Critical Agrarian Studies Colloquium
International Institute of Social Studies -ISS-

International Institute of Social Studies

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Agrarian Change and the Pursuit of self-supplied food security in China

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Paper # 68

Apirila – Abril – April
24, 25, 26
2017

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Abstract

At the start of 2016, the Chinese central government issued a document on a crop planting programme called the "National Planting Structural Adjustment Plan (2016-2020)." This document shifted focus towards a new main problem in agricultural production, from the insufficient total output to the output's structural imbalance of crops (such as maize overproduction and soy underproduction). Along with the regional allocation method, sitting planting-acreage targets for the main crops were defined as the solution for agriculture's structural problem. As a result, a batch of crop planting project plans emerged. This paper takes the sugarcane project as a case to explore the interaction between agrarian change and the state's intervention in agricultural production for a self-supplied food security strategy in China. The main findings of this paper are as follows: Firstly, China's access to the WTO, the increasing domestic land-labour cost and the dominant peasant-household production mode shape a socio-economic bottleneck to the country's political food strategy of self-sufficiency. Secondly, the current crop planting programme represents the state's focus on agriculture and food governance and the interests of large food companies more than the small peasants' needs for production and reproduction. Thirdly, the new program is changing the current production paradigm and introducing capital intensive production modes in the sugarcane sector. It should, however be noted, that these production modes should be practically and theoretically distinguished from capitalist production. Fourthly, the centralized and top-down agricultural production strategy and capital investment in agriculture are squeezing the social-economic space of rural society as a whole instead of differentiating the peasantry. Nevertheless, peasants involved in the crop project plan did make different economic choices. These choices were based on the accessible resources to and the market situation of land, labour, food and other production factors.

Key words: food security, agrarian change, capitalization, peasant farming, class differentiation

Introduction

In 2013, a "double-high" sugarcane project[1] was launched in the Guangxi province. The main goal of this project is to build a modern sugarcane production zone of a

[1] "Double-high" is short for high yield and high sugar content.

minimum of 5 million mu[2] by 2020, to guarantee the raw material demand in the sugar industry (Guangxi Government 2013). This project was intended to secure the sugar supply in China, as cane sugar accounts for nearly 95% of the domestic sugar market. As a government document entitled "*Development Plan for the Main Sugarcane Producing Area (2015-2020)*" indicates, the increasing sugar demand in China and the price impact of the global market have led to a low sugar self-sufficient rate. Therefore, it is critical to ensure the development of the main sugarcane producing region – namely, the Guangxi and Yunnan provinces. The two provinces make up 80% of the total sugarcane planting acreage in China, and they produce more than 80% of the domestic sugar. The project's plan is to keep 21 million mu of land for the use of sugarcane production in the two provinces, among which 7 million mu are to be converted into a modern sugarcane production zone that reaches the modern agricultural standards of specialization, large-scale production, intensification and mechanization (National Development and Reform Commission 2015).

This sugarcane project is not a unique case of crop production arrangements in China. In fact, the Chinese central government has introduced a document that outlines a nationwide adjustment of the crop planting structure, entitled "*National Planting Structural Adjustment Plan (2016-2020)*." This document states that the main problem in the current agriculture production has shifted from an insufficient total production to the output's structural crop imbalance. Thus, with the exception of wheat and rice, most crops are identified as unable to maintain a production-consumption balance. Maize, vegetables, fruits and tea have rapidly boomed in the past decade, while oil crops, sugar crops and cotton are shrinking in acreage –but with increasing imports from the global food market. To deal with this issue, the document aims to set specific production goals for different crops through regional allocation. The goals include but are not limited to the following: For grains, the total sowing acreage should be maintained at 1.65 billion mu, including 450 million mu for paddy production, 330 million mu for wheat production, 500 million mu for maize production, 140 million mu for soy production and 230 million mu for tuber crops. In the case of oil crops (excluding soy), sugar crops and cotton, the expected crops and related planting acreages are 100 million mu for rape, 70 million mu for peanut, 21 million mu for sugarcane, 3 million mu for beet and 50 million mu for cotton. Finally, the document also plans 320 million mu of land for vegetables and 60 million mu for forage crops (Ministry of Agriculture of the PRC 2016). To achieve these goals – maintain, raise or reduce the planting acreage of each specific crop – regional allocation is taken into account. For instance, the central government has decided to resume soy production in the northeast provinces, protect cotton production in the Xinjiang province and sugarcane production in the Guangxi and Yunnan provinces, reduce maize production in thirteen northern provinces, and etc.

Although this document was issued in 2016, the relevant crop projects have been carried out for several years in practice. Provincial projects – with financial and institutional support from the central government – have been set up to achieve

[2] 1 hectare equals 15 mu.

the allocated planting targets. As the new form of state intervention in food production, these projects generate new changes in the Chinese agricultural production and rural development. This paper aims to explore the interaction between agrarian change and a state intervention in the agricultural production that aims to ensure national food-security. The paper is structured in three parts: First, it will explain the new socio-economic bottleneck between agricultural production trends and self-supplied food security in China. Second, it will review the policy transition of state interventions in agricultural production for the national food-security strategy since the 1980s. Third, it will focus on the implications of the recent crop planting project plans, especially with regard to the social differentiation and peasants' economic choices in rural China.

This paper takes the sugarcane project as a case study, and uses both statistical data and fieldwork data in the analysis. Statistical data was mainly drawn from official databases, including the National Bureau of Statistics of the PRC, FAOSTAT and other statistical publications. Fieldwork data was collected by the author during three periods of fieldwork in the Guangxi province during 2014 and 2016. In addition, secondary data from reports, media, news and conference materials was consulted as supplementary information.

1. The new socio-economic bottleneck between agricultural production and food security

In the early years of China's accession to the WTO, the Chinese government and academia already had divergent predictions about its impacts on domestic agriculture and farmers. The key questions on this matter were as follows: How would China's accession to the WTO influence its agriculture? Would it impoverish Chinese farmers via greater import competition? If so, how would the Chinese government respond, considering the historical tradition of policies aimed at food self-sufficiency? (see Gale Jr, Frederick 2002; Anderson et al. 2004; Huang et al. 2004). While many predictions tended to be negative, Jikun Huang and others argued the opposite: 'While imports of numerous land-intensive farm products may well increase, reduced protectionism may also boost output and exports of some labour-intensive farm products in which China still has a comparative advantage'. And while the on-farm income might fall, the off-farm wages would rise. Moreover, Chinese farmers could be encouraged to adjust their cropping structure to increase the overall output, even if market prices fell. Last but not least, they argued although the domestic agricultural production could moderately change in the trade liberalization environment, that would mainly result from China's comparative advantages regarding the production of vegetables, fruits, aquaculture commodities and other high-value farm products (Anderson et al. 2004; Huang et al 2003; Huang et al 2007).

More than a decade later, Jikun Huang's arguments proved to be both right and wrong. More specifically, the trends of cropping structure changed, and the increasing rural migrant numbers for off-farm income followed his economic logic.

However, the price competition in the global food market impacted the domestic agricultural production much more than 'moderate(-ly)'. The destruction of the domestic soy production is a typical example of the possible severity of this impact.

There are two main explanations for the structural change of China's agricultural production. According to Jikun Huang, as mentioned above, it may have resulted from the market-oriented choices of Chinese farmers after China gradually liberalized agricultural trade (Huang et al 2007). Philip Huang's argument on China's agricultural structure change is known as the 'hidden agricultural revolution', which was caused by the restructuring of the Chinese food consumption. Put another way, the rising demand of Chinese consumers for high-value agricultural products like meat-poultry-fish-chicken-eggs and vegetable-fruits led to the increased output of these high-value products (Huang et al 2012). However, Philip Huang over-emphasized the exogenous factor's impact on the agricultural structure transition, and almost neglected the endogenous factors. The two noticeable endogenous factors – which have shaped the new trajectory of agrarian change in China – are land rent and labour price (Zhang 2016). In this paper, I try to explain the socioeconomic bottleneck of the current agricultural production to fulfil the idea of self-supplied food security in China. The price change of land and labour in the domestic market is taken as part of the cause.

The cropping structural change in China can be analysed from two angles: One is the change in the crops used to cultivate the land, the other is the change in contribution rates of the agricultural activities in the total agricultural output value. Below I show the changed planting acreage of different agricultural crops since 1982 (Table 1) and the changed composition of the agricultural output value between 1995 and 2014 (Figures 1 and 2). The test years were selected as follows. First, because the Household Responsibility System was carried out nationwide since 1982 and because China accessed the WTO in 2002. Second, because the output value of each specific agricultural crop was only recorded officially since 1995.

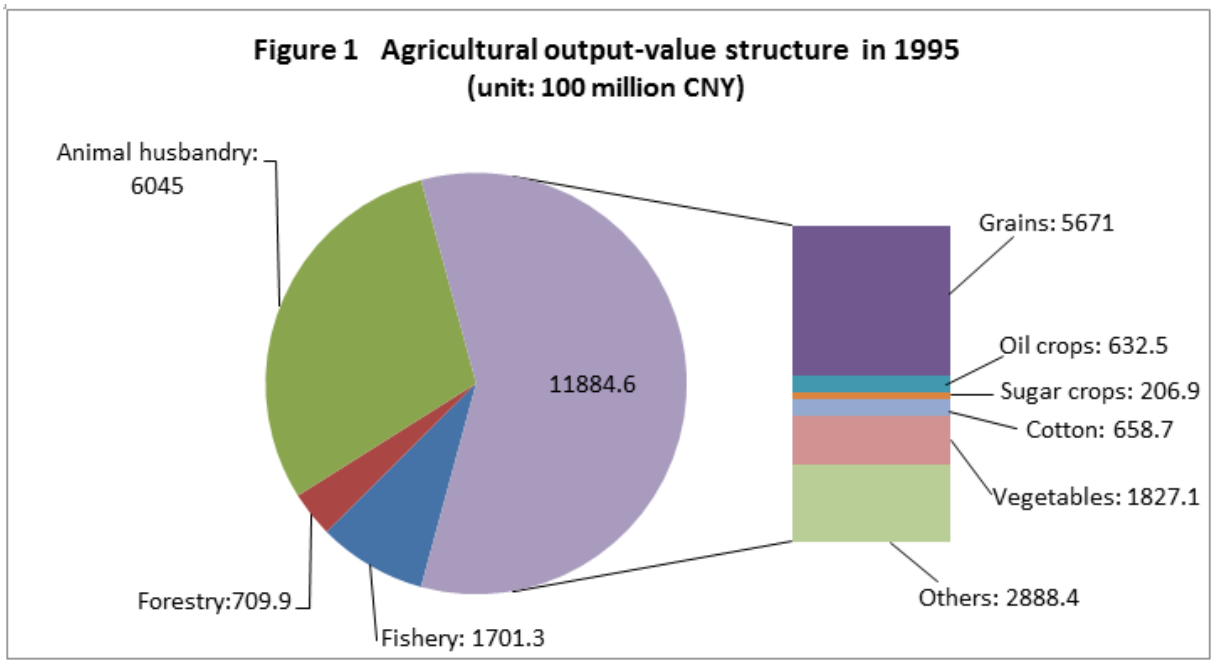
Table 1 The sown areas of different agricultural product categories in 1982, 1992, 2002 and 2012 (unit: 1000 ha)

Product categories	1982	1992	2002	2012	Rate increase in thirty years
Grain crops	113462.40	149007.10	154635.51	163415.67	44.0%
Beans (incl. soy)	8418.80 (soy only)	8983.00	12543.10	9709.45	15.3%
Tuber crops	9369.87	9056.50	9881.35	8885.89	-5.2%
Oil crops (excl. soy)	9343.07	11489.40	14766.30	13929.79	49.1%

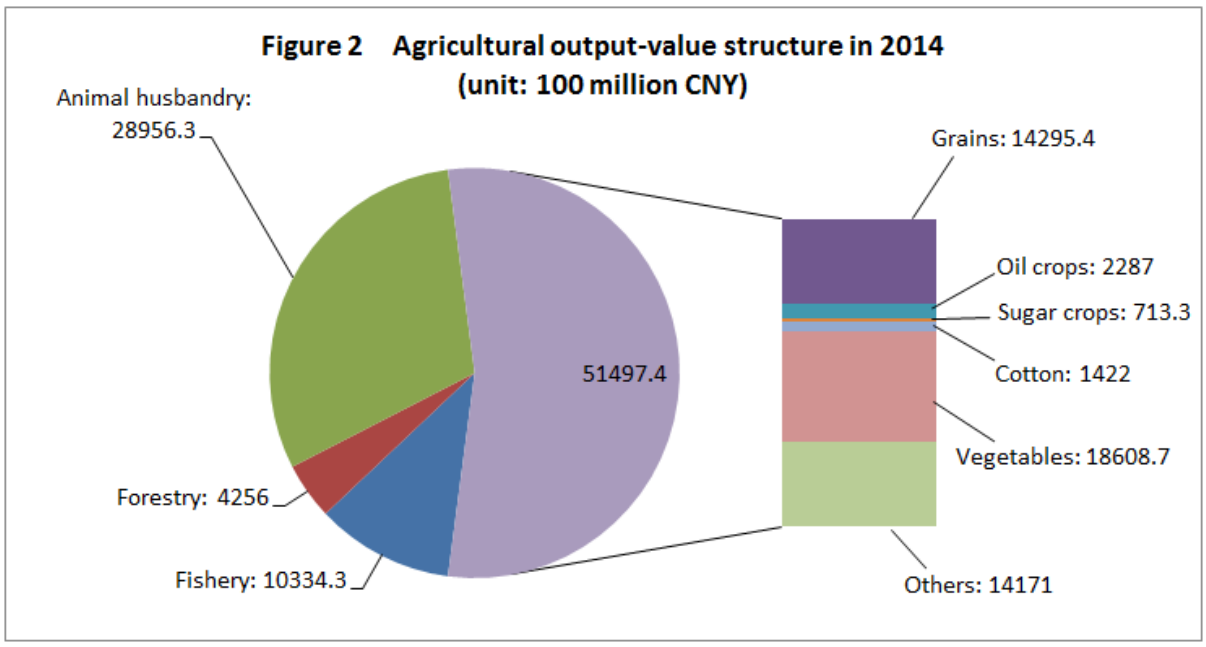
Sugar crops	1115.60	1905.80	1871.50	2030.44	82.0%
Cotton	5828.40	6835.00	4184.20	4688.13	-19.6%
vegetables	3887.47	7031.00	17352.93	20352.57	423.5%
Fruits and melons	2434.67	6768.90	11452.75	14548.14	497.5%
Tea	1096.93	1084.20	1134.24	2279.94	107.8%
Herbs	95.47	254.00	963.91	1560.45	1534.5%
Forage crops	1647.47	1786.80	3013.52	2060.81	25.1%
Aquaculture*	3200.65	4476.18	6814.64	6854.40	114.2%

Data source: With the exception of aquaculture, all the figures are drawn from the National Bureau of Statistics of China. The figures on aquaculture are drawn from two data sources: the Thematic Database for Human-Earth System; and China Fishery Statistical Yearbook 1992, 2002, 2012.

Figure 1 Agricultural output-value structure in 1995
(unit: 100 million CNY)



Note: The diagram is produced by the author based on two databases: one is the "Output Value and Income Database" provided by the Department of Crop Farming Administration, Ministry of Agriculture of the PRC; the other is "China Statistical Yearbook 2015".



Note: This diagram is produced by the author based on two statistical publications: "China Agricultural Yearbook 2014" and "China Statistical Yearbook 2015".

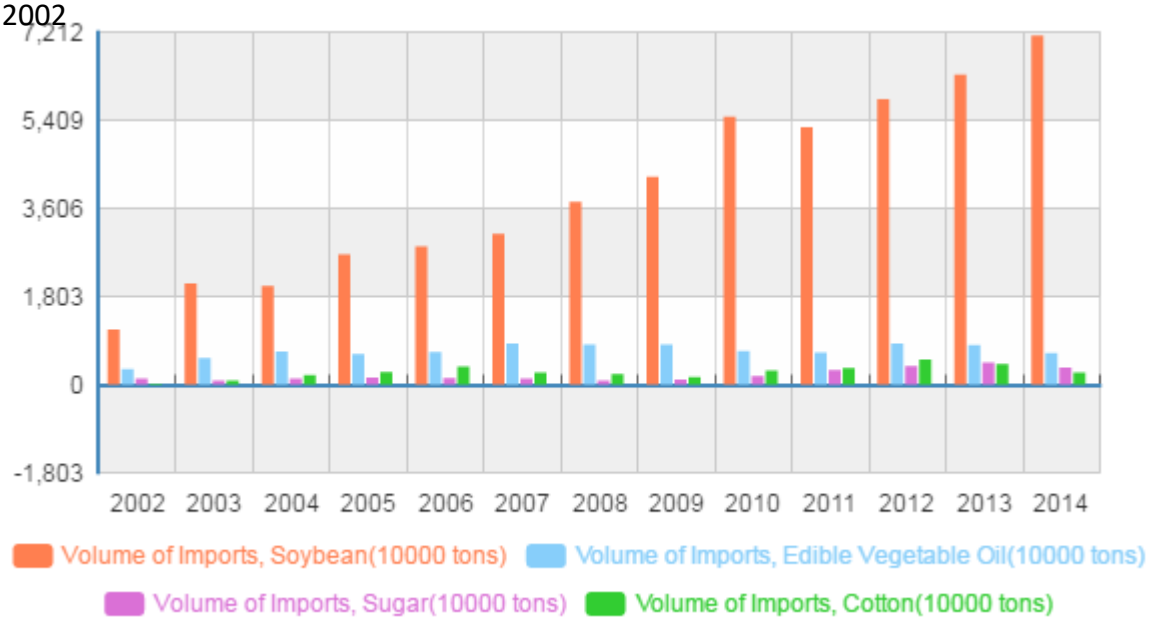
Based on the data above, one can conclude that, while China's agriculture developed rapidly, its inner structure also changed dramatically. Among the four broad categories of agricultural activities, fishery and animal husbandry witness significant growth. Their output values are 3.8 times and 5.1 times higher than two decades ago, respectively. In the farming sector, although grain production had increased gradually, its value contribution declined. Moreover, its land expansion meant less land being used for beans (especially soy), tuber crops and cotton. This crop choice change was induced by the central government's policy to protect the price of grains. Another remarkable transition is the boom of vegetables, fruits/melons and other high-value crops (like herbs and tea), in both sown area and output value.

Despite the remarkable achievements, there is a potential negative trend in the agricultural structure change: compared with the rising demand in the domestic market, the production of edible oil, sugar, cotton, soy and forage (for feed) has lagged behind. The downtrend of these crops in planting acreage has started in recent years. The most well-known case is soy, whose sown area shrank by 2.5 million ha since China accessed the WTO. In the case of oil crops, sugar crops and cotton, the planting acreage shows a first-rise and then-fall pattern, especially in the traditional production zones during the past decade. Therefore, the national food security strategy[3] has met a new problem regarding the self-sufficiency rates of these agricultural products. In addition, the gap between the declining domestic

[3] The food security strategy is the Chinese government's framework of domestic food production and supply, which consists of policies for maintaining food self-sufficiency in China. This strategy is very well explained by a media article, as follows: "China's agricultural sector is supported by a number of policies that are collectively designed to achieve a food self-sufficiency objective. The objective stems from the Chinese Government's view that China's food security is best maintained by meeting its domestic food demand with domestically produced food and minimising its reliance on international markets" (The Poultry Site 2014).

production of these crops and the fast-rising demand for oil, sugar and cotton keeps growing. This issue has aroused the government's attention, as the import volumes of these crop products boomed quickly in recent years. Figure 3 below shows the import volumes of soybean, edible oil, sugar and cotton since 2002.

Figure 3 Yearly import volumes of soybeans, edible oil, sugar and cotton since 2002



Data source: National Bureau of Statistics of the PRC.

Edible oil, sugar and cotton are viewed by the Chinese government as strategic agricultural products, since their price fluctuation and market supply shortage can cause direct impacts on social stability. Similarly, soy has an importance role in the Chinese traditional diet, and is also becoming the main crop for animal feed, thus indirectly supporting the modern diet of the growing Chinese middle class. The Chinese government would, therefore, not expect the supply of these crops to mainly depend on the external market, as that is economically and politically risky.

However, the current agricultural production for this food-security goal is meeting a bottleneck, with two main relevant factors: the increasing land-labour cost, and the dominant peasant household production mode. Land rent and labour price in China have increased 4-5 times within the past ten years (Zhang 2016). The high land-labour cost makes it difficult to grow the aforementioned crops, as they are both land and labour intensive crops. This is especially so when considering the crops' moderate prices, which are expected to decrease as a result of the global market. As Figure 2 shows, the higher-value products like vegetables, aquatic products, or herbs have been largely produced.

In the state's view, the dominant production mode of peasant household farming has transformed from a cornerstone of the national self-supplied food security strategy to its barrier. Thus, in the 1980s, each peasant household prioritized grain production for their own subsistence and the national tax in kind. In certain regions

where the natural conditions were suitable for oil crops, sugar crops and cotton, the government encouraged peasants to grow these crops and then bartered for the products with grain. Through this family- and state-led parallel food supply model, China has maintained its food self-sufficiency in the past thirty years. Since the new millennium, China abolished the agricultural tax and gradually opened its agriculture and food sector to the global market. While the former policy changed the previous peasant-state relation regarding the national food supply, the current one has put the Chinese peasants in the new situation of producing for the market. Far from being destroyed by the liberal policies, Chinese peasants became very active on the market. They have adjusted their crop choices and farming plans according to the market prices of land, labour and crops, as proven by the emerged structure change of the agricultural production.

Therefore, opening the domestic food production and market to the global market, the increasing domestic land-labour costs and the dominant peasant-household production mode have driven the Chinese agriculture toward a labour intensification and high output-value oriented production trajectory. However, this transition of agricultural production cannot guarantee the political security of national food self-sufficiency, which is a strategy firmly stated by the Chinese central government. Thus, while the bottleneck between agricultural production and food security in China is rooted in the changed socio-economic conditions, it is caused by political concerns.

2. The transition of agriculture and food governance in China: She sugarcane case

In the aforementioned context, a national adjustment plan on crop planting structure was proposed and then quickly carried out by the central government as the new measure to ensure food self-sufficiency. With this policy orientation, a batch of targeted crop project plans were set up in different provinces. These projects aim to guarantee that the targeted crops can be produced in their traditional production zones through the development of large-scale mechanized plantations. The new food-security program deviates from the previous parallel family-state strategy for self-supplied food security, and also from the current peasant-household production mode. In this section, I take the sugar supply and sugarcane production as an example for understanding the transition of agriculture and food governance in China. I first explain the previous peasant-household based sugar security model, and then address the new “double-high” sugarcane project. Based on this case’s historical development, the periodization of agricultural production, state intervention and capital accumulation can be drawn.

Since the establishment of new China, a state-planned economic system was implemented. The sugar industry, as any other economic sector, was completely controlled by the state. All the sugar mills were state-owned, and sugarcane was supplied in quotas to appointed collective production teams under people’s commune system. At the time, the production capacity of these sugar mills was very

low, due to poor technology and a lack of sugarcane. Feeding the people was the first goal of the farming activities in the new-born country. Both sugar production and consumption were low, and sugar was not common in Chinese people's daily diet during this period (Si 2004). At this stage, China's main food security issue was food shortage. The national-wide famine at that time was due to the country's ideological antagonism with western countries and the broken relation with Russia during the 1950s and 1960s. China's food trade relations with the external food market were not clear because of missing official data. Therefore, China was also left out from the geographical map and theoretical framework of the global food regime analysis (see Friedmann 1982; Friedmann & McMichael 1989).

It was not until the early 1980s – when the reform and opening-up policy were implemented and the Household Responsibility System (HRS) was set up – that the economic institution and agriculture policy started to change. However, the pattern of state capital accumulation did not change, in the sense that sugar mills were still state-owned. In this phase, sugar supply and sugarcane production were influenced by two intervention policies: "east sugar going west" and "grain-sugarcane barter". The "east sugar going west" policy was a regional development program, part of the central government's national development plan. Before the 1990s, the Hainan, Guangdong and Fujian provinces were the main sugarcane production zone. Since the reform and opening-up, the southeast coastal area was designated as the special economic zone that would develop a labour-intensive manufacturing industry to attract foreign investment (Jiang 2008). The land in the economic special zone thus became scarce and expensive, and labour price became relatively higher than the inland area because of the many job opportunities in factories. However, as previously mentioned, sugarcane is a land and labour intensive crop.

The central government decided that the remote and poor southwest provinces like Guangxi and Yunnan should take the responsibility of domestic sugar supply. Thus, the sugar industry and sugarcane production transferred from the coastal region. The "grain-sugarcane barter" policy was then introduced as a complementary measure to motivate the peasants in the Guangxi and Yunnan provinces to grow sugarcane. Under HRS, land was distributed to individual households. Sugarcane production was no longer ensured through assigning production targets to the collective production teams. Individual households still gave the priority to growing grain, beans and tuber crops to feed themselves due to the food-shortage experience of the past decades. Nevertheless, the whole country was in sore need of sugar. It is reported that, before 1988, the average yearly sugar consumption per capita was less than 3 kilos, and not everyone could have access to sugar (Jiao 2012). To encourage peasants to grow sugarcane, the state had to guarantee that peasants would get an equivalent in grain. The basic idea of "grain-sugarcane barter" policy was to reward cane peasants with certain amounts of grain based on specific exchange rates (which varied across provinces) (State Council 1981). For instance, the Guangxi provincial government could get 400 kilos of grain from the central state when it produced one tonne of sugarcane (Jiao 2012). But those 400 kilos of grain were not fully distributed into the hands of the direct producers, since the local governments extracted a certain portion for grain reserves. In fact,

peasants could only receive a maximum of 110 kilos of grain when handing in one tonne of sugarcane (Guangxi government 1981).

Nevertheless, the two intervention policies did guarantee the sugarcane supply and sugar production in China during the 1980s and early 1990s. There were two direct intervention implications of the sugar-security strategy in this phase. The first is the geographical relocation of sugarcane production inside the country – that is, the Guangxi and Yunnan provinces became the new sugarcane production zones. The second is that, while small peasant household farming was admitted and respected by the state, the peasants themselves were economically squeezed by the state-based capital accumulation and the bureaucratic system.

Sugarcane, as was the case for other industry-related crops (cotton, oil crops and soy), experienced a boom period from the mid-1990s to the mid-2000s. The prosperity of planting these crops and the development of the related processing industry were attributed to a series of changes in the socio-economic context, including the economic institutional change, the transition of the capital accumulation pattern, the agricultural policy adjustment, and the food demand restructuring. But a persistent favourable factor was the central government's positive attitude towards small household farming. Since the 1990s, the Chinese government took several large steps to boost and liberalize the domestic economy. The first was to further show its belief and effort on foreign direct investment. The landmark event was Deputy Chairman Deng's inspection speech in south China, which showed the Chinese government's determination towards an opening reform and a market economy. The second step was the reform of the state-owned enterprise system, which opened some previous state-controlled economic sectors to private/foreign capital (Lin et al. 1998). The third change took place in the administrative system namely: the fiscal and tax reform between the central and local governments. The fiscal reform turned the local governments into "local state corporatism", which refers to the strong incentives received by the local officials to pursue local economic development (Oi 1992). These three institutional changes transformed the pattern of capital accumulation in China. Foreign capital and domestic private capital developed quickly and soon became as active as the state-owned capital in the opened economic sectors. The accumulation pattern is no longer one of the state-based capital accumulation, squeezing peasants with direct administrative commands, but a market-based capital accumulation with some government interventions.

The exclusive control of the sugar industry by state-owned capital was disrupted and many state-owned sugar mills were acquired by foreign or domestic private capital since the 1990s (Luo 2009). For instance, the Thai MitrPhol Sugar Group, which is the largest sugar-and-bioenergy business company in Asia, merged five state-owned mills in the Guangxi province in 1993 and established the Nanning East Asia Sugar Company. This company gradually developed into the largest sugar company in China (see *Baidu Baike*[4]and the Guangxi Nanning East Asia company

[4] Guangxi Nanning East Asia Sugar Group. *Baidu Baike*. Available at: http://baike.baidu.com/link?url=mBV2OXyBHSi5YcYF9naQKL1zWmsLy-

website[5]). Later, the Yangpu Nanhua Sugar Company – also owned by domestic private capital, and having developed the same way as the previously mentioned company – became the second largest sugar related business company in the country.

The public-to-private ownership transformation stimulated the Chinese sugar industry, but this is only part of the reason for the sugarcane boom. A new regime of ensuring sugarcane production was set up during this phase. This was a complex, market-administrative force regime, which featured two intervention measures – the "cane area system" and the "cane pricing mechanism". The cane area system was first designed to balance the competition and market share among the sugar companies that developed from sources of diversified capital. An equally important characteristic was that it was also a fiscal revenue support framework for the local governments in these agricultural provinces. According to the official documents issued by the Guangxi provincial government, the sugarcane production zone in Guangxi was divided into separated areas. Each area was the specific sugarcane supply base of a sugar company. Thus, in each area, peasants were required to sell their cane to the assigned sugar company. Trans-area selling and purchasing was banned, except for some special agreements approved by the local government. A sugar company would deliver purchase vouchers to the peasants within its designated area as the agreement of trading between the two parties. The private selling of sugarcane without purchase vouchers to other trans-area sugar companies was considered "illegal"[6]. Peasants who did so would be penalized by having their sugarcane impounded or receiving very few vouchers in the coming year. This system had an obvious effect on the sugarcane expansion, since it provided the fixed channel of selling and purchasing sugarcane – the cane sown area in the Guangxi province soared from only 320, 000 hectare in 1990 to more than 1 million hectare in 2010, almost tripling in two decades[7].

In terms of the cane pricing mechanism, the provincial government sets a basic price for purchasing cane according to the general sugar market situation every year, but the final price that should be paid towards the peasants is linked with the fluctuating sugar price. For instance, in 2014/15, the basic purchasing price of sugarcane was 400 yuan/tonne, which was linked with the sugar price of 5160 yuan/tonne[8]. But the actual purchasing price of sugarcane increased by 6% of the increment of sugar price in the market. If we substitute X and Y for the actual cane price and the actual sugar price, then the relationship between the prices would be X = 400 + (Y - 5100)* 6%. The price mechanism does stabilize the purchasing price of cane each year, mitigating the peasants' worry about market risk. At the same

W2HM0myj2CVlHdzaZvrOrPkvUOy895JSegt_15eYbRTx7SiGU0EepG8a [in Chinese] [accessed on the 26th July, 2016]

[5] Guangxi Nanning East Asia Sugar company website: http://www.easugar.com/en/about_1.php [accessed on 26th July, 2016]

[6] A word used by the local government and the sugar company when describing the situation.

[7] The figures are obtained from the National Bureau of Statistics of the People's Republic of China: http://data.stats.gov.cn/easyquery.htm?cn=C01

[8] Guangxi Price Bureau. Emergency notification on sugarcane purchasing price, issued in 2014/15. Available from: http://news.static.gsmn.cn/201412/03/106.000043.B7A2.html [In Chinese] [accessed on 27th July, 2016]

time, it is the sugar companies that can generate large profits from the eliminated price competition and the stable supply of raw material. Moreover, the basic purchasing price set by the government is approaching the input cost that increases year after year. Furthermore, due to the stagnant sugar market in recent years, most sugar companies defaulted on their cane purchasing payments. It was reported that some sugar companies delayed the payment for more than two years, which led to peasant protests or lawsuits.[9] Thus, the sugarcane production control regime features significant inequality in terms of power relations. However, it has effectively boosted the domestic sugarcane production and sugar industry in the past two decades.

The socio-economic bottleneck of the Chinese agriculture production increased since the mid-2000s. The sugar sector entered a difficult period in 2012. Tables 2 and 3 present two sets of comparative data on sugarcane/sugar price in 2014 China and Brazil, respectively, and the output value/production cost of sugarcane in China for the past six years. Table 2 shows the cane/sugar price gaps between the Chinese domestic market, the Brazilian domestic market and the China-Brazil trade market. It shows that the price gap of domestic and imported sugar was significant enough to impact the domestic cane/sugar production. In fact, since 2012, China's import volume of sugar (refined and centrifugal combined) has been three to four times higher than ten years before, while occupying one third of the domestic sugar market (Li 2003). As a result, many Chinese small sugar companies went bankrupt. Meanwhile, the government-stated basic purchasing price for sugarcane declined from 500 yuan/tonne during the 2011/12 season to 400 yuan/tonne in the 2014/15 season for the sake of the domestic sugar industry (Guangxi sugar website, 2015). However, as Table 3 shows, the production cost of sugarcane increased by 30% between 2011 and 2014. The data also shows that the main cause for the cost increase was the rapidly rising land and labour price in the market.

Given the falling profit from growing sugarcane and the land-labour price change, peasants try to find new strategies of balancing land-labour input and farming income to maintain their livelihood. According to my field observations, they are three main strategies they can make use of. One strategy is turning to high-value products, like watermelon, citrus fruits, sisal, tea, ginger, olive fruit and leaf mustard. These crops are labour-intensive, but their market prices are much higher than sugarcane. The second strategy is to return to traditional crops, like cassava, maize and beans. While growing high-value products involves a high risk due to market fluctuations, the traditional crops can guarantee a stable income. More importantly, these traditional crops need relatively little labour. The third strategy is planting eucalyptus instead of growing farm crops. As eucalyptus hardly needs labour, peasants can convert their farm manpower into wage labour. This countermeasure ensured that the reality of increasing labour wages in the market

[9] People.cn. The Zuojiang sugar company's cane payment in arrear lawsuit ended. Available from: http://gx.people.com.cn/n2/2016/0801/c368791-28760165.html [in Chinese] [accessed on 28th July, 2016] Yunnan sugar website. Guangxi cane peasants dun for default payments from the sugar company. Available from: http://www.ynsugar.com/Article/ZXZX/changu/201404/42459.html [in Chinese] [accessed on 28th July, 2016]

changed from a previously unfavourable condition for farming to an advantage for making a living.

Table 2 Price comparison of sugarcane and sugar between China and Brazil in 2014 (unit: USD/tonnes)

	Sugarcane price	Refined sugar price				
		Domestic price	FOB price	Shipping cost	Price within TRQs (15%)	Price above TRQs (50%)
Brazil	28.15[10]	299.67[11]	392.06[12]	20[13]	470.87	608.09
China (Guangxi)[14]	65.12	830.24				

Note: Sugarcane and sugar prices fluctuate throughout the year; thus, all the figures in the table are their average values throughout the year. The FOB price stands for "Free on Board shipping" price. TRQs refers to Tariff Rate Quotas. The tariff rates within and above quotas were agreed in the terms of China's access to the WTO. The prices within and above TRS include shipping costs, but in practice there are other factors that slightly influence the actual import price, e.g. insurance rate, currency, attrition rate, premiums and discounts. However, they are still valuable data for reference.

Table 3 Comparison of values and costs of sugarcane production in China in the last decade (unit: kilo per mu, or yuan per mu)

	2009	2010	2011	2012	2013	2014

[10] This figure is drawn from "Tools for Assessing production cost" by Carlos Eduardo O Xavier. Available from: https://www.iea.org/media/technologyplatform/workshops/brazilnov2014/ToolsforAssessingProductionCosts.pdf [accessed on 28th July, 2016]

[11] The figure is calculated by the author based on the data from the "Annual report sugar Brazil" by the USDA Foreign Agriculture Service. Available from: http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Sugar%20Annual_Sao%20Paulo%20ATO_Brazil_4-15-2016.pdf [accessed on 28th July, 2016]

[12] This figure is from a news report on the Guangxi Sugar Website. Available from: http://www.gsmn.com.cn/ShowNews.do?id=A20160219000008 [In Chinese] [accessed on 28th July, 2016]

[13] ibid

[14] The figures for sugarcane and sugar prices in the Guangxi province in 2014 can be found in the official document entitled "Emergency notification on sugarcane purchasing price issue in 2014/15" by Guangxi Price Bureau. The full document can be accessed from: http://news.static.gsmn.cn/201412/03/106.000043.B7A2.html [In Chinese] [accessed on 28th July, 2016]

Output		4738.99	4746.83	4710.21	5028.81	5177.72	4798.11
Output value		1517.44	2167.88	2327.06	2384.91	2294.58	1965.71
Total cost		1168.70	1382.01	1626.54	1978.96	2177.77	2115.76
Production cost	Total	1029.30	1221.09	1448.63	1786.52	1953.60	1881.39
	Materials and service cost	516.19	584.73	664.46	765.04	800.15	747.69
	Labour cost	513.18	636.36	784.17	1021.48	1153.47	1133.70
	Family labour	261.99	311.69	383.60	545.16	604.38	618.04
	Hired labour	251.19	324.67	400.57	476.32	549.07	515.66
Land cost	Total	139.33	160.92	177.91	192.44	224.17	234.36
	Rented land	6.28	7.70	8.35	11.37	16.17	19.03
	Self-owned land	133.05	153.22	169.56	181.07	208.00	215.33
Cash cost		773.66	917.10	1037.38	1252.73	1365.39	1282.38
Cash income		743.78	1250.78	1253.68	1132.18	929.19	683.33
Net profit		348.74	785.87	700.52	405.95	116.81	-150.04

Data source: Compendium of source materials from the national survey of costs-incomes
of agricultural products (2014, 2008)

However, the crop choice adjustment of peasant households for their livelihood goes against the interests of domestic large sugar companies, as well as the state's strategy regarding sugar supply security. More specifically, according to the cane price mechanism, the purchasing price for cane is only linked with the sugar price in the market. Nevertheless, the business field of large sugar companies is quite broad. The products from sugarcane include sugar, pulp, electricity, bio-fertilizer, fodder, ethanol, monosodium glutamate, bio-chemicals, etc. Moreover, the large sugar companies also have their own businesses, such as logistics, labour service, agricultural machinery and food science research. Thus, the reduction of sugarcane production threatens the large sugar companies' entire business chain. For the state, it is an economic issue of protecting the domestic sugar industry from being destroyed by the global market. But, to a greater degree, it is also a political issue of ensuring the domestic sugar supply in order to maintain autonomy in international relations and domestic social stability. Therefore, crop choice is not

simply a household-level economic issue that relates to peasant livelihood. It is deeply embedded in the accumulation process of agro-food capital and the political governance system of the state. In this sense, the large sugar companies and the Chinese government share the same goal – ensuring that enough land is cultivated with sugarcane.

From this idea, the "double-high" sugarcane project was launched. According to the yearly government documents, the project's objective is to maintain the current sugarcane production zone and lower sugarcane production costs. The project's task is to develop 5 million mu of modern production base within the Guangxi sugarcane production zone. The task is being fulfilled by increasing the production scale, introducing improved sugarcane varieties, mechanizing the cane planting and harvesting processes, and constructing a modern irrigation system. The subjects of sugarcane production to be subsidised include: sugar companies that possess large sugar plantations or achieve land concentration by collaborating with peasant-households; agriculture investment companies, known as specialized sugarcane planting companies; specialized sugarcane production cooperatives; and specialized large households/scaled-up family farms for cane production (Guangxi Government 2013, 2014, 2015). The standard of eligibility for subjects of sugarcane production in the project is that the concentrated planting acreage must be above 200 mu, which is nearly ten times of the average land scale owned by peasant households in the Guangxi province. Land transfer and concentration then became the main activities in the "double-high" project. Besides, a significant change in the new phase is that the state-owned capital rebounded in the sugar industry. The agribusiness accumulation and state food governance is completely integrated in this form.

This section has chronologically described four intervention regimes on domestic sugarcane production. As mentioned at the beginning of the section, the transition between intervention regimes does not only result from policy adjustments, but also a series of changes in the market situation, the pattern of capital accumulation, the government's agricultural development philosophy, the main implication of the "food security", concept and the central government's anticipation of peasant decision over time. Table 4 summarizes the different periods of the agricultural and food intervention regimes and some directly related agrarian changes in China in the past half century based on the sugarcane case.

Table 4: The periodization of state agro-food intervention and some agrarian changes in China

	People's commune period	Post-rural reform	Fiscal reform and foreign capital "bring-in" policy	Post-WTO

Time period	Before the early 1980s	early 1980s to early 1990s	early 1990s to mid-2000s	since the mid-2000s
General market situation	Planned economy; no formalized domestic food market and trade	Controlled domestic food market and trade	Administratively intervened domestic food market and trade	Capital-force intervened domestic food market and trade; open to global market
Capital property	State-owned capital	State-owned capital	Dominated by foreign capital and domestic private capital; State-owned capital declined	Foreign capital remains; domestic private capital shrinks; revival of state-owned capital
Intervention regime	Assigning production targets to collective production teams	"East sugar go west"; "grain-sugarcane barter" policy	Cane area system; cane price mechanism	"double high" sugarcane base project
Government perception on agriculture and peasants	Collective agricultural production	Recognized the function of individual, small household farming	Relied on small household farming	Turning to large-scale, mechanized agriculture production
The main implications of "food security"	The problem of low agricultural productivity and output	Food self-sufficiency	Food self-sufficiency and rural income	The contradiction between peasant livelihood, state food governance and agribusiness accumulation

In a historical retrospective of the agro-food intervention regimes in China, one cannot avoid referring to Bruno Benvenuti's analytical framework – the 'Technological-Administrative Task Environment' (TATE). TATE is composed by the many institutions surrounding the agricultural sector (banks, agribusinesses, providers of services, extension agencies, state agencies, farmers' unions, etc.). These institutions increasingly prescribe and control the professional role of agricultural producers. It is indeed an 'environment' that specifies what is to be

done, how it is to be done, at what time, in which sequence, for what kind of reasons, how it is to be monitored and evaluated, etc. Such a prescription mostly (or even completely) occurs through technical and administrative specifications. These are seemingly neutral – Benvenuti argued, in this respect, that 'technology operates here as language', telling farmers what to do. Evidently, TATE is not a static phenomenon, but constantly changing (Benveuti 1975). In this respect Frouws argued that "change in the economic organization of agriculture implies changing roles for the economic actors involved, and also entails change in the meaning and sense of farm labour, 'produced' through the interlocking strategies and intentionalities of these actors (food manufacturers, input suppliers, farmers, retail corporations, finance and assurance companies) and the administrative rules that define the modalities of 'responsible', 'good', 'valuable', 'sustainable' agricultural practice" (Frouws 1997, 86). TATE offered a useful perspective to understand how external socio-economic structures influence the agricultural development path and farm practices. At the same time, Benvenuti also emphasized the agency of the peasantry. This can involve radical rural resistance, but more commonly manifests as peasant households adjusting their livelihood strategies through resource reorganization.

In the next section, I will discuss the influence of the new intervention regime on current agricultural production and the economic choices peasants made under this context, which also leads to a reflection on rural class dynamics.

3. A reflection on the agricultural production path and agrarian class dynamics

The post-WTO food intervention regime has a kaleidoscope effect, the project impacts being multi-dimensional (economy, society, governance and politics, rural culture and family, etc.) and multi-layered (different capital groups, central-local government relations, economic situations of individual villages, etc.). Moreover, the results are heterogeneous. Therefore, it is far beyond the scope of this paper to explain them all. Instead, this paper focuses on the project implication on the agricultural production path and agrarian class dynamic in rural China.

The project attracted various types of capital, in two different ways. First, the project approach is mostly capital-intensive engineering – that is, it involves building large cane farms and field roads, introducing improved cane varieties and large machinery, and constructing modernized irrigation system. Second, the many government subsidies for the project have more attraction for capital. The subsidies include 1300-1500 yuan/mu for land consolidation, 300 yuan/mu for cultivating an improved sugarcane variety, 1540 yuan/mu for irrigation development, etc. As a result, the dominant pattern of peasant household farming in cane production was disrupted, and new modes of capital intensive cane production emerged.

Nevertheless, the new capital intensive modes should not simply be seen as capitalistic farming, as that is only one of the capital-intensive production modes. Other modes include cooperative farming, peasant household joint farming,

entrepreneurial family farming, etc. The Fusui County, the largest cane producing county in China, is perhaps the earliest region where the new capital intensive modes of sugarcane production developed. Since 2013, the Kaili agricultural company successively developed eight large sugarcane plantations in the sugarcane production zone of the Guangxi province via the "double-high" project. Among the eight, two cane plantations are located in the Fusui County – 6800 mu in the Dubang hamlet[15] and 6300 mu across the Pabai and Palou hamlets. Both plantations have occupied most of the cultivated land in their affiliated villages. In fact, only the low-quality land, such as hilly or low-lying land, was left to the peasant themselves. The plantations have realized sugarcane monocropping, planting mechanization, drip irrigation with integral control of water and fertilizer, and pesticide spraying by UAV[16]. Currently, the company is pursuing harvest mechanization, which has lagged behind because of the technical challenge of applying large harvesters under the local natural conditions. Labourers for the daily plantation work are mostly from the affiliated villages, according to the preferential clause in the land transfer contract, but the labour demand is very limited outside the crushing season, when the entire sugarcane production zone is in urgent need of external cane cutters.

In contrast to this organizing mode, cane production cooperatives were also set up in some villages with the administrative instruction and financial support of the government. The cooperatives in the Qulu and Gengfeng hamlets are two typical cases. The production mechanism of the two sugarcane cooperatives is similarly mechanized and modernized to the company plantations. But there are several differences between the two modes: First, land is the peasants' material capital to get the shareholdings of the cooperative economy, and peasant income is not offered as land rent but determined by the cooperatives' profit. Second, the cooperatives have no justification for rejecting its members' low-quality land, which is different from the self-interest focused company plantations. Thus, the cooperatives tried to provide means to make use of the unfavourable land – for instance, by planting citrus trees on the hilly land and growing vegetables in the low-lying land. Third, the peasant income and the cooperative economy are bound up with each other. Thus, instead of focusing on sugarcane monocropping for the sake of labour cost reduction – as the company plantations did – the cooperatives need to diversify farming activities in order to generate more gross value to share with the membership households. Those activities include livestock breeding, forage processing, fruits and vegetables cultivation.

The third organizing mode is a quasi-cooperative one, which I refer to as peasant household joint farming. This mode is directly resulted from the land consolidation and re-allocation work that is carried out by the government to resolve the land fragmentation problem caused by the Household Responsibility System. With the strong financial support of the "double-high" project, the local government implemented land levelling and re-allocation in many villages. As a result, in these villages, each household received a piece of unbroken and relatively flat land which

[15] In China, a village is a regional collection of several hamlets administratively defined by the government. Due to the scattered residence of the Guangxi province, even a hamlet can cover a broad area.
[16] Unmanned aerial vehicle.

was equal to the sum of their previous, scattered plots. The government therefore encouraged the community to mechanize the process of sugarcane planting and harvest together. Even so, the peasant household is still an independent farming unit and owns the autonomy to make farming plans. In this case, most households still intercrop sugarcane with watermelon and cassava to maximize earning from the land.

The fourth mode is the specialized, enlarged and entrepreneurial family farm. The officially defined family farms are above 200 mu – the minimum requirement in the "double-high" project. Family farms are developed by individual households through a loan from the bank or the sugar company. They are also characterized by monocropping, mechanization and profit maximization. The difference between the entrepreneurial family farms and the company plantations is not only land scale, but also their relationships with the sugar company and the local villagers. As the company plantations control large resources (land and sugarcane), they have the economic power to negotiate with sugar companies for priority when receiving vouchers, transporting, asking for material support or cost compensation, etc. However, most entrepreneurial farms depend on the sugar company for either financial or social relation support. Regarding the relationship with the local villagers, the agricultural company has the social responsibility – pushed by the communities – to offer work opportunities to the local villagers first. This hiring relation has become the typical feature of the hired-labour based capitalist agricultural production mode. However, the entrepreneurial family farms have no such social pressure on labour hiring. They choose cheaper workers, such as Vietnamese cane cutters, or sometimes their relatives or acquaintances who are not local residents. The hiring relation in the case of family farms is mostly seasonal and sometime kith-and-kin related. Thus, it has not completely developed into a capitalist hiring relation.

Therefore, the direct result of the "double-high" project is that it promoted capital intensive farming. Capital intensive farming should be distinguished from capitalist agricultural production. As Bernstein emphasized, the key to understand agrarian change is to 'investigate(s) the social relations and dynamics of the production and reproduction, property and power in agrarian formations...' (Bernstein 2010: 1). Since there is no capitalist hiring relation generated within the other capital intensive farming modes – cooperative farming, peasant household joint farming, or entrepreneurial farms – it cannot be argued that Chinese agriculture is developing towards capitalist production. Yan and Chen have argued for the capitalist tendency of Chinese agricultural production from the capital accumulation perspective (see Yan and Chen 2015). However, the penetration of capital control in agricultural production should be better understood as the process of commodification in agricultural production and the imbalanced power relation in market economy rather than agricultural capitalism, which implies a particular social relation in agricultural production. As Webber argued, 'capitalism [...] is a specific way of producing and distributing goods and services' (Webber 2012: 9, cited by Van der Ploeg and Ye 2016). Van der Ploeg further pointed out that '[we cannot] view capitalism as the central nervous system of society as a

whole, a view that implied that all activities (all production and all marketing) should be understood as capitalist' (Van der Ploeg 2016: 107). In fact, the cooperatives, peasant household joint farming and entrepreneur farms have production and social relations that are very different from the company plantations in terms of means of land concentration, labour regimes and mechanisms of wealth distribution. See Table 5 below for an overview:

Table 5: Production and social relations of the capital-intensive production modes

	Company plantation	Peasant cooperative	Peasant household joint farming	Entrepreneurial family farm
Production unit	Company	Cooperative	Household	Household
Production target	Pure profit[17] maximization	Gross income maximization	Gross income maximization	Pure profit maximization
Means of land concentration	Land transfer	Land as shareholding	Land re-allocation	Land transfer
Labour regime	Hired-labour based	Membership labour based	Family labour based	Seasonal hired labour and kith-and-kin labour based
Mechanism of wealth distribution to peasants	Land rent	Profit sharing	Farming income	Profit from farming

As capital intensive farming does not imply a full transition of social relations in agricultural production, what is the essential change towards capital intensive farming? Van der Ploeg has provided a perspective for analysing the material aspects of the production and distribution processes in the agro-food sector, which is interconnected with and complementary to the social relation analysis of producing and marketing agricultural products. He argued that the main questions that need to be asked are: 'What are the main resources? How are they developed? How are they converted into products? And how are these products channelled to consumers?' (Van der Ploeg and Ye 2016: 108) From the material conversion perspective, the farming activities under the philosophy of agricultural modernization are seen as changing from a household self-provisioning, ecological capital based, and human-nature interactive process to a money capital intensive, financial debt (or governmental subsidies) dependent, natural resource controlling and speculating set of activities (Van der Ploeg and Ye 2016: 85-129).

[17] In this paper, I apply the terms used by Chayanov in "The theory of peasant co-operatives". In the modern economics terms, 'pure profit' refers to marginal product value; 'gross income' refers to total product value.

Lang and Heasman explained three modern agricultural production paradigms: the productionist paradigm, the life science integrated paradigm and the ecologically integrated paradigm (Lang and Heasman 2004: 16-30). The distinctions among the three paradigms result predominantly from the material aspect rather than social relations. Specifically, the former two paradigms commonly relate to large-scale capitalist agricultural production; however, cooperative farming and entrepreneur farming can also engage in industrial agricultural production that is characterized by fossil fuel-consuming machinery, GM seed, fertilizer, pesticide, and a modern credit system. According to Land and Heasman, the main features of an ecologically integrated paradigm are environmental, energy/waste reduction, diversity, reduction of certain inputs, risk minimization, organic food, being nervous regarding the increase of the scale of production, an improved link between the land and consumption and greater transparency (Lang and Heasman 2004: 32). This ecological process of agricultural production can be realized through moderate household farming, but this is not always the case. For instance, peasant household farming could also use as much fertilizers and pesticides as large-scale company farming under the scientific-technological agricultural program promoted by governments and agro-companies. However, the nature of peasant farming shows more of "integrity" towards ecology and food compared to the large-scale industrial farming, since peasants tend to make best use of ecological resources to reduce input cost, and their food production is a mutual process between man and living nature (Van der Ploeg 2009: 23-30).

One's understanding of the agricultural production path directly influences the analysis of class dynamics and politics in rural society. Agrarian Marxists see the agrarian change through a perspective that fits all new phenomena into the capitalist system. They argue that peasantry can be differentiated into capitalist farmers who reproduce themselves as capital, and medium/poor farmers that cannot reproduce themselves without selling their labour force (Lenin 1982; Bernstein 2010). Thus, the current agrarian change in China can be explained as a significant trend of class differentiation – capitalist employers, petty bourgeoisie/commercial farmers, dual-employment households, wage workers and subsistence peasants (Zhang and Donaldson 2010; Zhang 2015). Others point to the de-peasantization tendency in the capitalization process of agricultural production (Yan and Chen 2015). Based on the different epistemology of China's agricultural production transition above, this paper holds a challenging opinion on the class differentiation analyses. In particular, it issues questions on two aspects: First, to what extent can the current classification reflect the real economic status and living level of peasant households? Second, to what extent may the current classification connect with the political appeals of the peasant class groups they distinguished? The basic argument here is that, if the class differentiation cannot reflect the real economic status and the political choices of the peasantry, the 21lassification loses its meaning. Thus, it is necessary to look into the peasant choices under the "double-high" project in order to understand the dynamics of rural economy and politics in China.

In the Palou hamlet, where the company plantation is located, most households own more land compared to other rural communities – above 50 mu. The families with fewer members and less economic pressure prefer to lease their land to the plantation because the handsome land rent can well support their daily living. In contrast, those families faced with more economic burdens (such as children's education, marriage savings for their children, medical costs for their elderly parents, etc.) are negative towards land transfers. They not only make the best use of their own land, but also tend to lease in land with low rent[18] to gain more earnings. In the Shuangjun hamlet, whose community land is limited (with an average farmland per household of 5 mu), the villagers have engaged in non-farming work in cities or nearby towns for many years. Their land was levelled and concentrated under the "double-high" project and they run a joint farming mode to save labour on farming activities. In the Qurong hamlet, where the average land per household is moderate (most households own 10 to 30 mu land), the village has a good tradition of reciprocal labour. Every year, eight to ten households organize a mutual-aid team during the crushing season to solve the labour demanding problem of the cane harvest. In this way, they gain income from their own labour. Moreover, due to the appropriate farm size, this hamlet rarely experiences out-migration. In contrast, the number of migrant families in the Palou and Shuangjun hamlets is remarkable. In the Qupo hamlet, a natural village close to the town centre, many households leased out land and opened family-run workshops (such as peanut oil extraction, noodle shop, etc.). Land income is the initial capital for their small business and most of them still rely on land rent to release cash flow pressure.

Based on these cases, some reflections can be drawn on the dynamics of rural society: First, the households that own more land lease it out instead of becoming "big farmers," due to the considerable land rent paid by cane plantations. Second, the households that have less land could seek out non-farming income, but they can also lease in land and intensify their farming activities. Third, the hiring of seasonal labour depends on the ratio of family members to the land scale. Thus, hiring labour cannot be taken as a criterion to distinguish class groups among the peasantry. Fourth, the peasants who give up farming are not necessarily part of the proletariat; instead they may become traders and asset owners. But even rural traders and asset owners highly rely on land value. Fifth, although the peasant households in the four villages have very different economic choices, they have a non-significant economic gap that can divide them into social classes. Their economic status is convergent instead of polarizing. Sixth, the choices of leasing land in/out, hiring/selling labour, engaging in/abandoning farming are changing all the time among peasant households, according to the land rent, labour rent and food price on the market. A static classification of the peasantry into commercial farmers, semi-proletarian farmers or proletarian peasant workers is unreliable. Moreover, the different class positions argued by Zhang not only cannot reflect the peasant households' real economic status, but also lack relevance for an analysis of

[18] They pay low rent to get land because either the land is out of the flat and irrigated area, or the land lease agreement is arranged through a kith-and-kin relationship.

peasant resistance. This leads to the last reflection, namely that – although there are different economic interests and different livelihood strategies among peasant households in the "double-high" project –the fundamental economic and political appeal is the autonomy of land use rights[19]. From the small land owners to the big land holders, Chinese peasants strive for land benefits in the market and for the autonomy of land use rights. The current land problems in rural China are less related to internal conflicts and more related to the local villagers' efforts against external interventions. As Paige argues, 'it is the central role of land in agriculture, however, which gives rural class relations their unique character, and the relative importance of land versus either capital or wages sets limits on the direction and intensity of class conflicts' (Paige 1975: 11).

In the case of rural China, the Household Responsibility System of the early 1980s distributed land to rural households in a relatively equal way[20]. Peasants make crop choices according to the (land-, labour-, product-) market situation. The crop planting programme is considered by the central government as the solution to the contradiction between the national food governance, agro-capital interests and the small peasant household farming during the process of further liberalization of China's agricultural and food markets. However, the nature of these planting project plans is that the state and agro-food capital need land to prioritize the production of certain crops, which would, in turn, lead to cheap market prices. For this reason, the peasant household is not the ideal unit for agricultural production. Large investments on land concentration and machinery are the central task of these crop projects, and they are beyond the economic ability of individual peasant households. Instead of generating peasant differentiation, the project interrupted (to some extent) the expanded reproduction of the peasants who owned more land, since those peasants chose land rent and less drudgery. It also had negative impacts on the relatively less landed households who wanted intensive farming by themselves because land rent cannot support their livelihood.

Therefore, the "double-high" project has resulted in neither income polarization nor class differentiation among the peasantry of the Guangxi province. Instead, it is a forceful top-down flow of governmental interventions and industrial-commercial capital into rural China. This flow is changing the current agricultural production paradigm and mode in China. Faced with top-down political and economic forces, even the cyclical demographic differentiation among the peasantry tends to be vague. In other words, the socio-economic space of the agrarian society in China is suppressed by the current consortium of administrative power and agro-capital. In this process, the cane peasants had diversified reactions – depending on their own resource situation (valid family labour, land scale, working skills, social relationships, etc.) – in order to achieve the optimal choices for their livelihoods. However, they all put land right autonomy as the bottom line for taking political actions. The agrarian Marxists' so-called differentiated peasant groups can ally to

[19] In China, peasants only own land use right, the land ownership belongs to rural communities.

[20] Unequal land possession currently exists in rural China, complicating causes and impacts. I will discuss the land issue in another paper, but, for now, the majority of Chinese rural households possess a certain amount of land.

fight for land benefits. The agrarian transition initiated from above rendered land property the focus topic in rural society. Land issues have again become the core of agricultural production in China in this new historical phase. But the current agrarian change in China is a complex of on-going trends of agro-food governance, agricultural production paradigms, agricultural production modes, land property, labour regime and agro-capital accumulation in the changing food market situation.

4. Conclusions and discussion

This paper first analysed the current agricultural production bottleneck for the national food security strategy in China. Using the sugarcane project as a case study, it documented the historical transition of China's intervention regimes in its agriculture and food production. Finally, it reflected on the impacts of the new planting-planting plan program on agricultural production paths and rural society. While the accession to the WTO and the rising prices of land and labour in the domestic market have transformed the Chinese agriculture production into a "capital-labour dual intensifying family farm(s)" based production trajectory (Huang 2011), the state governance of food security and the capital interest in agricultural and food industry are shaping a different production trajectory – in particular, large-scaled industrialized production for certain "needed" crops of cheap market prices. The new agricultural and food intervention regime is changing the current agricultural production paradigm and production mode through the national planting project plans. Under the centralized and top-down agricultural program, peasants have different economic choices, which are based on their livelihood resources and the concrete market situation of land, labour, food and other elements.

I argue that, with China's new agricultural and food production intervention policy, class differentiation among the peasantry is actually diluting, since the new agricultural program was not designed for individual peasant households. What should be clarified here is that no class differentiation among peasantry does not mean no class dynamics in rural society. For instance, the sugarcane project has shown that a new form of class opposition between local peasants and intrusive agro-capital has emerged. In this sense, land benefits from market and use right autonomy have become the realistic basis of peasants' political process in rural China.

Finally, in terms of labour hiring in agricultural production, Zhang argues that family farming in China is undergoing a fundamental transformation because it "is no less capitalistic than corporate farming organized by agribusiness using wage labour" (Zhang 2015: 362). I propose a different understanding: hiring labour is not the defining attribute of capitalistic farming. Instead, the principles of distinction are whether the agricultural production activities rely on the capitalist employment relation, and whether the production process with hired labour is aimed at profit maximization or income maximization. In the sugarcane production case, large plantations and the majority of peasant farms hire labour to cut sugarcane and

sometimes in the planting process. The peasant households hire labour due to a shortage of energetic family labour and the lack of available advanced tools, which can be observed from the aging labour in rural society and the low level of mechanization in sugarcane production in China. Company plantations base all agricultural activities on the employment relation, and the entire operation process is to pursue profit maximization. In contrast, the peasant households still arrange farming activities according to the family's ecological and economic resources, and their goal is to maximize farming income. When it comes to the practical process, hiring labour is a way to compensate the shortage of family labour or expensive machines. As Wang argued in the Punjab state case, the 'consumptive utilisation of hired labour' by women and elderly people in farming activities to substitute their physical shortcomings is different from the 'productive utilisation of hired labour' in capitalist family farms for expanded reproduction (Wang 2009, also cited by Ye and Pan 2016). Thus, labelling farming with hired labour as capitalistic farming might be simplistic. That being said, one must acknowledge that some expanded family farms are emerging that share many characteristics with corporate farming. This new agricultural production mode can be referred to as entrepreneurial farming, but the survivability of entrepreneurial farms need further research and time to test.

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Nazioarteko Hizketaldia

ELIKADURAREN ETORKIZUNA ETA NEKAZARITZAREN ERRONKAK XXI. MENDERAKO:

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