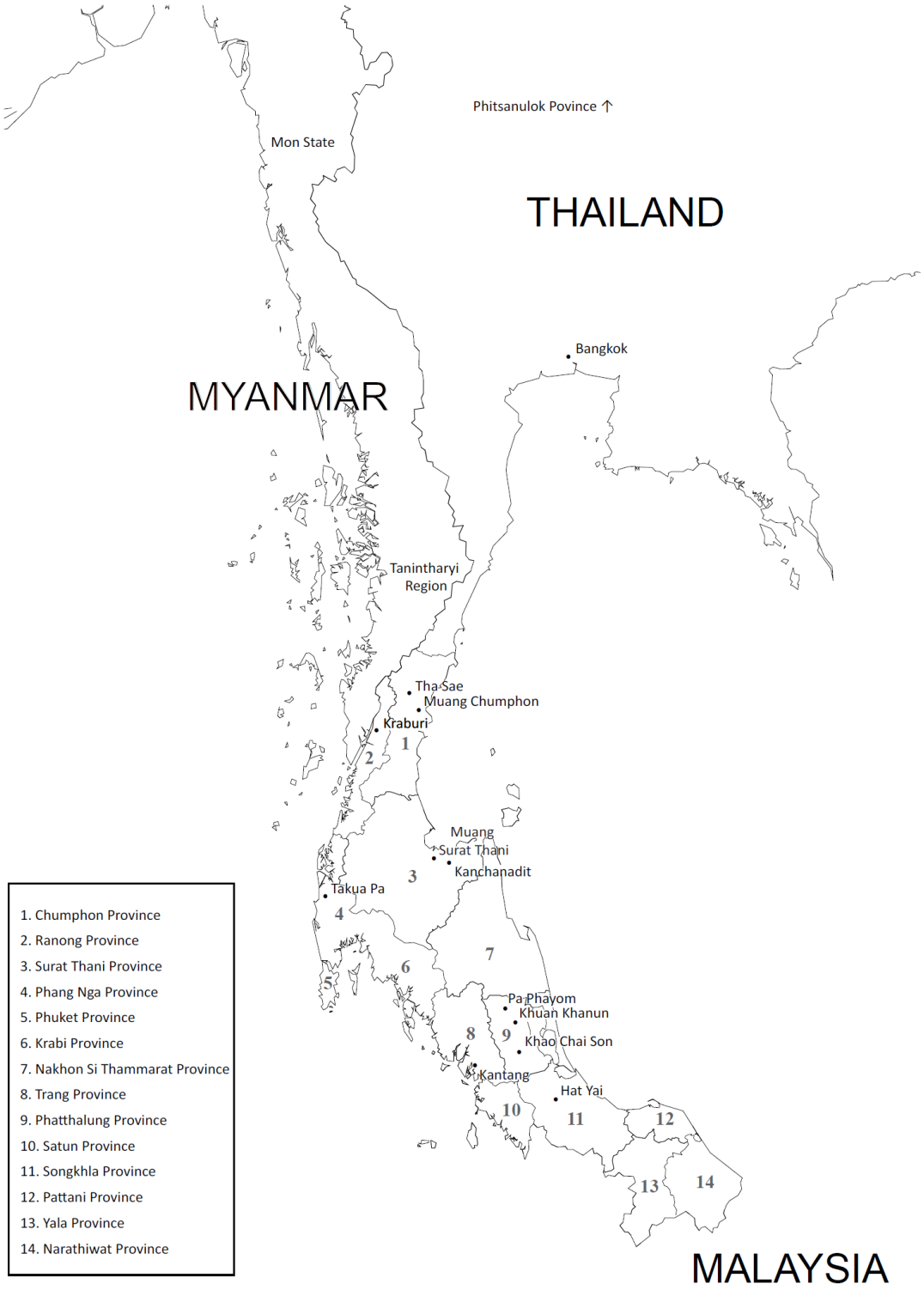

Figure 2: Map of southern Thailand and locations of interviews.

II. Methodology

As noted above, I aim to demonstrate how representations of the challenges facing Thailand's rubber growers that surface through protests are often too simplistic, seemingly producing a spatial dichotomy from below that groups these individuals and situates them in reference to an abstract and unpredictable marketplace. I thus examine the lacunae between messages calling for improvements in price and market conditions and the actual experiences of growing rubber in the places where the majority of the protests happen—southern Thailand. To reiterate, these messages are meaningful for farmers with whom I spoke, yet they are often probed and challenged as individuals talk through their own experiences with rubber.

Below, in Section *VI. The Protests*, I will discuss details from several of the protests. My response to these, in Section *VI. Discussion of Research Findings*, is constructed primarily through semi-structured, qualitative interviews with rubber farmers. I did not interview individuals from a single district in a particular province. Rather than set my study within the bounds of one place, I am interested in comments from individuals that speak to concerns resonating broadly in southern Thailand yet are not limited to price and market domains. With interviews in several locations throughout southern Thailand—Chumphon Province (two districts), Ranong Province (one district), Surat Thani Province (two districts), Phatthalung Province (three districts), and Trang Province (one district)—informants provided me with cases rich in unique details from which to draw (see Figure 2). While I left selection criteria of interview subjects quite broad, I did aim to meet with individuals owning rubber plots considered to be of a small scale in southern Thailand. The largest plantation that

belonged to an interview participant measured 80 *rai*, with the rest under 50 *rai*.[2]

In all but one instance, I met interview informants through other individuals. With confident, though far from perfect, skills in Thai and being clearly an outsider I found that having introductions helped considerably to facilitate interviews. A few words from a native speaker, letting participants know that I was a graduate student in the United States carrying out research related to smallholder rubber in Thailand, helped to defray the initial surprise, confusion, and/or puzzlement at seeing me approach to ask questions of them. It is worth bearing in mind that negotiating with 'gatekeepers', while enabling the researcher to access informants, could also introduce risks into the research project. Valentine (1997), for example, comments that researchers should be cautious of gatekeepers' narrowing the potential range of research participants, challenging his or her ability to engage with an array of people.

I acknowledge that seeking out interviews with rubber farmers primarily through introductions may have limited the breadth of interview participants and the type of information gained through research. For example, speaking with informants in different places as opposed to a particular location does not afford much in terms of farmer-to-farmer comparisons. However, as I noted above, my objective here is to discuss experiences of keeping rubber holdings in view of the larger messages demarcated by concerns over prices and markets. While I am interested in exploring the meeting points and departures of informants' comments, I focus on how these points relate with broader conversations taking place in Thailand.

[2] 1 *rai* is equal to 0.16 hectares.

Although I recycled certain stock questions across all informants, such as those pertaining to plantation size and length of time one has been growing, during most interviews I invited informants to talk freely, discussing both the difficulties they face, and what they believe the causes of these to be, as well as why they feel that keeping rubber holdings is a worthwhile use of their time—or in cases where growers hire workers, why rubber is a worthwhile investment.

With Farmers and Workers

In late February 2013 Dr. Anisara Pensuk of Thaksin University in Phatthalung Province invited me to give her graduate students an overview of my research. During my visit to the university she had also organized a car, and she and two of her graduate students accompanied me to a rubber sheet-making factory in Khao Chai Son District as well as a latex-buying cooperative shop, also in Khao Chai Son District. At the shop I spoke not only with the shop manager, but also farmers that had come to sell latex. While visiting Thaksin University I carried out five one-on-one interviews in total as well as an informational group interview at the local branch of the Office of the Rubber Replanting Aid Fund (ORRAF) in Khuan Khanun District (see below), which Dr. Pensuk also organized.

The interviews in Tha Sae District and Kantang District, which I carried out in February and May, were arranged through introductions by Thai colleagues at the University of Wisconsin-Madison. In Surat Thani Province I relied on a personal contact, whom I had known while working in Surat Thani City in 2007, to introduce me to three individuals. In Kraburi District I spoke with three informants after introductions from a personal contact

who was in the area working on a malaria eradication program. On my return trip from Kraburi, I had the opportunity to interview an individual without a formal introduction in Muang Chumphon District, a short distance over the Ranong-Chumphon provincial border. He had recently ordained as a monk and agreed to speak with me about his rubber holdings in Kraburi District.

Beyond speaking with rubber farmers, I also interviewed ten individuals from Myanmar (Burma) employed in rubber plantations in Phang Nga Province and Chumphon Province. In Takua Pa District I connected with the Foundation for Education and Development (FED) for eight of these interviews. The FED is a non-governmental organization (NGO) in Thailand; this particular office aims to provide foreign workers in Phang Nga and nearby provinces with education about labor rights. Moreover, it looks after a school that workers' children attend. The FED was a very useful resource, as at least one member from the organization accompanied me to interview sites each time. I additionally conducted interviews with two foreign workers in Tha Sae District. Both of these interviews happened after I had spoken with these individuals' employers (informants THS1G and THS2G), who were present during the interviews.

Informational Interviews

Lastly, I carried out three informational interviews. In these conversations I did not seek comments on informants' own experiences with rubber. During one, I spoke with three

individuals at the ORRAF office in Khuan Khanun District, Phatthalung Province.[3] Those present included an agricultural extension agent, a rubber cooperative leader in Khuan Khanun District, and a local professor.

In Hat Yai, a large city in Songkhla Province, I spoke with Dr. Buncha Somboonsuk of the Faculty of Natural Resources at the Prince of Songkhla University in a one-on-one interview. Dr. Somboonsuk has written extensively on smallholder rubber growers' livelihoods in southern Thailand. During our conversation we discussed findings from his own research, his outlook on challenges facing growers in the future, as well as how markets for rubber generally function. My other one-on-one informational interview was with the current head of the Thai Rubber Party, Mr. Perk Lertphanwong.[4] I spoke with Mr. Lertphanwong to gain a sense of what the Party hopes to achieve as well as if and how it and its members have been involved in protest activity. I summarize the contents of this conversation in Section *IV. The Protests* below.

Language

Regarding interpreters, a type of gatekeeper, Heller et al (2011) write that these individuals' interactions with research participants are crucially shaped on the basis of

[3] The Office of Rubber Replanting Aid Fund (ORRAF) was established in 1960, following the Rubber Replanting Aid Fund Act. Its main objectives concern financial assistance in first-time planting and replanting with higher-yielding varieties, product development, and marketing (rubber.co.th). The organization's activities, including administrative tasks, are funded from export taxes that adjust to the rubber price as well as government subsidies.

[4] A pamphlet I obtained in The Thai Rubber Party's Bangkok offices writes that the Party was established on June 24, 2011. Its principal objective is to promote the happiness and wellbeing of Thailand's farmers and people involved in the agricultural sector. It aims especially to support those with livelihoods in rubber, from the time the latex starts flowing to when it stops.

several personal factors, such as gender, which affect how information is constructed during the interview. To mitigate this influence, I carried out conversations with each rubber grower in Thai without a translator. During interviews with four of ten foreign workers[5], however, a staff member from the FED translated from Burmese into English. Having lived in southern Thailand for over one year and studying Thai both independently and at the advanced level during the 2009 Southeast Asian Studies Summer Institute at the University of Wisconsin-Madison, I felt confident to speak directly with interview participants. Additionally, working without a translator (for the majority of interviews) reduced the number of steps between informants' comments and my interpretations of them.

A description of each informant and interview setting is provided in the Appendix. Aside from listing the district where the interview took place (as well as the district where the plantation is located), no other personal identifying information is provided. This is due to the confidentiality agreement to which informants gave their oral consent when agreeing to the interview.

[5] Informant TKP5M through Informant TKP8M

III. Background

Rubber in Thailand

I will now turn to providing background on Thailand's rubber economy. The share that rubber (from the tree species *Hevea brasiliensis*) contributed to Thailand's national income was relatively consistent in the 1980s and 1990s, between 2% and 3%, increasing and surpassing that of rice in 2002 (faostat.fao.org, data.worldbank.org).[6] Holdings planted to *H. brasiliensis* have been taking on a greater presence in the nation's agricultural land use over recent decades, as Figure 3 shows. Thailand's share of global production (tonnes of output) was roughly 16% in 1990, but this increased to around 33% by 2000, and was close to 30% in 2010 (faostat.fao.org, oae.go.th). China has by far been the largest market for Thai rubber: from 2010 to 2012 China's share of all exports climbed from around 31% to 41%. Malaysia, Japan, and the United States followed, though at large margins from China (nso.go.th). Southern Thailand's growers have been, and continue to be, responsible for a substantial portion of production: in 1990, 2000, and 2010 southern Thailand contributed 92%, 89%, and 80% of the nation's rubber output (oae.go.th), respectively. These provinces' production share is ceding ground to others, but it still forms the majority.

[6] See Section c in the Appendix for a discussion on rubber's rise to prominence as a global industrial commodity.

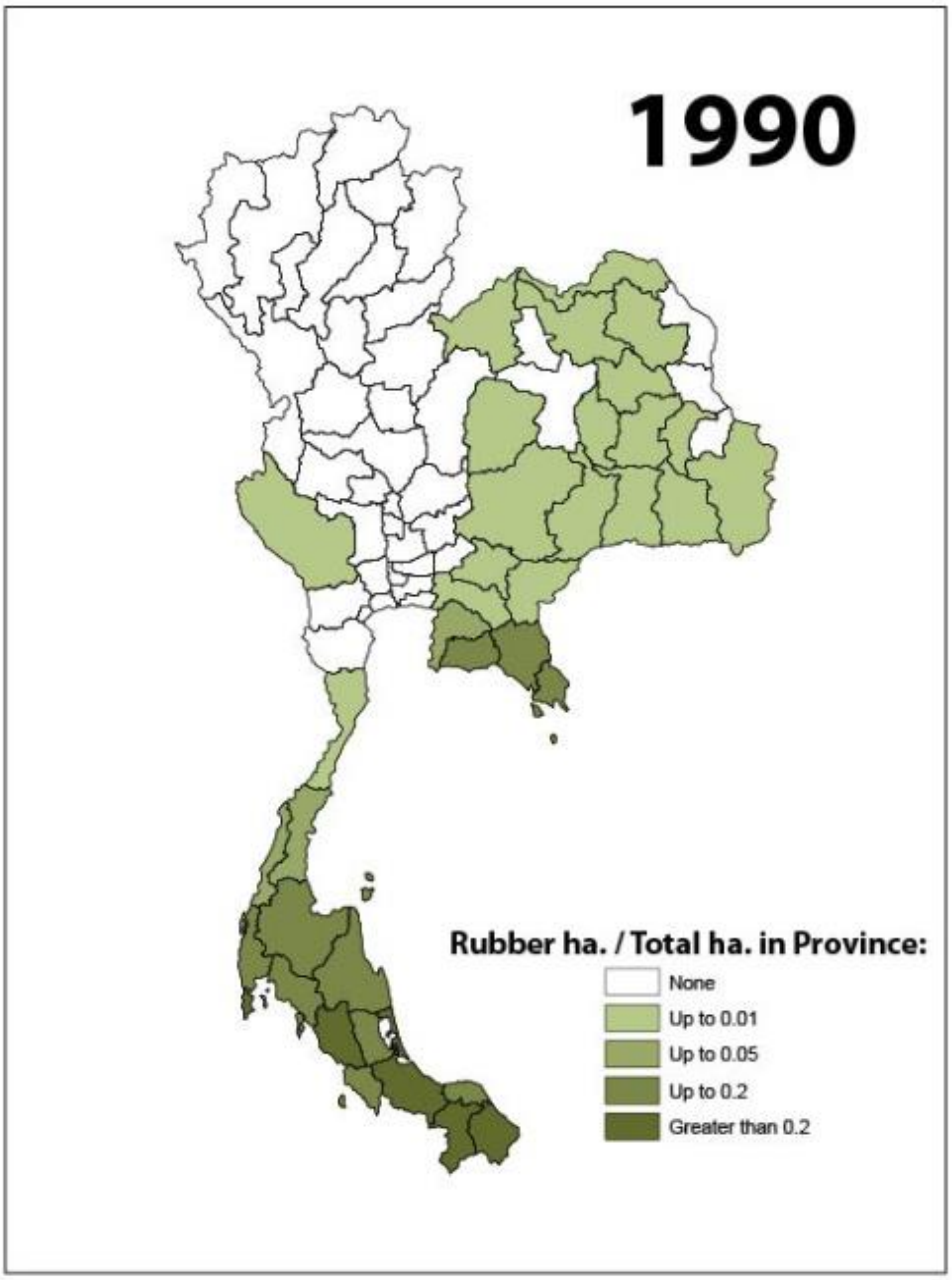

Figure 3a: Area of rubber planted per hectare by province in Thailand: 1990 (Data Source: oae.go.th, 2012)

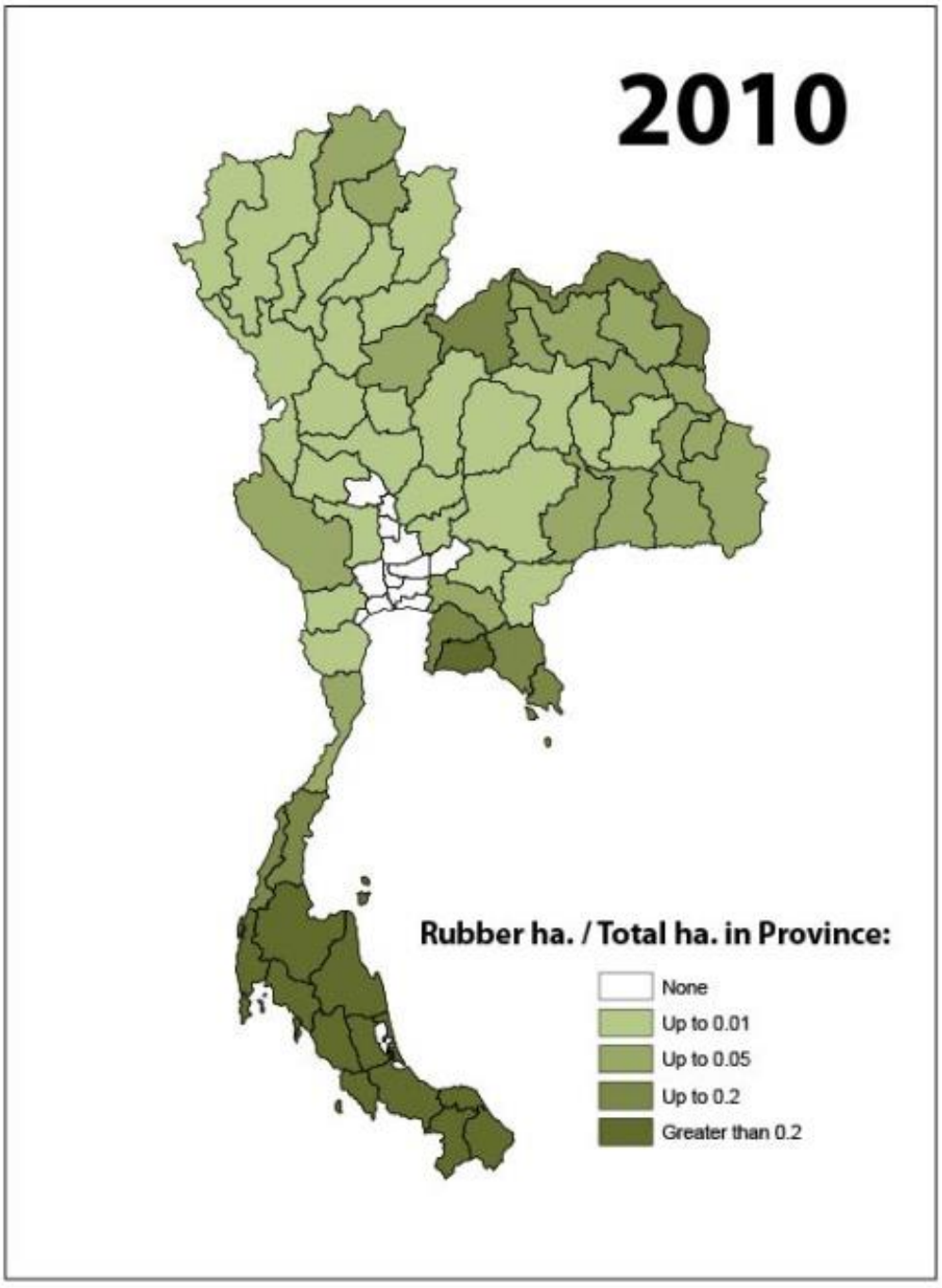

Figure 3b: Area of rubber planted per hectare by province in Thailand: 2010 (Data Source: oae.go.th, 2012)

Organization of Production

As many researchers note (e.g., Cherdchom et al. 2002, Viswanathan 2008), approximately 90% of Thai rubber plots are smallholdings that average 0.3 to 8.0 hectares, which means that national production comes primarily from a broad base of smallholder growers. Kaiyoorawong and Yangdee (2008, p. 11) contend that "rubber farmers are merely product suppliers at the upstream process." This type of supply chain organization lends to conceptualizing farmers' relationships with markets in terms of core-periphery hierarchies (more on this below). Indeed, as Kaiyoorawong and Yangdee (2008) further write, the prices that growers receive are lower than export prices on account of various deductions between the farm gate and the border. For example, the authors note that rubber buyers deduct transport costs from the prices they offer to farmers. In addition, the per kilogram fee charged to rubber exporters to fund ORRAF activities (see footnote 3) are passed down to growers. Neupane and Calkins (2013) write that large processing plants control the rubber sector in Thailand. Plants make purchases through local traders, and the marketing channel involving smallholder growers is characterized by "lots of middlemen and collecting centers." (p. 189)

During my interviews, two growers I spoke with in Tha Sae District, Chumphon Province[7] echoed these points, explaining that prices are not the same in all places because of a series of middlemen. There are (at least as far as Tha Sae is concerned) three different buying levels: a buyer at the village level, another buyer ("*pho kha"*) to which the first sells and who is likely located elsewhere (e.g., in Surat Thani Province), and then a third buyer

[7] e.g., informants THS1G and THS2G

who buys from the second and transports sheets to a factory.[8] Thus, these growers reasoned, they have no opportunity to know the price in advance ("*rao mai mi okat thi cha ru ko dai loei*"). One of the informants[9] remarked that if there were a large factory nearby, like there is in Surat Thani, the price received by the farmers would rise because the number of in-between steps would be fewer. At the time of the interview, he said that one company is currently in the process of building a factory in Chumphon, close to Tha Sae District. A buyer[10] of unsmoked sheets and *khi yang* in Tha Sae also remarked on the opening of the factory: she would be able to sell directly to the factory instead of to another buyer.[11] The margin she earned from buying and then selling was 50 satang/kg. to 1 baht/kg., which is standard in the area. She explained that she finds out how much the factory is buying for and then adjusts the buying price offered to farmers accordingly. She commented that the price increases at each buying level, and that she is positioned at the lowest, i.e. right from the farmers themselves ("*an ni chan tam sut laeo*").

Beyond the price markdowns that occur at each stage from the factory to the grower, Thai factories' products earn higher per kilogram margins than the fees middlemen extract. Some data from Sri Trang Group illustrates this point. In Kaiyoorawong and Yangdee's (2008) paper, the authors comment that Sri Trang Group was the second biggest rubber exporter over the period 2002 – 2006. Because Sri Trang Group is a publically traded company, financial details are available on the company's website, sritranggroup.com. In 2012 the company accounted for 12% of the market share for Chinese rubber imports. From

[8] In all transliterations of Thai I will use the Royal Thai General System of Transcription.
[9] Informant THS1G
[10] Informant THS3G
[11] *Khi yang* refers to clumps of latex that collect and harden in the cups attached to trees after tapping. *Khi yang* is less labor-intensive; subsequently its price is lower.

the company's annual reports, it is instructive to observe that the majority of products in all quarters of 2012 is in the form of technically specified rubber (TSR), or *yang thaeng* in Thai. The Agricultural Futures Exchange of Thailand (AFET) reports (afet.or.th/v081/thai/product/str20/) that TSR can be manufactured from different types of inputs, for example latex, unsmoked sheets, *khi yang*, or rubber scraps. The process is carried out by cutting materials into small pieces, drying, and then compressing into blocks. TSR is used mainly for producing vehicle tires. While somewhat out of date, a report issued by the Food and Agriculture Organization of the United Nations (FAO) in 2003, *Medium-term prospects for agricultural commodities, Projections to the Year 2010*, notes that more than 60% of rubber is used in tire manufacturing, and further that natural (as opposed to petroleum-based synthetic) rubber constitutes about 50% of the share of material inputs in this sector. Tire manufacturers, the AFET's explanation continues, are increasingly using TSR instead of smoked sheets due to more easily recognizable quality grades as well as ease of transport. In addition, the production costs of TSR are on average lower than those of smoked sheets.

With TSR making up almost 75% of Sri Trang's revenues in the first quarter of 2012, the product saw a return on sales (profits/revenues) of 6%, or almost seven baht per kilogram. By contrast, products from concentrated latex, which accounted for roughly 7% of the company's production in that quarter, saw a return on sales of 2.3% and a per kilogram profit of about 1.6 baht. Beyond Thailand's borders, however, profit margins are even greater: Bridgestone's return on tire sales was 10.2% in 2012 (bridgestone.com).

Rubber Prices

During my conversation in Hat Yai, Dr. Somboonsuk explained that rubber prices mainly come out of Singapore, in auctions and forwards markets, and to a lesser extent in Tokyo. Because a few large companies exert the most influence by controlling a substantial buying share in the rubber market, he commented, it (the market) is not perfect ("*man pen talat mai sombun*"). During a part of our conversation when we were speaking in English, Dr. Somboonsuk referred to this as "cheating". Along these lines, he noted that the forwards market is only for large merchants ("*talat luang na mi samrap pho kha yai yai*"), and that individual rubber growers by and large sell no matter what, as they do not wield influence over the market and no one knows what the market will do.

In the informational interview I had in the Khuan Khanun ORRAF office, the agricultural extension agent remarked that forwards prices for rubber follow the oil price ("*tam kan loei*"). She noted that if the oil price increases but rubber production is too high, the rubber price might rise somewhat, but not by much. However, the informants at this interview noted that local rubber prices differ depending on location, which is due to transportation costs. They will tend to be higher in places with factories close by. The cooperative leader present during the interview corroborated this point, saying this is why the prices in Hat Yai markets and prices elsewhere in southern Thailand would differ (the Hat Yai price would be higher).

Growers I spoke with, for example those in Tha Sae District[12], also reported that

[12] Informants THS1G and THS2G

while local prices and those outside of Thailand are connected, they do not concern themselves with the latter. Rather, they pay attention to what the local latex- and rubber sheet-buying factory publishes. They explained that they find out about these using their mobile phones, and the price changes about three times daily, or in other words "*plian plaeng talot*" ("*it changes all the time"*).

Regarding the high rubber prices in 2011, Dr. Somboonsuk attributed these to basic supply-demand mechanics: other producing countries faced problems such as floods, meaning production dropped substantially. Demand, especially from China, was also strong at the time. Lastly, oil prices had risen, which led to substitution effects beneficial for growers, as manufacturers relied less on synthetics. The low prices (at the time of my research) Dr. Somboonsuk commented were the result of reduced purchases from the Eurozone as well as a general slowing down of world market growth overall: "*talat lok chalo tua*." Since 2011, Thai exports of TSR, while higher than they were during the low points of the global economic recession, have for the most part remained within 80 to 120 million kilograms per month, fluctuating monthly yet not displaying strongly upward (or downward) trends (oae.go.th).

Rubber's Labor Demands

The growth in rubber cultivation throughout Thailand (Figure 3) is especially noteworthy when one bears in mind that maintaining rubber stands and harvesting latex is a labor-intensive process. In fact, the Thailand Development Research Institute (TDRI) reported that the labor required per area of land in rubber cultivation is highest in comparison

with other perennial tree crops such as coffee or oil palm (TDRI 2007). Indeed, part of what makes rubber—or the topics surrounding its cultivation and production such as workplace relationships or ties with commodity markets—an interesting object of study is the seemingly unchanging labor needs that have persisted for over a century: while methods used to extract latex from trees have undergone developments, the discovery by H.N. Ridley of the Singapore Botanic Gardens in 1897, which called for single incisions into the bark at an angle from the horizontal, is still in widespread use today (Baulkwill 1989).

The continually high labor requirements of rubber challenge some of the deterministic outcomes proposed by induced innovation theories as they are applied to agriculture (e.g., Ahmad 1966). These theories argue that the technology of the optimal, or Hicksian (after Hicks 1964), input mix in some production process changes due to shifts in relative factor prices. To illustrate, Ahmad (1966) depicts different production designs along an isoquant-shaped curve, which captures variations in technological combinations whose selection depends on factor price ratios (Ruttan and Hayami 1990).[13] The progressions marked along the curve are often described in terms of eventual agricultural mechanization. Hayami and Ruttan (1985) argue, for example, that increasing adoption of mechanical inputs in agriculture is motivated primarily by the need to reduce labor inputs. As they remark,

> "the production functions which described the individual grain-harvesting technologies, from the sickle to the combine, were induced by changes in relative factor costs, reflecting the rising resource scarcity of labor relative to other inputs" (p. 79).

Using the example of changes in US wheat cultivation from the late nineteenth century into the mid-twentieth, they note the savings in labor use after the entrance of the mechanical

[13] In standard microeconomic analysis, an isoquant is the two-dimensional projection for some set of inputs of an *n*-dimensional production function. The curve, which represents a specified level of production, shows how the two inputs or input groups can be substituted for each another while maintaining a certain level of output.

binder—from five workers to two per 140 acres.

As I have argued elsewhere using quantitative analysis (Shattuck 2012), foreign workers in Thai agriculture reflect labor-saving gains if one is willing to distinguish the agricultural labor supply between Thai and non-Thai workers. However, this artificial distinction does not mask the fact that rubber and other forms of agriculture in Thailand still exhibit consistently high labor needs. These may be difficult to fulfill in contexts where people increasingly choose non-agricultural employment and/or there are local labor shortages. This is a point to which I will return below in the discussion of informants' comments.

For rubber holdings in southern Thailand, it has been widely noted that foreign labor, mainly from Myanmar (Burma), compensates for local labor shortfalls, thus constituting a marked, or in some cases majority, share of the workforce in plantation maintenance and harvest (Martin 2004, TDRI 2007, Hall 2011, Simien and Penot 2011). Shortfalls in local Thai labor have been attributed in part to increasing distaste for so-called '3D' working conditions, or those that are considered dirty, difficult, and dangerous (e.g., TDRI 2007, Thiwakun and Wongkonthut 2010). Chantavanich and Jayagupta (2010) point toward a supply-demand imbalance in labor markets as the reason behind the Thai government's first addressing issues of foreign labor employment in the early 1990s. As they write, Thailand began facing lower comparative advantage in labor-intensive industries, which came at a time when higher education and a declining birth rate amongst Thai citizens left fewer taking on jobs in the labor-intensive industries.

The nexus of foreign labor dependency/local labor scarcity and market exposure is a tension that I had at first intended to make the subject of this thesis. However, I have

determined that a narrower focus for the project would enable me to engage more deeply with one or a subset of issues, instead of attempting to patch together a mechanism that links foreign workers with growers under an umbrella of global commodity markets and price fluctuations. I decided on this route partly due to the level of access I had to foreign worker informants. As noted in Section *II. Methodology* above, in Phang Nga Province I connected with the FED, which made it possible to speak with eight foreign workers out of a total of ten that I interviewed[14]. However, I did not have an opportunity to speak with the workers' employers for various reasons. In several cases, for example, employers were absentee farmers and seldom came to Phang Nga. Many lived and worked in nearby Phuket, I was told. Therefore, to attempt an analysis of this nexus by inferring from cases of growers and workers independent of one another in terms of workplace relationships would be general and overlook a host of local, meaningful specificity. Despite this change in direction from my original plan, much of the information collected during the ten interviews with foreign workers aids substantially in addressing the research problem I outlined in the introduction.

Beyond these logistical constraints, after speaking with several growers directly, as well as with Thai professors and agricultural extension agents about rubber cultivation in southern Thailand more generally in the informational interviews, I learned that the notion of a sweeping dependence on foreign workers across the South does not always bear out, as much of the literature suggests. Indeed, in one district of Phatthalung Province I was told that very few, if any, growers employ foreign workers. Several people said that if I wanted to see where such a practice does happen, then I would have to go up to Surat Thani Province or

[14] The remaining two foreign workers, whom I interviewed in Tha Sae District, Chumphon Province, were able to speak with me while their employers sat at the table.

Phang Nga Province. This comment provides a glimpse into the variation in labor practices in southern Thailand. Even if the eventual aim is to deconstruct it, building up a mechanism that brings together employers, foreign workers, and markets would be precarious with the information I have. For this reason I will limit my focus to the owners of rubber plantations (the growers). Looking into such a nexus between these groups could prove very worthwhile in future research, however.

Although I use the term ‘southern Thailand’ and its adjectival form throughout this study, it is important to stress that claiming growers I interviewed fit a ‘southern Thai’ characteristic would be problematic and would easily mislead and/or misrepresent. I thus use the terms in a geographical sense only, to denote growers with plantings in provinces south of Prachuap Khiri Khan and north of the Malaysian border.

IV. The Protests

I began this study with a recap of a protest that took place in Nakhon Si Thammarat Province in July 2012, which was not an isolated event. To recall, several reports in widely read newspapers over the past few years have drawn attention to rubber growers' feelings of discontent about prices and the apparent failings of Thai government to step in and assist. Thailand's newspaper media tends to be heavily concentrated in Bangkok. While the top two Thai-language mass dailies, Thai Rath and Daily News, are published in Bangkok and distributed across the country, the papers also have field offices outside of Bangkok—the Thai Rath, for example, has thirty-five news centers in other provinces (thairath.co.th). Coverage pertaining to particular provinces, districts, etc. thus finds large audiences, in all of Thailand's regions.

While protests vary in terms of specific demands, common among them is a call for government measures of the sort that move in the direction of 'social and natural protection' and away from 'economic liberalism', to draw on Polanyi's (1944) concept of a double movement, to shield growers from the vulnerabilities unleashed by commodities markets and fluctuating industrial demands. In a response to such demands for intervention, though, Agriculture and Cooperatives Minister Yukol Limlaemthong was quoted as saying the government "wants rubber prices to move in line with the market mechanism", adding that pledges to prop up prices would strain government budgets; as he stated, "we don't know how much money we'll have to spend." (Bangkok Post, August 25, 2013)

The articles report on growers' struggles against a constellation of market forces outside of their control. The subject even appeared in the Asia Pacific section of the New

York Times on August 29, 2013. The Times reports that growers in southern Thailand "snapped" in August in response to falling prices. The article also highlights political tensions that underlie growers' frustrations. For illustrative purposes, and to motivate the development of my conceptual framework below, I will review several other of these accounts.

In January 2012, more than six months prior to the demonstration in Na Bon District, about 100 growers in Satun Province gathered at an intersection in the provincial capital, trying to recruit others to join them in their pleas to have the government intervene to support the rubber price (Thai Rath, January 10, 2012). The group's leader announced that if the government did not act according to their demands, they would drive trucks carrying tanks of latex to Bangkok to empty in front of Prime Minister Yingluck Shinawatra's house. A variant of this threat was actually followed through in Trang Province's capital city in August 2012. There, about 1,000 growers from the province's ten districts had gathered in the city to call for government assistance to alleviate their feelings of trouble and concern ("*khwam dueat ron*" in Thai) (Thai Rath, August 20, 2012). These feelings, they argued, were rooted in price unfairness because farmers are disadvantaged compared to people involved with industry. Similar to the demonstrations in Na Bon District, the growers announced a series of demands directed to Prime Minister Yingluck Shinawatra. These included a price floor, an increase in the number of rubber-buying shops in each district, and keeping corruption in check by making sure 'red-shirt politicians and industrialists don't take advantage of the budget [allocated to ensuring price stability]'.[15] The protesters gave the Prime Minister's Office

[15] Translated and paraphrased by author, original text: "*หามาตรการป้องกันการทุจริต งบประมาณที่ใช้ในการประกันราคายางพารา และป้องกันการฉวยโอกาสจากนักการเมืองเสื้อแดงและนายทุนที่กอบโกยผลประโยชน์*"

fifteen days to respond to their demands. Finally, they dumped two containers filled with latex on to the street outside of the provincial courthouse.

The 'red shirt' reference in the protests is worth considering briefly. The term 'red shirts' (or "*suea daeng*") is used in Thailand to identify members of the group, the United Front for Democracy Against Dictatorship (UDD). The group began in opposition to the 2006 coup that ousted former Prime Minister Thaksin Shinawatra (brother of current Prime Minister Yingluck Shinawatra) over corruption charges and the train of political events that has followed in its wake. Group members allege that these have undermined democracy in Thailand, an example being the contention that former Prime Minister Abhisit Vejjajiva was illegitimately elected in 2008. Membership of the 'red shirts' is composed mostly of rural Northerners, Northeasterners, as well as parts of Bangkok's working class. As such, many of the 'red shirts' have been the principal beneficiaries of a generous rice subsidy program, pledging 15,000 baht per tonne, under Prime Minister Yingluck's government. The subsidy, which helped Prime Minister Yingluck win the general elections in 2011, has been noted as a case of "classic Thaksin populism" (*The Economist*, August 10, 2013), after Prime Minister Yingluck's brother. Former Prime Minister Thaksin was instrumental in designing the program from outside of Thailand.

Thus, the reference signals that calls for the government to intervene likely have broader, specifically political, agendas than providing income supports alone. Indeed, the recent New York Times article cited above draws attention to the political content of the protestors' messages. Thus, when the Bangkok Post reported that Democrat leader Mr. Thaworn Senneam of Nakhon Si Thammarat Province claimed grievances submitted to Prime Minister Yingluck were absent of intent to cause political trouble, the only purpose

being to help farmers, (Bangkok Post, May 2, 2013) one should probably be somewhat skeptical.

The regional political divisions that have appeared in more pronounced ways in the years since the 2006 ousting of former Prime Minister Thaksin Shinawatra are also reflected among groups of rubber growers in different provinces. In late August, for example, the Bangkok Post reported (August 29, 2013) from Deputy Prime Minister Pracha Promnok who said that growers in northern and northeastern Thailand agreed not to take part in the protests against low rubber prices scheduled five days hence, on September 3, 2013. This decision was a result of negotiations between Agriculture and Cooperatives Minister Yukol Limlaemthong and representatives of rubber growers from throughout Thailand.

Published on September 2, 2013 in the Bangkok Post, the article "Colour divide hampering rubber price talks" by former Post editor Mr. Veera Prateepchaikul further draws attention to this issue. According to Prateepchaikul, low rubber prices are not the most critical concern reflected in the protests. Rather, "[i]t is the government's attitude toward the southern rubber planters which may be influenced by the colour-coded political divide." Prateepchaikul writes further that many of southern Thailand's rubber growers question why the government continues to support rice farmers and does not guarantee the rubber price. As Prateepchaikul comments:

> "While the government can dig deep into the coffers to support rice farmers with the full knowledge that it will have to bear a huge loss of up to 100 billion baht and the grim prospect there may not be enough space in warehouses to store the new rice, it appears the same government is reluctant to set aside, say, 20-30 billion baht, to help shore up the rubber price. … Apparently, the rubber price issue has become more complicated because it has been politicised by both sides of the colour-coded political divide, especially with the biased attitude towards the protestors."

Prateepchaikul regards the protestors' criticism toward the choice of the Thai government to

subsidize some agricultural sectors and not others as valid. The political content of the protests is therefore evident, an outcome that relates to Ferguson's (1990) conclusions: seemingly apolitical technical interventions cannot easily be taken out of their political contexts.

Voicing sentiments of struggle and hardship, which in the Thai press is often reported using the term '*khwam dueat ron*', appears to be a strategy that protest leaders use to make their appeals resonate with politicians. For example, the Bangkok Post published an article this past spring that quotes Mr. Perk Lertphanwong, current head of the Thai Rubber Party, as saying that rubber prices were exacting substantial economic tolls on growers (Bangkok Post, April 28, 2013). For example, Lertphanwong estimated that more than 100,000 pickup trucks would be reclaimed by the end of the year because of farmers' liquidity shortages. He has also argued for reducing the cost of saplings (Thai Rath, July 5, 2011), having the government support a facility that processes rubber in order to achieve higher value-added levels on rubber products (77.nationchannel.com), as well as removing middlemen from the marketing process (Thai Rath, September 8, 2012). The middlemen, he argued in 2012, were unwilling to buy rubber from growers at the time. Instead, they held off because they knew that a government program procuring rubber (with the aim of price stability) was running into financial trouble, meaning stock piles would be sold off at low prices.

In July 2013 I had the opportunity to speak with Lertphanwong directly to discuss the aims of the Thai Rubber Party, as well as to ask him what the Party held to be the biggest types of challenges growers confront. Lertphanwong clarified up front that the Party strives to represent all types of growers from all parts of Thailand engaging in both small and large scale operations. He then said that a substantial problem in the rubber market generally is the

lack of industry and sites for refining rubber from a raw material into a more highly value-added product. As I will show below, Lertphanwong and the Party are not alone in holding this view.

In terms of the single most important issue with which growers from all over Thailand contend, however, the price is it, or "*panha lak*" (*"main problem"*) in Thai (Personal Communication, July 4, 2013). Lertphanwong said that once concerns of low prices and price instability are sorted out, solutions to all other problems will fall into place. As he argued, with a good price the children of growers who are working in other occupations in places away from their homes will choose to return and earn money on the farm. He said this is because the income-earning potential in rubber is relatively higher than that in other jobs. Other constraints facing Thailand's rubber economy, such as growers being able to find adequate labor, would thereby be met, he maintained. This is an interesting argument, and it is a point with which I go into further detail below. Briefly, it is worth taking note that researchers have found Thailand and other parts of Southeast Asia to face an increasingly de-agrarianizing labor force. For example, Hall et al (2011, p. 118) remark "[t]here is extensive evidence across Southeast Asia that farmers would like to get out of agriculture themselves and, even more, that they hope their children will not become farmers." A statement such as the one from Lertphanwong suggests that the trends Hall et al mention would not be entirely applicable to something as (potentially) lucrative as rubber. In the discussion below, though, I will discuss how Lertphanwong's logic might not hold up unproblematically.

I asked Lertphanwong about the Party's affiliation with the protests last year, and he said that it [the Party] had helped in organizing these demonstrations by sending individual

Party members to partake. I then asked why the majority of the protests were held in the South, and why they were not taking place in northeastern or northern provinces. He told me that because rubber is still new in those two regions it does not have the widespread presence in rural families' livelihoods that it does in the South (and parts of central Thailand). Additionally, he noted, the cost of living is still comparatively cheaper in the North and Northeast, meaning low rubber prices would exert less pressure on family budgets. Beyond this, he remarked that where rubber is grown in the North or Northeast there is also rice. In the South, however, farmers only have rubber and oil palm. By this he meant that northeastern and northern farmers would be in a more stable household income position, even if rubber prices should fall.

Although registered as a political party in Thailand, Lertphanwong emphasized that the Thai Rubber Party does not have political aspirations in the sense of changing the current Prime Minister or administration; the only aim of the Party, he commented, is to look after the wellbeing of growers. While this may be the Party's stated position, Lertphanwong also remarked that the current government does not take an interest in the South's rubber growers; they are instead only interested in rice farmers. To finish our conversation I asked about the Party's stance on the government's 15,000 baht/tonne rice price guarantee (an issue that was making headlines daily in Thai and English newspapers at the time). While he does agree that the program might be beneficial for farmers for a year or so, its continued implementation will cause rice stocks to accumulate. Moreover, it will diminish the government's budget for other forms of agricultural assistance. Such criticism resonates with Prateepchaikul's comments in the Bangkok Post (September 2, 2013).

Beyond telling the reader that rubber growers are feeling the pinch of lower rubber

prices (compared to highs in 2011), reports in such outlets as the newspapers cited above or comments reflecting the opinions of the Thai Rubber Party additionally relate that a common problem confronts Thailand's rubber growers. Prices and a lack of opportunity for value-added gains on rubber in Thailand create hardship for farmers. Newspaper articles report on protest platforms that identify a problem in Thailand's rubber industry in need of correction, which can be achieved through a market-based calculus. Concerns over prices, at least in the short term, recommend themselves to government policy enacting price supports, while encouraging opportunities for higher value-added content in rubber calls on the need to develop domestic industry such that incomes from rubber are not (almost) entirely dependent on raw materials exports. In either case, improvements in growers' positions would come through figuring out sets of political-economic actions.

Participants at the rallies are, of course, growers themselves voicing frustration over a set of principal worries they see as pressing and needing of attention. Aside from the fact that they had never taken part in protests like these, the various informants I spoke with identified problems they encounter that do not rest entirely within the sort of market logic taking center stage at the demonstrations. I would imagine that the protesters likewise believe they are confronted by other issues as they maintain and tap their holdings (or hire workers to carry out these tasks) than prices and markets alone. Thus, probing into what the demonstrations *do not* convey motivates asking what they really *do* for Thailand's rubber farmers. What might undermine their intended objectives presently or in the future?

The protesters' messages resonate with classic issues of global unevenness that world systems analytical traditions address. In effect, protesters seem to reify the world systems imagery. As I explain in conceptual framework below, these perspectives compare cores,

peripheries, and semi-peripheries not in terms of inclusion into or exclusion from the capitalist world system, as all places are held to be part of a single capitalist system, but rather in terms of 'articulation' to varying degrees. Cores are characterized by internal market consistency, whereas peripheries produce primary products and are dependent on the core's demands; peripheral incomes are subsequently subject to core-driven fluctuations in the prices of these goods. Semi-peripheries, which arguably include the Thai economy, are host to both core and peripheral processes. Within this analytical framework, the incomes of Thailand's rubber growers would be seen as derivative of market activities outside of the country. Unevenness between places is a result of unequal exchange (more on this concept below).

Portraying problems and solutions in this way contributes to essentializing growers' experiences, conveying certain 'meta-features' about growers. This sort of typifying naturally elides aspects of growers' individual circumstances in order to concentrate on a select few. As I stated above in *I. Introduction*, though, these peripheral elements weigh perhaps as heavily, if not more so, than concerns over price and market dimensions. Conceptually, this tension relates to Scott's (1998) discussion of the 'Everyman' of scientific, modern agriculture. In the section, "Rural Settlement and Production", of *Seeing Like a State*, Scott goes into considerable depth exploring the gaps between the institutional character(s) of modern agriculture and farmers themselves. He contends that while the abstractions required of scientific agricultural planning have been acknowledged by many critics, important questions of usefulness for whom and what are often overlooked: "It is at the level of human agency where scientific agriculture constructs its greatest abstraction: the creation of a stock character, the Everyman cultivator" (p. 299). I contend that a disconnect similarly obtains

between the ‘Everyman’ protester and the grower.

I will not work through the detail of the ways in which one individual’s experiences or opinions diverge from larger narratives. This would not be a fruitful exercise, as there is bound to be an uncountable number of such differences that become apparent as one abstracts from specific people and their stories to the scale of activist group or broad-based organization. Neither do I propose that such representations are inherently problematic. Integrating the full suite of growers’ frustrations into a single campaign would be unwieldy indeed. I maintain, however, that these resulting portrayals support interventions of questionable efficacy into smallholder agriculture. Moreover, they facilitate seeing smallholder agriculture in terms of core and peripheral processes; growers as a group are situated away from the places where market prices materialize and then steer household incomes from above.

V. Conceptual Framework

Introduction

In academic literature on rubber in southern Thailand, or indeed many forms of agriculture found in tropical or sub-tropical climes, one does gain a sense that the market underpins the cultivator's essential experience, although through discussion subtler than that in newspaper reports on protests and demonstrations. Simien and Penot (2011), for example, endorse diversified agricultural systems for rubber growers in the Thai provinces of Phatthalung and Songkhla. In addition to rubber, these systems would include vegetables, fruit trees such as mangosteen or durian, etc. Simien and Penot describe the benefits of doing this in terms of rubber price uncertainty. As they note, "[f]ruits and vegetables provide an economic buffer in the face of declining rubber prices" (p. 258). This contributes to farmers' "resiliency", as they refer to it. No doubt there is some truth in this comment. The left panel of Figure 4 shows an example of intercropping, which I had not witnessed before, in Surat Thani Province at the plot of a grower who had put his bets on two widely cultivated crops in southern Thailand, rubber and oil palm. The right panel shows a more typical example of intercropping where rows of young rubber trees are separated by patches of pineapple.

Figure 4: Left: Rubber intercropped with palm (Photo: W. Shattuck, Kanchanadit District, Surat Thani, 26. May 2013), Right: Rubber intercropped with pineapple (Photo: W. Shattuck, Thai Muang District, Phang Nga, 20. May 2013)

In contexts where labor is hired to work on farms operating exclusively for profit, as opposed to those that additionally combine subsistence agriculture, literature also often suggests that a market logic is embedded in workplace tensions that emerge from employer-employee hierarchies and/or racialized differences in ethnicity between the two. Appealing to Wolf's (1971) typological distinction of 'new' forms of plantations that, in contrast to the 'old', exhibit impersonal relationships centered around the wage as remunerative for "muscular energy" (Wolf 1971, p. 169), Zawawi Ibrahim's text, *The Malay Labourer by the Window of Capitalism* (1998), addresses status in Malaysian plantations. He writes that in some places status has been used as a means to appropriate labor power. For example, he finds that those in managerial positions at times hired workers based on an eight-hour day and then proceeded to set productivity quotas. If the quotas were unmet, a loss of wages would result. Ibrahim argues that such pressures on workers constitute a means of enabling profit-maximization. Throughout the book, he pays particular attention to contexts in which ethnicity and class form a "congruence" (p. 60) on the plantations. He found that individuals

at higher positions on the social hierarchy tended to be non-Malay (i.e., Chinese) while Malays were often subordinate and made up the lower levels of the administration in addition to more or less the entirety of the laboring group.

Beckford (1972) similarly regards that a central tension, or inconsistency, in plantation societies is driven by the dual concepts of social integration and cultural pluralism. Social integration, he writes, points to a common profit-driven economic interdependence between workers and employers. He defines this in terms of economic production, aspirations to become a member of the planter class, and sentiments of nationalism. These factors emerge in light of the welfare for all groups in a plantation society being dependent on relationships with the metropolitan core (more on the concept of a 'core' below). Social and cultural plurality signifies difference, such as that pertaining to race or ethnicity, and can lead to internal conflicts as a result of pressures created by low prices in commodity markets, among other factors.

In these accounts the market for plantation output rises to a prominent position. It appears to be endowed with certain properties that materialize in the shape of workplace relationships as well as the decisions on what is best to cultivate. Moreover, as discussed in Section III, the demands of demonstrators, talking points of the Thai Rubber Party, and discourses that emerge from agricultural extension offices (e.g., the ORRAF) relate to a sense of market determinism over growers' livelihoods. The defense to this is situated in a market rationale. As such, the market is left unproblematized as the main entity underlying and giving rise to other concerns. In this conceptual framework I aim to move beyond the market's role with a taken-for-granted status, to question its position as agent, and to enroll it into a more integrative and broad-based framework that draws from multiple theoretical

angles.

In this section I engage with literature in which discussions of export-oriented agriculture draw a clear distinction between a place where a crop grows and a different place where the harvest becomes a 'raw material', something which is then refined into consumer or industrial goods. Here, descriptions of agricultural processes are framed in terms of outer rings of global capitalism that come under influences originating in places of more 'core' activity. The concerns, oppositions, and demands reported to newspaper audiences in articles on the protests and demonstrations appeal to these spatial divisions. Such a framework is not entirely irrelevant to what I learned through field research, as growers commented that they indeed confront challenges rooted in the unpredictable turns of commodity markets. However, I also hold that this conceptualization can be opened up and made more robust through complementary perspectives.

World Systems and Agriculture

Glassman (2003) remarks that Samir Amin's discussion of cores and peripheries provides a useful "spatial ontology" (p. 31). In this article, he demonstrates that while the 1997 financial crisis in Thailand had its most direct effects on Bangkok's economy, individuals in the Thai government relied on rural areas to absorb unemployed internal migrants returning to their home provinces. He thus draws attention to critical spatial unevenness within the country. Noting these divisions' relevance to agriculture, he writes,

> "the transformation of agrarian regions also takes place … through increased development of transportation and communication links that assist the commodification of agriculture and tie it more closely to urban-industrial and export markets." (p. 42)

I begin this sub-section with reference Glassman's piece for two reasons, aside from its application to Thailand. Firstly, the link he makes between "agrarian regions" and urban and market centers is relevant when thinking about the problems depicted for smallholder rubber farmers in southern Thailand. As seen in the Na Bon District protests in 2012, for instance, the types of transportation connections Glassman refers to were emphasized and point toward a topography of intra-national unevenness. Secondly, an appeal to Samir Amin's work is also fitting for my objectives. Amin, an economist, articulates uneven relationships reflected spatially between cores and peripheries. His accounts convey how local experiences and processes are components of larger processes. Whether one country is alleged to wield more economic influence than another, or certain groups of people within a country relate with and react to a network of transnational forces, a world system holds these pieces together. Taking account of these relationships is important for such scholars as Soja (1980). Soja is critical of purely Marxist approaches that do not enroll discussion of space into their interpretations of production relations.

My purpose here is not to discuss and then refute the important contributions made by Glassman and Amin, among others. Indeed, the specific setting within which a scholar such as Glassman was working is quite different from my own. I will consider how the analytical positions that these researchers offer certainly help to explain parts of what rubber growers discussed with me in interviews. Additionally, however, I hope to demonstrate the ways in which this framework can usefully work alongside alternative accounts.

Amin's texts, *Accumulation on a World Scale: A Critique on the Theory of Underdevelopment* (1974) and *Unequal Development: An Essay on the Social Formations of*

Peripheral Capitalism (1976), both go into a discussion on ‘articulation’ and the term’s opposite, ‘disarticulation’. By ‘disarticulation’, Amin suggests that the periphery lacks the core’s autocentrism, a place where capitalist processes are fully integrated and have multiple connections among industries and branches of the economy. In the more disarticulated peripheries, economic processes operate from their dependence on the cores’ activities, namely their economic demands. In this framework, world economies should not be understood in a dual sense, as in an either/or embrace of capitalism. Rather, there is a single world capitalist system, and economies exhibit varying degrees of articulation within the system. Understanding capitalist processes through this lens is a departure from standard Marxist theorizing, as any capital invested in the periphery is done so with an external reference, namely in relation to economic activity in fully articulated cores.

As Amin argues, the development of underdevelopment occurs when the autocentric core no longer requires certain of the periphery’s products, rendering these economic pursuits in the periphery redundant and without any outlets. He writes thus that the fully integrated and articulated cores reflect nations with a true “economic space” (1976, p. 238). In the periphery, by contrast, firms and industries are atomistic “microspaces” (1976, p. 238). Disarticulation exists in the periphery because investment in industry is lacking; the competitive advantage on industry that the core experiences renders peripheral investment to be unproductive. Earnings in the periphery, Amin explains, are thus used toward consumption goods, meaning that such expenditures do not produce surplus value—namely profit in the sense of internally consistent capitalist spaces.

In both the 1974 and 1976 works, Amin discusses movement of value in terms of unequal exchange, which derives from the imbalance between export prices and internal

prices in the peripheral economy. This outcome reflects a new form of primitive accumulation:

> "The characteristic feature of primitive accumulation, in contrast to normal expanded production, is unequal exchange, that is, the exchange of products whose prices of production, in the Marxist sense, are unequal." (1976, p. 187)

In terms of peripheral agriculture specifically, Amin notes that when production is (re)oriented for export, it is done so as a consequence of imported goods having value under a monetarized economy—goods that did not have the same value under pre-capitalist conditions. To bring in an example, he actually discusses rubber expansion across Southeast Asia, commenting that there was a fifty-seven fold increase in smallholder plantations between 1909 and 1940 (Amin 1974). The bourgeoisie in urban centers of the periphery look to invest in agricultural land because of the opportunity to earn income from rents. These will continue to accrue as long as economic demands from the core persist. Peripheral nations' bourgeoisie, Amin (1974, p. 377) contends, thus remain "appendages" to more powerful capitalist forces due to their reliance on exporting primary products.

In addition to Amin's analysis, there are several other illustrative examples that depict agriculture, in particular tropical and with an export-orientation, in terms of core-periphery divisions. For example, Beckford's (1972) text, *Persistent Poverty: Underdevelopment of plantation economies of the Third World*, explains how plantation economies exhibit characteristics of dependency, in turn maintaining conditions of underdevelopment. Beckford defines plantations by their singular drive for profit, which distinguishes them from other settlements such as manors or haciendas. The latter aim for self-sufficiency in addition to profit, and factors such as religion or family ties are central features in relationships of agricultural production. Beckford maintains that plantation economies frequently depend on

imports of food and other essentials because their agricultural systems are biased toward producing a limited range of products.

Similarly, Sofer (1985) draws on the example of two Fijian islands to analyze the relationships between agricultural production and material imports—the latter, Sofer comments, are reflective of new consumption patterns that evolved during and on account of Fiji's colonial period—in terms of core-periphery unevenness. In the example, Kadavu Island grows a type of pepper that must be shipped through Suva Island to reach markets in other parts of Fiji. Even if commercial production does not account for the majority share of households' activity on Kadavu, Sofer remarks, this type of production is nonetheless essential because residents consume imports of clothing, certain foods, and building materials. Sofer argues the connection between Kadavu and Suva demonstrates dependency of the former on the latter. As such, inadequate infrastructure, such as inconsistent shipping services, diminishes Kadavu's capacity to respond to changes in market conditions.

In *Regional Integration on the Capitalist Periphery: The Central Plains of Thailand*, Douglass (1984) discusses internal peripheries in Thailand, paying particular attention to the Central Plains. According to the author, maintaining an alliance with the United States in the post-World War II era rendered Thailand to "[accept] a position … on the outer orbit of the international system as a supplier of raw materials and primary products." (p. 171) Thailand's exchange economy was spatially expanded through road and railroad construction into rural areas, he writes, which meant that towns in the Central Plains developed principally in terms of the linkages they provided to Bangkok. Concerning the role of agriculture in national development agendas, Douglass notes that the Thai government's need to fund urban industrial growth has been facilitated through continual exports of agricultural raw materials.

As opposed to providing support for subsistence farming, the government's attention tended to focus instead on commercial farmers and agribusinesses producing higher value crops. Thus, industrial investment in Bangkok signified that attempts, however successful or unsuccessful they turned out to be, were made to promote an internal consistency. This relied, however, on the functions of internal peripheries.

The texts of Glassman, Beckford, Sofer, and Douglass articulate certain relationships between rural peripheries and cores, which often share the same national space. These accounts highlight vectors of economic agency in which undertakings in the former places are positioned at the endpoints of processes originating in the latter. Rubber protestors' frustrations over low prices and price volatility clearly align with this conceptual structure and the unevenness it connotes. In the following subsections I will review literature that explores beneath this structure.

Critiques

The insight Amin brings to understanding relations of production has been received under varying degrees of criticism. Soja (1980) writes positively on Amin's integration of space in the discussion on transfers of value from peripheries to cores, something which troubles the Marxist take on the aspatiality of production relations. Throughout this particular article, Soja contends that global capitalism functions both through horizontal (in terms of cores and peripheries) as well as vertical (in terms of class struggle) means. At the same time, however, Soja (1980, p. 224) also notes that Amin takes "two steps forward, one step backward", as Amin ultimately makes an appeal to global social relations consisting of a

world bourgeoisie and world proletariat, which Soja claims ventures into aspatial territory.

Disney (1976) critiques Amin's conceptual framework by arguing that it does not fully explicate the concepts of core and periphery, despite their obvious importance to his arguments. For example, Disney cites greater degrees of economic similarity (at the time of writing) between countries such as Portugal and Argentina despite their locations in Western Europe (a core) and Latin America (a periphery), respectively. To this end, he writes that a fuller articulation of peripheries within individual economies is necessary, for example the peripheral position of Appalachia within the United States. This point is taken up by Glassman (2003) and others discussed above, who comment on integrating subnational spaces.

In Peet and Hartwick's *Theories of Development* (1999) the authors review some of the main critiques of dependency theory and world systems analysis, bringing both into the same discussion. Among the critiques the authors summarize is that of Booth (1985). As they note, Booth contends that these positions on development imply a "metatheoretical commitment" (p. 119) and are teleological. This type of critique relates to issues frequently raised in the meta-narratives and meta-geographies literature, including by political geographers. In his recent work on questions concerning land grabbing in Cambodia, for example, Baird (2013) argues that the land acquisitions in his research area in northeastern Cambodia have not been as 'global' as the prevailing land-grab meta-narratives would suggest. He contends that meta-narratives insufficiently give attention to certain other issues, even though these (lesser noticed) are also crucial. In other words, the audience of meta-narratives is subject to under/mis-representation and is thereby exposed to more totalizing

explanations. As he continues, meta-narratives are often deployed by groups such as NGOs to voice concerns and push for political influence. They are thus "commonly linked to various kinds of 'strategic essentialisms'." (Baird 2013, p. 9) Similarly, reports on widespread rubber protests demonstrate how the campaigns of certain groups distill individual experiences into carefully constructed talking points, which are then used to represent the interests of the group's members to sway politicians to enact legislation in their favor.

Pointing out the potential that meta-narratives usher in flawed, or at best partial, understandings of problems in particular places, Baird (2013) cites the work of Lewis and Wigen (1997), *The Myth of Continents*. While a principal objective of Lewis and Wigen is to identify the meta-geographical problems of parsing the world into the set of seven continents with which elementary school students become familiar, the authors additionally provide a discussion on world systems, noting both the advances over earlier forms of spatial conceptualizing as well as pointing out what they perceive to be the central weaknesses. They contend these fall into three categories: an over-emphasis on structure and mechanism to explain historical change, unevenness in spatial coverage (meaning that places such as sub-Saharan Africa or Siberia receive limited, if any, attention), and an economic bias.

Concerning the last of these, Lewis and Wigen remark that "formal models of world systems theory ... have a tendency to glide over cultural relations in preference for analyzing material issues, particularly those of circulation or exchange." (p. 140) They note that one of the problems brought on by the economic bias is the erasure of culture from cartographic representations of world history, thus giving way to meta-geographical depictions. Their recommendation entails appealing to "cultural macroregions" (p. 141), or acknowledging

cultural commonalities among different places. They comment further that taking cultures in isolation is dually problematic. Lewis and Wigen demonstrate the ways in which boundaries among different regional and cultural imaginings are constantly (re)negotiated, criticizing the reduction to conceptual spatial binaries. From my research findings, I agree with the authors' point that the economic leaning of a world systems approach can be troublesome theoretically and practically if left without the support of additional perspectives. However, the inclusion of 'cultural' elements that I found through my research does not align precisely with their re-spatializing argument. My use of 'culture' instead centers on shifting beliefs about what one considers to be worthwhile employment.

It is fair to conclude that world systems theory is helpful as a heuristic to think through the position in which agriculturalists such as smallholder rubber growers find themselves. Indeed, it appears that the imagery it offers through spatially distinguishing types of activity resonates with the demonstration agendas reported in the newspapers. There are currently certain basic empirical facts about growing and selling rubber in Thailand: the majority of it is exported, prices materialize largely through transactions outside of the country and are then passed down to growers absent of sufficient government intervention if they fall. Some content from world systems theory thus applies usefully. The ease with which it can be grasped conceptually, moreover, makes for an attractive analytical approach. However, a focus on larger systemic processes may omit adequate consideration of more locally specific factors. Engel-DiMauro (2009), for example, points out that world systems research often has fallen short of properly accounting for ecology; it tends instead to be concerned with social phenomena. In this sense, where world systems approaches can be strengthened by substituting and/or complementing with different theoretical angles from

outside of the theory is also critical.

Additions but not Replacements

Beyond a more specific definition of which spaces belong to the cores and which to the peripheries (e.g., Disney 1976), world systems' analytical takeaways may be seen as too heavily a structured set of relationships with uni-directions of action from core to periphery. However, the interpretation of core-*to*-periphery lines of influence is not necessarily a feature built into these analyses, as researchers such as Engel-DiMauro (2009) have argued. Engel-DiMauro is quite critical toward political ecologists' tendency to reduce world systems theory to determinist, functional instruments of which they (political ecologists) are largely critical themselves.[16] He stresses that the core-periphery concept is not explanatory; rather it is descriptive. The determinism, the author continues, that is often assigned to world systems is misplaced because this branch of research has always held on to an idea of co-construction and co-determination across scales. He summarizes that world systems research looks at the effects of the world system on the people within it (the world system) as well as the ways in which changes among people and within societies have far-reaching impacts. Despite Engel-DiMauro's reading, the texts reviewed above are not explicit on this point, and subsequently they convey a hierarchy of actors more strongly.

Contributions from other researchers echo Engel-DiMauro's comments about co-construction, although without directly engaging world systems theory. For example, Hart

[16] It should be noted that Engel-DiMauro (2009) contends world systems research facilitates analysis and is not itself constitutive of a theory, which is a point emphasized by Wallerstein (1998). Wallerstein writes that world systems research is a critique, a response to dominant modes of explanation in the social sciences.

(2002) demonstrates ways to see around the presentation of core and periphery through an active (e.g., core) versus passive (e.g., periphery) dualism. She contends that narratives of globalization appealing to dichotomous understandings of global/local rely on problematic conceptions of space, namely those that see space as a passive object, comparable to a receptacle of activity. Hart remarks that these views in turn produce impact models, wherein key economic processes such as industrial investments are taken to originate in the West and emanate outward. She contends that understanding global activity through these vectors aligns with interpreting globalization as a set of deterritorialized processes and advocates thus for appealing to 'multiple trajectories', which she defends by writing,

> "The political and practical importance of the concept of multiple trajectories and the method of relational comparison is that they provide a means for steering a course between economism ('only one thing is possible') and voluntarism ('anything is possible')" (p. 15).

Hart maintains that globalization presents processes which "are the product of explicitly spatialized, power-laden practices at multiple levels" (p. 52). Further, what happens in certain places are not "*effects* of global flows … but actually *constitutive* of them" (p. 52, original emphasis). I will consider this point in the discussion of my research results below.

These points are brought to light through examples in Bunker's work (2003) on the Brazilian Amazon. Bunker introduces the concept of "[m]aterio-spatial analysis" (p. 250), giving a great deal of attention to the conditioning properties of the resource under consideration, e.g., rubber or iron ore. He is critical of inclinations to understand social constructions of space at the exclusion of, or perhaps diminished attention to, the conditioning features of spaces themselves on globalization and political outcomes. As an example, he situates much of his discussion in terms of a scale-space contradiction, where economies of scale stand in tension with the spatial constraints on resource extraction and

use. With parallels to Hart's work, Bunker provides illustrations of the idea that peripheries are more than just imprints of global activity; influences traverse paths in many directions. Although Bunker's piece is at times somewhat heavy-handed in attributing a function to the material and spatial properties of certain physical entities, the argument is on the whole salient and instructive to consider in tandem with the more structural explanatory devices of world systems.

World systems analysis provides one useful measure to motivate thinking about southern Thai rubber holdings within the context of global capitalism. This consideration could offer meaningful explanation to some extent, and, as noted, it appears at least that demonstrators (among other groups) reify the spatial unevenness that it describes. Although I maintain that an approach situated purely in terms of cores and peripheries to study the experiences of rubber growers in southern Thailand would be challenging, this framework of analysis establishes grounds for seeing power differentials that clearly feature spatial variation. In addition to the 'materio-spatiality' of rubber-growing locations, gradients of capitalist articulation likely also have a hand in configuring some of the real pressures on growers, which come from outside of Thailand. I contend therefore that it is helpful to bear in mind not only perspectives paying attention to contextualized processes that take part in shaping broader patterns, but also to consider how the architecture of world systems analytical approaches can dually lend constructive insight.

VI. Discussion of Research Findings

I now turn to a discussion of my research findings. In many instances, growers offered information that resonates with reports on the price demonstrations. As I discussed above in Section III, protestors cite vulnerability to low and volatile prices in terms of exposure to markets and the Thai government's lack of price supports. However, growers' comments often challenged the notion that these platforms' singular market-oriented push will have lasting and meaningful effects.

The Future Part I: Rubber's Geographical Expansion

Before looking at growers' and workers' relationships with rubber in specific social and ecological growing contexts, I will abstract to consider the main points of contention brought out in the demonstrations within broader agricultural and market arrangements in Southeast Asia. As Figure 3 shows, a substantial amount of rubber has been planted throughout Thailand over the past two decades. Some of this growth is the product of direct government intervention. Alton et al (2005) write, for example, that in the mid-2000s the Thai government was looking to support rural incomes in the North and Northeast by planting 160,000 hectares of rubber across the two regions. Dr. Buncha Somboonsuk, with whom I spoke at the Prince of Songkhla University in Hat Yai, said that high prices from 2006 onward motivated the government to enact policies aimed at increasing the planted area in places like the North and the Northeast. Of this Dr. Somboonsuk is critical, citing the resulting oversupply as evidence of this policy's shortcomings.

Outside of Thailand, rubber has also been increasingly prominent on agricultural landscapes, not always with the consent of the people closest to where it is planted. Baird (2010) writes, for instance, that large land concessions to Vietnamese rubber companies in southern Laos have been based on discourses of 'empty' spaces, leading to *de facto* land grabs in the region. Similarly, Barney (2009) writes of global business tendencies that have depicted rural areas in Laos through a 'frontier' discourse, which legitimizes the "geographical extension of capitalist relations of production." (p. 147) Capital investment has subsequently led to reduced access and enclosure, resulting in land degradation and removal of local resource bases. Such an outcome has caused land to exit from common use and enter into private smallholder rubber plantations.

Manivong (2008) attributes expansion of rubber into northern Laos to growing global demand, especially from China. As Mann (2009) summarizes, Chinese investment in rubber moved into Laos and Myanmar after large parts of rural Yunnan were converted to rubber plantations, helped along by government subsidies at the end of the 1990s. Some communities across the border in Laos welcomed the transitions under the impression that rubber would yield them substantial income improvements.

Growers I interviewed called on this proliferation of rubber throughout Southeast Asia as the basis both for current and future price woes. During the informational interview at the ORRAF offices in Khuan Khanun District, the informants commented that the abundance of rubber in world markets is the reason for the currently low prices that Thai farmers are contending with. The agricultural extension agent remarked that in Thailand's past, when rubber was largely planted in the southern provinces only, along with some cultivation in central Thailand, prices were seldom of major concern to farmers. Now that

nearly every province in Thailand has some amount planted, however, production has been too high and prices too low.

Despite widespread concern over rubber quantity dampening prices, some southern Thai growers (opportunists or investors could perhaps be better words) have actually begun planting in provinces outside of the South. I conversed with one such grower[17] in Wang Thong District, Phitsanulok Province (in the North) selling rubber saplings at a large outdoor nursery. She is originally from Phun Phin District in Surat Thani Province, and has rubber holdings in two of the province's districts. She came to Phitsanulok Province roughly seven years ago to start a rubber plantation, which is maintained and tapped by employing labor locally in the province. She told me the reason that she as well as others from southern Thailand began planting in Phitsanulok is because available land in the South has become expensive and difficult to find. After growers from the South came, citizens of Wang Thong District started planting themselves ("*pluk tam*", or *"they planted after"*). This expansion in cultivation led her to establish a nursery in the district. Toward the end of our conversation I asked which tree variety she sells, and she said the same that growers use in Surat Thani, RRIM 600. The weather and land quality are fine, she said, but the rubber quality is better in Surat Thani.

This anecdote may signal a broader trend among some of southern Thailand's rubber growers toward investing in rubber holdings in locations far removed from where they live and work. The Bangkok Post reported in May 2013, for example, that southern Thai "capitalists" had invaded districts in northern Thailand to plant rubber. Moreover, in July

[17] Informant WGT1G

2012 the Myanmar government had arrested 500 Thais accused of planting rubber illegally across the border from Ranong province (Bangkok Post, July 6, 2012). An informant I interviewed in Kraburi District[18] mentioned that she is aware of Thais using funds to invest in rubber plantations in Myanmar, which Myanmar people across the border in Kawthaung District maintain for them. It is difficult to conclude that these instances reflect widespread movement away from owners having direct involvement in managing and overseeing operations on the rubber holding. Notions of these transitions did come up in other of my interviews, however: an informant I spoke with in Chumphon, who had recently ordained as a monk[19], spoke unenthusiastically about rubber, and, in addition to relating that he may change his holdings to palm in the future, he commented that he may also simply hire workers from Myanmar to look after his plantation and then split the income.

The Future Part II: the AEC

Alleviating low prices and price fluctuations for Thailand's growers through instruments such as price floors requires government intervention, as demonstrated through the contents of newspaper articles discussed in Section III. The previous sub-section brings attention to the expansion in rubber cultivation emerging in Southeast Asia. In light of the opening of the ASEAN Economic Community (AEC) in 2015, this new growth would likely challenge hoped-for results from 'fixing' prices through subsidies, or even strengthening domestic industry to reduce the quantity of latex and rubber leaving Thailand as exports.

[18] Informant KRB1G
[19] Informant MCH1G

Under the AEC, tariffs and non-tariff barriers to trade will be eliminated altogether for most goods[20]. Indeed, one remark made during my interviews with growers was that the AEC will hurt Thailand's farmers because commodity prices will decline[21].

The positives and negatives of the AEC on the ten nations'[22] populations are yet to be determined, of course, and one should not doubt that they will likely be unevenly distributed and continue to marginalize many of those already marginalized. For this study, however, the topic that is most relevant concerns ways in which the new market terrain forged from this multilateral agreement will engage with concerns about rubber prices. While speculative at this point, the main tension could very well derive from demands for protective measures versus arbitrage opportunities that become possible with more open trade borders.

Beyond a 'freer' market for agricultural goods, though, a concern that is on the minds of a number of growers I interviewed is the uncertainty of what foreign workers will do. For example, one foreign worker[23] in Takua Pa District reported that his plan is to continue working in Thailand, save money, and then return to Myanmar to plant rubber and start an eco-tourist resort. When I asked why he planned to go into eco-tourism specifically, he

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[20] The ASEAN Economic Community (AEC) Blueprint reports that the AEC intends to "transform ASEAN into a region with free movement of goods, services, investment, skilled labour, and freer flow of capital." (2008, p. 5) The single market and production base envisaged in the AEC Blueprint calls for, among other measures, the free flow of goods among member countries. This means eliminating both tariffs as well as non-tariff barriers altogether by 2015. There are leniency windows for products included on nations' Sensitive Lists, Highly Sensitive Lists, and General Exceptions. General Exceptions are products "permanently excluded from tariff reductions for reasons of national security, protection of public morals, protection of human, animal and plant life and health, and the protection of articles of artistic, historic and archaeological value." (asean.org/communities/asean-economic-community/item/questions-and-answers-on-afta) Thailand does not report having any items on the Highly Sensitive list; however, products on its Sensitive List include cut flowers, potatoes, coffee, and copra (thai-aec.com/file/sensitive-list.pdf). Section A7 of the Blueprint (Single Market and Production Base section; Food, Agriculture and Forestry sub-section) makes particular mention about facilitating increased agricultural trade, both among member nations as well as exports. Recommendations noted in this sub-section mainly involve harmonizing standards of agricultural and livestock goods.

[21] e.g., Informant KDT2G

[22] Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Viet Nam

[23] Informant TKP4M

commented that he expects many tourists from Thailand, China, and other nearby countries to visit in the near future. A different informant[24] in Takua Pa said that because he has spent half of his life in Thailand (he was thirty at the time of the interview) he wants to go back home when he can. An informant in Tha Sae[25] said he is interested in starting a rubber plantation at his home in Mon State in the future, adding that if earnings from working in Thailand were the same as those from working in Myanmar, he would rather return and work there. Also in Tha Sae, one informant[26] said that when he is unable to work Thailand ("*mai wai*") any longer he will return to Myanmar. He told me that he has been sending money back to his relatives to use to start a rubber plantation and build a house.

In Kraburi I had the opportunity to speak to an individual from Myanmar[27] that has made this transition from worker to rubber holding owner. He said that in the past he had worked in Kraburi as a tapper and had saved enough money to plant thirty *rai* of rubber in Myanmar seven years ago. He receives a per kilogram price that is about ten baht lower than that in Ranong because of the transportation cost required to move product across the border to Ranong City. This is due to a lack of locally accessible markets near where he grows. However, he anticipates that with the opening of the AEC in two years he will be able to sell more freely in Thailand, perhaps at other points along the border, which will reduce the transport burden. He remarked that having worked as a rubber tapper in Thailand provided him with knowledge about plantation management and a skill set that he could easily apply in Myanmar.

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[24] Informant TKP1M
[25] Informant THS1M
[26] Informant THS2M
[27] Informant KRB3G

This type of labor movement away from southern Thai rubber holdings has occurred before. For example, Alton et al (2005) note that beginning in the late 1980s an interest in planting and looking after rubber in northeastern Thailand grew among many Northeasterners. Prior to this time, the authors write, Northeasterners composed roughly 70% of the hired labor in southern plantations, and through their job experiences had acquired the skills requisite for plantation maintenance and tapping. Not looking after it himself, though, my informant in Kraburi noted that he hires local (i.e., Myanmar) labor and shares income on a 50% : 50% arrangement because the plantation is in the forest and is difficult to access.

During the informational interview in Hat Yai, Dr. Somboonsuk stressed that when thinking about foreign labor in Thailand one must think about the AEC, especially how labor arrangements in rubber will change. In his opinion, he expects workers to continue to come to Thailand after the beginning of the AEC; although, he anticipates that most agricultural workers will be relatively unskilled. He said that those with skills, such as being able to tap rubber, will return to their countries. He also cautioned that repatriation will not be rapid because Thailand's neighboring economies will not improve immediately. Instead, he expects that most will stay and continue sending money back to their countries for some years to come. He was very clear, however, to point out the uncertainty, namely that no one knows exactly how labor availability will change in the future after the AEC is established.

Growers I spoke with expressed feelings that the AEC will bring about a number of changes and unforeseeable outcomes. In Tha Sae, for example, two informants[28] related such concern:

[28] Informants THS1G and THS2G

Will: *tha hak wa lukchang raengngan tangtao cha klap prathet cha lambak mai*
[If foreign workers were to return to their countries would that be problematic?]

Informant THS1G: *na cha mi panha tae wa tong kae tam thammachat khon thai tong ha raengngan khon thai tham atcha yung yak nit noi*
[It would likely cause problems, but we'd have to solve it naturally. Thai people would have to find Thai workers. It would likely be somewhat troublesome.]

This informant suspected that sharing rates in Tha Sae would have to be raised from the current norm of 60% : 40% (grower-worker) to 50% : 50% in order to attract Thais to work on the holdings. He also said, however, that he (and others he knows) are not worrying about this yet because the start of the AEC is still some time away. A different informant I spoke with in Tha Sae[29] suspects that after two years many workers will have returned to Myanmar, and there will likely be labor shortages. At the same time, he also believes that many newcomers will arrive to work in Thailand because crossing the border will be easier. Additionally, he remarked, if foreign workers start rubber plantations of their own in Myanmar in two years' time, it will be seven years before they earn any income, meaning they would continue to come to Thailand during the waiting period. In answer to my question about whether he would be able to hire Thai people if there were a labor shortage, his opinion is that Thai people simply do not want to do the work, even if the income is high. Informants in Kraburi responded similarly, one[30] remarking, for example, that in twenty years' time it will be hard to find adequate labor. In twenty years, he thinks many workers will have returned to Myanmar as more opportunities arise there.

Attempting to conclude that the AEC will precipitate a series of events that drastically, and suddenly, reshapes southern Thailand's agricultural landscape would be rash

[29] Informant THS5G
[30] Informant KRB2G

and full of speculation. However, the comments from both foreign workers and growers about the future do betray that it would be equally incorrect to think about the future of southern Thailand's rubber holdings purely through static market rationales, namely that the key to solving growers' concerns lies ultimately in greater articulation of the domestic economic space and/or price guarantees. It is also important to acknowledge that regional market changes may mean that isolating parts of the domestic agricultural economy will become untenable.

Cores and Peripheries? Maybe.

Comments that reflect the framing of problems within a core-periphery dynamic came up in conversations with growers as well as in the informational interviews noted above. Especially in the informational interviews, underdevelopment of Thailand's domestic rubber markets was reasoned as the underlying cause of low and unpredictable prices, and hence the main problem for Thailand's rubber growers.

Barely five minutes into the conversation at the ORRAF offices in Khuan Khanun, the extension agent argued that the main problem of the world rubber market today is too much production: "*chuang ni rueang talat lok ni lae khao kiaokap phonphalit yue*" (*"right now, the issue in the world market is about the high level of production"*). This, she observed, is because the market cannot absorb all production from Thai farmers. She continued by saying that the Thai government's response to this supply-demand imbalance has involved directing financial support to farmers to reduce planting area in order to cut back production. She made clear that this is not the right way to solve the problem. Instead, it is necessary to

find more markets ("*ha talat phuem*") to which Thai production can spread.

Thus, to improve rubber prices and support growers' economic wellbeing, she recommends that the Thai government focus on looking for ways to use rubber within the country, for example through factories that process latex into an input suited to Thai industries. She took her argument to a more macro level by noting that support for increased domestic industry will have the added benefit of providing employment to the unemployed. With most relevance for rubber growers, though, developing industries in Thailand that provide a direct source of demand for rubber will situate growers in a better position to influence the commodity price ("*mi amnat nai kan to rakha*"). The logic that this extension agent talked through coheres squarely with conceptualizing the causes of global unevenness through world systems lenses. My interpretation of this informant's comments is that resolving the so-called passivity and vulnerability of growers' income to external forces requires internal consistency to be developed.

Bringing her discussion more locally, the extension agent continued by remarking that just ten years ago 30% of Phatthalung's agricultural land was under rubber cultivation (mostly in the mountains), and Khuan Khanun did not have any. Now, however, rubber is grown throughout the province ("*phiap loei*"), even in Khuan Khanun which has historically depended on paddy.[31] The rubber cooperative leader at the table added that the majority of agricultural land in Khuan Khanun had been under paddy for hundreds of years, but now there is more rubber than rice. Both he and the extension agent noted that the soil conditions

[31] According to available data from the Phatthalung branch of the National Statistics Office, the area under paddy in Khuan Khanun decreased by over 51%, from 121,118 *rai* in 1993 to 58,801 *ra* in 2011. While data are lacking at the district level, a different story holds for rubber in Phatthalung province as a whole: from 1993 to 2011 the area planted increased by roughly 95%, from 444,645 *rai* in 1993 to 865,342 *rai* in 2011.

are not ideal for rubber, meaning that latex quality is not as high as that in other places. However, the extension agent stated that the principal motivation behind changing land use from rice to rubber has ultimately been the rubber price. Moreover, she maintained, rice yields had been lower than they ought to have been, which further encouraged land use change.

To recall, during my conversation in Hat Yai, Dr. Somboonsuk said that high rubber prices in the latter half of the past decade, from 2006 onward, motivated the Thai government to enact policies that supported increases in area planted to rubber in regions such as the North and the Northeast. In his opinion, though, these policies were not sound and did not align with market signals. As he phrased it, the Thai government acts as if it is playing the lottery by encouraging more planting. The professor at the informational session in Khuan Khanun explained that when the Thai government began to promote rubber widely throughout the nation there were few people asking the questions of who or where would buy when the latex-harvesting began. Furthermore, he added, rubber is now cultivated in all of Thailand's neighboring countries as well as in China.

In both conversations, the informants held that increases in area planted at various points in time have resulted in an oversupply in the market, which, in a textbook example of supply-demand logic, has meant lower prices. Dr. Somboonsuk also noted that recent concerns such as various Eurozone crises have exacerbated the supply glut due to lower demand.

Importantly, these comments by no means emerge solely from detached, analytical positions, in offices removed from the plantation itself. Indeed, all of these informants also have plantations of their own. Growers I interviewed—those conversations in which the

focus was on their personal experiences with rubber—are not blind to these larger formulations or depictions, nor are they disinterested in the price and measures that can be undertaken to control volatility. One grower in Kanchanadit[32], for example, who reported that he earns roughly 80% of his income from eleven *rai* of rubber and the rest from operating a motorcycle repair shop, said that the price is the biggest and most important problem he faces. A grower with plantations in Phanom District, Surat Thani[33] remarked similarly, saying that in the future the biggest problem for rubber growers is price. This, he continued, is because rubber is being planted abundantly, i.e. throughout Thailand and Southeast Asia, while demand remains the same. He thinks that the Thai government should establish a price floor instead of interfering in the buying market ("*saek saeng rakha*").

Another informant in Kanchanadit[34], who operates a latex-buying shop and has rubber and palm plantations in Surat Thani Province and Chumphon Province, believes the rubber price is not correct ("*rakha mai thuk*") because Thailand lacks the technology to add value to rubber; everything is sent to China as a raw material, which then returns to Thailand as a product with higher monetary value. This creates problems for rubber farmers, she said. Further, she added, the price will continue to be a big problem in the future because people are planting heavily in places such as the Northeast as well as outside of Thailand, meaning that there will be too much in the market.

As a novice researcher I found it interesting to see how parts of the analytical framings from world systems (e.g., distinctions between areas of articulation and their more disarticulated counterparts) were echoed in actual conversations during these sessions.

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[32] Informant KDT1G
[33] Informant MST1G
[34] Informant KDT2G

Comments from the growers above do speak to these abstracting and 'big picture' explanations; however, as I will proceed to discuss, growers also cited several other factors that are not directly related to a lack of domestic industry or uncertainty over the price level. It should not be surprising that the topics of these conversations diverged and became more complex. Opinions from a grower about her trees and the array of challenges faced or factors that inform planning/planting decisions are bound to be more concerned with her specific locale and circumstances. Taking note of such differences alone is not necessarily insightful or informative. However, reading among these scales betrays a static quality of the messages that aim to 'fix' rubber's problems through market logics—growers conveyed much more dynamic (and unpredictable) ways of negotiating their own practices and future agricultural goals. It is to this topic that I now turn.

Considering the Trees (Ecological)

Interviews with twenty growers provided twenty unique cases from which to draw information. This also makes it difficult to tease out clearly unifying themes running across all individuals' experiences. However, from among these cases I found that certain pieces of information fall into two broad categories, which for the sake of convenience I will term the *ecological* and the *social*. In the previous sub-section (as well in Section IV where I discussed my conversation with Mr. Perk Lertphanwong) one sees narrative threads that rest on concepts of market underdevelopment and subsequently vulnerability to low prices and/or price uncertainty. As noted, this information fits with standard conceptions of what peripheral economic activity is, and while some comments growers offered also demonstrate a concern

for such a division of activity, others complicate this image.

Firstly, when talking about rubber prices, some informants placed their opinions into a much more relative context than speaking of the rubber market as a reference point. They remarked specifically that while rubber prices are unpredictable and sometimes unfavorable, the prices of other goods remain high or rising. An oft cited example was fertilizer: one grower in Kraburi[35] commented that fertilizer is a large input cost, and if the rubber price were to remain at around 100 baht/kg he would not have a problem covering this as well as his living expenses. When the rubber price drops, however, he feels a pinch. An informant in Kanchandit[36] said that he and growers he knows will apply fertilizer twice per year if the rubber prices are good and once per year if they are not.

When considering such information as that provided by the individual from Myanmar I interviewed in Kraburi[37], who started his own plantation just across the border (the Kraburi River) in Tanintharyi Region about seven years ago, rubber price comments made in reference to fertilizer prices bridge the conceptual divide between thinking about rubber in purely commodity versus hybridized tree-commodity terms. This informant told me that his plantation does not require nearly as much fertilizer as those in Kraburi because of the longstanding presence of forest, which has provided the soil with a high nutrient base. Having only recently cleared the land, rubber saplings have benefitted from these relatively undisturbed periods of forest cover. While his comment suggested a comparative growing advantage over his neighbors in Kraburi, he also remarked that in thirty years' time the nutrients will be largely depleted on Myanmar's side because many people have already

[35] Informant KRB2G
[36] Informant KDT1G
[37] Informant KRB3G

begun planting rubber and palm. In addition, some Thais have invested money to start plantations of their own across the border to be managed by local Myanmar workers[38]. For informants KRB2G and KDT1G, rubber prices thus unload financial hardship in part because of the physical relationships between the trees and the sites where they are planted. In other words, taking measure of the local growing context is critical.

In terms of inputs outside of the price domain, however, weather was cited by many as weighing heavily in the array of challenges they confront. Drawing from his own research with smallholder rubber growers in southern Thailand, Dr. Somboonsuk told me the single issue growers are most worried about is climate change. He commented that climatic variation is lengthening the time required for trees to mature to the point where they can be tapped, which could now be as long as eight years instead of seven. Moreover, he continued, weather patterns have been shifting such that the hot season may come later in some places, in July instead of April for instance. This in turn pushes back the timing of leaf fall and therefore tapping. Additionally, the amount of rain is increasingly unpredictable, and growers have difficulty making tapping plans. Climatic variation's most important consequence, he summarized, is a reduction in the number of tapping days. Webster and Paardekooper (1989) among others write that both the amount and timing of rainfall not only correlate with variations in latex yields; they also impact rubber trees' susceptibility to disease.

While rubber is cultivated ideally under wet tropical conditions, the agricultural extension agent in the Khuan Khanun ORRAF office interview concisely answered my question, 'what do rubber growers find difficult?' with "*chao suan klua arai mak thi sut klua*

[38] General comment from Informant KRB1G

fon" ("*What do growers fear the most? They fear rain.*") Indeed, a grower in Pa Phayom[39] said that the biggest problem faced by her and her husband is unfavorable weather conditions, most importantly an excess of rain that reduces latex quality and number of tapping days. Shortly after, she said that they do not worry expressly about rubber price fluctuations because these are so unpredictable and there is nothing they can do to control market conditions. At the time of the interview (in late February 2013) she noted that the price for rubber earlier in the week was 81 baht/kg, whereas it was 75 baht on the day we met. Other informants in Kanchanadit, Kraburi, and Khao Chai Son[40] also commented that high amounts of rainfall have caused them substantial problems. In Kraburi especially, two growers[41] remarked that there has been much more rainfall this year compared to last. One informant[42] said that she has not been able to [have her hired workers from Myanmar] tap the plantation in over two months.

In Kantang District I spoke with one grower[43] who told me that the mix of carbon dioxide released into the atmosphere from car exhaust and rain has caused a fungus ("*chueara*") to affect around 30% of his trees. While tree leaves are infected, he clarified the main cause for concern is that the bark on lower sections of the tree trunk becomes brittle and crumbles easily in comparison to healthy trees. Under these conditions tapping is still possible; however, one needs to make incisions higher up the trunk to sections that would require most people to use a ladder. This informant felt that trees grow slowly now because of global warming. It was not like this in the past, he added. To demonstrate the effects of

[39] Informant KNK2G
[40] Informants MST1G, KRB1G, KRB2G, PPY1G, respectively
[41] Informants KRB1G and KRB2G
[42] Informant KRB1G
[43] Informant KNT1G

global warming, he pointed to trees that were six years old and apparently quite short. I asked how tall they should be, and he pointed to a tree that was ten to fifteen feet higher.

To the extent that carbon emissions and the subsequent rise in global atmospheric temperatures are responsible for too much rainfall this year or various tree fungi is not an issue I aim to engage with here, nor am I capable of engaging with it on a biological or ecological level. Nevertheless, it should be acknowledged that the persistent worries about weather as well as climate change and its attendant influences on global weather patterns are enrolled to explain why growing rubber is increasingly challenging.

Unpredictable weather patterns were, in a number of conversations, linked to qualifying various strategies aimed at diversifying household income and hedging risks. In many cases, growing oil palm entered as a point of comparison to rubber, as informants remarked that palm is more weather resistant, so to speak (see the Appendix for a list of agricultural complements to informants' rubber holdings). In Tha Sae, for example, one grower[44] noted that if there is too much rain, one cannot tap rubber. Palm (as well as fruit), however, can be harvested under heavy rain conditions. A second grower in Tha Sae[45] said that he has a palm plantation in addition to rubber and commented that the weather and soil conditions in Tha Sae are favorable to both. Palm brings in decent levels of income, he added.

The popularity of palm as a complement (or replacement) to rubber was echoed in the remarks of a grower I spoke with in Phatthalung Province[46]. He said that he had recently bought land in Trang Province to plant with palm, though not replacing rubber, in an effort to

[44] Informant THS1G
[45] Informant THS2G
[46] Informant KNK3G

diversify his income base. Of the reasons he cited for doing so, planting palm in addition to rubber enables one to have income throughout the year, whereas rubber only provides income for eight to nine months. While talking with this grower, who is working toward a master's degree at Thaksin University, a colleague of his who was also sitting at the table chimed in, remarking that in her opinion many people increasingly have begun to think palm is a safer bet than rubber in large part because of challenges presented by unpredictable weather. An informant with plantations in Surat Thani[47] said that he decided to plant palm because his land cannot support more rubber. Additionally, having both rubber and palm will provide him with a stronger income base.

While driving from Kraburi District to Muang Chumphon District, I stopped to visit a temple named Wat Tham Sanuk ('Fun Cave Temple'). At the entrance to the cave I spoke with a monk[48] who has rubber and durian holdings across the provincial line in Ranong. Having ordained only a month prior to our conversation—and planning to leave the temple at the end of the rainy season, after the Buddhist holiday *wan ok phansa*—he was up to speed with current problems he and his wife face on their rubber holding. While he said that the current rubber price causes him a good deal of headache, it is particularly the combination of price and weather patterns where he lives which causes him the most trouble. His plantation, which he looks after with his wife because it is relatively small, has not been tapped since he ordained, and in the month prior to ordaining she and he were only able to tap seven days on account of the rain. He informed me that he is seriously considering converting all of his land planted with rubber to palm. Concerning the durian, he remarked that these trees require a lot

[47] Informant MST1G
[48] Informant MCH1G

of maintenance and are not easier to look after than rubber. Mangosteens, he mentioned, do not require much attention, but with a price per kilogram of about three baht at harvest they are hardly worthwhile to grow for household income. He would like to see the area around his plantation become an eco-tourist attraction, but the local government official ("*kamnan*") does not support this. In the future, if he keeps his land under rubber, he might simply let foreign workers come and tap, sharing income on a 60% : 40% arrangement, because he is tired of dealing with the work.

When I visited the farm of the Kantang grower[49], in addition to learning about the fungus affecting his trees and the problem of stunted growth, I was able to talk with this individual about his current and planned farm management strategies. The thirty *rai* of rubber he has currently are maintained and tapped by a Thai husband and wife team whose children are adults and employed in non-agricultural occupations in other provinces. He said that when his employees retire, he will reduce the amount of land he has under rubber to a fraction of its current area and tap this remaining portion by himself. Additionally, however, he plans to expand his palm plantation by about ten more *rai*. He showed me the eleven *rai* of palm he planted three years ago, all of which he looks after and harvests himself. He finds that taking care of palm is easier than rubber, in no small part because it requires a lower fertilizer expense[50], and while palm yields him about 4,000 baht per *rai* per month in comparison to rubber's 6,000 baht, it is easy to lose money growing rubber because of rain and other unfavorable weather. With palm, however, he said that rain presents no problem; he would still be able to harvest palm nuts under any weather condition.

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[49] Informant KNT1G

[50] Informants in Kraburi remarked that palm requires more fertilizer than rubber, so this informant's comments could be specific to his particular growing environment.

After we had left his farm and ventured back to his house in Kantang town, he led me to the top floor and then up a narrow stairway to a door that led to an attic. He motioned for me to be quiet and then slowly opened the door. From inside the darkness came a rush of chirps and the chaotic sensation of things darting frantically about the room. He did not hold the door open for long. On the way downstairs he explained that a few years ago he invested in raising swiftlets for their nests, which fetch highly lucrative returns, primarily in Chinese consumer markets.

Stepping back from these interviews and taking measure of the different types of information volunteered, I realized that growers are apt to invoke reasons that are, if not departures from, at least supplementary to markets and prices to explain the important issues confronting them in their own plantations. Most clearly is more attention paid both to the rubber tree as an object whose productivity and wellbeing come under threat from an increasingly variable growing environment. Additionally, through various comments it is clear that relationships with rubber are not construed solely in commodity terms, independently of the agricultural holding where the rubber is planted. Instead, these are often situated relative to alternative suitable options such as palm.

The informant in Kanchanadit who also operates a latex-buying shop[51], and who commented about the lack of industry in Thailand to add value to raw materials, said that in her opinion the biggest problem confronting Thai rubber growers is the tree breed itself ("*saiphan*"). She argued that the Thai breeds cannot compete with those used in Malaysia, where the Malaysian varieties can yield double the amount of latex as Thai varieties. She

[51] Informant KDT2G

blamed this shortcoming on the lack of research done in Thailand, in comparison with Malaysia, adding further that the Thai government only supports replanting and not improvements in agricultural technology. The result of this flawed policy, she argued, is that Thai growers replant sooner than they ought to, instead of improving yields with existing stocks. Relating this, as well as comments about rainfall and palm, to my central question in this project, it is worth asking to what extent market-oriented price 'fixes' align with growers' other concerns. In other words, what sort of longevity and reach across different individuals would changes in market structure and/or improvements in price levels necessarily provide?

Labor Availability (Social)

Given comments from numerous researchers that rubber growers are concerned about labor shortages (e.g., Barlow and Jayasuriya 1987, Somboonsuk 2001, Somboonsuk and Shivakoti 2001, Viswanathan 2008), I found it both surprising and interesting to learn from various informants that labor shortfalls were not a main source of worry (for now, at least). Labor conditions vary from place to place, and likely across time as well. One informant in Phatthalung[52] explained that Phatthalung's people are diligent and industrious ("*khayan*"), meaning they will do as much work as possible by themselves, and when they do hire workers to help, these will be Thai and local. It is hard to imagine that individuals in other provinces would be quick to claim that people there are lazy; however, it is worth taking note that the origins of hired workers—or whether workers are hired at all—exhibit a fair amount

[52] Informant PPY1G

of variation (see Appendix for a summary of labor arrangements on informants' rubber holdings). There are likely various reasons behind these differences, such as the size of the rubber holding, opportunities for non-agricultural employment, or even the rubber holding's location with respect to the Myanmar-Thai border.

Many informants actually remarked on the ease of finding people to work as tappers. One in Tha Sae[53], for example, who reported that he hires both Thai and foreign workers, said that it is easy to find local, Thai workers because the income one can earn from tapping is high. Several informants I spoke with in Phatthalung[54] hire locally within the province as well. They said that they have not experienced any difficulty finding individuals willing to do the job. While an informant I spoke with in Tha Sae[55] hires one foreign worker[56], he commented that, especially for rubber plantations, finding workers is not a problem. According to him, this is because compensation is determined on a percentage basis ("*tham yue dai jue khon khikhiat kae dai noi*") and there is no strict schedule where a boss forces the employee to work at certain times ("*mai chamkat wela mai mi khon bangkhap*"). In Kraburi, informants told me that the district's proximity to the Myanmar border means there is a large community of Myanmar people living in the area and finding workers is not difficult at all. One[57] said that in her sub-district there are more Myanmar people than Thai residing.

While this information importantly questions the perception that southern Thai rubber plantations are widely characterized by labor shortfalls and a dependency on foreign workers, it is critical to place these comments alongside other observations that concern the

[53] THS4G
[54] Informants KNK1G, KCS1G, KCS2G, and KNK2G
[55] Informant THS2G
[56] THS1M
[57] Informant KRB1G

willingness of Thai people, specifically Thai youth, to take up agricultural occupations currently or in the future.

Labor 'Value' (Social)

On a morning in mid-February in Tha Sae I drove with an informant[58] and his two daughters, both in their late twenties or early thirties, to another grower's[59] plantation a short distance away. When we arrived, we greeted the second grower, who then led us from his house to a small structure that had a roof but no walls. Inside was his employee[60] who had been up the night before tapping the plantation during the early hours of the morning, at around 2:00 or 3:00 am when latex flows from cut bark most freely. Some hours after tapping, but well before we arrived, he had collected the latex that had dripped into the upturned coconut husks attached to each tree.

As we entered the structure, he was busy turning liquid latex into raw sheets, which would then be dried and sold several days later. His employer explained that he had first put all the latex into a large container and then mixed it with other agents, one of which he said was "*nam som*" (literally 'orange juice', but meaning formic acid in this case), in aluminum baking pans in order to form semi-hardened white rectangular blocks. The consistency of the blocks appeared similar to that of packaged tofu in the grocery store.

As we watched, he would place one of the blocks on to a mat laid out on the ground and, using his hands and feet, knead it in all four directions. When he determined it to be at

[58] Informant THS1G
[59] Informant THS2G
[60] Informant THS2M

the right width he took the sheet and ran it twice through an electric-powered ironing machine. Each of the finished sheets, measuring about two by three feet, was set aside. He would later hang them on bamboo poles outside to dry.

He worked through the blocks of rubber while the rest of us stood and observed the process. As he kneaded out the blocks, the latex cocktail splashed all over his pants and shirt. The website of the United States Occupational Health and Safety Administration (OSHA) notes that formic acid can irritate and cause problems to skin, eyes, and mucous membranes, and chronic exposure could be damaging to kidneys. While handling the latex blocks, which had already been treated with formic acid, he did not wear protective gloves or eyewear.

While the procedural details and exact technique needed to turn liquid latex into a marketable sheet are many and complex, it was immediately apparent to the casual, less informed observer (me) that this process is demanding and labor-intensive. Bearing in mind that the same person had been up the night before tapping each of the trees and negotiating a range of nocturnal hazards, which includes a variety of poisonous snakes, it is hard to miss that the work in a rubber plantation requires expending considerable physical effort, logging hours when most people are asleep, and a willingness to contend with a difficult physical work environment.

Later that day, the two daughters of the informant noted above[61] kindly offered to drive me from Tha Sae to the bus station in Chumphon City. Along the ride, my hosts told me that the income one earns growing rubber is on the whole substantially higher than that from such jobs as teaching in a school or working in a local office. One of the women referred to

[61] Informant THS1G

the latter types of work as regular ("*thammada*"). According to her, people in their twenties and thirties would not want to admit to being a full-time farmer, so they aim to take on non-agricultural work. She said this is driven by concerns for status and how other people would view one. Indeed, she and her sister made a point to tell me of their jobs at a local bank and school library, respectively.

Both foreign workers I interviewed in Tha Sae informed me that their annual earnings, after revenue sharing with their employers, ranged between 200,000 to 300,000 baht. To put these figures into perspective, when surveyed by the National Statistics Office's annual Labor Force Survey in 2012, close to 60% of the people working in the southern region's education sector earned monthly incomes of 15,000 baht (180,000 baht per year) or below, and 40% fell into the category 10,000 baht (120,000 baht per year) and below.

The distinction between 'regular' and agricultural work was echoed in the conversation I had with Dr. Somboonsuk. As we spoke, Dr. Somboonsuk clarified what he believes are major obstacles in rubber plantation organization. After climate change, which southern Thai rubber growers have told him is their primary concern, adequate labor is the second greatest worry. In large part, he attributes this to what he sees currently to be a general trend in rural household structure in this part of Thailand. As he noted, households increasingly consist of two generations, one aged about fifty-five and older and then children not more than ten years. Dr. Somboonsuk said that by and large the working labor has mobilized into different types of employment closer to home or to distant jobs in Bangkok and other urban areas. He contends this process is especially accentuated in the South, owing to the comparatively higher (in relation to other regions such as the North or Northeast) average incomes and levels of education of the labor force. He said that even though income

from rubber might be high, through his research he has found that people in their twenties to forties seek out different types of work. Importantly, Dr. Somboonsuk regards these preferences as issues of "*waeru*", a local pronunciation of the English 'value'.

He illustrated this through an example. If there are two individuals, one of whom works in an office setting and the other in a rubber plantation, the former will be seen to have more *waeru* even if the income is less. As he explained, the non-agricultural employee

> "*sai suea suai ... mi rot ma rap dai noi kwa krit yang ... pen rueang khong waeru*" (*one can wear a nice shirt ... there's a car that comes and takes one to work, this person earns less than tapping rubber ... it's an issue of waeru*).

An important attribute of jobs with *waeru*, Dr. Somboonsuk noted, is that people begin work in the morning and return home in the evening. As the conversation with the foreign worker in Tha Sae[62] brought to light, the working hours in a rubber plantation do not follow a standard nine-to-five (or thereabouts) routine.

It is important to make a distinction between the English meanings of 'value' and the meaning that Thai speakers imply when they borrow this term. As one native speaker explained to me in her own words, *waeru* would most closely resemble the Thai term *khaniyom* in meaning, literally *popularity* or *value*. Its usage can apply to several different contexts, which include sporting the latest Korean fashions. She summarized that the term refers to "*sing thi khon suan yai tham laeo ko hen wa di*" (*things that most people do and that are viewed positively*). In the case of professions, her explanation of *waeru* aligned with the comments brought up in both the conversation with Informant THS1G's daughters as well as that with Dr. Somboonsuk. Specifically, a person admitting to working an agricultural job would feel that contemporaries would look down on her/him. Therefore, she continued, a

[62] Informant THS2M

person recently graduated from high school would be doing something with *waeru* if they studied (and finished) a bachelor's degree.

Similar sentiments came through in my conversation with the grower and latex-buying shop operator in Kanchanadit[63]. She maintained that future generations will not want to do work farming rice or keeping rubber stands because Thais think of these as 'low' jobs with low "*khaniyom*". Thus, she contends, in the future there will certainly be a shortage of labor.

Dr. Somboonsuk was quite clear in pointing out the lack of agricultural experience and knowhow among the children, currently in their twenties to forties, of growers. At one point in our conversation he gestured to his assistant (recently graduated from college) in the next room whose father had been growing rubber in Phatthalung for several decades. Despite being raised in Phatthalung, Dr. Somboonsuk noted that she does not have practical knowhow about growing and tapping rubber. This prompted me to ask him whether younger generations in Songkhla or Phatthalung would plan on keeping the rubber holdings after their parents stopped working, they inherited the land after their parents are deceased, etc., to which he responded that the decision depends on the children's economic circumstances in the future. If income from rubber is strong, he said, they might want to hold on to the land; however, they would by and large need to employ outside labor to manage it.

Country-wide data from the Thailand's National Statistics Office's (NSO) annual Labor Force Survey show that in 1994 the share of the total Thai labor force in agriculture was just over 50%, but by the end of 2010 the share had declined to roughly 38%. One might

[63] Informant KDT2G

quickly point to income as the driving force behind job choice. Indeed for the southern region in 2012, on average close to 90% of the people in earnings brackets above 10,000 baht per month had employment outside of agriculture. However, the conversations discussed above demonstrate that decisions about occupation are made through diverse reasons, even if income earned from an agricultural job is sometimes higher than a non-agricultural alternative.

In this and previous subsections I have reported comments that dispel understanding rubber purely in terms of a commodity, i.e. as a primary product feeding into the world economic system, and toward seeing the tree as a material, living thing. The vagaries of rainfall, difficulties of plantation maintenance, and the notions of what jobs have *waeru* and which do not convey that operating a rubber plantation currently and in the future could very well concern the types of interactions the trees demand with weather and people far more than price guarantees or domestic market development alone.

VII. Conclusions

Informants' comments add a great deal of complexity to assessing challenges to rubber growers' livelihoods as seen through the agricultural extension office or on the platforms of highway demonstrations. Concerns along the lines of changes in weather patterns (more consistent shifts, consistently more anomalies, etc.), current and future occupational preferences of Thai youth, and/or the new political-economic terrains that materialize as a result of the AEC could all complicate the persuasiveness of arguments that tend ultimately to reify a conception that growers are in one place and react to an action springing up elsewhere.

The counterargument to this complication is that growers' myriad concerns ultimately reduce to a single concern with the market, and for this reason protests over the rubber price do not necessarily under- or misrepresent growers' actual interests. After all, it might be asked, for what reason other than the profits received from participating in the market would people be growing rubber? Questions such as this are the reason why brushing aside world systems perspectives entirely would not be reasonable. However, growers' comments problematize the singular notion of market-as-agent and caution against such simplification and reductionism. In the future, even if earnings might be lower than those gained through rubber, growers and their families may prefer planting more palm and fruit or working in *waeru*-able jobs.

There is no clear-cut message about how rubber 'works' in southern Thailand, and generalizations about the regional rubber economy would be difficult to substantiate. However, the pictures that growers present of their experiences are far more nuanced and

textured than the image of the rubber holding at the endpoint of economic vectors originating in the autocentric core and radiating outward in the periphery's direction. When looking to the logic or conceptual frameworks on which these types of arguments are based, one ought to consider them alongside other non- (or not purely) market factors.

My intent is not to pass judgment on the value of price supports or greater market development in Thailand in general. One would likely be hard-pressed to find a grower disinterested in higher (and steadier, more predictable) prices for her product. However, I have aimed to bring attention both to the time horizon that such market-focused goals imply as well as the varied, layered dimensions entailed in the process of growing rubber.

Whether or not price troubles are resolved, if rubber in southern Thailand decreases its agricultural footprint while that in Myanmar and in other places increases, it would be too simplistic to perceive such shifts merely in terms of transplanting (literally) a peripheral activity from one national or regional context to the next. If there are changes in the places where rubber is cultivated and by whom, it is critical to ask what this change of place means not only for specific landscapes and relations of production but also for the functions of global marketplaces themselves. To give a very concrete example, many sites in southern Thailand are suited to growing rubber due to specific climatic and soil conditions. However, as I discussed above, these might be changing. A shift of activity away from the South and toward other regions in Thailand or abroad could very well imply a change in latex, and hence rubber, quality. What would these quality changes look like in global industrial contexts? Will the selective breeding procedures of *H. brasiliensis* that allow trees to be grown in less than ideal conditions present problems in the way of disease resistance and/or ability to withstand future changes in weather patterns? What kinds of local markets and

market infrastructure (will) exist? Ultimately, how will these condition transactions in the distant commodity markets? I hold that considering and allowing for openings of different nodes of activity make the conceptual positions from researchers such as Bunker (2003) and Hart (2002) applicable to (re)constructing perspectives on the smallholder rubber growing context in southern Thailand.

Rather than reading changes in the agricultural landscape effectively as imprints of global changes, or looking at rubber as an unvaried, undifferentiated commodity in the marketplace, it is important to be aware of different paths traversed—e.g. from the latex-collecting upturned coconut husks strung around tree trunks to automobiles' tires. If one is willing to look across scales in this way, observing how different agents and elements involved condition one another, it is possible to appreciate how growing rubber is a negotiated process. It, and the people involved with planting, maintaining, and harvesting it, can hardly be situated purely in reference to a marketplace.

Appendices

a. Informants (Growers)

Grower	Location of Interview (district)	Location of Plantation (district)	Additional Occupation
THS1G	Tha Sae	Tha Sae	Retired teacher
THS2G	Tha Sae	Tha Sae	School custodian
THS3G	Tha Sae	Tha Sae	Unsmoked sheets and *khi yang* buyer, rents out properties she owns
THS4G	Tha Sae	Tha Sae	Shop manager (buys latex and resells)
THS5G	Tha Sae	Kraburi	Employee in ORRAF office
MCH1G	Muang Chumphon	Kraburi	Monk
KNK1G	Khuan Khanun	Khuan Khanun	Factory owner (buys latex and turns it into smoked sheets)
KNK2G	Khuan Khanun	Pha Pa Yom	N/A
KNK3G	Khuan Khanun	Trang Province (district not stated)	N/A
KCS1G	Khao Chai Son	Khao Chai Son	N/A
KCS2G	Khao Chai Son	Khao Chai Son	N/A
PPY1G	Pa Pha Yom	Khao Chai Son	Office Administrator
KNT1G	Kantang	Kantang	Retired fisherman
KDT1G	Kanchanadit	Kanchanadit	Motorcycle repair shop
KDT2G	Kanchanadit	Kanchanadit and Sawi (Chumphon)	*Khi yang* buyer
MST1G	Muang Surat Thani	Phanom (Surat Thani)	Middle school teacher
KRB1G	Kraburi	Kraburi	Occasional wage work
KRB2G	Kraburi	Kraburi	Sells cattle and buffalo
KRB3G	Kraburi	Kawthaung (Tanintharyi)	N/A
WGT1G	Wang Thong	Khiri Rat Nikhom (Surat Thani)	Rubber sapling nursery owner

a. Informants (Growers) continued

Informant	Labor	Main Problems Cited	Other Ag. Holdings
THS1G	Hires foreign	1) Nature: In 1991 a hurricane destroyed all plantations in the area. If this happens again, they'll have to start over. 2) If foreign workers leave Thailand in the future, the revenue sharing rates will have to be renegotiated to encourage Thai people to come work because Thai people are fussy ("*khon thai tham a rai man chuk chik*").	Fruit
THS2G	Hires foreign	Nothing specific	Palm
THS3G	Hires foreign and Thai from Northeast	Nothing specific	Palm
THS4G	Hires foreign and Thai	Nothing specific	N/A
THS5G	Hires foreign	1) Price, 2) Weather	N/A
MCH1G	Does not hire	1) Price, 2) Weather	Durian
KNK1G	Hires local Thai	Weather	N/A
KNK2G	Hires local Thai	Too much rain	N/A
KNK3G	N/A	Rubber is not as safe as palm.	Palm
KCS1G	Hires local Thai	Prices: the government should help farmers when prices are low.	N/A
KCS2G	Hires local Thai	Prices: the government should help farmers when prices are low.	N/A
PPY1G	Does not hire (mother & father maintain and tap)	Price	Rice, limes, chillies etc. (household use)
KNT1G	Hires local Thai	1) Global warming causing a tree fungus, 2) Rubber relatively more difficult to maintain than palm	Palm, Raises swifts in attic
KDT1G	Does not hire	1) Prices: the government should help farmers when prices are low. 2) Weather	N/A
KDT2G	Hires local Thai	1) Breed of rubber tree and lack of plantation technology, 2) Lack of markets for domestic use of rubber	Palm
MST1G	Hires Thai from Northeast	1) Price, 2) Weather	Palm
KRB1G	Hires Burmese	1) Prices: the government should help farmers when prices are low. 2) Weather	Palm
KRB2G	Hires Burmese	1) Price, 2) Weather	N/A
KRB3G	Hires local (Burmese)	N/A	N/A
WGT1G	Hires local	Nothing specific	N/A

b: Informants (Foreign Workers)

Informant	District Where Employed	Originally From	Total Time in Thailand	Time at Current Plantation	Sharing Rate (Employer : Employees) | Estimated Earnings (baht/year)
THS1M	Tha Sae	Mon State	18 years	N/A	60% : 40% | 200,000
THS2M	Tha Sae	Mon State	10 years	7 – 8 years	70% : 30% | 200,000 – 300,000
TKP1M	Takua Pa	Mon State	15 years	6 – 7 years	55% : 45% | N/A
TKP2M	Takua Pa	Mon State	20 years	20 years	N/A
TKP3M	Takua Pa	Mon State	23 years	N/A	60% : 40% | N/A
TKP4M	Takua Pa	Tanintharyi Region	15 years	N/A	N/A
TKP5M	Takua Pa	Mon State	1 year	1 year	60% : 40% | N/A
TKP6M (Group of 4)	Takua Pa	Mon State, Tanintharyi Region	4 – 15 years	N/A	60% : 40% | N/A
TKP7M	Takua Pa	Mon State	1 year, 5 months	5 months	65% : 35% | N/A
TKP8M	Takua Pa	Mon State	3 years	Over 1 year	60% : 40% | N/A

c. Rubber

The genus *Hevea*, of the family *Euphorbiaceae*, originated in the Amazon and gave way to ten species, only one of which, *H. brasiliensis*, or rubber, is cultivated extensively for its latex (Clément-Demange et al 2001). Rubber grows best within 5° of the equator, generally at altitudes below 200 meters, with an annual rainfall ranging between 2,000 and 4,000 mm (Rao and Vijayakumar 1992). The ideal soil type is one that is well-drained and rich in organic matter (Memmler 1934). Principal abiotic stresses to *H. brasiliensis* are low temperatures, high vapor pressure, and wind (Priyadarshan 2011). The second condition, high vapor pressure, occurs during periods of low rainfall and high levels of exposure to sunlight, which results in increased evapotranspiration demand (Priyadarshan 2011). Subsequently, irrigated rubber plantations display increases in leaf area index (the area of the leaf blade per unit area of ground) and shoot biomass (Priyadarshan 2011).

At the age of 3 to 4 years, all *H. brasiliensis* trees are subject to annual defoliation during the dry season, which is a consequence of the tree's having short shoots (Memmler 1934, Webster and Paardekooper 1989, Wycherley 1992). During this time, trees shed most or all of their leaves until new shoots emerge bearing young foliage (Wycherley 1992). With a definite dry season, namely that marked by no rainfall, the duration of defoliation tends to be short and latex yield reductions are not substantial (Webster and Paardekooper 1989). Additionally, periods of complete defoliation that occur prior to refoliation have been found to reduce the severity of attacks by certain diseases (Wycherley 1992). However, during ambiguously dry seasons, i.e. where rainfall is lower than normal and more infrequent but not absent, leaf fall is gradual and latex yield reduction is much greater (Webster and Paardekooper 1989).

A history of European exploration in the Amazon, colonial holdings, and industrialization explains the current distribution of *H. brasiliensis* worldwide. Before European involvement in the collection of latex, reference to rubber from *Hevea* species had been found in religious documents in Central and South America dating back roughly 1,400 years before the present (Priyadarshan 2011). Latex was often used to make effigies which were then burned as a form of incense, albeit with an unpleasant odor (Jones and Allen 1992). In the early nineteenth century, aside from applications in chemistry, physics, and medicine, rubber experienced limited uses in Europe (Baulkwill 1989). After 1830, in tandem with rapid industrialization in the United States and Europe, demand for rubber began to expand for use in textiles; however, garments produced using rubber were found to be unsuited to both hot and cold temperatures (Baulkwill 1989). Accordingly, the critical moment where latex tapped from *H. brasiliensis* was turned into a viable industrial agent occurred from 1838 to 1844 when Charles Goodyear and Thomas Hancock developed the process of vulcanization, which combined latex, lead oxide, and sulfur over heat (Baulkwill 1989). The resulting material would not harden in cold winter temperatures, nor would it grow soft under high summer temperatures (Jones and Allen 1992).

The initial spread of *H. brasiliensis* outside of the Amazon was initiated by an English expedition (Priyadarshan 2011). In 1876, Henry Wickham, a naturalist, received orders from the British India Office to collect 70,000 seeds of *H. brasiliensis* from the Rio Tapajos region of the Upper Amazon to transport to the Kew Botanic Gardens outside London (Priyadarshan 2011). Of those seeds, 2,899 germinated of which 1,911 were then sent to botanical gardens in Sri Lanka (Priyadarshan 2011). The reason for Wickham's expedition to collect seeds came from Clements Markham of the India Office, who sought to

develop profitable cropping systems in India and Sri Lanka (Baulkwill 1989). Seedlings from the Wickham Sri Lanka collection were then distributed further afield, and the current coverage in Southeast Asia is believed to have come from this original stock (Imle 1978, Simmonds 1989). While it is somewhat peculiar that plantations would be developed in Asia and not in *H. brasiliensis*' native habitat in the Amazon, two main reasons have been cited as to why Brazilian rubber plantations were seen as unattractive investments. Firstly, rubber trees in the Amazon are highly susceptible to a leaf blight (Jones and Allen 1992). Secondly, though profitable, South American extraction systems through the nineteenth were seen to be poorly managed businesses, which subjected rubber tappers to harsh working conditions (Jones and Allen 1992). Asian plantations in the nineteenth century began to attract substantial amounts of capital due to high dividends, with connections between import-export agencies in Singapore and markets in London facilitating investments (Baulkwill 1989). After the introduction of *H. brasiliensis* to the region in the late nineteenth century, Southeast Asia rapidly assumed prominence as a global supplier of rubber by around 1910 (Priyadarshan 2011). According to data provided by the Food and Agriculture Organization of the United Nations (FAO), Southeast Asia has accounted for between 76% and 77% of the total area planted globally with *H. brasiliensis* since 2005.

The massive expansion of plantation rubber has occurred alongside the growth of automobile and airplane manufacturing, in addition to overall industrial activity from the mid-nineteenth century onward, as increasing uses led to pressure from manufacturers to expand the raw material supply base (Baulkwill 1989, Jones and Allen 1992, Schultes 1993). Since 1978, the widespread use of radial tires has led to larger demand for natural rubber as an input, as this type of tire requires a higher natural rubber content as opposed to petroleum-

based synthetics (Burger and Smit 1989). More than 60% of natural rubber is used in tire manufacturing, and latex constitutes about 50% of the share of material inputs in this sector (FAO 2003). In addition to tires, however, other sectors such as apparel and medical goods made up approximately 22% share of natural rubber use in 2010 (Burger and Smit 1989).

Despite evident economic gains linked to cultivation, growers have not always been situated favorably. During the years between the First and Second World Wars, numerous problems came to the fore when, after price peaks in 1910, increased global supply response was followed by price depressions (Jones and Allen 1992). The British government thus attempted to tighten output in its colonies; however, the price improvements that followed were met with expanded smallholder production elsewhere during the mid-1920s, which countered the moderate price increases (Jones and Allen 1992). Later on, the Great Depression led to a substantial drop in worldwide prices, and after the Second World War the proliferation of synthetic rubber products was enabled by relatively cheap petroleum prices, thus raising the level of competition faced by growers (Jones and Allen 1992).

Aside from global economic forces influencing the proliferation of *H. brasiliensis*, domestication has been further enabled through improvements in latex tapping techniques, which minimize tree damage and provide opportunities to tap at least 100 times per year (Imle 1978). While methods used to extract latex from trees have undergone several developments, Baulkwill (1989) notes that the discovery by H.N. Ridley of the Singapore Botanic Gardens in 1897, which called for single incisions at an angle from the horizontal and removing strips of bark, is essentially still in commercial use today.

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