



RANEPA
THE RUSSIAN PRESIDENTIAL ACADEMY
OF NATIONAL ECONOMY
AND PUBLIC ADMINISTRATION

The 5th International Conference of
the BRICS Initiative for Critical Agrarian Studies
[New Extractivism, Peasantries and Social Dynamics: Critical Perspectives and Debates]

Conference Paper No. 23

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sector: agro-technification, food politicization and land
speculation

Jin Zhang

13-16 October 2017

Russian Presidential Academy of National Economy and Public Administration (RANEPA)
Moscow, Russia

Organized jointly by:



COHD 人文与发展学院
College of Humanities and Development Studies (COHD)



Universidade de Brasília



With funding support from:



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October, 2017

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Strategies underlying capital accumulation in the agro-food sector: agro-technification, food politicization and land speculation

Jin Zhang

Abstract

Capital accumulation in the agro-food sector shows new characteristics in modern society. This paper identifies three accumulation strategies: The first is agro-technification – a way of cost shifting and harvest redistribution between food companies and farmers. The second strategy is food politicization. Food companies can rely on the state's administrative power to continue further accumulation activities while the state can reinforce its political power on food governance in the process. The third strategy is land speculation. Land stops being the ecological basis of agricultural production and, instead, becomes object of speculation under the modern finance system. This paper points out that the new accumulation activities will render the national or transnational food system more fragile and unsustainable. Moreover, it argues that the current capital accumulation in agro-food sector has exceeded the classical agrarian analysis of land-labour-capital triangle relation. A new triangle relation of technological-political-financial coercion is taking place.

Keywords: Capital accumulation, agricultural technology, food politics, land consolidation, China

1. Introduction

Capital accumulation is a key factor driving agrarian change all over the world in the current era. Although the agrarian Marxists and the pro-peasant intellectuals hold different opinions about agricultural development, the fate of rural society and the prediction of peasant differentiation, they all see capital accumulation in agriculture and the food sector. Classical Marxists focus more on the capital accumulation in the agricultural production sector. According to Marx, the original English capitalists were those land-owners who expropriated land from the agricultural population. The process of separating the producer from the means of production and forming the early stage of capital is referred to primitive accumulation (Marx 2010 [1887]). The large farms (also referred to as 'capital farms or merchant farms') could only be defined as capitalist farmers when the farmers exploited more wage labour and the money capital of the farm increased¹ (Marx 2010 [1887]). Lenin developed the analysis of capital accumulation in agricultural production and brought up the argument of peasant differentiation. Lenin argued that peasant activity is to be found in 'every commodity economy and every order of capitalism' (Lenin 1982, 130). Because of production competition among peasants, agricultural production would be concentrated in the hands of a minority of the peasant bourgeoisie and leave the majority as rural proletariat. According to Lenin, the renting of land for the sale of grain, the necessity to employ many farm labourers, and the generation of spare cash for farm improvements, demonstrates capital accumulation by well-to-do peasants, by (Lenin 1982).

Kautsky systematically analysed the relationship of capitalism and peasantry in the modern society, and he extended the previous Marxist explanation of capital accumulation out of agricultural production activities. He recognized the functionality of peasant farms in the capitalist economy, i.e., their 'underconsumption' and 'excessive labour' set the basis of accumulation in the capitalist agriculture and industry (Kautsky 1988 [1899]). On the one hand, the peasant farms are 'production sites' for labour that is needed by the capitalist farms and industry. On the other hand, surplus value is extracted from peasants through technological packages, credits, contracts as well as the control of modern storage, transport and retail outlets by the agro-industrial capital (Kautsky 1988 [1899]).

Kautsky's understanding of capital accumulation is not far from the pro-peasant intellectuals who disapprove the trend of capitalist class differentiation within peasant farms. He pointed out that the capitalist profit extraction is gathered more from the upstream and downstream activities in the food supply chain as well as from the credit system. Chayanov and his predecessors did not so much explain capital accumulation. But their works on peasant co-operatives show that the capitalist economy squeezes peasant farms through market specialization, machinery and science, processing, transporting and retailing. In their view, a peasant cooperative is the best organizational system to compete with and to protect peasant farms from capitalist agriculture and industry (Chayanov 1991 [1927]).

Goodman et al (1987) gave a systematic analysis of industrial appropriation of rural production processes. They explored how industrial capital created accumulation sectors by re-structuring the pre-industrial rural production process, including agricultural equipment, processing, food manufacture and distribution. Their main argument is that the replacement of labour and natural materials by machinery, fertilizers, hybrid seeds and agro-chemicals are the two stages of appropriation, that is, a different way of capital accumulation. In addition to the means of value appropriation by agro-industrial capital, Van der Ploeg (2009) discovered that the current giant food corporations never produce value, instead they simply appropriate value produced by farmers through reorganizing the production process.

¹ According to Marx, there were other historical circumstances that caused the emergence of capitalist farmers in England. These circumstances include the progressive fall in the value of precious metals/money, the continuous rise in the price of all agricultural produce, lowered wages. All these changes generated more profits for the farms.

The debate on capital accumulation in agriculture and food sector has turned out to be the kernel to understand agrarian change in China. Philip Huang argues that the small peasant farms are the main force for the enormous increase of the total agricultural production value in the past three decades in China. Moreover, the diet structure transition and the new food consumption demand will ensure that peasant farms will survive and further develop by producing high-value agricultural products and by intensifying labour and capital on their farms (Huang 2010, Huang et al. 2012). Following this argument, Huang points out that the profit extraction from peasants is taking place in the trading and food processing sectors instead of in the farming activities (Huang 2012). To put it simply, capital accumulation is outside the farm and value extraction is in the agricultural upstream and downstream chains.

Contrary to this viewpoint, a group of scholars discuss the capitalization of agricultural production in China. Yan and Chen looked into the dynamics of capital accumulation in rural China. They argue that the development of accumulation in agricultural production towards capitalization and de-peasantization is in progress. The top-down accumulation dynamics go through 'dragon-head' enterprises by means of vertical integration, that is, integrating peasant farms into agro industry. The accumulation can, however, also happen from below, i.e. through the scaling up of family farms (Yan and Chen 2015). Echoing Yan and Chen's study, Sun referred to the peasant differentiation in a rural town in the Southern China. According to him, several capitalist agricultural enterprises emerged due to the land consolidation encouraged by the local government. The result is that small peasants and middle peasants lease out their land and become hired workers in the large farms (Sun 2015). The debate about the capitalization in China's agriculture and food sector following the aforementioned two classic traditions in agrarian studies, are of great significance to understand the relation between capital and peasantry in the agricultural modernization process. However, the current studies on accumulation in the agro-food sector are also limited to the two theoretical trajectories. Briefly speaking, one is about the accumulation within agricultural production, that is, the emergence of capitalist farms and agricultural workers. The other one concerns the accumulation by the agribusinesses by making peasant farms their objects of value exploitation.

The discussion in this paper is based on the two perspectives about capital accumulation in agro-food production. Through long-lasting sociological fieldwork in the sugar industry and in sugarcane production in the Southwest of China, I observed some new accumulation strategies in the agro-food sector. The current accumulation activities have blurred the boundary of the two analytical viewpoints. Here I summarize the accumulation activities into three strategies:

The first one is agro-technification. By introducing new technological knowledge to farmers and applying high technology in the sugarcane processing procedure, sugar companies reconstruct the profit distribution between themselves and cane farmers.

The second one is food politicization. By endowing sugar the political significance of national food security, the sugar companies can rely on the state power to continue further accumulation activities through direct resource redistribution and administrative intervention in trade.

The third strategy is land speculation. Within the sugarcane-planting project that is guided by the governmental ideology of agricultural modernization, land is used by speculators as a material medium to raise capital through the modern finance system. The following sections elaborate the three accumulation strategies. The analysis is based on empirical data collected during three periods of fieldwork in a sugarcane-growing town from 2014 to 2016. Before jumping into the accumulation strategies, it is necessary to introduce the research setting.

2. The research spot in the socio-economic context

Dongmen town is one of the typical rural towns in the sugarcane-planting region where local peasants' livelihood heavily relies on growing sugarcane. It is under the jurisdiction of Fusui county in Guangxi province, located at the southwest border area between China and Vietnam. Sugar manufacturing is the mainstay industry in Fusui county and therefore it is also the main source of the governmental fiscal revenues. The total farming land² in this town is around 200,000 mu³, among which 189, 000 mu is cultivated for sugarcane.

The fever of growing sugarcane started around 2002 due to several changes in the social-economic environment at that time. Firstly, the property of the sugar mills changed from the state into private capital. Large capital of different sources was invested in modern crushing and refining equipment. As a result, the crush capacity of the sugar mills expanded. Secondly, considering that the demand of sugarcane had increased, a half-administrative and half-economic regulation system, the so-called 'cane-area system', was introduced to ensure the sugarcane selling and purchase activities. According to an official document (Guangxi Planned Economic and Trade Commission 2002 [No. 560]), the sugarcane planting area in Guangxi province is divided into different zones. Peasants are only allowed to sell sugarcane to the sugar mill inside their appointed zone. Trans-zone selling and purchasing have been banned, except in some special circumstances. The initial goal of this system is to avoid social instability and economic chaos that might be caused by intensified competition of purchasing sugarcane among the sugar companies. On the other hand, the sales channel of sugarcane is secured and therefore peasants prefer to grow sugarcane rather than other crops. The third and most important reason is China's increasing demand for sugar, which caused the price boom of both sugar and sugarcane in the domestic market.

Generally, a sugarcane zone with one sugar mill covers five to eight rural towns, depending on the mill's crushing capacity. Dongmen town is the town of the largest cane planting acreage in the cane zone of Dongmen-Nanhua Sugar company. This sugar company is one of many affiliated companies of Nanhua Sugar Industry Group whose multi-business on sugar spreads across seven provinces in China. Alone within Guangxi province it owns 15 affiliated sugar companies. Within the cane-area system and given the fact that the sugarcane selling and purchasing channels are targeted, the relation between cane peasants and sugar companies seems like contract farming. However, the key difference is that peasant households still have the autonomy of switching to other crops whenever they want since there is no real contract between them and the sugar company. Therefore, since 2012 when the domestic sugar market was heavily influenced by the dropping of the sugar price in the global market, peasants gradually turned to grow other crops.

As a response to the low motivation of growing sugarcane among peasants Guangxi province government launched a five-year 'double-high'⁴ project, in 2013, which fits into the central government's national food security and agricultural modernization framework. According to the official documents, the project aims to improve 5 million mu of sugarcane production land which should meet the standards of large-scale⁵ and mechanized production, improved cane varieties and modernized irrigation systems (Guangxi Government 2013 [No. 36], 2014 [No. 15]). Under the well-funded project, the large governmental subsidies are distributed to land consolidation, large agro-machineries, improved varieties of cane seed, specific agro-technical materials, and modern irrigation techniques as drip irrigation, underground irrigation, water-fertilizer integrated irrigation, and etc.

² In China, the rural land is categorized by and regulated for different usages, e.g. farming land, forest land, construction land, etc. Legally, forest land cannot be used for farming, and vice versa.

³ Mu is a Chinese measurement unit. 1 hectare equals to 15 mu.

⁴ 'Double-high' refers to high yield and high sugar content.

⁵ The minimum land scale that can fit into the 'double-high' project is 200 mu.

Against this background two main transitions in sugarcane production are taking place in this rural town: Firstly, large sugarcane plantations are emerging. The one built up by the Kaili agricultural investment company⁶ in 2014 covers 6300 mu farmland across two villages and involves nearly 180 households. In fact, since the launch of ‘double-high’ project the Kaili agricultural investment company has invested several large plantations in other sugarcane production zones in Guangxi province. Another plantation under construction is financed by the sugar company and outsourced to another agricultural investment company. This plantation covers 11000 mu in a village involved with more than 270 households. Secondly, the sugar company plays a more important role in “modernizing” sugar production. The governmental subsidies for improved varieties of cane seed, agro-technology and large agro-machineries go into operation through the sugar company instead of through peasant households.

Therefore, two main categories of sugarcane production actors currently exist in Dongmen town: the massive number of peasant households and the emerging large-scale plantations. The farming scale⁷ of peasant households ranges from 20 mu to around 150 mu, which is mostly determined by either the current effective family labour or the land scale that was initially owned by the households. The scaled-up ‘family farm’ defined by the official document of the ‘double-high’ project is supposed to plant above 200 mu sugarcane, according to which I heard none from the farming affair office of the sugar company. To the contrary, the corporate cane plantations invested by big capital always cover thousands of farmland, hire skilled agricultural workers all year around and try to achieve both planting and harvest mechanization. Within this context, the following sections will discuss the new strategies of capital accumulation in agricultural production sector that is recently happening in China.

3. Agro-technification: cost shifting and redistribution of harvest

The relation between science, technology and capital accumulation in agriculture has been discussed by many social scientists. Kenny (1986) documented the evolving university-agro-industry relation in terms of the development of modern biotechnology and he discussed particularly the agricultural sector which had become a main field for biotechnology application in addition to the chemical and pharmaceutical industries. Companies invested in biotechnology research to invent new products and techniques (such as superovulation in cattle farming, plant diagnostics and etc.) and in animal and crop production, which can open new markets and create huge profits.

Seed is the most noticeable element of agricultural production that the capitalist industry has commodified and absorbed. Kloppenburg (1988) reviewed the history of how biotechnology industry has set up plant breeding business and got control of seeds. He pointed out that the objective of modern plant breeders is to produce a new variety that can be sold at a profit rather than realize a social optimum. This reveals the imperative of profitability in a capitalist system. The most elaborate explanation of modern technology and capitalist development of agriculture is from Goodman and Sorj (1987). They argue that the industrial appropriation of the rural production process (mechanical, chemical and genetic innovations) and the industrial substitution of rural products (large-scale food processing and preservation, artificial raw materials) are the two patterns of capital accumulation in the modernization process of agro-food system.

⁶ Agricultural investment companies or farming companies, refer to the companies that emerged recently in China with the policy support of ‘industrial and commercial capital going to the countryside’. These companies transfer land of rural households and directly engage in agricultural production activities.

⁷ Note: this is only about the farmland, which is used for planting crops. Forestland is not included because: firstly, the collective forestland is common land, each household can grow their own trees there; secondly, trees need very little labour. As I was told by peasants, once the eucalyptus is planted, they only need apply fertilizer once a year.

These studies explain how modern companies, by applying new science and technology, try to capitalize agriculture production and food processing. Put in another way, industrial capital accumulates through creating new scientific and technological products for agricultural and food production. The great impact of this process on peasants is the rising costs of producing food. As Shiva puts it, 'as farming is transformed from the production of nourishing and diverse foods into the creation of markets for genetically engineered seeds, herbicides, and pesticides. As farmers are transformed from producers into consumers of corporate-patented agricultural products...the global economy becomes a means for the rich to rob the poor of their right to food and even their right to life' (Shiva 2000: 7).

In this section I explore further the capital accumulation through science and technology in the agro-food production. It is not only about the commoditization of agricultural inputs, but more on the unequal bearing of the increased cost of applying science and technology in agricultural activities and the unequal sharing of the increased harvest due to the new technologies between peasant farming and food industry. I call the former as "cost shifting" by the food companies and the later as "redistribution of harvest" between peasants and food companies.

The goal of the 'double-high' project is to achieve high yields and a high sugar percentage in the sugarcane. Thus, the technological means to increase sugarcane yields and sugar content are a large part of the project. Improved cane varieties and plastic-film mulch technology are the two main methods to achieve these aims. In total, 35 cane varieties are eligible for governmental subsidy, including the 12 improved and higher-price cane varieties⁸ that are highly recommended by the sugar companies. The plastic-film mulch is also eligible for subsidy. However, only when all the standards – including the improved varieties, the plastic-film mulch technology, the required (large) land scale and planting mechanization – are met the producers can directly get the subsidy package (Guangxi government 2014 [No.89]). Hence, because of their disqualification at land scale and mechanization level, the peasant farms are actually excluded from the enormous project subsidies since the cane peasants had no access to subsidies⁹, the sugar company and the government strongly advised them to use the improved cane varieties and to apply the plastic-film mulch method. Agricultural experts and technicians from the government and sugar companies organised training sessions for the peasants about the benefits of the new seeds and the mulch technology. They also went to the field to help the peasants with the new seeds and mulch technology. In the 2014/15 season, the yield of the improved varieties of cane seed was 480 yuan/tonne while the yield of traditional varieties is 440 yuan/tonne¹⁰. However, the new seeds and the mulch technology are more expensive. Moreover, traditionally cane farmers have a stockpile of cane seed on their own farms and they only buy cane seed when their own store is insufficient. If they would switch to the new varieties, the peasants have to buy all the seed on the market, which implies an increase of production costs.

As regards the plastic film, the costs are also quite substantial. Sugarcane needs 2.5 - 3.5 kilo plastic film per mu land, and the price of plastic film is 25 - 35 yuan per kilo. Hence, only the costs of material is around 90 yuan per mu, and this does not include the cost of mulching activities by either tractor or labourer. To push this change, the sugar company and the local government tried both economic incentives and administrative means. As for the economic tools, compared to the regular cane varieties, the sugarcane company offers the peasants 30 yuan per tonne more for the improved seeds. Besides, the peasants who apply for film mulch technology can get a subsidy of 60 yuan per mu from the second year of the cane ratoon. In terms of the administrative means, the supply of regular

⁸ Here the higher-price refers to both the seed price and the selling price of these cane varieties, which I will talk about below.

⁹ According to the county government, the seed prices peasants pay are already subsidized by the government. However, there is no price difference between the cane seed and the cane for mills considering that they are the same canes. Even if it is true, it should also be questioned who gets the subsidies.

¹⁰ As mentioned in the 9th footnote, the cane seed and the cane sold to the factory have similar prices in the same year. Besides, one mu land needs 0.8 tonnes cane seed.

cane varieties has been gradually cut off from the market since the process is controlled by the local government. Film mulch planting was not only the work of technology propagation but also part of the ideological mobilization by the government.

These measures did achieve remarkable effects. According to the local government, the adoption rates of improved varieties and the film mulch technology in Dongmen town are respectively more than 50% respectively 80%. The belief that they can have a better harvest by investing in the improved seed and new technology- as promised by the agricultural experts and technicians - is common among peasants. If taken at face value, the improved varieties can get a higher price and there is also scientific evidence that the film mulch technology increases the yields. However, the mechanism which redistributes the harvest between the sugar companies and the cane peasants, is concealed within the new technologies.

The four improved varieties that are offered 30 yuan more per tonne by the sugar company during 2014/15 in Dongmen town are GT 29, GT 42, YT 93/159, LT 05/136. According to the official introduction report, the new varieties are - compared to CK 22, the most popular traditional cane variety – early-mature, lodging-resistant, have a higher sugar content and some, though not all of the four, have according to tests higher yields. Early-mature cane can reduce the cane company's operational costs at the early stage of the crushing season by resolving the problem of a low sugar extraction rate of the traditional cane varieties in the early harvest season. The lodging-resistance character is developed for harvest machinery suited for large cane plantations.

The relation between a higher sugar content and higher cane yields is tricky since the sugar company and cane peasants have different desires in this respect. The sugar company wants a higher sugar content rather than simply higher yields because it gains its profit from the sugar but has to pay for the sugarcane. For cane peasants, the desire is the reverse. The sugarcane variety database of Guangxi Academy of Agricultural Sciences and reports issued by the Guangxi Science and Technology Department, show that the cane yields (tonnes/mu) of these improved varieties increase from minus to 11%¹¹. However, the quantity of sugar from one mu land of cane (tonnes/mu) can increase from 14% to 21% (GAAS; Huang et al. 2016). If we link up the increase rates with the market prices, it becomes clear who gets how much. In the 2014/15 season, the average sugar price was 5400 yuan/tonne and the corresponding sugarcane price was 470 yuan/tonne for the improved varieties. If we choose the highest increase rates for both cane yields and the expected quantity of sugar, peasants could get an additional 206.8 (=470*4*11%) yuan/mu, while the sugar company could get 598.5 (=5700/2 *21%) yuan/mu.¹² However, the costs of the changeover to the improved varieties remain at the peasant household level.

The scientific knowledge of the film mulch technology has been distorted when it was introduced to the cane peasants. The film mulch technology increases the yields only for newly planted cane, that is, the first-year cane seedling. The logic is that it can speed up the germination and produce strong seedlings. In the first year, the number of cane in a certain area is determined. In the years afterward, the main function of film mulching is to increase the sugar content instead of boosting the yield. However, the agricultural technicians only told cane peasants about the yield-increase effect of film mulch technology. Besides, the subsidy for film mulch planting from the sugar company only covers a part and starts from the second year of the cane ratoon. Therefore, while the cane peasants bear the increased costs of the new technology the real beneficiary is the sugar company.

The second part of the technological redistribution of the harvest is to create multiple products from sugarcane. Yet, the purchase price of sugarcane is similar to the market price of the main product – sugar. In addition, the company sell the sugarcane by-products to the peasants. With the technology

¹¹ The yield increase rate of GT 29 is minus as compared with CK 22.

¹² The average cane yield is 4 tonnes per mu. On average, 8 tonnes sugarcane can get 1 tonne sugar, which means 1 tonne sugar needs two mu land of cane.

development, the agricultural product processing industry can cover a wide range of business fields. Traditionally the products from crops are limited to food, fodder, wood, wool, and fibre. However, recently the high-value products extracted from agricultural crops include bioenergy, electric power, pharmaceuticals, cosmetics, chemicals, organic fertilizers, etc. Borras and others (2014) refer to crops with such character as 'flex crops and commodities', which include 'crops and commodities that have multiple uses (food, fodder, fuel, industrial material) that can be, or are thought to be, flexibly inter-changed'. But in this paper I refer to a slightly different concept, which I mention "all-in-one crops". The difference is that the products from these crops are not an either-or relation, but coexisting. For instance, sisal can be transformed into fibre, saponin, cosmetic ingredients, and medicine components sequentially along the processing process.

The "all-in-one" economic benefits are determined not only by the character of the crops, but, more importantly, by high technology. Nowadays most crops can be processed into multiple products at the same time. Sugarcane is also a typical crop through which one can understand this economic benefit. The sugar company gets two primary products after crushing the cane, molasses and bagasse. Sugar, the main product, is first cleared from molasses. In the next step the "waste molasses" is fermented into monosodium glutamate, yeast, nutrient medium, lysine and other acids, and etc. Bagasse is first used as fuel to operate the whole processing line. But this only consumes part of the bagasse that the sugar company could gain from the sugarcane. A large amount of bagasse is also used for generating electricity and producing pulp. Furthermore, the sludge left from the burning of bagasse is made into organic fertilizer for crops, and sold back to peasants.

Given that sugarcane can produce so many high-value products, it is surprising to see that the only the market price of sugar determines the cane price. From 2012 onwards, the sugar price in both the global market and the domestic market has fallen. As a result, the bottom purchase price of cane dropped from 500 yuan/tonne in the 2011/12 season to 400 yuan/tonnes in the 2014/15 season. The low cane price made cane peasants' life more difficult considering the money inflation in the economy and the increased costs of cane production. According to the data from National Survey of Cost-Incomes of Agricultural Products in 2014, the cash income generated by growing sugarcane was 683.33 yuan/mu but the net profit was minus 150.04 yuan/mu (CSMNSCIAP 2014)¹³. While the cane peasants suffered from the stagnancy in the sugar market, the sugar company still gained profits from other by-products. Therefore, the sugar company is trying in different ways to prevent the peasants from turning to other crops. The basic problem aroused is the unequal distribution between the cane peasants and the sugar company of both increased production costs and growing harvest. Thus, agricultural technification has become a covert way of capital accumulation which shifts the technological costs to peasants and gains more profits from applying technologies in farming and food processing.

4. Food politicization: the nexus between the state and agro-food capital concerning food governance

Clapp and Fuchs (2009) made a breakthrough with their analysis of the relation of agri-food corporations and food governance. They proposed an instrumental-structural-discursive framework to identify the political role and the power construction processes of transnational corporations in the arena of global food governance. Their work is critical to understand the interaction between the global food system and transnational private capital. To some extent, their explanation corresponds to David Harvey's accumulation analysis of the "transnational capitalist class" in the neoliberal global economy (Harvey 2003: 183-189). However, this global political economical perspective on agri-food corporations and food governance cannot adequately explain the political and economic process of

¹³ The net profit is the margin between cash income and the market price of family labour and self-owned land. It is a way to look at whether growing a particular crop is profitable by comparing the value of the crop, land, labour in a certain economic market.

food governance at the national level. For instance why is the national food policy related to the global food market sometimes more aggressive and sometimes constrictive? The combination of the expansion policy of food corporations and the restrictive policy in food supply market is even more complicated. How and to what extent are these policies related to the accumulation goal of the agro-food capital?

Although Clapp and Fuchs pointed out the interdependence of business and state power in the political process of food governance, they much emphasized in their work the independent political identity and private authority of agri-food corporations (Clapp and Fuchs 2009). The questions are how and why the agro-food business and the state are interdependent. Therefore, it is important to examine the way in which agro-food corporations make use of state power in order to maintain accumulation at both national and transnational level. Equally important, how can the state reinforce its political power on national food governance through its support of accumulation activities of agro-food capital? In this section, I try to answer these questions by looking into the interaction between the Chinese state and the domestic agro-food companies in the sugar industry from a sociological perspective. The focus is on the political strategy of capitalist accumulation in the era of economic liberalization. This must be distinguished from the state-driven accumulation for economic development – the so called developmental state (Johnson 1999). In the case of China, this historical transition started in the 1990s.

In the 1990s, the Chinese economy entered into a privatization and liberalization stage as the result of the opening to the outside policy and the domestic economic reform. However, the power of both international finance capital and domestic private capital were submissive to the Chinese state (Harvey 2007: 122-123). In the sugar industry sector, the decisive change started in 1993 when the Thai MitrPhol Sugar Group took over five state-owned sugar mills in Guangxi province and started the Nanning East Asia Sugar Company in China. The company developed rapidly in Guangxi province and then became the largest sugar producer in China. The Yangpu Nahua Sugar Group was officially registered in Hainan Province in 1997 by domestic private capital and later it extended its business to Guangxi and other provinces. Therefore, in the past two decades the Chinese sugar industry is dominated by private corporations, although few state-owned farms are still engaged in sugar production.

The liberalization of the sugar market further developed after China accessed to WTO in 2002. According to China's accession agreement accession to WTO, after the phase-in period of six years the sugar import quota would be over 1.9 million tonnes, and the in-quota tariff and out-quota tariff were set at 15% and 50% respectively (World Trade Organization 2001). It is clear that the low sugar import tariffs pushed the Chinese sugar sector into the liberal global market. This is even clearer when making a comparison between China's conservative import tariffs for grain and the high sugar import tariffs of most member countries in WTO¹⁴. The reckless opening to global sugar market with low import tariffs did not show a negative impact on the domestic sugar industry right after the end of phase-in period, because the global food market encountered dramatic price increases in 2007-08 (Von Braun 2008). With the fading of the global food price crisis, the competitive disadvantage of domestic sugar companies came to light. From the 2010/11 season onwards, the domestic sugar price has declined during six years due to the excess supply in the global sugar market. The low sugar price directly caused the bankruptcy of small private sugar companies as well as the substantial reduction of the sugarcane planting area. Thus, capital in Chinese sugar industry was facing accumulation crisis.

The countermeasure strategy of these sugar companies is to politicalize this accumulation problem. The original implication of "food security" in China refers to grain security. As Ghose explained,

¹⁴ It is reported, the average sugar import tariff of WTO member countries is 97%. This average index among developed member countries, developing member countries and the underdeveloped member countries are respectively 122%, 55% and 167%. A report from CI Consulting, "Adjustment of sugar import tariff came into focus". Available from: <http://www.ocn.com.cn/jinrong/201609/bbpof29104133.shtml> [accessed on 22nd March 2017] [in Chinese]

cereal grain production was put central in the restructuring of the agricultural sector during China's economic reform in the 1980s (Ghose 2014). Chinese Premier Li Peng promised during the second World Summit on Food Security in 1996 that China would rely on domestic resources to achieve mainly grain self-sufficiency. Since then the grain self-supply strategy has become the national guiding policy for agricultural production, and it lasts till today¹⁵. Along with this, in the Chinese agro-food policy discourse, grain, cotton and oil are the three strategic goods in the Chinese agro-food policy discourse. Sugar has never been considered a dietary product with political significance. The long-lasting sugar price fall drove the sugar companies to lobby the Chinese central government. They argued that sugar should be taken as important as grain-cotton-oil in the national agro-food security strategy. Sugar security is about the security of domestic sugar and the relevant food industry, but it is also highly related to the direct income of 40 million of cane farmers (Ministry of Agriculture of the PRC 2014).

The lobbying was successful and earned the attention from the central government. Under the instruction of the State Council, an official document titled "*Development Plan for the Main Sugarcane Producing Area (2015-2020)*" was issued in 2015. The document clearly states that the development of the sugar industry in the main sugarcane producing area is upgraded to a national strategy. Investments in infrastructure, science-technology and machinery in the whole of sugar and cane production process is the solution (National Development and Reform Commission 2015). The idea of sugar security in the document put sugar companies in the central position. Following this document, a "double-high" project was launched. The government highly invested in four modules of the "double-high" project, including in land consolidation, improved cane varieties, machinery and irrigation infrastructure. The application of the governmental subsidies into the project practice was carried out by the sugar company. Therefore, the project brought direct benefits to the sugar companies.

Except for assigning the resource allocation to sugar companies, the political influence also extended to business and trade activities. One change is about the sugar import regulation. Before 2010, the yearly sugar import volume was, as promised by the Chinese government in its WTO agreement, within the tariff-rate quota of 1.945 million tonnes. From 2011 onwards, the yearly import volume of sugar increased rapidly: from 2.92 million tonnes in 2011, 3.75 million tonnes in 2012, 4.55 million tonnes in 2013, to 3.48 million tonnes in 2014 and 4.84 million tonnes in 2015 (National Bureau of Statistics of China). The imported sugar occupied more than one fourth of the domestic sugar market and the proportion keeps rising. At the start, the China Sugar Association made the industrial rules for the domestic sugar refineries as regards the restriction of the import volume of raw sugar (Yunnan Sugar Web 2014). However, the commercial rules were not capable to control the profitable sugar imports. Late in 2014, the central government launched a registration system for out-of-quota sugar imports (Reuters 2014). Although the Commerce Ministry did not respond to the doubts on the introduction of a registration system, it is clear that this new system can be a buffer of importing sugar.

The sugar companies further argued that control of sugar imports was necessary but that the low tariff was the main problem. It damages the domestic sugar industry, since the global average for sugar tariffs is 97% while the Chinese non-quota tariff is only 50% (Dominique 2015). Thus the Guangxi Sugar Association officially applied for an investigation on the damage of sugar importation on the domestic sugar industry in 2016. The Ministry of Commerce then started the investigation on sugar tax, of which the result can adjust the current China-WTO agreement on sugar tariff (Ministry of Commerce, PRC 2016). Hence, after getting subsidies in the production sector, the sugar companies successfully got support from the state to intervene in the trade activities. However, the "from-capital-to-the state" intervention approach is only one of the double ways in the state-capital interactive process.

¹⁵ QStheory. 2015. Analysis of China's food security and supply-demand condition. Available from: http://www.qstheory.cn/economy/2015-02/15/c_1114379549.htm [accessed on 30th March 2017][in Chinese]

The other way of state-capital interaction is the “from-the state-to-capital” intervention, which operates through the expansion of state-owned food enterprises. While the state can reinforce the political power on food governance through support of the domestic food companies, private capital cannot always go along with the national food-security plan. Therefore, the state-owned food enterprises started to set foot in the sugar business when the domestic sugar industry began to face the crisis. COFCO and the Bright Food Group are the two main state capital-controlled food companies¹⁶. The Bright Food Group acquired 60% share of the largest sugar company in 2009. It was financed by foreign capital in Yunnan province¹⁷ – the second sugar-producing province in China. The Bright continued its acquisition strategy and it merged with the Guangxi Feng Sugar Company – a large private sugar company in Guangxi province – in 2014. The actions of COFCO are more aggressive. COFCO got a dominant role in the sugar industry and trade in China through business acquisition or new project investments from 2011 onwards. Table 1. Shows its development trajectory in the sugar business

Table 1 The state-owned agro-giants and their expansion in sugar business in recent years

State-owned Agro-giant	Time	Merged/newly-built sugar companies	The previous capital property
COFCO (-TUNHE)	2011	Australian Tully Sugar	Foreign capital/overseas
	2011	Sugar manufacturing project/company in Guangxi province	Newly-built
	2014	Caofeidian Sugar Refinery (largest sugar refinery of the imported raw sugar)	Newly-built
	2014	Sugar mills of Noble Agri. in Brazil	Foreign capital/overseas
	2014	China Huafu Trade & Development Group (responsible for the national sugar reserve)	State-owned
	2014	Sugar business module in China National Sugar & Alcohol Group (the largest sugar sale and marketing company in China)	State-owned
Bright Food Group	2009	Yingmao Sugar Industry Company (the largest sugar company in Yunnan province)	Foreign capital/ domestic located
	2014	Guangxi Feng Sugar Company (one of the largest sugar company in Guangxi province)	Private capital

Note: The table is synthesized by the author according to the information from COFCO, Bright websites and various news reports.

The involvement of state-owned capital in the sugar industry shows both political responsibility for national sugar security and for the economic interests of transnational corporations. The direct result of the state-owned capital expansion is the tendency towards state-owned capital monopoly in the

¹⁶ COFCO belongs to the Central state-owned Assets Supervision and Commission (the Central SASAC), while Bright Food Group is under the Shanghai state-owned Assets Supervision and Commission (the Shanghai SASAC). Information from their websites: <http://www.cofco.com/cn/index.html>; http://www.brightfood.com/cn/about.aspx?Class_ID=11 [accessed on 11th May 2017]

¹⁷ Yunnan website. 2009. Bright Food acquired 60% stake of Yunnan Yingmao Sugar Company. Available from: http://finance.yunnan.cn/html/2009-08/19/content_876476.htm [accessed on 11th May 2017][in Chinese]

domestic sugar industry. COFCO and Bright Food soon ranked into the top list of the sugar producing companies in China, which even does not take into account their substantial share in the tariff-rate quota sugar¹⁸. Moreover, COFCO controls most of the domestic sugar marketing channels. Besides, this change also led to the restructuring of capital power in the sugar industry and trade, that is, the rise of state-owned capital and the decline of foreign and domestic private capital. In turn, the capital structural adjustment in the sugar industry sets the ground for the “double-high” sugarcane project. As the manager of Dongmen-NanHua sugar company said: “We (as domestic private capital) respond to the governmental policy and positively get involved in the ‘double-high’ project. We also contribute to the national sugar security goal. COFCO-Tunhe and other state-owned sugar companies are more active in the project because they have abundant capital from the state. Besides, it is their responsibility to achieve sugar security goal. However, the East Asia Sugar Company is not participating well in the sugarcane project. They do not follow the instructions of the government about investing in land consolidation and sugar plantations. This is because the boss is Thai, he is not Chinese.”¹⁹

In both the “from-capital-to-the state” and the “from-the state-to-capital” interventions, the agro-food capital cannot continue its accumulation activities without the support of the state. Similarly, the state cannot achieve its political authority and economic security without the collaboration with capital groups. By politicalizing the accumulation crisis as a national food security problem, private capital acquired both natural resources and governmental subsidies. Through its support of the agro-food companies, the state can ensure its strategy targeted at national food governance. In countries like China, the state can govern the domestic agricultural production and food industry through specific market activities – by using state-owned capital to interfere in the agro-food sector.

5. Land speculation: the crisis of sustainability in agriculture production and food supply

The goal of the “double-high” project is to build up modern sugarcane plantations in order to reduce the sugarcane production costs as well as to ensure the raw material supply to the sugar industry. The sugarcane plantations supported by the government include sugar companies, agricultural investment companies, cooperatives, and scaled-up family farms (Guangxi Government 2014). For these enterprises, land consolidation is the main aim since it is the basis of other project activities such as the replacement of the traditional seeds with improved cane varieties, the use of machinery and the construction of a new irrigation system. Thus, concentrating land is the first step to get qualified membership in the sugarcane project and to access agricultural subsidies and to engage in farming activities. So far, already different agricultural production modes emerged²⁰. Although they have to deal with different problems related to their specific production modes, the mode operated by agricultural investment companies shows the reckless capital accumulation strategy that springs from the modern financial system. This accumulation activity is potentially destructive for the national food security and the livelihood of local peasant households.

The accumulation strategy under the cloak of agricultural investment companies is a speculation activity rather than a production activity. To understand this, we need to look back on the development of the Kaili Company²¹. Due to the domestic sugar industry crisis, the sugar companies and local

¹⁸ According to the sugar import regulation of the Ministry of Commerce, PRC., 70% imported sugar within tariff-rate quota is distributed to state-owned enterprises.

¹⁹ The conversation is from the author’s interview during fieldwork.

²⁰ See the author’s another paper, which was presented in ICAS-Etxalde Colloquium - Elikadura21. The conference paper is accessible from: <http://elikadura21.eus/wp-content/uploads/2017/04/68-Zhang.pdf>

²¹ Since the agricultural investment companies are very sensitive about their background and other information, the author had tried very hard to get a credible and complete picture of Kaili Company. The author stated the situation of data collection here in case there is any minor unmatched description in the paper.

governments were respectively under pressure from corporate profits and tax revenues in the 2010/11 crushing season. Seizing the opportunity, Huang, the initiator of the Kaili Company, promoted the large sugarcane plantation mode of production to the local government. The local government reported this idea to the Guangxi provincial government as being the solution for the local economic hardship. The provincial government further developed the idea into a blueprint of the so-called “second prosperity of the sugar-cane industry”, which fits into the sugar security plan of the central government. Therefore, corporate plantations became the main highly subsidized production mode in the “double-high” sugarcane project. Having gained policy support, the Kaili Company started land concentration activities. Land concentration is based on land transfer under the Chinese Household Responsibility System, that is, renting land from the farmers. Between 2013 to 2016, eight sugarcane plantations have successively been created in the cane production zone in Guangxi province (see table 2 below). In fact, the sugarcane plantation in Dongmen town is only one of the eight cane plantations exploited by of the Kaili agricultural investment company.

Table 2: The expansion of sugarcane plantations implemented by of the Kaili Company

Location of cane Plantations	Acreage of each plantation	The completion year
Zhanjiang	4000 mu	2013
Nanning-Wuming	3450 mu	2013
	8000 mu	
	3700 mu	
Liuzhou	600 mu	2014
Chongzuo-Fusui	6800 mu (Palou-Pabai plantation, in Dongmen town)	2014
	6255 mu	2015
	4200 mu	2016

Note: The author gathered the data during an interview with one of the managers of the Kaili Company. Some of the plantation acreages are approximate figures.

The accumulation mechanism is very bold. According to one key interviewee²², the Kaili Company is, like any other agricultural investment company, a “fund-extracting company”. The company registered without substantial capital. To the contrary, it is founded for raising capital. According to the subsidy rule of the “double-high” project, one can get 2478 yuan/mu construction costs from the government for establishing a modern sugarcane plantation. So, the Kaili company can totally get $(4000 + 3450 + 8000 + 3700 + 600 + 6800 + 6255 + 4200) * 2478 = 91,698,390$ yuan for the eight plantations. Besides, to achieve government performance and accomplish the local targets of the “double-high” project, the local government puts pressure on the sugar companies and the banks to provide loans to the Kaili Company against passive or very low interest. The known amounts are 12 million yuan from the Dongmen Nanhua Sugar Company and 10 million yuan from the Nanning East Asia Sugar Company. The loans from COFCO-Tunhe Company and the local China Agricultural Bank are not clear. According to information from another key interviewee, the government sponsored a part of the input costs of the plantations. Moreover, the Guangxi Sugarcane Research Institute offered a considerable proportion of cane seeds and the government and sugar companies subsidized heavy agricultural machineries and other production materials (like pipes and plastic films). As this interviewee said, “Kaili started with very little capital, but now it has already 100 million of assets.”

The speculation activities are unsustainable in many respects. The first one is the impact on the local economy. Land transfer and concentration put pressure on the local villagers’ livelihoods and income and caused tensions. The villagers have doubts about the Kaili Company as regards its capacity to pay

²² Since the topic of land speculation is very sensitive, the interviewees asked for anonymity.

the land rent and its capacity to fulfil the contract period. The tension around land rent caused real conflicts in the summer of 2016. At that time, the local villagers who transferred their land to Pabai-Palou plantation did not get land rent from the Kaili company at the agreed time. They protested in front of the building of the Kaili Company and of the township government's office. When they got no response, they forcefully stopped the production activities in the plantation and locked the gate of Kaili's storage of machineries. After two months, the Kaili Company paid the villagers after the county government pushed the local China Agricultural Bank to offer a loan to Kaili. However, because of the conflict, the plantation missed sugarcane's best growing season. The doubt about whether Kaili can abide by the contract has not yet resulted in any action, but the villagers keep on worrying about it.. Almost every farmer I interviewed said, "Who knows, one day the boss may take the money and run away and leave the chaos to us. If it happens, we will get nothing from the land next two to three years, because it will take this period to redistribute the land to each household. "

Secondly, idleness is a feature of the local societies where cane plantations are constructed. Gambling is the most common way to deal with idleness, and can be found at every corner in the villages. Since the large plantations can only hire a very small number of labourers, the majority of the villagers that rent out their land have become unemployed. Most of the local villagers are cane farmers for generations and have little working experience in cities. As several young men told me, "We have no college diploma, nor professional skills, who will hire us? We tried to work in cities before, but we spent more money than we earned. So our parents asked us to come home and grow sugarcane. But since we rent out our land, we just wait for the land rent and enjoy life." Contrary to those who spent their time with gambling, the families with economic burdens, like children's education, filial marriage or heavy diseases, are looking for more income sources. These villagers are mostly against land transfer and the Kaili Company, since they can benefit more from self-farming than from land rent. They are anxious and resentful about the current situation and the future. One of these farmers told me, "Compared to the land rent, I can get a double to triple income from the land if I work hard by myself. Now I have to go to our county centre to look for jobs. I will do anything that people offer me, guard or dustman, etc. I am old, it is not easy to find one. But I have two children who are of school age."

The third unsustainable aspect is the counter effect on national food security. The key issue here is productivity. The government and the Kaili Company claimed that modern cane plantation can increase the sugarcane yield, so that it can lower the sugarcane production costs. However, the cane plantations did not show higher yields in the past two years. The average yield in the cane plantations was less than 4 tonne/mu, which is even lower than the average yield of small farmers. The manager of the Kaili Company blamed the local villagers' action for the low yield in the cane plantations. But, as the local farmers explained, "even if there has not been an interference, this mode does not work well anyhow. The plantation workers only spray pesticide and weed at the outer part of the cane field, they do not go inside the field. No one works as hard as for their own farm." Another issue about productivity is the output per unit of land. Before the land transfer to cane plantations, farmers intercropped their sugarcane with watermelon. Per mu land, one can yearly produce on average 4.25 tonnes of sugarcane and 2.5 tonnes of watermelon. Although the farmers didn't intercrop watermelon in the entire cane field, 30 to 70% of the land was planted with the two crops depending on each household's farming plan. However, mono-cropping is the popular planting system in the plantations. Thus, even if the cane plantations can achieve their yield goal of 6 tonnes per mu but which is difficult to reach in to the current situation, the question is which farming mode can produce more food. While small farmers choose intensive farming to produce more farm products in order to get more income, plantations search for profits based on large-scale land and rough farming²³. The yield of a particular crop in the plantation mode may but not automatically be higher, but small farms produce more farm products within in their limited land plots. Accordingly, the project goal is seriously challenged by its unrealistic method.

²³ Rough farming refers to the farming strategy that uses more land but less labour to produce food. This strategy gets relatively higher profits by reducing production costs (especially when the labour cost is high).

The nature of this capital accumulation strategy is resource extraction, including financial resource and natural resources. It is detrimental to both the national food security pursued by the Chinese government and the livelihoods of the local villagers. Furthermore, this accumulation activity is turning into a serial, and trans-border land occupation action. The speculators accumulate their initial large capital by extracting the agricultural project funds in China, which government currently subsidizes large-scale agricultural production due to the high domestic land and labour prices. But after obtaining the funds, the speculators can shift the plantation business to regions where land and labour prices are low. In the meantime, they can declare their limited liability companies in China bankrupt. As stated by two key interviewees, the boss of the Kaili Company is searching for sugarcane locations in Cambodia, Thai and Myanmar. However, as the tendency is still in the early phase, further field observation and research need to be carried out.

6. Conclusion: understanding the discourse

This paper discussed three new strategies of capital accumulation in the agriculture and food sector in China. State intervention in agricultural production and food supply provides the social and economic context for capital to accumulate and re-accumulate. New technologies create the redistribution of the output (or 'value' in the sense of commodification) between food companies and farmers. Land speculation is the most unsustainable and fraudulent way of capital accumulation and the resource extraction from both nature and the financial funds is destructive to the agricultural population and their activities.

The discourse of capital accumulation originates from the political economy discipline, which, however, does not turn it into a political economic perspective. Besides, the misunderstanding is prevalent that Chayanovian scholars neglect capital accumulation, class contradiction and the agrarian politics. The key issue is neither who owns the discourse nor whose argument is right, but what insights remind us to reflect on the practice. This paper attempts to show how the new accumulation strategies work; how the strategies go against food security and rural livelihoods; how the strategies destroy the sustainability of the nature and the society. By showing that large-scale, modernized sugarcane plantation cannot guarantee the sugar supply security in China, this paper argues that national food security should not be taken as equal to the production security of each individual crop. Even at the domestic production level, national food security is a whole production system of various crops, including vegetables, fruits, tea, and other non-staple products. In terms of food security, domestic production is only one of the influential factors. There are other factors: food import sources, food storage systems, and the food consumption habit. In addition, social and natural sustainability should be taken into account when the state pursues national food security. A sustainable food production system should not be based on controlling capital in a capitalist agricultural production modality. It should rely on the moderate family farming pattern, which has returns to individual households and rural society.

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**New Extractivism, Peasantries
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The 5th International Conference of the
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October 13-16, 2017
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About the Author(s)

Jin Zhang is a PhD student in Rural Sociology Group, Department of Social Sciences, Wageningen University & Research. Her research interests are peasant farming and rural livelihood in China, state governance on food security, agrarian capitalism, agrarian (cross-border) migration, rural land institution, rural politics. The title of her current PhD project is "Peasant farming, the state and capital in the transitional agrarian China: the case of Guangxi Sugarcane sector". The research site of her PhD research is a Chinese rural town at the border region between southwest China and north Vietnam.

Email: zhangjin082448@163.com; jin.zhang@wur.nl



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