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Beyond the “hidden agricultural revolution” and “China’s overseas land investment”:

Main trends in China’s agriculture and food sector

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Abstract

This article has three parts. The first part discusses the multiple agricultural production modalities that currently can be observed in China. By analyzing the complexity of the existing modalities, it will be shown that agricultural production in China still relies strongly on peasant farming. The second part explains that the domestic agrarian change influences China's relation with the global food market. This implies that China’s overseas agricultural investment and the domestic agrarian situation should be studied together instead of being separated from each other. The third part focuses on the internal changes of agricultural production in China. Based on the thesis of ‘hidden agricultural revolution’ as elaborated by Philip Huang, it is argued that dietary transition indeed plays a critical role in the restructuring of the agricultural production in China. But this is only an exogenous driving force. The endogenous drivers of structural change in agricultural production are the rapid increase in land rent and labor costs in China. Agricultural structural change is a process of mutual interaction between the exogenous conditions and endogenous conditions.

Introduction: getting the data right

In the current literature on China’s agriculture and food sector one can distinguish three main foci. The first focus highlights the overseas impacts. Since the global food price spike in 2007/08, much literature on a global land rush and agricultural investments have been published. Herein China attracted much attention due to its vast consumer population, evolving dietary structure and rapid industrialization. This literature refers to the double role of China in the global booms. The first role includes acting as a *large buyer*. China is the largest soy import country due to the traditional Chinese diet custom and the recently increased demand for meat. Today more than 80% of the nation’s soy consumption is imported, and this occupies around 60% of the total global soy trade volume. The increasing demand for soya in China is the main driving force behind the widespread planting of soya in South America, where ‘soy is the monoculture starlet of the agro-export model.’¹ This is also the case with oil palm. According to the statistics, China is the single largest global buyer of palm oil. The imported quantity of palm oil increased fivefold from 1996 to 2007, and this stimulated the expansion of monocrop production of oil palm in Indonesia and Malaysia.² In addition, the sugarcane boom in Thailand, Cambodia, and Myanmar in recent years has close relations with the increasing demand for sugar in China, the tremendous sugarcane crushing capacity of sugar mills located along the southwest border of China as well as with the

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¹ Gustavo de L. T. Oliveira and Mindi Schneider, ‘The politics of flexing soybeans: China, Brazil and global agroindustrial restructuring’, *The Journal of Peasant Studies* 43(1), (2016), pp. 167-194.

² Saturnino M. Borrás Jr, Jennifer C. Franco, Sergio Gómez, Cristóbal Kay and Max Spoor, ‘Land grabbing in Latin America and the Caribbean’, *The Journal of Peasant Studies* 39(3-4), (2012), pp. 845-872.

political-economic changes of sugarcane production inside China.³ The same goes for the “sustainable reforestation” across Southeast Asia: ‘a vast 300,000 ha of land in Cambodia, which was allocated for eucalyptus plantation to produce pulp for export to China’.⁴ Second, China is a *direct investor* in overseas agricultural production and land resource. It is reported that China’s land investments in Africa, including private entities, were aimed to produce jatropha, sugar, and maize, most of which can be used for food, feed as well as biofuel.⁵ Different from the understandings on China as a large buyer, some literature does not claim that China is currently food insecure. Instead, they argue that China’s overseas land acquisitions could be related with the expected food or energy shortages in the future that could emerge as a consequence of climate change or sudden shocks in the global economy.⁶ Without making a close examination of China’s domestic agricultural production, the literature assumes that China has to supply its domestic demand with global resources currently or in the future. As a result, investment in foreign countries comes to the core as being of strategic importance.⁷

Opposite to the first approach, the other two blocks of literature focus on the changes within China’s domestic agricultural production. One block of literature is headed by Philip Huang, who argues that the agrarian change of the past 30 years in China is a ‘hidden agricultural revolution’ that has ‘capitalization without proletarianization’ as special characteristic. According to Huang, the Chinese ‘hidden agricultural revolution’ is different from the classical western concept of ‘agricultural revolution,’ which is exemplified by the English agricultural revolution in the eighteenth century and the ‘green revolution’ in India and Latin America during the 1960s and 1970s. The Chinese agricultural revolution is, on the contrary, represented by the great increase in total agricultural output which is valued instead of the apparent rise of land productivity or labor productivity. The reason for this phenomenon is that Chinese peasants turned to produce more high-value agricultural products, like meat, poultry, fish, milk, eggs, vegetables, and fruits.⁸ Huang believes the change of the Chinese agricultural production structure is due to the fundamental restructuring of Chinese food consumption habits. This revolution is led by Chinese peasant farms that

³ Ben McKay, Sérgio Sauer, Ben Richardson and Roman Herre, ‘The political economy of sugarcane flexing: initial insights from Brazil, Southern Africa and Cambodia’, *The Journal of Peasant Studies* 43(1), (2016), pp. 195-223.

⁴ Saturnino M. Borras Jr and Jennifer C. Franco, “Political dynamics of land-grabbing in Southeast Asia,” *Amsterdam: Transnational Institute*, (January 2011), available at: http://www.burmalibrary.org/docs21/Saturnino-2011-Political_Dynamics_of_Land-grabbing_in_Southeast_Asia-en.pdf (accessed 17 July 2017)

⁵ Joachim Von Braun and Ruth Suseela Meinzen-Dick, “Land grabbing” by foreign investors in developing countries: risks and opportunities,” *International Food Policy Research Institute*, (April 2009), available at: <http://www.rrojasdatabank.info/landgrab/landgrabifprtab01.pdf> (accessed 20 June 2017). Ruth Hall, ‘Land grabbing in Southern Africa: the many faces of the investor rush’, *Review of African political economy* 38(128), (2011), pp. 193-214.

⁶ Joachim Von Braun, *Food and financial crises: Implications for agriculture and the poor* (Washington DC: International Food Policy Research Institute, 2008); Niall Duggan and Teemu Naarajärvi, ‘China in global food security governance’, *Journal of Contemporary China* 24(95), (2015), pp. 943-960; Helen Lei Sun, “Understanding China’s agricultural investment in Africa,” *South African Institute of International Affairs*, (November 2011), available at: https://www.saiia.org.za/wp-content/uploads/2011/11/saia_sop_102_lei_sun_20111129.pdf (accessed 3 October 2018)

⁷ Lorenzo Cotula, Sonja Vermeulen, Rebeca Leonard and James Keeley, *Land grab or development opportunity?: agricultural investment and international land deals in Africa* (London/Rome: IIED/FAO/IFAD, 2009); Annelies Zoomers, ‘Globalisation and the foreignisation of space: seven processes driving the current global land grab’, *The Journal of Peasant Studies* 37(2), (2010), pp. 429-447.

⁸ Huang Zongzhi, ‘zhongguo de yinxing nongye geming’ [‘China’s hidden agricultural revolution’], *Kaifang Shidai* [Open Times] 2, (2016), available at: <http://www.opentimes.cn/Abstract/2093.html> (accessed 3 October 2017)

invest more capital and labor into farming, rather than by large capitalist farms. Chinese agricultural production thus grows as a consequence of capital and labor intensification by small family farms.⁹ This process is of capitalization in the sense that the means of production on the Chinese peasant farms are capitalized, and meanwhile, the farms produce more agricultural commodities for the market. However, this process does not involve many hired agricultural workers; it is characterized as ‘capitalization without proletarianization.’¹⁰

The agrarian Marxist perspective more influences the second block of domestic-focused literature. Herein, scholars argue that the capitalization in Chinese agricultural production implies capitalist relations and class differentiation. New institutions for capital accumulation as, for example, cooperatives, family farms, and dragon-head enterprises, are emerging from above and below. It leads to a de-peasantization tendency.¹¹ In addition, peasant farming has changed into nonpeasant forms of agricultural production even if a rural household is still the production unit. Zhang and Donaldson characterize this as ‘from peasants to farmers.’ The different types of peasants include commercial farmers, entrepreneurial farmers, contract farmers, semiproletarian farm workers with Chinese characteristics, semi-proletarian farm workers and proletarian farm workers.¹² As a result, the new agrarian class structure includes five social classes, that is, the capitalist employer class, the petty bourgeois class of commercial farmers, the dual-employment households, wage workers, and subsistence peasants.¹³

The two blocks of literature aim to explain the agrarian transition inside China by looking into capitalization and proletarianization of agricultural production. However, the former block focuses on the internal changes of peasant household farming. Capitalization was examined within peasant farms, and it means a process of more capitalized means of production but without capitalist relations. The latter block pays attention to the external changes of peasant farming, which means the new actors in agricultural production and the emerging capitalist relations between peasant farms and the new actors. However, neither of the two approaches notice or explain well the changing situation of agricultural production factors in themselves, namely, land, labor, and capital. Besides, responding to the overseas focus thesis, the latter two approaches hardly touch on the domestic agricultural production situation and its interaction with the global market, which can strongly influence the agricultural production structure and modalities inside China.

In this article, the author engages with the three foci on agrarian change in China and also the related food security issue¹⁴. Most importantly, the article will try to answer several overarching questions. They are: What are the agricultural production modalities in China, and what can we see from the complexity of the diverse modalities? Is the gap between China’s domestic production and its demand for food so high that it can explain China’s land and agriculture investments abroad? What is the relation between the structural change in

⁹ Ibid.

¹⁰ Huang Zongzhi, ‘‘Zhongguo Xinshidai de xiaonong jingji’’ daoyan’ [‘Introduction of ‘Peasant Economy in the New Era of China’], *Kaifang Shidai* [Open Times] 3, (2012), available at: <http://www.opentimes.cn/bencandy.php?fid=332&aid=1579> (accessed 3 October 2017)

¹¹ Hairong Yan and Yiyuan Chen, ‘Agrarian Capitalization without Capitalism? Capitalist Dynamics from Above and Below in China’, *Journal of Agrarian Change* 15(3), (2015), pp. 366-391.

¹² Q. Forrest Zhang and John A. Donaldson, ‘From peasants to farmers: Peasant differentiation, labor regimes, and land-rights institutions in China’s agrarian transition’, *Politics & Society* 38(4), (2010), pp. 458-489.

¹³ Qian Forrest Zhang, ‘Class Differentiation in Rural China: Dynamics of Accumulation, Commodification and State Intervention’, *Journal of Agrarian Change* 15(3), (2015), pp. 338-365.

¹⁴ There are many definitions of food security by different official or research institutes. In this article, the terms of “food security/insecurity” are used to refer to the food supply situation at the national level, which is related to the Chinese government’s self-food sufficiency goal.

agricultural production and the restructuring of consumption habits, or more precisely, is the former caused by the latter, as Huang argues?

Agricultural production modalities and the agrarian transition in China

According to the *Green Book of Rural Area 2014-2015*, until 2014, food production in China realized a successive increase during the previous 11 years. In 2014, the gross output of grain was more than 600 million tons and the rate of increase was 0.9% compared to 2013. The meat production grew by 2.0% to 87 million tons of total output. Cash crops had shown great fluctuation due to domestic price policy adjustments (especially for cotton) and international trade (especially for sugar). In terms of employment, 2014 is the first year in which rural employment was below 50% of the total working population, but still as large as 49.1%. The proportion of agricultural gross output value in the national economy kept shrinking in relative terms, but just as the *Green Book* clearly states, the new dynamics for example, the national demand for agricultural products, the presence of new actors in agricultural production and the emergence of new forms of rural employment, confirm the pivotal position of agriculture for national development.¹⁵

The *Green Book* pointed out that new actors in agricultural production have been emerging in recent years. The land transfer is not limited to small peasant households but is also open to specialized big households¹⁶, family farms, rural cooperatives, as well as urban industrial and commercial capital. In some typical land transfer regions, land tends to be concentrated by these new actors in agriculture. According to the *Green Book*, these new actors contribute to agricultural modernization. They fill the vacancies of farming caused by massive rural labor out-migration and thus solve the problem of ‘who will farm in China’ to some extent. At the same time, it is mentioned that land enclosure by an alliance of local governments and industrial and commercial capital poses threats to stable food production and food security in the future.¹⁷

In the *Green Book*, three points are emphasized. First, food production keeps rising in China, but the proportion of agricultural added value in Gross Domestic Product is small and keeps shrinking. Second, the rural population is still large, and agriculture plays an important role in the employment of the national population. Third, new actors in agriculture emerged and gradually formed a new structure of agricultural production. The three points raise the following questions: What are the agricultural production modalities in current China; what are the relations between them; and which is the main production modality in Chinese agricultural production?

A report published by Chongqing Survey Team of National Bureau of Statistics¹⁸ categorizes the current agricultural production actors in China into three types: ‘household-led,’ ‘cooperative-led’ and ‘corporate-led.’ This classification is based on the production cost on labor, land, fertilizer, machinery, energy/fuel, and other input factors. However, the three terms are too broad and ambiguous to describe clearly the diversity of production modalities. In this article, the author decomposes the three categories and propose a set of theoretical

¹⁵ *Nongcun lvpishu 2014-2015 [Green Book of Rural Area 2014-2015]* (Beijing: Zhongguo shehui kexueyuan, 2015).

¹⁶ ‘Specialized big households’ refers to *zhuanYe dahu* in Chinese. It is an old term referring the local big producers since 1980s.

¹⁷ *Nongcun lvpishu 2014-2015 [Green Book of Rural Area 2014-2015]* (Beijing: Zhongguo shehui kexueyuan, 2015).

¹⁸ “Woguo zhuyao nongchanpin shengchan liutong xiaofei jiage guanxi yanjiu” [“Research on the price relations of main agricultural products during production, distribution and consumption”] *National Bureau of Statistics of PR China*, (12 June 2014), available at: http://www.stats.gov.cn/tjsj/tjsj/tjcb/dysj/201406/t20140612_567159.html (accessed 6 September 2016,)

concepts to build new constellations of the existing modalities in Chinese agricultural production today.

‘Household-led’ refers to the agricultural production type that is organized by individual households. Here the family is the unit of agricultural production and economic/livelihood calculation. In most cases, the production relies on family labor, but the family can also hire some seasonal or permanent labor. Thus, the ‘household-led’ type includes small peasant farms and scaled-up family farms (also called specialized big households). The pervasive mode of small peasant farms originated from the Household Responsibility System (HRS) during agrarian reform in the 1980s. The scaled-up family farms have emerged with the land transfer among villagers since 1990s, but the amount of the scaled-up family farms increases fast recently with the government policy on promoting land transfer in rural areas.¹⁹

Conceptually, the ‘cooperative-led’ type still refers to rural cooperatives. However, this type is essentially different from the cooperatives in the 1950s or the People’s Commune during 1960s and 1970s in China. The new rural cooperatives emerged especially after the passing of “*Law of the People’s Republic of China on Specialized Farmers Cooperatives*” in 2006, although a certain number already existed before, mainly as pilots. According to the official document, Specialized farmer cooperatives are economic mutual-help organizations that peasants join voluntarily and are managed democratically by the producers/operators, or by the providers/users of agriculture-related services on production and operation.²⁰

The ‘corporate-led’ type can be divided into two subcategories. The first one is the ‘agriculture industrialized dragon-head enterprises.’ Dragon-head enterprises have different linking forms with agricultural production activities. The three most popular forms are ‘company + households,’ ‘company + production base + households’ and ‘company + cooperative + households.’ Yan and Chen have discussed the development of the vertical integration forms.²¹ In the ‘company + households’ form, the company has a direct contract with scattered peasant households. With regard to the second and third forms, an intermediary agent exists between the company and peasant households. The difference between the two kinds of intermediary agents is that the production base is mostly a block of land that the company leases in to produce the agricultural products, while the cooperative is usually an independent agent owned by the village committee.²² The second subcategory is the specialized farming/breeding companies that emerged with the support from the state policy of ‘industrial and commercial capital going into the countryside,’ which was approved by the central government in 2013 in the ‘No.1 Document’. Among these specialized farming/breeding companies, small or middle ones usually belong to private entrepreneurs while large capital groups usually finance large farming companies. However, all of them are directly engaged in agricultural production. The proponents of these agricultural enterprises argue that they bring high-technology and a substantial amount of capital into the countryside

¹⁹ Yiyuan Chen, ‘Ziben zhuyishi jiating nongchang de xingqi yu nongye jingying zhuti fenhua de zaisikao’ [‘The rise of Capitalist Family Farms and a reflection on the differentiation of agricultural subjects’], *Kaifang Shidai* [Open Times] 4, (2013), pp. 137–156.

²⁰ “Zhonghua renmin guoheguo nongmin zhuan ye hezuoshe fa” [“Law of the People’s Republic of China on Specialized Farmers Cooperatives”], *Ministry of Commerce of PR China*, (31 October 2006), available at: http://www.fdi.gov.cn/1800000121_23_61763_0_7.html (accessed 12 September 2016)

²¹ Hairong Yan and Yiyuan Chen, ‘Debating the rural cooperative movement in China, the past and the present’, *The Journal of Peasant Studies* 40(6), (2013), pp. 955–981.

²² “Nongye chanyehua jingying de zuzhi moshi” [“Organization modalities of agricultural industrialized operation”], *Huanqiu Wang* [Huanqiu website], (21 August 2012), http://finance.huanqiu.com/mba/2012-08/3048672_3.html (accessed 9 August 2016)

and they therefore can raise productivity and contribute to agricultural modernization.²³ The opponents argue that industrial and commercial capital targets land investment rather than agricultural production, which acts as the Chinese form of “enclosure.” It not only makes peasants lose land but also results in a “nonfood” phenomenon of rural land since the land investors expect to develop agricultural tourism and real estate in order to generate high profits.²⁴

[Figure 1 near here]²⁵

Although pieces of information on the agricultural production modalities can be found from journal articles, government reports or media news, this taxonomy provides a complete summary as well as an analytical tool for the modalities that can be currently observed in China’s agricultural production. The evolvement of the agricultural production modalities in China has a tight link with the governmental agricultural policies, which is also a critical issue to discuss. However, the limited scope of this article does not allow to expand on this topic.

The scheme shows two trends. One trend is the change within rural household farming, which the paper refers to an internal change. It concerns a scaled-up family farm which has different characteristics from the conventional household farm under the Household Responsibility System (HRS). According to the Ministry of Agriculture, up to 2013, China had around 267.5 million rural households while the number of family farms was 877 000 (the data is excluding Tibet Province). This means that for every 1000 regular rural households there were 4.5 scaled-up family farms.²⁶ The average scale of a family farm is about 200.2 mu, nearly 27 times that of the average scale of a regular rural household in China.²⁷ Some scholars interpret the scaled-up family farms as entrepreneurial farming because they rent land, hire labor and produce for nonlocal markets.²⁸ However, the scaled-up family farms are ‘simply large peasant farms’ according to Van der Ploeg who considers them as peasant farms because of the following facts: First, most of these family farms are not built on financial capital (i.e. loans from banks), but on household savings. Second, their land is not originating from the free land market where land can be sold out and bought in with a market price. Instead, the land (use-right) owner can take it back. In fact, most family farms gain land through social networks inside their own communities and at a lower price compared to the price in the land transfer market. Third, even if they hire seasonal or permanent labor, the operation of family farms primarily relies on their own labor and techniques. Hired labor is to

²³ “Shuangxiang chengxiang yitihua xianlu shengji” [“Hopes rise for the double-way of rural-urban integration”], *Beijing Ribao* (*Beijing Daily*), (12 November 2012), available at: <http://theory.people.com.cn/n/2012/1112/c40531-19551177-1.html> (accessed 4 October 2016,)

²⁴ Xuefeng He, ‘Gongshang ziben xiexiang de yinhuan fenxi’ [‘The analysis on the potential problems of industrial and commercial capital going to the countryside’], *Zhongguo Xiangcun Faxian* [*The Rural Discovery in China*] 3, (2014), pp. 125-131.

²⁵ Xiaoshan Zhang, ‘Nongmin zhuan ye hezuoshe guifanhua fazhan jiqi lujing’ [‘The normalization of development and trajectories of specialized farmers cooperatives’], *Hunan Nongye Daxue Xuebao* [*Journal of Hunan Agricultural University*] 142, (2014), pp. 25-26.

²⁶ Since the statistical data of family farms does not cover Tibet province, for the percentage calculation the total rural households number should also exclude Tibet province as the corresponding denominator.

²⁷ “Nongyebu: Jiating nongchang shizhi shi zudi nongchang” [“The agricultural ministry: the nature of family farms is tenancy”], *Caixin Wang* [*Financial news website*], (14 June 2018), available at: <http://m.china.caixin.com/m/2014-03-20/100653908.html> (accessed 25 August 2018)

²⁸ Huang Zongzhi, ‘zhongguo de yinxing nongye geming’ [‘China’s hidden agricultural revolution’], *Kaifang Shidai* [*Open Times*] 2, (2016), available at: <http://www.opentimes.cn/Abstract/2093.html> (accessed 3 October 2017)

supplement a shortage of family labor rather than for creating surplus value. Fourth, the mechanism of farming is more based on peasant logic, meaning that they try to control the resource flow and avoid complete commodification in order to reduce their monetary costs. Income mainly derives from their own effort, including the work in the fields, techniques, and management. Fifth, the market is the outlet for their products, which is the characteristic that they share with small peasant farming. Producing for the market doesn't change their way of farming, and the market is not 'the ordering principle' for them. Finally, most family farms maintain a scale tailored to what the family can manage instead of taking expansion as the final goal. In fact, once they expand beyond the scale they can manage, the family farm cannot function well.²⁹ The covert change within peasant farming is related to their agricultural activities. Van der Ploeg and Ye point out the new strategies of intensification in small household farming, including labor investment in the resource base, intensifying cropping schemes, embedded specialization, space reorganization, and on-farm processing.³⁰ According to Philip Huang, as Chinese peasants turned to produce high-value products under the 'hidden agricultural revolution,' small family farms have become more intensive as far as the use of capital and labor are concerned.

The other trend is about the new actors and relations that are external to the peasant household and which the paper refers to as external relations. These agricultural actors are cooperatives, specialized farming companies, and dragon-head enterprises. Each of them has a different relation, with peasant households. While peasant households become members in real cooperatives and organize their production and marketing together, the fake cooperatives and specialized farming companies only need the land from peasant households. Differently, dragon-head enterprises integrate peasant households into the food industry chain, but let them remain as producers. Clearly, these production modalities are not similar to peasant farming, and they differ from each other about the system of agricultural production. Specialized farming companies and some fake cooperatives (in the sense that some capital owners concentrate land from villagers) organize agricultural production in a capitalist way, which means large-scale farming, use of financial capital, high investments and new technologies.³¹ The real cooperatives are collective orientated, which is the model of peasant economic organization and opposite to the capitalist organization of agricultural production, as argued by Chayanov.³² The most misinterpreted production modality is the one with collaboration between dragon-head enterprises and peasant households. Most scholars refer to this as capitalization. But here we should distinguish between capitalist production and capitalist penetration into agricultural production. Capitalist production is to organize agricultural production in a large scale with capitalist relations involved in. Capitalist penetration into agricultural production includes the commodification of seeds, fertilizer, pesticides, and standardization of farm products.³³ This capitalist penetration into agricultural production can also threaten the autonomy and sustainability of peasant

²⁹ Jan Douwe Van der Ploeg and Jingzhong Ye (ed.), *China's Peasant Agriculture and Rural Society: Changing Paradigms of Farming*, (London: Routledge, 2016).

³⁰ Ibid. pp. 66-79.

³¹ Jan Douwe Van der Ploeg, *Peasants and the art of farming: A Chayanovian manifesto (No. 2)* (Winnipeg: Fernwood, 2013).

³² Aleksandr Vasil'evich Chayanov, *The Theory of Peasant Economy* (Oxford: Oxford University Press, 1987 [1925]).

³³ David Goodman, Bernardo Sorj and John Wilkinson, *From Farming to Biotechnology: A Theory of Agro-Industrial Development*, (Oxford: Basil Blackwell, 1987); Steven Sanderson, 'The emergence of the 'world steer': Internationalization and foreign domination in Latin American cattle production', in F. LaMond Tullis and W. Ladd Hollist ed. *Food, the State, and International Political Economy* (Lincoln, NE: University of Nebraska Press, 1986), pp. 123-148.

household farming.³⁴ Therefore, the dragon-head enterprise modality is not a capitalist agricultural production modality since the basic production unit is the family household which is engaged in a peasant way of farming (see figure 1).

Although no statistical data exists on the contribution of capitalist agricultural production (specialized farming companies and fake cooperatives controlled by capital investors) to the national agricultural gross output, there are constant reports on social media about the underperformance of the large-scale farms. A significant number of them are reported to go bankrupt despite substantial government subsidies.³⁵ Meanwhile, it is reported that until 2014, more than 1.4 million rural cooperatives have been built and that the involved rural households are amounting to 100 million.³⁶ However, 80-95% of them are considered as ‘fake cooperatives.’³⁷ The number of real cooperatives is thus minimal. Therefore, even if the agricultural production modalities and the actors of agricultural production in China are diversified, agricultural production still relies on household-led modalities wherein the dominant way of agricultural production is peasant farming. Nevertheless, Chinese agriculture production is very dynamic about internal changes as well as external relations. While Philip Huang focuses on the internal changes of peasant farms and interprets it as ‘capitalization without proletarianization,’³⁸ Yan and others try to explain the ‘capitalist new actors with de-peasantization tendency’ by examining the external relations.³⁹

This article argues that there are two concurrent trajectories of agrarian change in China. Firstly, Chinese peasant households are adjusting their farming strategies or changing the production modality (scaled-up and specialized) to accommodate the new markets and other socio-economic conditions. Secondly, while new production modalities and new ways of agricultural production are emerging, peasant households are building new relations with external economic organizations. However, to fully understand the agrarian transition in China we should not only look into both internal changes and external relations but also pay attention to the interaction between the two trajectories. The latter is more complicated and important to study. For instance, will peasant farms be able to coexist with capitalist farms in the long run by making use of their respective advantages, or will they compete with each other in the market until one way of farming declines? How do peasant farms improve or, in what way do cooperatives or Dragon-head enterprises challenge them? What will be the new relational dynamics between capitalist farms, cooperatives, and dragon-head enterprises? All these questions are essential for understanding the Chinese agrarian transition and the future of its agriculture and rural society.

Changes in agricultural production factors and China’s role in the global food market

³⁴ Jan Douwe Van der Ploeg, *The new peasantries: struggles for autonomy and sustainability in an era of empire and globalization*, (London: Routledge, 2009).

³⁵ “Woguo zhuyao nongchanpin shengchan liutong xiaofei jiage guanxi yanjiu” [“Research on the price relations of main agricultural products during production, distribution and consumption”], *National Bureau of Statistics of PR China*, (12 June 2014), available at:

http://www.stats.gov.cn/tjsj/tjsj/tjcb/dysj/201406/t20140612_567159.html (accessed 6 September 2016)

³⁶ “Nongcun hezuoshe jin baiwan” [“The total of rural cooperatives in China closes to one million”], *Jingji Cankao Bao* [*Economic Information*], (22 February 2014), available at: http://jckb.xinhuanet.com/2014-02/22/content_492636.htm (accessed 9 August 2016)

³⁷ Laoshi Liu, ‘Hezuoshe shijian yu bentu pingjia biaozhun’ [‘Practice of Rural Cooperatives and Local Evaluation Criterion’], *Kaifang Shidai* [*Open Times*] 12, (2010), pp. 53-67.

³⁸ Philip C. C. Huang, Gao Yuan and Yusheng Peng, ‘Capitalization without proletarianization in China’s agricultural development’, *Modern China* 38(2), (2012), pp.139-173.

³⁹ Hairong Yan and Yiyuan Chen, ‘Agrarian Capitalization without Capitalism? Capitalist Dynamics from Above and Below in China’, *Journal of Agrarian Change* 15(3), (2015), pp. 366-391.

As mentioned in the introduction, research carried out by scholars abroad assumes that China's increasing demand for food-feed-energy is leading to its direct investment in land and agriculture abroad. The agrarian discussions held outside of China have focused on China's impacts on resource acquirement, local agricultural production, and indigenous livelihoods abroad. But these research on China's overseas agricultural investment seldom looked into China's domestic agrarian transition. Yet, the domestic agrarian change is tightly related to China's relationship with the global food system. So how do we understand the agrarian transition inside China as well as its agricultural strategy abroad? Relating to this question, it is also important to figure out whether food insecurity is the reason for China's agro-food investments abroad and, whether these investments are directly on land and agricultural production, as both of these assumptions have been demonstrated as true in the land grabbing literature.⁴⁰

According to the official statistical categories, the main agricultural products in China are grain, cotton, oil crops, sugar, wood, fruit, and vegetables. This article focuses on the farm products for food and feed, so cotton and wood are not included. The selected agricultural products can be divided into two groups: one group contains low-value agricultural products, including wheat, rice, corn, and soybeans; the other contains high-value products, such as oil crops, pork, sugar, fruit, and vegetables. The line charts below show the trends of the annual outputs of these agricultural products since 1990.

[Figure 2 near here]

[Table 1 near here]

[Figure 3 near here]

[Table 2 near here]⁴¹

From figure 2 and table 1, it can be derived that in the past 22 years annual the outputs of rice and wheat show a similar trend: great achievements in the 1990s; and rising after a slight decline at the beginning of the 2000s. The trade data show that China has changed its role of rice exporter and wheat importer and that both the rice export volume and the wheat import volume declined. This reflects the results of long-term government intervention policy that aims to equilibrate the balance of supply and demand for rice and wheat in the domestic market. Maize is probably the fastest growing low-value crop in China as its output has more than doubled during this short period. The trade data also reveal large maize exports in the past, but the export volume has continuously decreased. One reason is that the domestic maize price is protected by the Chinese government and is higher than the global market price. As a result, Chinese maize lost competitiveness in the global market.⁴² Another reason is that the increased maize output can be consumed mainly by the growing domestic demand for feed in

⁴⁰ Deborah Brautigam, *Will Africa Feed China?* (Oxford: Oxford University Press, 2015). pp. 1-7.

⁴¹ NES refers to 'not elsewhere specified', which means these categories don't include items that are listed separately.

⁴² "Rang Yumi jiage huigui shichang" ["Return the maize price to the market"], *Zhongguo Qingnian Bao* [China Youth Daily], (28 January 2016), available at: <http://news.sina.com.cn/c/2016-01-28/doc-ifxnzanm3750780.shtml> (accessed 26 August 2016)

livestock rearing and for raw material in energy, medicine, chemicals, and bioindustry, that is, intensive husbandry.⁴³ Although there is a rising demand for soy as feed and raw material for industry, the soy production inside China witnessed a continuous decline while the soy import volume rose rapidly since 2000. It implies that low-value crops that lack government-set prices are not the crop choices of Chinese peasants anymore. This situation also applies to oil crops and sugar that turned from relatively high-value crops into low-value crops due to the shrinking profit margin between the medium price in the market and the rising labor costs during production. Therefore, we can see in table 2 that the import volume of oil and sugar has kept growing year by year. Just as Huang argued, Chinese peasants turned to high-value agricultural products like meat, vegetables, fruits, etc. Figure 3 shows the dramatic boom of vegetables and fruits production in China, which has also resulted in a noticeable increase in the export of vegetables and fruits. Pork, the most consumed meat in China, also doubled in output in the past two decades, but the volume of imports still went up.

Looking at the domestic output, import and export data of the main agricultural products it becomes clear that China's agro-investments abroad are related to the structural change in domestic production, and not to food insecurity. The grain self-sufficiency rate is sufficiently high in China. The contradiction is between nongrain low-value crops (soy, oil crops, and sugar crops) and high-value products (meat, vegetables, and fruits). Chinese peasants have increased the production of high-value agricultural products for both the domestic market and the global market. For the supply of soy, oil, and sugar China has increasingly turned to the global market (see figure 4). Therefore, the argument that food insecurity is forcing China to invest in land and agricultural production abroad is questionable. Structural change in domestic agricultural production is the reason why China turned to overseas agricultural investment. The structural imbalance of Chinese agricultural production therefore cannot be equated merely with food insecurity. Although China's import volume of soy, oil, sugar and other low-value crops is substantial, the deficit in the balance of agricultural trade is not remarkable. This is mainly because China exports high-value agricultural products to the global market.⁴⁴

[Figure 4 near here]

The domestic structural change in agricultural production pushed China to seek for large amounts of low-value crops from abroad, which is the core of the Agricultural 'Go Out' strategy. But the question is whether China's overseas agricultural investment critically depends on direct investment on land as the land grabbing literature argues.⁴⁵ Cotula and Vermeulen, in 2009, explained, 'Acquisition of foreign land for domestic food security is not part of China's mix of policies for national food security. In 2008 a draft policy document drawn up by China's Ministry of Agriculture did advocate the acquisition of foreign land for food security purposes, and the proposal was intensely debated; but finally, it was not adopted because of the perceived high political risks related to dependency on outsourced agricultural

⁴³ "Woguo Liangshi Gongqiu ji 'shisanwu' shiqi jushi yuce" ["Domestic food supply and the trend forecast of 'Thirteenth Five' Period"], *Guojia Tongjiju* [National Bureau of Statistics of PR China], (13 March 2015), available at: http://www.stats.gov.cn/tjzs/tjsj/tjcb/dysj/201503/t20150313_693961.html (accessed 4 September 2016)

⁴⁴ For instance, in 2014, China imported about 100 million tons of low-value crops and products (including grains, soy, vegetable-oil and sugar), with a total value of 59 billion USD. The export value of vegetables, fruits, aquaculture products, herbs, tea and tobacco were 44 billion USD. Data source: *Guojia tongjiju* [National Bureau of Statistics of PR China].

⁴⁵ See introduction.

production for domestic food security'.⁴⁶ Hofman and Ho argued that not only the data quality and reliability about Chinese land grabs is problematic, but also China's overseas land-based investments should be understood as 'development outsourcing' – 'the contracting out of a business function to an external party due to comparative advantages in labor costs or economies of scales.'⁴⁷

There is still a wide range of international debate on the objectives, mechanisms, scope, and impact of overseas land-based agricultural investment. Yet, it might be argued that the goal of China's overseas agricultural investment is not direct land investment. It is rather to get more secure channels of overseas food supplies and gain global power in the global agricultural commodity trade. Freeman and others pointed out that the Chinese government launched a series of measures to secure foreign supplies for its domestic food demand, among which resorting to the international market and state-supported agricultural project abroad are typical ways.⁴⁸ On China's overseas state agribusiness, Xu and others argued that China's state-owned enterprises (SOE) had turned into independent market players since the 1990s when the market-oriented reform started.⁴⁹ Since the ABCD food companies control about 90% of the grain trade in the world and also have great power in the global sugar and oil market.⁵⁰ China is at a disadvantage in the global commodity value chain as a larger buyer. Therefore, China's overseas agricultural investment has been to compete with global agribusinesses on the purchase, processing, trade, and transportation. For instance, to expand overseas China's sugar business 'COFCO' took over 'Australian Tully Sugar' and the 'Noble Agri Group' in 2011 and 2014 respectively.⁵¹ The sugar business covers a broad range of activities from sugarcane processing to transportation instead of land investment and sugarcane production.

To summarize, the agrarian discussion on China's overseas agricultural investment and its domestic agrarian change should be understood together. China is not a food insecure country currently. The recent increasing imports of agricultural products (mainly low-value products) is caused by domestic agricultural structural change. In addition, China exports high-value agricultural products, like vegetables, fruits, aquaculture products, herbs, tea, tobacco, nuts, etc. China is not a threatening land grabber either. Chinese agribusiness focuses more on food processing and trade rather than on direct investment in land and agricultural production. The controlling of the agricultural commodity chain and the value appropriation by giant global

⁴⁶ Lorenzo Cotula, Sonja Vermeulen, Rebeca Leonard and James Keeley, *Land grab or development opportunity?: agricultural investment and international land deals in Africa* (London/Rome: IIED/FAO/IFAD, 2009), ISBN: 978-1-84369-741-1

⁴⁷ Irna Hofman and Peter Ho, 'China's 'Developmental Outsourcing': A critical examination of Chinese global 'land grabs' discourse', *The Journal of Peasant Studies* 39(1), (2012), pp. 1-48.

⁴⁸ Duncan Freeman, Johathan Holslag and Steffi Well, 'China's foreign farming policy: can land provide security', *BICCS Asia paper* 3(9), (2008), pp. 3-27.

⁴⁹ Xiuli Xu, Gubo Qi and Xiaoyun Li, 'Business Borderlands: China's Overseas State Agribusiness', *IDS Bulletin* 45(4), (2014), pp.114-124.

⁵⁰ ABCD food companies refers to the four giant transnational food companies; they are Archer Daniels Midland, Bunge, Cargill, and Louis Drefus. The four companies dominate the global trade of main agricultural products, like grain, soy, edible oil, sugar, etc.; Sophia Murphy, David Burch and Jennifer Clapp, *Cereal Sectrets: The world's largest grain traders and global agriculture* (Oxford: Oxfam International, 2012), ISBN: 978-1-78077-150-2.

⁵¹ "COFCO owns 99% of Tully Sugar", China Daily, accessed August 29, 2016, http://www.chinadaily.com.cn/bizchina/2011-07/20/content_12943795.htm; "Zhongliang tunhe shougou Tully Tangye, haodu 'quantang chanyemeng'" ["COFCO took over Tully Sugar, bet on its 'sugar industry dream'"], Caijin Wang [Fianctial and economic website], available at: <http://stock.caijing.com.cn/2013-04-15/112674840.html> (accessed 29 August 2016); "Zhongliang yu laibao qitan zujian hezi qiye" ["COFCO and Noble discuss on a joint venture"], Diyi Shipin Wang [Foods1 website], available at: <http://www.foods1.com/content/2496174/> (accessed 29 August 2016).

agribusiness should be understood using the “food empire” framework, Chinese food companies are just the same as other global agribusinesses.⁵²

Agricultural structural change in China

The ‘hidden agricultural revolution’ mainly refers to the agricultural structural change within China. Its driving force is the transformation of the food demand rather than the factors internal to agriculture (such as seeds, fertilizer, new machinery, etc.). The Chinese diet structure of grains, meat-fish, and vegetables-fruits changed from the traditional 8:1:1 - 5:2:3 in the past 30 years.⁵³ The rising demand for meat-fish, vegetables-fruits, and their higher value-added properties attracted peasants to produce these products. Huang argues that the change in agricultural production resides in the output value instead of productivity. The output value of meat-fish and vegetables-fruits was about two-thirds of the total agricultural output value in 2007 compared with only one-sixth in 1978. Besides, these agricultural products boosted the whole output value of agriculture. In 2007, the total output value of agriculture was 5.1 times of that in 1980.⁵⁴ Many studies reach the same conclusion, that is, the Chinese dietary food demand has turned to less grain and more meat-fish-milk-vegetables-fruits. Although these studies are from different perspectives, including the rising consumption of meat and milk, nutrition transition, the impact of income on food demand and the tendency of eating outside the home, etc.⁵⁵ However, the question arises to what extent the structural product change in agricultural production is caused by the exogenous force of the diet structural transition?

[Table 3 near here]

Table 3 verifies that Chinese food demand has turned to less grain and more high-value-added products such as meat, dairy products, and fruits. However, the vegetable data seems not to match Huang’s argument. The point about vegetables is that although the per capita consumption by both urban and rural residents declined, the fast urbanization and the increased population in China imply that total demand increased.⁵⁶ Thus, the diet structural transition is one reason that drives Chinese peasants to produce more high-value products. However, from the trade data in the third section, we have seen that China also exports large amounts of vegetables, fruits, and aquaculture products. In addition, Chinese peasants also turned to produce more herbs, tea, tobacco, nuts, silk, etc., which are high-value crops but

⁵² Jan Douwe Van der Ploeg, *The new peasantries: struggles for autonomy and sustainability in an era of empire and globalization*, (London: Routledge, 2009).

⁵³ Huang Zongzhi, ‘zhongguo de yinxing nongye geming’ [‘China’s hidden agricultural revolution’], *Kaifang Shidai* [Open Times] 2, (2016), available at: <http://www.opentimes.cn/Abstract/2093.html> (accessed 3 October 2017)

⁵⁴ Ibid.

⁵⁵ Christonpher L. Delgado, ‘Rising consumption of meat and milk in developing countries has created a new food revolution’, *The Journal of Nutrition* 133(11), (2003), pp. 3907S-3910S; Shufa Du, Bing Lu, Fengying Zhai and Barry M. Popkin, ‘A new stage of the nutrition transition in China’, *Public health nutrition*, 5(1a), (2002), pp. 169-174; Xuguang Guo, Thomas A. Mroz, Barry M. Popkin and Fengying Zhai, ‘Structural change in the impact of income on food consumption in China, 1989–1993’, *Economic Development and Cultural Change* 48(4), (2000), pp. 737-760; “Wen tiejun: nongye shengchan lingyu chanye ziben mingxian guosheng” [“Wen Tiejun: Agricultural production sector shows up excessive industrial capital”], *Zhongguo Jingying Bao* [China Business Journal], (17 December 2012), available at: http://www.farmer.com.cn/xwpd/jjsn/201212/t20121217_785757.htm (accessed 3 October 2017)

⁵⁶ The urban population rate went up from 26.41% in 1990 to 52.57% in 2012. In 1990, the urban population counted 301.95 million people and the rural population 841.38 million. In 2012, the urban and rural population counted respectively 711.82 million and 642.22 million people.

have little relation to the dietary structural change in China. Therefore, it is indispensable to look also into the factors within agricultural production that possibly relate to agricultural structural change. This article mainly examines the changes in market prices of farmland and rural labor.

In theory, if we want to examine the fluctuation of labor cost in agricultural production, the average wage for hired agricultural workers should be investigated. However, in the context of China agricultural production still mainly relies on family labor, which is non-marketized (see Huang et.al 2012). Besides, the limited data on the wage of hired agricultural labor in certain agricultural activities (for instance vegetables and fruits production) cannot represent the rural labor price in general. In many studies on agricultural productivity or profit efficiency, ‘shadow prices’ was used as the approach to compensate the implicit price information.⁵⁷ Shadow prices refer to the ‘generalized profit function incorporates price distortions resulting from imperfect market conditions, and socio-political and institutional constraints.’⁵⁸ Thus, another indicator is adopted in this article to understand the change in labor cost in agricultural production. Figure 5 shows the average monthly wages of peasant workers between 1993 and 2015.⁵⁹ The average monthly wage of peasant workers signifies the opportunity wage of rural labor in China. The annual data of the average monthly wage of peasant workers indicates that the actual value of rural labor in China is nearly eight-fold of that in two decades earlier.

[Figure 5 near here]⁶⁰

There are no nation-wide statistics on farmland price due to wide divergences in geographical location, land quality, economic influences, and local government intervention.⁶¹ However, official reports and some regional studies have noticed the rapid rise of rental price in the farmland transfer market. As early as 2008, a report by the Investigation Team of National Bureau of Statistics in Jilin province, already pointed out that the increasing land transfer price started to influence the production costs of crop planting, which became a restrictive condition to the production of low-value crops, like maize.⁶² In the following year, the Investigation Team of National Bureau of Statistics in Fujian province published a report on the situation of rural land transfer in Fujian. It showed that the land transfer price had doubled

⁵⁷ Tim J. Coelli and D. S. Prasada Rao, ‘Total factor productivity growth in agriculture: a Malmquist index analysis of 93 countries, 1980–2000’, *Agricultural Economics* 32, (2005), pp. 115-134.

⁵⁸ Jirong Wang, Eric J. Wailes and Gail L. Cramer, ‘A shadow-price frontier measurement of profit efficiency in Chinese agriculture’, *American Journal of Agricultural Economics* 78(1), (1996), pp. 146-156.

⁵⁹ The data of monthly wage here is not inflation adjusted. However, Zhang and Clovis argued in the article titled as “China inflation dynamics: Persistence and policy regimes” that the persistence of the CPI inflation manifests a significant reduction around 1997; since the late 1990s China kept inflation low and stable. Chengsi Zhang and Joel Clovis, ‘China inflation dynamics: Persistence and policy regimes’, *Journal of Policy Modeling* 32(3), (2010), pp. 373-388.

⁶⁰ Feng Lu, ‘Zhongguo nongmingong gongzi zoushi: 1979-2010’ [‘The trends of wage change of Chinese migrant workers: 1979-2010’], *Zhongguo Shehui Kexue Bao* [Social Science in China Press] 7, (2012), pp. 47-67.

⁶¹ There are different types of land in rural China, for example, rural construction land, requisitioned land for urban uses. The prices for different types of land vary widely. This article only focuses on the rental prices of the land used for farming.

⁶² “Dali tuidong tudi liuzhuan, zhuli tuijin ‘sannong’ gongzuo” [“Facilitate land transfer and promote working on ‘three rural issues’”], *Guojia tongji ju* [National Statistics of PR China], (6 January 2011), available at: http://www.stats.gov.cn/zjtj/ztfx/dfxx/201012/t20101227_35288.html (accessed 18 September 2016)

within a few years.⁶³ One media report based on a survey on the land transfer price in Anhui province shows that the land transfer price increased five times between 2003 and 2013.⁶⁴ More discussions about increasing land price effects on agricultural production can be found in the media. Since growing grain crops became nonprofitable due to high land costs, turning to plant high-value products and rural tourism became popular.⁶⁵

Admittedly, many factors might impact the structural adjustment of China's agricultural production. But among these, the prices of the most relevant factor (e. g. farmland and rural labor) are strategic, as convincingly argued by Hayami and Ruttan.⁶⁶ The increased shadow-prices of rural labor and farmland have driven the peasant households towards an ongoing intensification. They opted to plant the high-value crops, invest in new technologies, buildings, and machinery. By doing so they responded on the one hand to the increased prices of land and labor and, on the other, provided the cities with their needed supply of more high-value food.

Huang did not pay attention to the change of the most important factors inside Chinese agricultural production – the rising market price of land and labor. Furthermore, Huang's analysis is limited to the production activities within rural households, which means that he left out the external relations of peasant farms, that is, with new agricultural production actors. Similarly, concerning the argument of 'emerging capitalist actors with de-peasantization tendency,' neither do Yan and Chen pay much attention to the changes in land and labor costs. The critical research for the future is to figure out how these new actors in agricultural production could develop with the increasing land rent and labor costs, and which production modality can succeed, and that will last in the long run. As mentioned in the second section, although peasant household farming is still dominant in Chinese agricultural production, this modality is experiencing fundamental change inside and outside its production unit. The key to understanding the current agrarian change in China is to examine the internal change of household farming, its external relations with new agricultural production actors and the interactions between the two trajectories.

Conclusion

This article presents a critical analysis of the current agrarian discussions on China. It tries to reinterpret the empirical data and reflect on the theoretical discussions.

This article categorized three general types of agricultural production in China – 'household-led,' 'cooperative-led,' and 'corporate-led,' and distinguished different production modalities in each type. Even though Chinese agriculture still relies on peasant farming, changes within peasant farming, new actors in agriculture production and emerging relations

⁶³ "Fujian nongcun tudi jingying quan liuzhuan qingkuang diaocha fenxi" ["Analysis on the situation of rural land transfer in Fujian Province"], *Guojia tongji ju [National Statistics of PR China]*, (2 July 2009), http://www.stats.gov.cn/ztc/ztfx/dfxx/200907/t20090701_34848.html (accessed 18 September 2016)

⁶⁴ "Shinian lai Anhui tudi liuzhuan sudu jizeng, jiage zhunian shangsheng" ["Land transfer sped up and land price increased in Anhui Province in the last decade"], *Zhongguo Jingji Dapdao [China Economic Herald]*, (11 December 2013), available at: <http://www.ceh.com.cn/shpd/2013/12/280902.shtml> (accessed 17 September 2016)

⁶⁵ "Guimohua zhongliang duo gaizhong jingji zuowu huo guanguang, tudi liuzhuan de 'fei liang hua' chongdong" ["Scaled-up land turns to growing economic crops or tourism, the 'non-grain oriented risk' of land transfer"], *Lu Wang [Lu website]*, (23 April 2014), available at: http://f.sdnews.com.cn/sdcj/201404/t20140423_1589738.htm (accessed 2 October 2016); "Liuzhuan feiyong gao, zhongliang dahu zenmeban" ["High land transfer cost challenges the grain farmers"], *Shijiazhuang Xinwen Wang [Shijiazhuang Daily]*, (9 April 2015), available at: http://www.sjzdaily.com.cn/finance/2015-04/09/content_2398451.htm (accessed 9 October 2016)

⁶⁶ Toshihiko Kawagoe, Yujiro Hayami and Vernon W. Ruttan, 'The intercountry agricultural production function and productivity differences among countries', *Journal of Development Economics* 19 (1-2), (1985), pp. 113-132.

between peasant households and the new actors are shaping a different picture of agricultural and food production in China. Therefore, this article argues that it is necessary to look into both internal changes of peasant farms and their external relations with the new agricultural production actors and to pay attention to the interactions between the two trajectories.

The data on China's domestic production and international trade show that the structural change of domestic agricultural production turned China into a large buyer of low-value agricultural products (like soy, vegetable oil, and sugar) from the global market. However, China cannot be labeled as food insecure country currently since it exports large amounts of high-value agricultural products instead (vegetables, fruits, aquaculture products, herbs, tea, tobacco, nuts, etc.). The possible effect of climate change or sudden economic shock on food security might be the concerns of China for its overseas agricultural investment, however, the Chinese overseas agricultural investment so far is not a land-focused investment but more on gaining more secure channels of off-shore food supplies and market power on global food trade. Therefore, this article suggests that the focus of studies on China's agro-food activities abroad and the domestic agrarian debates can and should be taken together. Relating to the thesis of agricultural structural change in China, Huang only pointed at the exogenous cause – the restructuring of Chinese food consumption. As a complementary argument, this article points out the internal production factors of rising land rent and labor price are also important drivers of structural change in Chinese agricultural production.

For the policymakers in China, it can be challenging at this moment to make significant policy design on the agricultural and food sector. Since there are many contradictions emerging in the process, that is, the contradiction between bring in new actors of agricultural production and ensuring rural livelihood, the contradiction between peasant farms growing high-value products and the state limiting grain importation, the contradiction between domestic food demand and profitable orientation of agricultural products export, the contradiction between opening to global food market and maintaining stability of domestic food supply, etc. However, the agrarian situation inside China and China's relation with the global food market will continue changing, and simultaneously the debates will go on.

Notes on the Contributor

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Figures

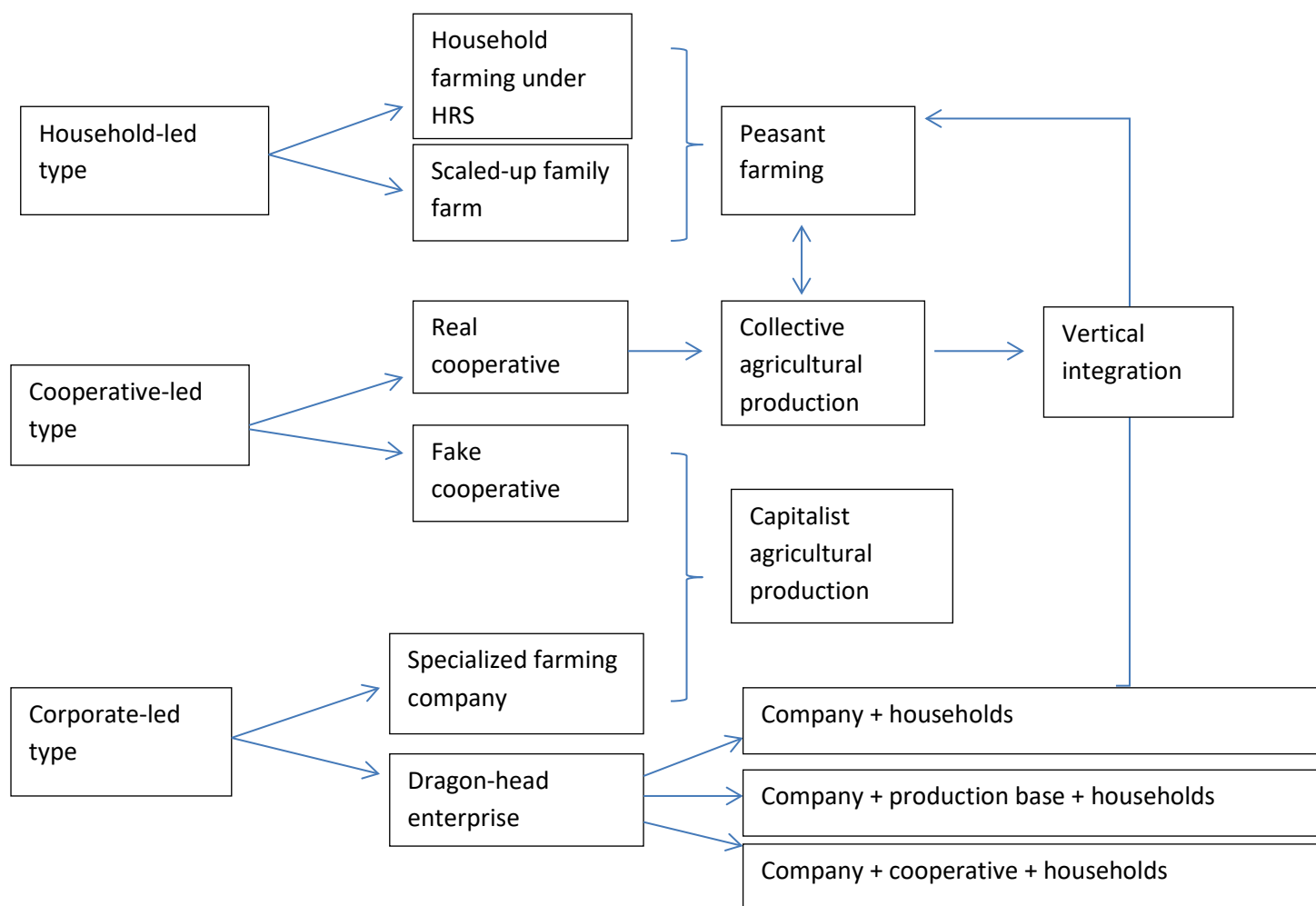


Figure 1. Schema of current agricultural production modalities and their interrelationships

Note: The taxonomy is summarized by the author based on the author's empirical knowledge and theoretical analysis, as well as the relevant second-hand data from academic articles, media articles and governmental reports.

Fake cooperatives refer to the situations that some of the cooperatives are controlled by several rich households or external investors, whereas others are registered mainly to access to the government subsidies.

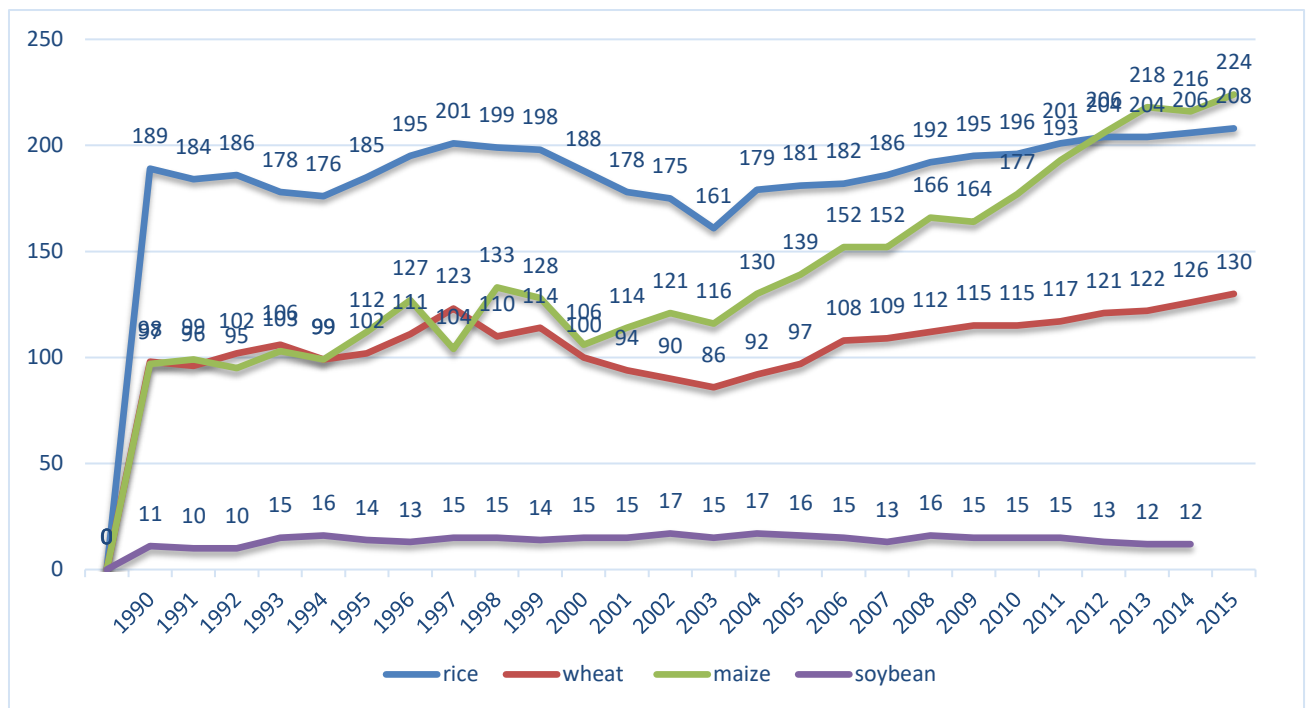


Figure 2. The annual outputs of low-value agricultural products since 1990 (unit: million tons)

Data source: Guojia tongjiju [National Bureau of Statistics of PR China]

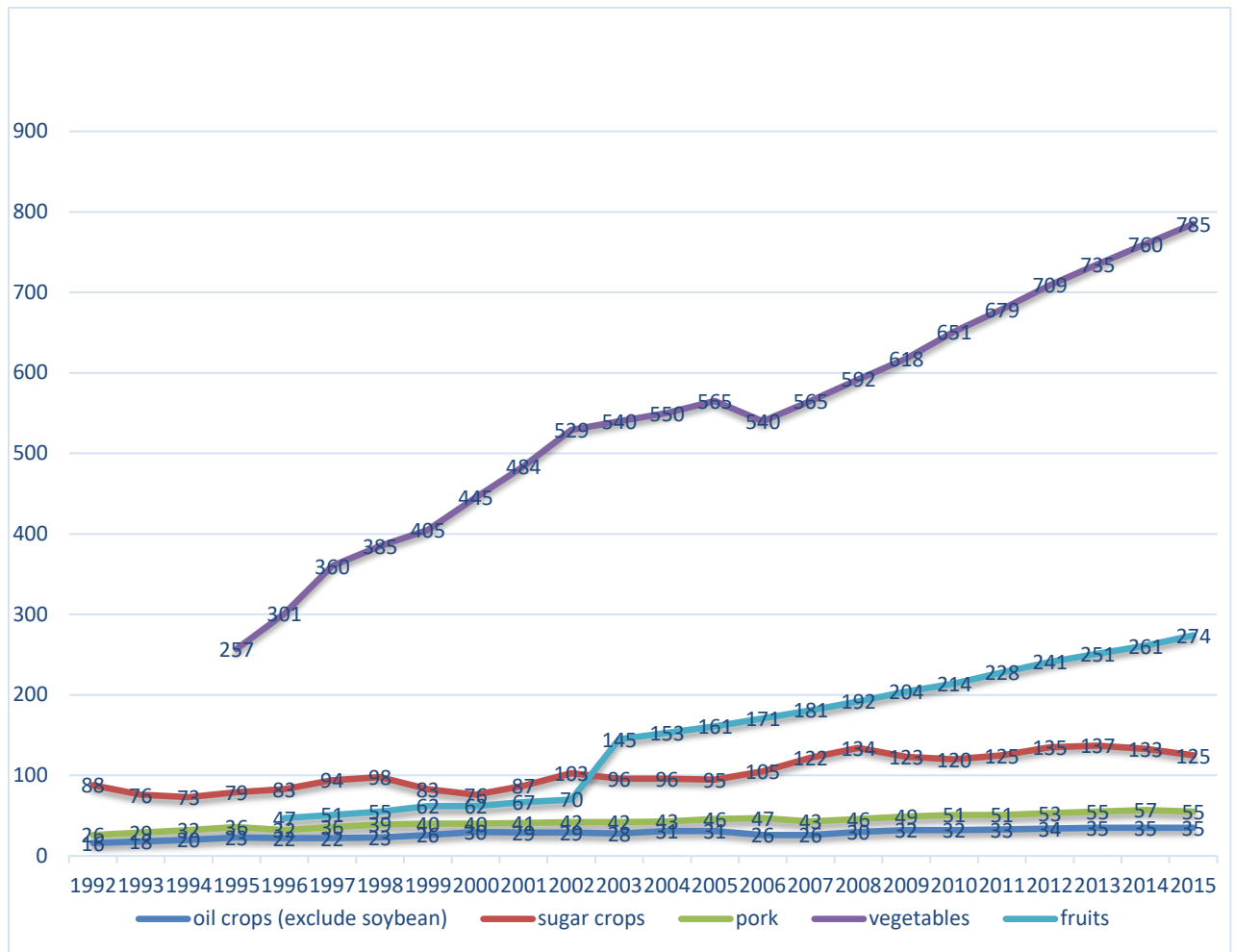


Figure 3. The annual outputs of high-value agricultural products since 1990 (unit: million tons)

Source: Guojia tongjiju [National Bureau of Statistics of China]

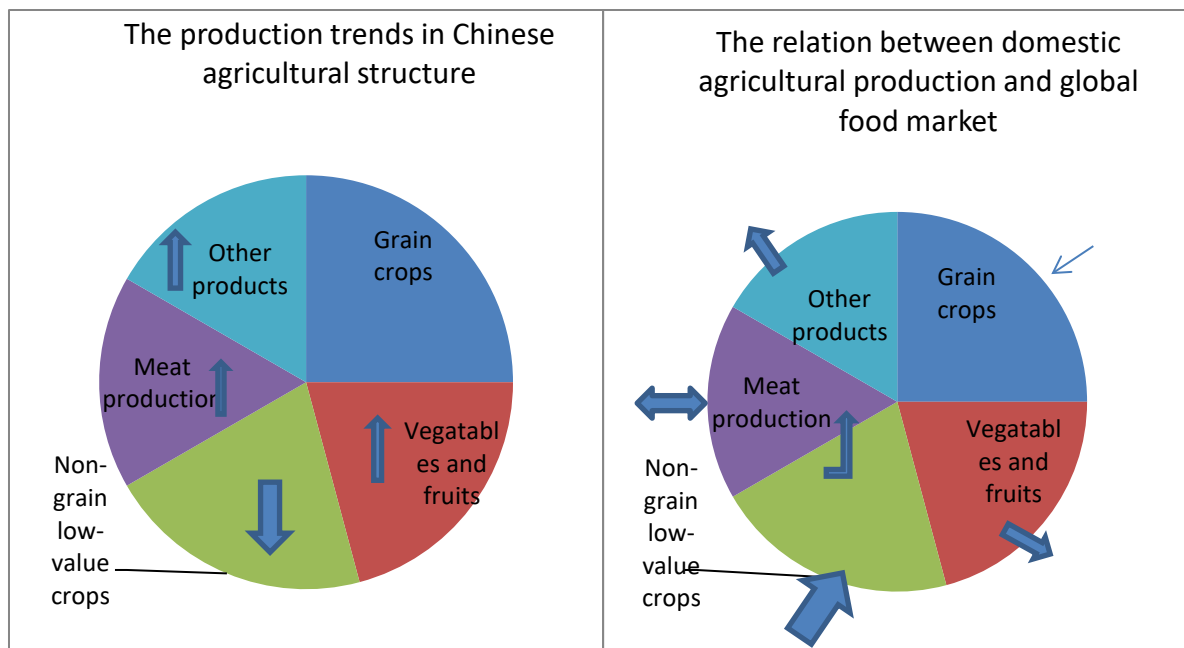


Figure 4. Depiction of domestic agricultural production trends and the relations between domestic agricultural production and the global food market in the past two decades (based on the figures and tables above).

Note: “meat production” includes intensive husbandry and aquaculture; the double-direction arrow in the right pie chart reflects that China imports pork, beef, mutton, and poultry while almost equally exporting aquaculture products. “Other products” mainly refers to other high-value farm products that Chinese farmers produce, including herbs, tea, tobacco, nuts, silk, etc.



Figure 5. Average monthly wage of peasant workers annually since 1990s

Data source: Zhongguo nongmingong gongzi zoushi: 1979-2010 [The trends of wage change among Chinese migrant workers: 1979-2010]; and Guojia tongjiju [National Bureau of Statistics of China].

Tables

Table 1. The annual import-export volumes of low-value agricultural products in China since 1990 (unit: 10,000 tons)

	Rice (milled equiv.)		Wheat		Maize		Soybean	
	Import	Export	Import	Export	Import	Export	Import	Export
1990	5.89	32.60	1252.73	0.32	36.88	340.43	0.09	94.03
1991	14.27	68.88	1236.77	0.17	0.05	778.19	0.08	110.90
1992	10.36	95.28	1058.13	0.27	0.01	1034.02	12.07	65.82
1993	9.62	142.04	642.39	8.69	0.03	1109.73	9.86	37.32
1994	5.12	144.84	729.93	10.71	0.06	874.00	5.16	83.18
1995	164.03	4.63	1159.00	1.62	518.10	11.25	29.39	37.51
1996	76.04	25.44	824.60	--	44.11	15.87	110.75	19.17
1997	32.62	93.33	186.06	0.07	0.04	661.73	287.59	18.57
1998	24.38	372.57	148.94	0.60	25.06	468.63	319.25	16.99
1999	16.81	269.06	44.81	0.09	7.02	430.50	431.86	20.44
2000	23.86	293.38	87.60	0.25	0.31	1046.56	1041.91	21.08
2001	26.91	184.76	69.01	45.48	3.61	599.80	1392.95	24.84
2002	23.56	196.39	60.46	68.76	0.63	1167.35	1131.44	27.59
2003	25.69	258.50	42.42	223.75	0.12	1639.95	2074.10	26.75
2004	75.64	88.10	723.29	78.39	0.24	231.82	2023.00	33.46
2005	51.40	65.74	351.01	26.03	0.40	861.10	2659.00	39.65
2006	71.82	121.84	58.41	111.41	6.52	307.05	2827.00	37.90
2007	47.06	130.35	8.34	233.66	3.52	491.66	3081.72	45.65
2008	29.33	94.68	3.19	12.59	4.91	25.25	3743.63	46.51
2009	33.27	76.21	89.37	0.84	8.36	12.95	4255.17	34.66
2010	36.32	59.89	121.87	<0.01	157.24	12.76	5479.78	16.36
2011	57.50	48.91	124.88	3.98	175.28	13.60	5245.29	20.83
2012	233.44	26.66	368.86	0	520.71	25.73	5838.26	32.01
2013	223.58	45.07	550.67	0.25	326.49	7.76	6337.78	20.90

Data source: FAOSTAT

Table 2. The annual export-import volumes of high-value agricultural products since 1990
(unit: 10,000 tons)

	Edible oil		Sugar, Total (Raw Equiv.)		Pork		Vegetables (fresh, nes)		Fruits (fresh, nes)	
	Import	Export	Import	Export	Import	Export	Import	Export	Import	Export
1990	--	--	114.72	61.97	--	--	0.02	27.45	0.06	0.32
1991	--	--	101.77	37.27	--	--	0.02	30.53	0.02	0.18
1992	--	--	110.34	180.84	--	--	0.09	18.35	0.04	0.49
1993	--	--	45.38	200.93	0.003	3.80	0.21	21.46	0.21	0.27
1994	163.00	27.03	155.79	102.65	0.014	8.33	0.32	28.99	0.70	0.64
1995	213.00	49.60	298.75	52.01	0.07	11.81	0.49	28.41	0.98	0.82
1996	264.00	47.35	125.91	72.06	0.05	7.45	0.63	37.05	2.33	0.88
1997	275.00	82.29	79.02	41.05	0.006	7.40	1.29	44.71	1.09	1.23
1998	206.00	30.92	48.70	47.26	0.09	7.58	2.17	52.44	2.03	2.31
1999	208.00	9.66	42.16	39.85	5.84	4.36	1.44	39.12	5.21	5.67
2000	179.00	11.15	64.76	45.04	13.61	4.64	0.81	35.87	8.96	5.40
2001	165.00	13.40	121.44	21.21	9.43	9.63	0.26	34.39	15.49	3.22
2002	319.00	9.74	119.36	35.34	14.49	14.20	0.13	42.62	12.90	6.53
2003	541.00	5.97	78.74	11.12	14.91	19.23	0.04	39.52	10.97	3.22
2004	676.00	6.52	123.08	9.19	7.05	27.63	0.08	35.06	12.90	3.69
2005	621.00	22.52	140.60	38.86	3.10	23.23	0.42	36.27	18.33	4.99
2006	669.00	39.92	136.99	16.69	2.38	24.93	2.12	39.12	21.81	4.56
2007	838.00	16.63	122.57	11.93	8.54	12.17	0.07	40.59	23.10	7.24
2008	816.00	24.76	80.15	6.29	37.31	7.41	0.05	41.88	34.81	7.17
2009	816.00	11.40	107.73	6.91	13.50	7.83	0.14	42.68	51.59	12.83
2010	687.00	9.25	178.36	10.22	17.63	9.99	0.06	45.26	57.57	12.12
2011	657.00	12.16	295.03	6.41	31.68	7.16	0.10	49.18	73.82	11.90
2012	845.00	9.95	377.51	5.08	15.43	13.22	0.03	51.52	87.74	9.76
2013	810.00	11.55	457.52	5.15	44.30	6.76	0.02	54.02	96.54	9.20

Data source: Guojia tongjiju [National Bureau of Statistics of PR China] and FAOSTAT

Note: only the figures of edible oil are drawn from Guojia tongjiju [National Bureau of Statistics of PR China].

Table 3. The main food products consumed per capita in the diet structure of urban and rural residents in China since 1990 (unit: kg)

		Grains	Vegetables	Veg oil	Pork	Eggs	Milk	Aquatic products	Fruits
Urban residents	1990	130.72	138.70	6.40	18.46	7.25	4.63	7.69	41.11
	1995	97.00	116.47	7.11	17.24	9.74	4.62	9.20	44.96
	2000	82.31	114.74	8.16	16.73	11.21	9.94	11.74	57.48
	2005	76.98	118.58	9.25	20.15	10.40	17.92	12.55	56.69
	2010	81.53	116.11	8.84	20.73	10.00	13.98	15.21	54.23
	2015	101.6	104.40	10.70	20.70	10.50	17.10	14.70	56.05
Rural residents	1990	262.08	134.00	3.54	10.54	2.42	1.10	2.13	5.89
	1995	256.07	104.62	4.25	10.58	3.22	0.60	3.36	13.01
	2000	250.23	106.74	5.45	13.28	4.77	1.06	3.92	18.31
	2005	208.85	102.28	4.90	15.62	4.71	2.86	4.94	17.18
	2010	181.44	93.28	5.52	14.40	5.12	3.55	5.15	19.64
	2015	150.20	90.30	9.20	19.50	8.30	6.30	7.20	29.70

Data source: Guojia tongjiju [National Bureau of Statistics of PR China]

Note: This is an estimated table, since only the data of purchased food quantities per capita by the urban residents can be found before 2013. However, the data can still provide the clear trends on diet structural change in China.