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Land control and crop booms *inside* China: implications for how we think about the global land rush

Saturnino M. Borras, Jr.^a, Juan Liu^b, Zhen Hu^c, Hua Li^d, Chunyu Wang^c, Yunan Xu ^a, Jennifer C. Franco^e and Jingzhong Ye^c

^aInternational Institute of Social Studies, The Hague, The Netherlands; ^bNorthwest A&F University, Yangling, People's Republic of China; ^cChina Agricultural University, Beijing, People's Republic of China; ^dTaiyuan University of Technology, Taiyuan, People's Republic of China; ^eTransnational Institute, Amsterdam, The Netherlands

ABSTRACT

This paper aims to broaden the scope of analysis of the contemporary global land rush by examining crop booms not only outside, but inside China; and investment flows not only from China, but also within and into China. It does so by examining the eucalyptus and sugarcane sectors in southern China, which have witnessed investment booms during the past decade, with capital being infused by both domestic capital and foreign capital, including Finnish, Indonesian, and Thai companies. Our argument addresses three key issues: (a) explaining why foreign and domestic companies enter into a multitude of lease and grower contracts involving holders of micro-plots, (b) revisiting the notion of extra-economic coercion, and (c) a critique of thinking about flows of large-scale investments centred primarily on nationality. These issues are central in current debates in the land grabs literature, and our study offers a different perspective from dominant narratives.

KEYWORDS

BRICS; China; crop booms; sugarcane; eucalyptus; land grabs

Introduction: the global land rush and crop booms inside China

While the role of national governments and domestic capital has been appropriately situated in most analyses of the global land rush (Borras & Franco, 2012; Edelman, Oya, & Borras, 2013; Wolford, Borras, Hall, Scoones, & White, 2013), the role of foreign investors remains an important point of controversy and interest. The role played by the BRICS countries as important sources of cross-border investment flows as a key context in current global agrarian transformations has been underscored (Scoones, Amanor, Favareto, & Qi, 2016). China is always implicated in crop booms – principally as a direct source of investments, or as a key part of the wider context (Bräutigam & Zhang, 2013; Hall, 2011). Crop booms include oil palm, sugarcane, maize, soya, industrial trees, and rubber. In turn, these booms are a result of increased market demands, partly in response to multiple crises in the capitalist world: food, energy/fuel, climate change, financial, leading to the rise of 'flex crops and commodities' (Borras, Franco, Isakson, Levidow, & Vervest, 2016; Kröger, 2016). Crop booms have spurred a similar 'boom' in academic studies of this phenomenon. Most of these studies take the BRICS countries and middle-income countries (MICs) as important contexts. It is impossible to talk about soya in southern America without talking about Chinese demand

CONTACT Chunyu Wang  wangchyu@cau.edu.cn

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for soya products (see, e.g. Oliveira & Hecht, 2016; Yan, Chen, & Ku, 2016); or soya in Bolivia without talking about the soya complex controlled by the Brazilian capital (McKay & Colque, 2016).

The BRICS countries and several MICs that are involved in crop booms experience internal booms themselves: soya is a boom crop both inside and outside Brazil (Oliveira & Hecht, 2016), in all cases involving Brazilian capital; similarly, oil palm is a boom crop both inside and outside Malaysia, in all cases involving Malaysian capital. There are now emerging studies of the complex political economy of ‘inside–outside’ crop booms (e.g. Brazil–Bolivia, Brazil–Paraguay) that are yielding fresh insights on agrarian transformations and possible future trajectories for the agrarian societies and communities implicated in these.

Yet, we argue that this perspective does not represent a full picture of China’s location in the global crop boom, and so in the global land rush. It is rare to see studies that look into the recent crop boom *inside* China (but see Siciliano, 2014 for an exception). During the past decade, at least two agricultural sectors have seen marked expansions of domestic production: sugarcane and industrial trees (eucalyptus and pine). These are concentrated in the southern part of the country, and more specifically in Guangxi Zhuang Autonomous Region (hereafter Guangxi). Our paper aims to contribute to broadening the conversation by examining crop booms not outside, but *inside*, China; and investment flows not from China, but *within* and *into* China. Specifically, we examine crop and commodity booms involving fast-growing trees (eucalyptus) and sugarcane in southern China. These are sectors that have witnessed investment booms with an infusion of capital not only from domestic sources, but also from foreign capital, including Finnish, Indonesian, and Thai companies. We examine this agrarian transformation inside China not in isolation from, but in relation to, the changing context at the international agrarian front.

Three key findings in our paper resonate strongly with the international literature – but in a way that questions dominant narratives in the literature and public debates, as follows: first, the lands acquired in southern China are generally small, even micro-scale, plots. Thus, ‘large-scale’ land acquisition should not be misconstrued as always involving one large unit of land entered in a land deal; rather scale has something to do with both land and capital. Our study shows that foreign and domestic corporations have acquired and invested in land in southern China despite having to deal with scattered tiny plots requiring a multitude of individual lease and grower contracts. At a glance, this goes against textbook arguments from new institutional economics about the need to avoid high transaction costs and risks, yet foreign and domestic companies have managed to gain control of several hundred thousand hectares of land through such a process. Topographically, these sugarcane and eucalyptus farms look like an endless, massive quilt, made of tiny patches sewn together. The article traces and examines the political and institutional bases of the crop boom in this unlikely institutional setting. Indeed, this case validates the working definition of land grabbing as a form of ‘control grabbing’, the notion suggested by Borras, Franco, Gomez, Kay, and Spoor (2012), in which ownership of land is less important than effective control of its use.

Second, and closely related to the first, the notion of ‘extra-economic coercion’ has been central to the land grabs debate, and some contributions have offered nuanced discussion of this issue (Hall, 2013; Scoones, Hall, Borras, White, & Wolford, 2013). But at times public debates tend to implicitly equate extra-economic coercion with force, violence and intimidation. Our study shows that coercion can take much more subtle forms, such as a combination of price incentive/disincentives, land-use zoning, and production quotas. Taken together and when enforced, villagers do not have to be physically and forcefully asked to give up land or particular land uses to be subject to extra-economic coercion.

Third, the nationality of companies and how this plays out in land deals is an important issue, but much of the literature tends to portray only a one-way trajectory: China as the origin of diverse

investments in large-scale land deals. Our study examines two other trajectories: Chinese investors investing within China, and foreign companies investing inside China – both requiring a significant degree of land acquisition and control. This reminds us that the fundamental logic of capital is that it will go wherever it can generate profits, regardless of nationality and national borders. This insight shares something in common with the findings by van der Ploeg, Franco, and Borrás (2015) in their study of land concentration and land grabbing inside the European Union. This also ties in neatly with Schneider's analysis of Chinese agribusiness companies expanding their clout both outside and inside China (Schneider, 2017), and situates recent scholarships on agrarian capitalism in China within current debates around the global land rush and crop booms (Yan & Chen, 2015; Ye, 2015; Zhang, Oya, & Ye, 2015).

The remainder of this paper is organized as follows. The next section provides an overview of the two crop booms: eucalyptus and sugarcane. It includes a discussion of how foreign capital is heavily involved in relevant sectors inside China. The third section analyses how specific institutional conditions related to land and labour, and subtle forms of 'extra-economic coercion' (land-use and crop/commodity zoning and quotas for crop/commodity production) have facilitated crop and commodity booms. The fourth part examines relations and interactions among key actors, including cleavages and tensions among relevant state and non-state actors. The fifth section focuses on these tensions and emerging limits to the further expansion of these boom crops. The paper ends with some insights that will hopefully enrich broader discussions of the global land rush and the agrarian transformations associated with it.

Crop and commodity booms inside China

Eucalyptus

The demand in China for wood forest products has markedly increased in recent years. China has become the world's second largest wood consumer, with consumption of 4990 million m³ in 2012 (Qin & Yu, 2014). This demand could not be fully met from pre-existing domestic production. Thus, China has also become the world's largest importer of wood and wood products (FAO, 2013; see also Figures 1 and 2). Yet, the increase in volumes imported could not by itself meet the

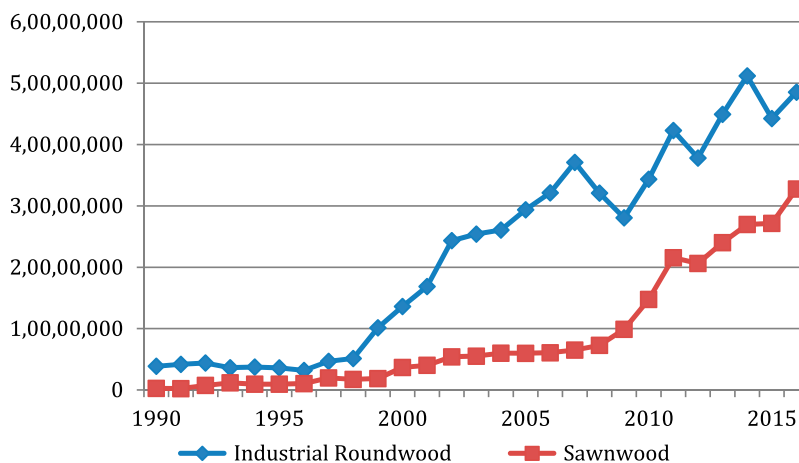


Figure 1. Quantity of industrial roundwood and sawn wood imported by China, 1990–2016 (m³). Source: FAOSTAT.

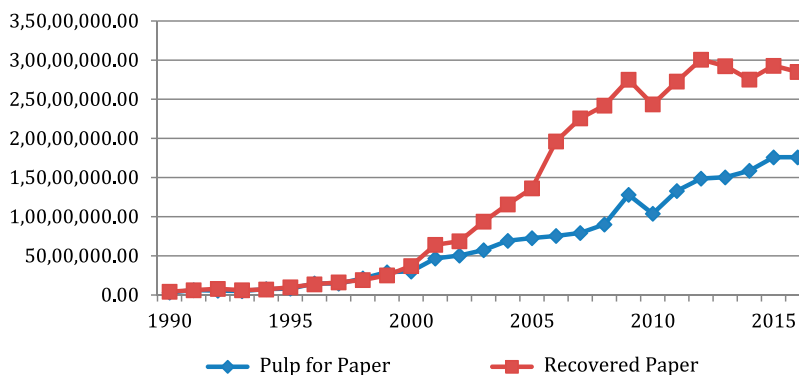


Figure 2. Quantity of imported pulp for paper and recovered paper imported by China, 1990–2016 (tonnes). Source: FAOSTAT.

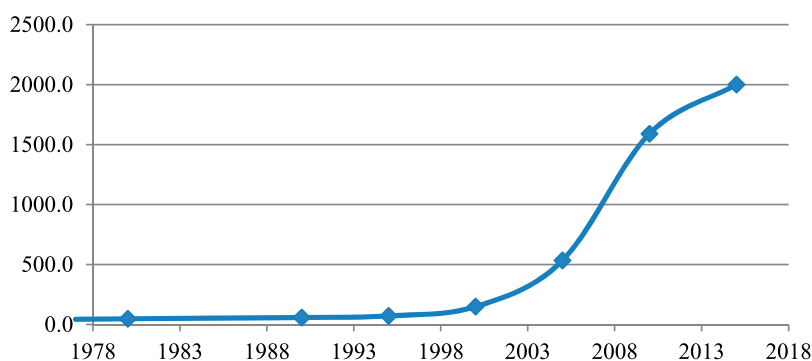


Figure 3. Eucalyptus production in Guangxi, China, 1977–2015 (1000 ha). Sources: Li (2008, p. 40) for data for 1977–2005; Guangxi Forestry Department (2010) for the 2010 entry; Qin and Yu (2014) for the 2014 data.

marked rise in demand, and the expansion of domestic production through the promotion of fast-growing tree plantations has thus become a compelling complementary approach.

Eucalyptus has become the favoured species in new tree plantations, and Guangxi (the star province) within China. To date, 2 million ha of land in Guangxi are planted with eucalyptus, accounting for 21% of China's annual wood supply in 2014 (Qin & Yu, 2014) (see Figure 3).

Sugarcane

Sugar consumption in China has expanded over the years, and the country is currently a net sugar importer (see Figure 4 for importation trends over the past four decades). However, during the same period, domestic sugar production expanded significantly. Sugarcane accounts for about 90% of sugar production in China (USDA GAIN, 2016). Guangxi, Guangdong, and Hainan are traditionally the areas within China where sugarcane has been grown, and have become the most important production zones in the present. Guangxi accounted for more than 60% of the national cultivated area, and thus cane production, in 2015 (see Figure 5), and has seen a great increase in the area planted over the past 15 years (but also a small recent decline).

The 13th five-year plan (2016–2020) of the Chinese government implies that government's intention is to gradually reduce imports and boost domestic sugar production. Both the central

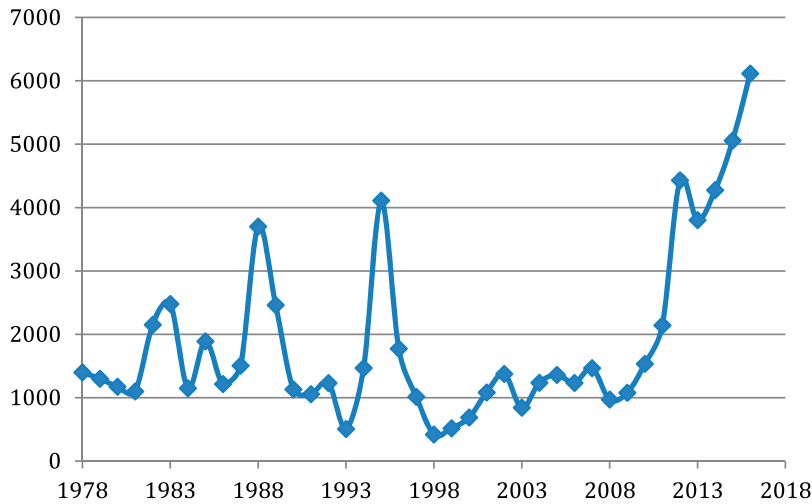


Figure 4. Centrifugal sugar imports to China, 1978–2016 (1000MT). Source: USDA.

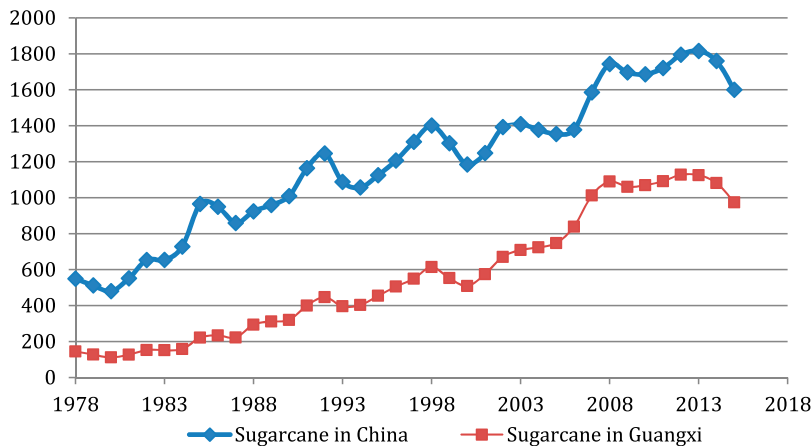


Figure 5. Area planted to sugarcane in China and in Guangxi, 1978–2015 (1000 ha). Source: *China statistics year-book* (2016).

government and the Guangxi government have begun to provide subsidies and financial support to farmers to enable them to increase yields and reverse the decline in sugarcane acreage, which is partly due to rising production costs. For instance, the Guangxi government has already started providing sugarcane farmers with subsidies of RMB 400 Yuan per mu for seeds, farm machinery, mulching film, and fertilizer. The goal is to put 5 million mu (333,300 ha) of ‘double high’ sugar cane (high in relation to both ‘sugar content’ and ‘yield’) into production (USDA GAIN, 2017).

Foreign and domestic companies in crop and commodity booms inside China

Eucalyptus

Before the 2000s, foreign direct investment (FDI) accounted for a small proportion of investments in the forestry sector, with a cumulative amount of US\$1.1 billion before 2000 (Liu, 2002). In 2002–

2012, the cumulative amount of FDI was US\$6.24 billion (*China forestry statistical yearbook, 2003–2013*), although it comprised just 1% of the total investments in the forestry sector. Around 2001–2002, the government encouraged further vertical integration in the production and processing of wood and wood products. Companies engaged in vertically integrated wood processing, pulp and paper production have become major players in the sector. [Table 1](#) profiles the leading companies in the pulp and paper-making sector in China.

The Indonesian company Asia Pulp and Paper (APP) first entered China in 1992¹ and established joint ventures with Chinese paper and pulp companies. In 1994, APP established its first direct plantation base in Guangdong Province, which initiated APP's development strategy of integrating forest–pulp–paper in China. Since 1996, APP has successively invested in wholly owned subsidiaries in eastern and southern parts of China and set up its headquarters in Shanghai. As stated by a manager of APP, 'a joint venture acts as a learning tool during the early stage of corporate expansion; however, wholly owned subsidiaries are preferred once ways of communication have been established' (APP-China, 2011). After more than two decades of operations, APP's asset base in China has reached a value of US\$22 billion through ownership of over 20 pulp and paper enterprises and more than 20 plantations, covering more than 300,000 ha on the Yangtze River and Pearl River deltas. APP's main business categories in China include copperplate paper, pulp, industrial paper, packaging paper, household paper, and carbonless copy paper. China's 'forest–pulp–paper integration' strategy not only saved APP from the financial and debt crises in the early 2000s, but also helped the company to consolidate its position in the Chinese market and its control over much forest land in China. It has to be noted that land for industrial tree plantations comes from two land categories: state forest farmland and collective forest land.

Stora Enso's operation started in 2002, and now involves 90,000 ha and an integrated board and pulp mill (under construction at the time of our research). The Guangxi investment is the largest ever in the history of Stora Enso. It was planned that the mill's board machine, with a capacity of 450,000 tonnes per year, would be operational by early in 2016, and later a chemical pulp mill would be set up. The eucalyptus plantations will provide the raw materials required for processing. The International Finance Corporation (IFC) has a 5% share in the project, Stora Enso owns 83%, and

Table 1. Major pulp and paper-making enterprises in China, as of 2017.

Company	Origin	Plantation sites	Size of direct plantation operation
Shandong Chenming Paper Group Co., Ltd	Chinese	Hubei, Jiangxi, Hunan, Guangdong, Guangxi	Not clear
Shandong Sun Paper Industry Joint Stock Co., Ltd	Chinese/joint venture with International Paper	Laos and Vietnam (no information of their operation inside China)	100,000 ha
Nine Dragons Paper (Holdings) Limited	Chinese	Vietnam; no details inside China	Not clear
China Paper Corporation	Chinese	Hunan, Guangdong	Not clear
Lee & Man Paper Manufacturing Co., Ltd	Hong Kong	Guangxi, Chongqing, etc.	More or less 3400 ha in Chongqing
APP	Indonesian	Hainan, Guangdong, Guangxi, Yunnan, and others	300,000 ha
Stora Enso	Finnish/Swedish/IFC/GX Forest Group	Guangxi	90,000 ha
Oji Holdings Corporation	Japanese	Guangxi	7500 ha
International Paper	US	Invested in manufacturing; no plantation operation	–
UPM	Finnish	Invested in manufacturing; no plantation operation	–

Source: Authors' collated data from company websites.

13% is owned by Guangxi Forestry Group Co. Ltd and Beihai Forestry Investment & Development Company Ltd.

There are also Japanese and Hong Kong investors in the sector, while two other leading companies in the world – International Paper (US) and UPM (Finnish) – have invested in manufacturing plants. When large Chinese companies joined up with these foreign companies, the result was a marked boom of the sector, a spike graphically illustrated in [Table 1](#). As latecomers to the sector, many Chinese companies could not gain access to good forest land inside China, and these companies began to leave China in search of a resource base, especially in Southeast Asia. For example, Shandong Sun Paper is planning to establish 100,000 ha of eucalyptus plantations in Savannakhet province in central Laos (World Rainforest Movement, 2009).

These foreign and domestic companies deploy different strategies to gain access to forest land in China.² First, *companies lease land* from local communities and state forest farms for period that range up to 30 years, and then establish and manage the plantations themselves. Companies typically assume full responsibility for financing projects and make annual lease payments to the community and state farms, but manage the site directly. Stora Enso favours this strategy. Second, *companies establish a joint financing arrangement* between the company and a private investor, in which they share the cost of plantation development and the latter assumes responsibility for managing the site, harvesting the wood, and delivering it to the mill site. Typically, the company receives a pre-defined portion of the harvest, while the private investor retains the right to sell the remainder to the mill at the prevailing market price. Some of APP's plantations are operated in this model. Third, a *production-sharing arrangement is established* between the company and the local community or state-owned forests, as land-owner. The company assumes full responsibility for financing the plantation development on community land, and the community is responsible for managing the site. At the end of the rotation, the wood harvested is divided between the company and the community according to an agreed ratio. Often the company provides a guarantee that it will purchase the community's portion of the wood at a pre-determined price. Oji company operate their plantations using this model. Fourth, *companies secure wood procurement contracts with the region's state-owned tree farms or rural communities* which have substantial existing plantation areas. For the collective land, APP invests in the inputs required for afforestation and tending trees, as well as in local infrastructures, while farmers and the community manage it by themselves. This is an arrangement similar to contract-farming and releases industrial companies from responsibility for the management work of the plantations. For elaboration of these strategies, see Xu ([in press-a](#)).

Sugarcane

More than 30 sugar companies have now established their mills in Guangxi, among which five companies are state-owned or state-controlled, five are controlled by foreign companies, and the rest are domestic private enterprises. For the sugar industry, there is a zoning rule for each mill, which means that sugar companies cannot expand their sugarcane area through land acquisition in areas outside their allocated zone. It is partly for this reason that several Chinese companies have begun to expand their sugarcane base by setting up operations in Vietnam and Myanmar to increase the supply of raw materials for sugar milling (see Borrás & Franco, [in press](#)). This form of expansion has been encouraged and supported by local government bodies in China, since tax from sugar milling has become the main income source for local government in these areas.

One of the largest players in the sector is the Guangxi Nanning East Asia Sugar Group (EASG), established by a parent company, the Thai Mitr Phol Sugar Group in October 1993. At present,

EASG operates seven sugar plants in Chongzuo City as joint ventures, with most of the sugar plants controlled in the past by the local government bodies. AB Sugar China's involvement in the Chinese sugar industry began in 1995 with a joint venture in a mill in Guangxi, known as BoQing. Collectively, their five sugarcane factories can process 5 million tonnes of sugarcane and produce over 600,000 tonnes of sugar annually. AB Sugar China has a policy of 'comprehensive utilization' for all co-products; so the mills also produce and sell bagasse, molasses, fertilizer and alcohol. Yunnan Power Biological Products Group has 14 companies in China, Laos and Myanmar. The factories and mills owned by this company process sugarcane, cassava and natural rubber, with sugar, alcohol, and rubber as their main products.

Land and labour as dimensions of crop booms

With reference to Tania Li's framing of the land and labour dimensions of global land grabbing (Li, 2011), the case of Guangxi demonstrates a diverse mix of land-labour relations in the context of land investments. There are cases where companies are in need of land but not labour, but others where both land and labour are needed by companies. The crop/commodity boom inside China has been accompanied by a widespread conflict among villagers, local government, land and labour brokers, and companies (Li & Wang, 2014). However, many of the contentious issues are not about displacement or dispossession, as in many cases elsewhere in the world (Hall et al., 2015). Rather, much of the tension centres around the terms and conditions under which villagers are incorporated into these emerging enterprises within the crop/commodity boom. The structural and institutional conditions in the crop boom sites thus shape the political character of tensions over land and labour.

A large-scale rural-urban migration process has been taking place in China since the early 1990s (Ye, Wu, Rao, Ding, & Zhang, 2016). About 20 million labourers left rural communities to work in urban areas in 1993. This figure rose to more than 22 million in 1998 (Rural Social and Economic Survey Office, 2005), and pole-vaulted to 220 million in 2008 and 260 million in 2013, respectively (National Bureau of Statistics of China, 2014). Geographically speaking, these large-scale outflows of workers are concentrated in six provinces and municipalities: Guangdong, Shanghai, Beijing, Jiangsu, Tianjin and Fujian. In Guangxi and eight other provinces, the outflows of population are higher than the inflows (Lu & Zhou, 2014). National population census surveys of 2000, 2005 and 2010 revealed that the net outflows in these nine provinces amounted to 2.55, 2.65 and 4.57 million people, respectively, in these years. In Guangxi, the proportion of the population engaged in agricultural production decreased from 70% in 1980 to 28% in 2012. These shifts have set the stage for subsequent crop booms in Guangxi (Guangxi Employment Department, 2014).

Official statistics (Guangxi Employment Department, 2014) show that the number of 'peasant workers' in Guangxi reached 11.65 million in total in 2013, of which 8.98 million migrated outside Guangxi to work. Approximately 6.23 million (or 69.4% of the out-migrants) went to Guangdong province with the majority of those (60.9%) working in the manufacturing sector. Thus, seasonal and cyclical migration had already been prevalent by the time that foreign and domestic capital moved into the agricultural sector in Guangxi in the 1990s-2000s.³

Labour dynamics have major implications for the politics of rural land. There are two types of ownership of rural land in China: 'state-owned' and 'collective owned'. Most of the state-owned land was originally under the management of state farms and state forest farms, while collective land usually refers to land owned by the village, or sub-village entities such as 'production teams'. From the late 1970s until 1983, China implemented the Household Responsibility System (HRS)

for the distribution of collective arable land, wherein each household took responsibility for a plot of land and its associated entitlements and responsibilities (Kung & Liu, 1997).

Land distribution in a village was usually conducted by categorizing all village arable land into different types according to fertility and productivity, and then equitably distributing these to households. What this means is that one household may hold multiple small plots dispersed in different locations within the village, each with different physical conditions, for example, in relation to soil fertility and access to irrigation. In principle, every household in a village should have some share of both flat irrigated land, and rocky and hilly land. This pattern of land distribution, originally borne out of a concern for egalitarianism, would play a key role in facilitating the subsequent crop boom. In 1993, the government declared that farmers' land tenure rights should be guaranteed in terms of 30-year contracts, hoping that peasants would be encouraged to invest in their land.⁴

Similar reforms were conducted in relation to the collective forest tenure system in the early 1980s, in order to motivate farmers to invest in tree planting and forest management. Slightly different from the arable land reform, the forest land reform was initially conducted by allocating small parts of collective-owned forest land to individual households as 'private mountains', and contracting the majority of collective forest land to these households as 'responsibility mountains'. By 1986, more than 70% of all collective-owned forest land had been allocated and contracted to farmer households, for an even longer period than arable farming land (Yin, Xu, & Li, 2003). Moreover, another type of rural land is known as the 'Four Wastelands' (*Sihuang*), including 'waste mountains', gullies, hills and riverbanks. In many provinces, wasteland was not clearly allocated to households in the beginnings of the reform, even if some wasteland was contracted to peasants at low or zero cost. From the late 1980s, however, some provinces decided to address the problem of soil erosion on barren, hilly lands. In this context, wasteland use rights were put up for open auction (Zhang, Liu, & Wang, 2002a, 2002b).

When the sugar industry started to expand in Guangxi in the late 1980s, people were encouraged to develop and reclaim wasteland in order to grow sugarcane. By the 1990s, this initiative had become very popular among villagers, who started to reclaim wasteland on a large scale. Auctions for waste mountains and waste hilly land accelerated afforestation and facilitated the expansion of fast-growing trees and plantations in Guangxi, accompanied by the government's *fast-growing, high yield* programme, which is meant to convert fragile farmland to forestland. This policy has been invoked at times to enable the conversion of sugarcane land to eucalyptus plantations. However, villagers tend to discover the full extent of the 'new' and 'real' value of so-called wasteland only after foreign companies (specifically Stora Enso and APP) have begun to lease land for eucalyptus production, from both state forest farms and collectives (Xu, *in press-c*).

State policies and the crop booms

Government policies have facilitated crop booms in China. These policies have resulted in the two sectors, eucalyptus and sugar, not only co-existing, but also complementing and contradicting one another. Their coexistence is thus marked by both tension and synergy.

Development of the Chinese sugarcane sector has taken place in various stages. In the 1950s, the government tightly regulated the sugar sector. In 1955, the Chinese Ministry of Light Industry decided to rapidly develop sugar processing in Guangxi. Sugar factories were established, and sugarcane was in great demand. In the next year, Guangxi government established a sugarcane pricing regime in which all sugarcane had to be sold to state-owned sugar factories at fixed prices.⁵ In order to safeguard the adequate supply of raw material for sugar factories, government encouraged the villagers to plant sugarcane by providing additional incentives: (a) in 1972, a policy was

introduced that villagers engaged in sugarcane production in certain government-determined sugar zones should be provided with rationed foodstuffs; (b) sugarcane farmers were given access to loans and fertilizer; and (c) investments were made in infrastructure in sugarcane producing regions, especially in water conservation and road construction.

In the 1980s, the HRS allowed households to manage agricultural production on their own, while farmland remained in the ownership of the rural collective. With the initial establishment of a market economy in China, some crops were freely traded in market. Until 1992, the price of *sugar* was thus market-based, while the price of *sugarcane* was determined in government-led negotiations between sugarcane farmers and factories. In 2001, China became a member of the World Trade Organization (WTO). One of China's commitments within the WTO was that the minimum import quota for sugar in 2002 would be 800,000 tonnes, which would increase 1.5% annually, and the tariff would be no more than 15% after 2005. With changes in patterns of consumption and growing demands for sugar, there has been a marked rise in the importation of sugar, which is cheaper than domestically produced sugar. To protect China's domestic sugarcane sector, government passed the Interim Measures for Sugar (*Tangliao Guanli Zanxing Banfa*) in 2002, which remains the most important form of regulation of the sugarcane sector. It also established the Sugarcane Region Regime (SRR), which has been in force since then.

Land-use zoning has become a central pillar of current sugarcane policy. The aim was to bind sugarcane production by villagers together with sugar factories' interests. Generally speaking, a county is divided into sugarcane regions, each connected to a sugar factory. In these regions, a sugar factory enters into contracts only with the sugarcane farmers who plant sugarcane for that specific factory. A sugarcane farmer cannot sell sugarcane to non-contract factories, even if the latter offers a higher price. Penalties are imposed for violations of these rules. For example, in 2006–2007, six sugar companies were penalized for buying sugarcane from other sugarcane regions.

Every year before the sugarcane harvest, the provincial government price bureau issues a mandatory price for sugarcane. In the crushing season, the price bureau issues a second sugarcane price, which is calculated according to the price of sugar. If the second price is higher than the first, the excess should be given to villagers; however, in the reverse, it is not necessary for villagers to return money to factories. Interestingly, all the sugarcane farmers we interviewed in the field said that they had never received any compensation for price differences.

Moreover, planting of eucalyptus trees is not permitted in some sugarcane regions, even on hilly lands, ostensibly because eucalyptus plantations damage soil and water. Article 20 of the Nanning City Drinking Water Source Protection Regulations of 2014 states that industrial eucalyptus should not be planted in and around sources of drinking water. This is one major bone of contention between sugarcane and eucalyptus producers. Local government officials have begun to be quite strict in enforcing the rule. However, it is public knowledge in Guangxi that the main reason why government officials are not happy with the eucalyptus sector is because it does not provide them with the substantial taxes yielded by the sugarcane sector.

The SRR is unquestionably beneficial to central and local government. Since 2006, the villagers have not paid taxes on their sugarcane production. Theoretically speaking, villagers can plant any crop in their lands, but if they plant sugarcane, they do not have to pay taxes, while the sugar companies secure enough raw material for sugar production – and in turn the government can obtain tax income from companies.

Alongside land-use zoning, the sugar quota system has also played a key role in shaping the development of the sector. In the 1960s, central government required Guangxi to produce 1.8 million tonnes of sugarcane and 35,000–40,000 tonnes of sugar. In order to complete the task, Guangxi assigned Chongzuo County and 11 other counties the status of sugarcane production zones. In

1977, Guangxi ruled that the state farm, Jin Guang Farm, and 10 other state-owned farms should make sugarcane their main crop, and that more than 70% of their arable land should be used to plant sugarcane. In 1988, the Chinese state council suggested that Guangxi makes full use of its 8 million mu⁶ of dry, hilly lands, with 75% of these lands being suitable for sugarcane plantation.

Currently, the ‘high in sugar content and yield’ Sugarcane Production Base (HSPB, Shuanggao jidi) is the key focus of the quota system. Guangxi has decided to develop 5 million mu for its HSPB. In 2014, the Guangxi government allocated this task among its various regions, involving a total area of 0.5 million mu. Each layer of the government bureaucracy parcelled out the task to its lower units, until the task was distributed among the villagers. This is called the ‘level-to-level contract responsibility system’ or a ‘sugarcane quota system with Chinese characteristics’.

What this suggests is that the sugarcane sector contributes substantially to the value added to the local economy and to local government taxes. This makes it a much more favoured sector than eucalyptus, and is one reason why there is much tension and conflict among villagers, state farms, companies and local government units, and within and between the sugarcane and eucalyptus sectors.

According to the Chinese tax system, government, especially local government, can only obtain tax from the processing of sugarcane, not from the production of sugarcane.⁷ Usually the sugar enterprise should pay enterprise income tax (EIT) and value-added tax, both of which accrue to the central and local governments.⁸ Similarly, the farmers pay no tax for their eucalyptus plantation, but, if a eucalyptus processing factory exists, the government, especially local government, can collect tax from it. There are not as many eucalyptus manufacturing plants in Guangxi as there are sugarcane mills; hence, local government officials tend to dislike eucalyptus, despite central government’s interest in promoting eucalyptus production.

Local government usually receives more than half of the sum of sugar taxes. In Chongzuo, the ‘sugar capital of China’, two sugar factories paid a total tax of 45,750,000 Yuan, which accounted for 70.18% of county revenue in 1993 (Guangxi Statistics Bureau, 2004). In 2011, Guangxi Dongmen Nanhua Sugar Company paid local tax of more than 0.1 billion Yuan. According to a statement, the tax paid by the two sugar factories usually accounts for about 50–60% of the total tax paid in Fusui County.

Villagers engaged in sugarcane production appear to be doing so of their own accord, responding to a variety of institutional incentives. However, critical analysis suggests that these incentives constitute a subtle form of coercion. The eucalyptus sector thrives in part because many households do not have sufficient labour that can be mobilized for labour-intensive sugarcane production, when compared to eucalyptus production, which does not require as much labour. Yet incentives are skewed towards sugarcane production.

Key actors and tensions among them

Crop booms in China have generated complex interactions between an array of state and non-state actors, including foreign companies, in political dynamics marked by both tension and synergy. As mentioned earlier, conflict has been widespread in these two sectors in Guangxi, and many revolve around the terms of incorporation of villagers into emerging enterprises, a type of conflict that is also significant elsewhere in the world (Hall et al., 2015; Xu, *in press-b*).

Sugar: farmers, companies, and local government

There is much observable conflict over control of land among farmers, sugar companies and the state. The main concerns of these actors are in relation to what types of crops should be planted,

how they are to be planted, and on which land. They are united in the calculation that there is much potential profit to be realized in these enterprises, but tensions tend to increase when contracted villagers run into financial difficulties.

At the height of the sugarcane boom (and just before the price decline of 2015), villagers, companies and local government officials all appeared to be happy, and popular folk songs depicted a 'sweet' situation for all concerned. In an interview, a company official exclaimed: 'There used to be huts, muddy roads and grasses, now there are paved roads, piped water, and these peasants are able to build up several-story houses, or "sugarcane houses" (*Gan zhe lou*), thanks to sugarcane.'⁹ A sugarcane farmer said: 'At that time, the sugar company paid us a lot, and they paid us quickly – only ten days after sending the sugarcane into the mill factory, we got the payment.'¹⁰ Sugarcane zones were dynamized and expanded, and specialized sugarcane farmers emerged, defined by sugar companies as those with a minimum of 70 mu under sugarcane or producing 400 tonnes of production per year. They were issued with a certificate, and showered with extra benefits, such as leisure travel to Vietnam, Yunnan and Beijing. Nanhua Sugar Company and East Asia Sugar Company provided between 50% and 60% (in some years over 65%) of local revenues annually, worth about 700 million Yuan in 2013, in which Nanhua was responsible for 280 million Yuan and East Asia 420 million Yuan.

However, from around 2010 the sugarcane sector began to experience a number of difficult challenges. Firstly, labour costs soared. Payments for casual labourers in the harvesting season increased from 20–30 Yuan per day in 1996–1997 to 50–60 Yuan per day in early 2000. In 2016, the cost of labour was about 60–80 Yuan per day before the Spring Festival (in late January/early February) and 100–130 Yuan per day after the Spring Festival, when the supply of labour dwindles.¹¹ Few migrant workers from provinces located in inner China (such as Yunnan and Guizhou) are available to harvest sugarcane at this time, since it coincides with their need to work on their own farms back home, and thus harvesting relies heavily on migrant workers from Vietnam. 'Without Vietnamese workers, we wouldn't be able to harvest the sugarcane', a sugar company employee explained.¹² Indeed, in Chongzuo City, shortfalls of 30,000 labourers in the less busy farming season and up to 50,000 labourers in the harvesting and crushing season are common (Wei, 2014).

Secondly, the price stipulated by the central state for sugarcane has progressively declined, amid increasing levels of imports of cheaper sugar. In the 2010–2011 crushing season, farmers were paid 600 Yuan per tonne. The price dropped to 500 Yuan per tonne in 2011–2012, 475 Yuan in 2012–2013, 440 Yuan in 2013–2014 and 400 Yuan in 2014–2015.¹³ Farmers in our interviews often complained of 'zero profits' from sugarcane. Some sugarcane farmers said that at 2016 sugarcane prices, the net profit per mu would be 1000 Yuan if a farmer used only family labour, but the net profit would go down to 300–500 Yuan per mu if labour had to be hired in.

Among the reasons for the declining price of sugar globally is the increase in the supply of sugar from a range of sources aside from sugarcane (such as sugar beet), but perhaps more importantly, the substantial expansion of sugarcane production worldwide. Based on FAO Statistics, 19.3 million ha were planted to sugarcane in 2010 globally. By 2014, this had jumped to 27.1 million ha of land.¹⁴ The rise of 'flex sugarcane' (sugarcane used flexibly for sweeteners, ethanol and other commercial and industrial commodities) may have contributed to the popularity of sugarcane, but at the same time may have contributed to the falling price of sugar (see Mckay, Sauer, Richardson, & Herre, 2016).

The global pattern of increasing areas planted to sugarcane is evident in China too. Using FAO statistics, it is estimated that there were 1.1 million ha of land planted to sugarcane in China in 2000,

increasing to 1.69 million ha in 2010 and 1.76 million ha in 2014.¹⁵ However, in some areas, there has been a contraction in the area planted to cane. The Nanhua Sugar Company in Chongzuo City in Fusui County, for example, lost a total of 70,000 mu between 2012 and 2014. There has also been a decline in the numbers of specialized sugarcane farmers. There were about 800 such farmers supplying Nanhua Sugar Company before 2013, but this had declined to 426 by 2014.¹⁶ A majority of the remaining specialized farmers have reduced their production of sugarcane, and some have switched to eucalyptus, banana or other fruit crops, adding further to tensions among and between sub-sectors.

Eucalyptus: farmers, state forest farms, local government, and foreign companies

The majority of the land that was previously used for sugarcane by Nanhua Sugar Company has been diverted to eucalyptus. The sugarcane boom began earlier than that in relation to eucalyptus, and the latter has occurred partly at the expense of the former in terms of acreage, for the compelling institutional and political reasons discussed above. Land-use conversion from sugarcane to eucalyptus involved nearly 30,000 mu in 2012–2013 in the Nanhua zone alone.¹⁷ Actors involved in the contests between sugarcane and eucalyptus (such as farmers, state forest farms, local government, forestry bureaus, sugar companies, and forest, pulp, and paper companies) have created competing discourses around eucalyptus, advocating either for or against the crop.

In the sugarcane sector, villagers accuse state farms of either encroaching onto their plots or outright theft of their plots. On the other hand, state farms that tend to aggregate plots into bigger, scaled up operation also accuse farmers of land theft. A state farm official told us:

Farmers are cunning. They often steal land from our state farms. [Our state farm] lost over 110,000 mu to local farmers in these years and couldn't take the land back. Suing is not the solution. Local government cares more about maintaining stability and harmony (*Wei wen Wei he*), so the arbitration decision is usually biased in favour of farmers. Even if we win the lawsuit, it is difficult to enforce the judgment. Farmers can easily occupy the land again. They cut a circle in the tree trunk, sow linseed after the tree dies, and then claim the land is theirs. When we take the land back through the court, and plant new seedlings, they may flip the trees with a whip, and a row of seedlings dies in a few minutes. We can do nothing about it.¹⁸

The conflict around eucalyptus is often triangular: villagers versus state farms versus foreign companies such as Stora Enso and APP. These are often widely reported in the media (Li & Wang, 2014; Xu, *in press-b*) and are similar to those reported in Cambodia and Ethiopia. This is illustrated in an interview with state farm officials:

We lost 100,000 mu to Stora Enso in 2007. This foreign company invaded in Guangxi in 2002, promising to build a big forest, pulp and paper company in Beihai Municipality. But more than ten years passed, and nothing has happened yet.¹⁹ Stora Enso took forests from ten state forest farms. Guangxi Forest Corporation was set up to deal with it. Stora Enso gives the land rent to Guangxi Forest Corporation and the latter is supposed to give the rent to the state forestry farms. But when this corporation no longer reported to the State Forestry Administration and became a part of SASAC (State-owned Assets Supervision and Administration Commission) in 2013, it refused to give the rent to us. The state forest farms have to rent land from farmers in order to enlarge their operations.²⁰

These examples illustrate how industrial crop booms in southern China are generating a range of conflicts between the key actors involved, both within and across the sugarcane and eucalyptus sub-sectors. They involve variable configurations of land, labour, capital and taxes, and tensions between villagers, the state, and Chinese and foreign capital. The institutional regime involves subtle

forms of coercion of villagers. Analyses of the global land rush must be adequate to the complexities of cases such as these.

Conclusion

Why would foreign and domestic companies go to the trouble of dealing with thousands of individual lease and grower contracts in the sugarcane and eucalyptus sectors of southern China, given that both the risks and the transaction costs involved are usually seen as being too high? Crop booms in southern China do not appear to fit with a dominant narrative in the literature on the current global land rush, which suggests that 'large scale' refers to a single chunk of land, of say, 30,000 ha, governed by one contract and usually operated with high levels of mechanization. Based on our study, the plausible answer to this question is twofold: (a) high transaction costs are offset by the economic advantages of being positioned inside China, the world's largest market for wood products and a key market for sugarcane products and (b) the Chinese government is willing to install the necessary (and coercive?) institutional rules to ensure that 'smooth and disciplined' acquisition and consolidation of scattered micro-plots takes place. Companies have achieved the scale of operations they desire by dealing with a multitude of individual villagers, who might each have plots as small as 5 mu to offer.

Why would villagers lease their lands to foreign or domestic companies, or enter into grower contracts with them? One important reason is because many small plots are no longer central to the livelihoods of those who had earlier migrated to the cities in search of wage work (Xu, *in press-c*). For many villagers, this is an unexpected additional source of income, and since neither eucalyptus nor sugarcane require their full-time labour, leases or contracts allow them to retain their main jobs in the cities. A combination of state-driven institutional incentives and disincentives around land, labour, trade and taxation – separately and together – have formed what can be construed as subtle forms of extra-economic coercion of villagers to enter into eucalyptus and sugarcane production, and then get stuck in it.

Why would China allow foreign companies to gain a foothold inside China and get involved in the politics of land control? The answer is that many of these foreign companies were already in China before the recent crop booms took place. They responded to the earlier campaign by the Chinese government to entice capital into China, and entered the country before the 'going out' Chinese policy was announced in 1999 (Hofman & Ho, 2012; Yan & Chen, 2015). When the global land rush kicked in from 2008 onward, some Chinese companies began to look at land inside China, in order to regain ground from foreign investors. At times, there were attempts by the late coming domestic companies to gain ground in the eucalyptus and sugarcane sectors by competing with the established foreign and domestic companies in terms of land control, causing some tensions between them.

Our study suggests that the dynamics of the global land rush revolve around the political economy of land, labour and capital (Bernstein, 2010): who gets which land, labour and capital, how, how much, why, for what purposes and with what implications? These are the key issues to focus on, rather than other aspects such as the nationality of investors, the cross-border direction of capital, the procedural elements of investment processes, and so on, that, although important in themselves, are in the end somewhat secondary.

Notes

1. Note that in March 2001, during the Asian debt crises, APP defaulted on its debt, most of which was subsequently rescheduled at lower values.

2. The exact figures of acreage and output for these different patterns in Guangxi are not available, but the official data show that in 2014, 656,300 mu land has been circled out and cleared for HSPB ('Guangxi Shuanggao', 2015) and by the end of 2015, 992,500 mu, with the government grants reaching 1.798 billion RMB (Ministry of Land and Resource of PRC, 2016).
3. For a relevant background discussion on migration and livelihoods, rural and urban, see van der Ploeg, Ye, and Pan (2014); for the dynamic interplay between land and labour, both rural and urban, see Chuang (2015), Andreas and Zhan (2016), Ho and Spoor (2006), and Ye (2015).
4. This decision was announced by the government's Central Rural Work Committee in October 1993. See CPC Central Committee and the State Council (1993).
5. For instance, in 1972 the price of sugarcane rose from 30.29 to 34.94 Yuan per tonne, but at the same time the price of sugar was unchanged. The production cost of sugar increased, and many sugar factories lost money (see Si, 2004).
6. 1 mu equals to 1/15 ha.
7. For background on the politics of taxation, see Kennedy (2007).
8. The Arrangement Measures for Sugar EIT (Zhitangye Qiye Suodeshui Guanli Banfa), adopted by Guangxi autonomous region in 2009, is one of the most important regulations in the system of sugar taxation.
9. Interview with HLQ, an official in Nanhua Sugar Company, March 6, 2015, Fusui County.
10. Interview with Gan, a village leader, March 7, 2015, Fusui County.
11. Interview with HQZ, a village leader, January 5, 2016, Fusui County.
12. Interview with Huang, an official in Nanhua Sugar Company, March 7, 2015, Fusui County.
13. Interview with XP, an official in Nanhua Sugar Company, March 7, 2015, Fusui County.
14. Calculated from data on the FAOSTAT website.
15. Calculated from FAOSTAT website.
16. Interview with XP, an official in Nanhua Sugar Company, March 9, 2015, Fusui County.
17. Interview with LS, an official in Nanhua Sugar Company, January 9, 2016, Fusui County.
18. Interview with an office director, a technician and an accountant in one of the state farms. March 10, 2015. Fusui County.
19. In fact, Stora Enso's investment in this project began in late 2014.
20. Interview with an office director, a technician and an accountant in one of the state farms in Fusui County, March 10, 2015.

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Notes on contributors

Saturnino M. Borrás, Jr. is Adjunct Professor at the College of Humanities and Development Studies (COHD) of China Agricultural University (CAU) in Beijing, Professor of Agrarian Studies at the International Institute of Social Studies (ISS) in The Hague, and a Fellow of the Transnational Institute (TNI).

Juan Liu is an Assistant Professor at College of Humanities and Social Development, Northwest A&F University, China, and a post-doctoral researcher at ICTA, Universitat Autònoma de Barcelona.

Zhen Hu is Associate Professor at the College of Humanities and Development Studies of China Agricultural University in Beijing. He specializes in land law, legal history, and agricultural law.

Hua Li is a lecturer at the College of Politics and Law of Taiyuan University of Technology. Her research interests include water politics, land transfer, and labour migration.

Chunyu Wang is Associate Professor at the College of Humanities and Development Studies of China Agricultural University in Beijing and was a China Scholarship Council post-doctoral fellow at International Institute of Social Studies (2011–2012).

Yunan Xu is a PhD Candidate at the International Institute of Social Studies (ISS) in Erasmus University Rotterdam funded by the China Scholarship Council (CSC). Her PhD research is about the political economy of industrial tree plantations in southern China in the era of global land rush.

Jennifer C. Franco is Adjunct Professor at the College of Humanities and Development Studies (COHD) of China Agricultural University (CAU) in Beijing, and a researcher in the Agrarian and Environmental Justice Program of Transnational Institute (TNI).

Jingzhong Ye is Professor and Dean of the College of Humanities and Development Studies (COHD), China Agricultural University.

ORCID

Yunan Xu  <http://orcid.org/0000-0002-4520-1207>

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