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Growth and Development of Organic Agriculture in Contemporary China:
A Study from the Producers' Perspectives

（中国における有機農業の展開－生産主体の視点から－）

The theme of this study is the current situation of China's organic agriculture sector and its producers. Driven by export opportunities in a growing global market, China's organic agriculture has been dominated in the initial stage by export-oriented companies. However, with a continuously expanding domestic market and consumers' higher awareness about environment and food safety, this sector has shown diverse ownership structures in the past few decades. With a primary focus on the production chain, this research studies three different models of organic production in China's organic sector, including the company leading model, the farmers' cooperative model, and the participatory guarantee systems model. Our findings lead to recommendations for policymakers and other stakeholders to better understand the present trends in China's organic agriculture industry and to emphasize the role of organic agriculture in China (not only its commercial value but also its social values rooted in the core of the organic agriculture movements).

Chapter 1 Introduction

Organic agriculture movements emerged in the 1930s as an alternative to the increasing intensification of agriculture when chemical intensive farming faced crisis in the form of soil degradation, poor food quality and the decay of social life and traditions. The organic agriculture movement in the Global North has been traditionally characterized by a small-scale, decentralized ownership structure with an orientation toward direct marketing, which has been mainly driven by individual farmers and non-government organizations. However, in the shadow of on-going processes of globalization, more recently there has been a lively debate among academics on whether there is a trend towards “conventionalization” in the organic sector, which is used to describe the processes organic agriculture is increasingly resembling the characteristics of the conventional industrialized agriculture that it had

originally opposed.

On the other hand, different from the Global North where organic farming has been mainly initiated by individual farmers and non-government organizations in response to the challenges caused by the conventional farming systems, the Global South shares a typical pattern of developing organic agriculture export-oriented and by contract farming, supporting organic food supply chains in the ongoing globalization. As the number and weight of members from the Global South increased, the scope of the organic sector has extended to more international scale, with a pattern more inclined to conventional contract farming that put more focus on the completion of production tasks, rather than the founding principles of organic agriculture, since the trades with the southern countries are often based on long-distance transport. Meanwhile, smallholder producer groups in developing countries are increasingly unable to bear the human resource and financial costs in this industrialized food supply system.

As the organic tea from Lin'an County of Zhejiang Province was exported using the Netherlands' SKAL certification, organic agriculture has been rapidly developing in China. In 2014, 2.1 million hectares of agricultural lands were certified as organic in China, which led to China having the fourth largest land area dedicated to organic cultivation. Before 1999, more than 95% of China's organic products were exported to overseas markets, mainly to the EU, US, and Japan. China's domestic organic market has been growing fast since 2000. With the rise of food consumption per capita of urban household increasing from 1,058.2 yuan in 1993 to 6,040.9 yuan in 2012, consumers, especially the rising middle class families from the major cities, are becoming more inclined to purchase healthier food in the market. In 2013, China's domestic market of organic products was the fourth largest in the world, with retail sales up to 17.5 billion Chinese yuan.

China's organic agriculture is initially driven by export-oriented opportunities based on contract farming, and develop-and-import schemes promoted by large suppliers and retailers in the Global North, which is regarded as a typical model of developing organic agriculture in the Global South. The early stage of China's organic agriculture shows a notable feature of being a supplier of organic ingredients by some western food manufacturers. However, this pattern has changed over the past two decades. With the increased awareness of food safety and rising demand for healthy products in the domestic market, China's organic agriculture has shown a trend with diversification away from the dominance of export-oriented to the co-existence of various ownership structures, in other

words, a trend of reverse development comparing with the Global North, which may lead this sector in China to having its own special features.

Among the whole chain of organic farming, producers have played an important role. In production, producers have to maintain an effective management to meet the requirements of organic cultivation and certification, while in downstream supply chain, a good marketing strategy is very important to its survival and profit after a considerable amount of front investment. Moreover, producers in China are facing more complex situations such as frequent food safety incidents, flooding product counterfeiters and the shortage of agricultural labor. With the expansion of China's domestic market and the increased participation of consumers in this sector, organic production model has been changing in the past decade. Thus, to have a better understanding of the current situation of China's organic agriculture, a research from a producer's view is necessary.

The major drivers behind China's organic agriculture in the early period were enterprises, both state-owned and private. Much of the market-oriented organic farming is an arrangement between trading companies and farmers, in which the companies are dominant. Currently, organic production in China is mainly organized in two models.

1) "Company leading" model, which includes "direct farming" and "contract farming". The former is also known as firm leasehold management, in which an organic company leases land from farmers and then manages the farm production. They provide inputs, technical advice as well as marketing channels; on the other hand, farmers are paid rent and become farm workers on the company's leased land. This model is particularly popular in the developed coastal regions of China and has provided useful opportunities for farmers in these areas, where agriculture is under intense pressure from industrialization and urban expansion.

In "contract farming", organic enterprises set up an organic production project in cooperation with a local agent or government in a village or township. Farmers in the designated project areas are asked to convert to organic production in line with the company's demand, and the company signs contracts with farmers for organic production and purchase. There are two points worth noting in "contract farming". First, rather than a producer, the role of organic enterprises is more like a middleman. It is the small household farmers who carried out the organic cultivation activities and then sell their products to those enterprises. Secondly, in such cooperation between companies and farmers, most of the farmers do not know the essence of organic production. It is the economic aspects that

attract them to cooperate with the enterprises. Sometimes organic companies with contracted farms have difficulties in monitoring every single sub-contracted farmer, and in many cases companies even prevent farmers from learning the process and leave them wholly dependent on the company.

2) “Farmer’s cooperative” model, under which the village administration or the farmers themselves organize producers’ associations to manage its production, and deal with the marketing and sales by themselves. Given the high cost of organic certification and its extensive requirements, it seems difficult for small households in China to operate organic farming independently. However, they appear to more wholly adopt organics and consequently appear to have better results in the field when it comes to a directly involvement of farmer’s organizations.

In addition, with rising doubts that organic agriculture has been marching towards a trend of conventionalization that may deviate from its original intention and create barriers for small-scale farmers, a new attempt called Participatory Guarantee Systems (PGS) has been developed in recent years as a solution to improve this situation. PGS came to China in the form of community supported agriculture, in which local producers and consumers are directly connected, thus organically grown products are no longer need to be certified by a third-party certification body as long as they gain trust from local consumers. Besides that, “local production for local consumption” initiated by the PGS has led to China’s organic agriculture having more social values, such as bridging China’s rural-urban divide and encouraging more small-scale farmers to participate. Since PGS was introduced to China in 2009, this model of cooperation has sprung up in big cities of China in just the past few years.

This dissertation has two objectives: 1) to gain a specific understanding of the current situation in China’s organic farming and to summarize its characteristics; 2) to analyze the different models of organic production in China and investigate of each model for its specific features. I make two main arguments in this study. First, I argue that with the Chinese government gradually improving the organic certification system and the rise of consumer awareness on the environment and food safety, China’s organic sector has been moving away from being dominated by export-oriented companies to becoming a more diverse sector over the past decade. This may lead this sector in China to have its own special features, which are not only different from the Global North but also from the other developing countries. Second, I argue that compared with the “company leading” model,

small households in the model of the farmer's cooperative show evidence of having more initiative. In the farmer's cooperative model, small-scale farmers have greater autonomy and also play a greater role in decision-making. Moreover, the increasing number of PGS indicates that there is an emergence of value-based initiatives that pay attention to the broader values of organic production and highlight the importance of direct interactions between consumers and farmers.

Chapter 2 China's Path to Organic Agriculture

Like many other countries in Asia, China's sustainable agriculture can be traced back to its traditional farming practices that existed thousands of years ago, which include several elements that are similar with modern organic farming methods such as crop rotation, composting and traditional ecological models which enable maintenance of soil fertility and good environment ecosystem that emphasized the balance between natural environment and human society without modern inputs.

Since the establishment of the People's Republic of China in 1949, to produce sufficient food has become the priority of the government to sustain its huge population. Agricultural productivity in China has been increased dramatically by adopting a series of strategies including distribution of hybridized seeds, synthetic fertilizers and pesticides. The so-called Green Revolution occurring between the 1940s and the late 1960s based on high inputs of fertilizer was widely extended to China in 1980s, which indeed greatly improved the food security and affected Chinese agriculture. However, along with the outputs of grain growing from 284.5 million tons in 1975 to 607.0 million tons in 2014, the use chemical fertilizer has been increasing from 8.8 million tons in 1978 to 60.0 tons in 2014, and so has the use of pesticide from 0.8 million tons in 1991 to 1.8 million tons in 2012. As a result, Chinese farmers are using more chemical fertilizers than any other farmers in the developed or developing countries. Figures from the Chinese Academy of Agricultural Sciences show that the average levels of fertilizer use has exceed the internationally accepted limit of 225kg per hectare in one-half of Chinese regions. In 2014, China's average fertilizer application amount per unit area reached 362 kg per hectare, which is 1.6 times of the internationally accepted safety limit 225 kg per hectare. For one ton grain production it consumes 98 kg fertilizers. Today, China is the major user of chemical fertilizers in the world. On less than one tenth of the world's arable land Chinese farmers apply about one third of the worldwide production of nitrogen fertilizers.

Behind the great success of feeding 22% of the world's population with only 7% of the world's land resources lie serious ecological problems. The overuse of fertilizers and pesticide has reduced organic substances and downgraded soil quality of farmlands, and led to a series of problems, such as resource exhaustion, destruction of the eco-environment and food safety. Meanwhile, the market-based reforms since 1978 has left China's environment in many regions more polluted, degraded and fragile, particularly in rural areas. At the same time, various scandals regarding the overuse of agro-chemicals have occurred and been reported as "poisoned food", which led to the ban of exporting Chinese-grown products to overseas markets. Safety and quality scandals have hit the food industry and consumer confidence. Agrochemical residues in food products, especially fresh food, became a major concern among Chinese consumers and policymakers. China's agriculture has been confronted with the challenges of maintaining a steady supply of food for the population on the one hand and creating a healthy environment on the other.

Since the early 1980s, many scholars have emphasized the degraded and polluted nature of the Chinese countryside and its fragility in the wake of environmentally inappropriate practices. Much attention has been paid to the negative effects of utilizing high amounts of chemicals. As a result, several strategies aiming at promoting sustainable agriculture have been made, such as the Chinese Ecological Agriculture (CEA), hazard-free food, green food, as well as organic agriculture.

China's organic agriculture began in the early 1990s, driven initially by export opportunities. Chinese enterprises, both state-owned and private, were contracted to produce organic products such as Chinese tea to be exported to European countries. The milestone of Chinese organic agriculture was set in 1990 when organic tea from Lin'an County of the Zhejiang Province was exported with SKAL certification of the Netherlands, which is regarded as the launch of organic movement in China. Since then, organic farming in China has been developing with international trades.

Currently in China there are 24 organic certification bodies including 22 local certifiers carrying out national certifications and four foreign certifiers (ECOCERT, IMO, BCS, and CERES) providing overseas certification. The number of organic certifications has increased from 22 in 2004 to 9,957 in 2013. The number of organic producers in China has increased from 102 in 2003 to 6,051 in 2013. By the end of 2013, retail sales of organic products in China's domestic market reached 17.5 billion Chinese yuan, which led to China having the fourth largest market in the world.

The development of China's organic agriculture can be roughly divided into three phases: 1) the period before 1999 witnessed the launch of an export-oriented organic movement in China, with more than 95% of China's organic product being exported to overseas markets. During this period, China's national policy on sustainable agriculture was mainly focused on the Chinese Ecological Agriculture (CEA) and green food. As CEA encountered a bottleneck and the strategy of grade-AA green food was not recognized internationally, the Chinese government then began to realize the importance of bringing organic agriculture into its international marketing strategy. 2) Between 2000 and 2010, the Chinese government set up and continually improved its regulations and standards of organic agriculture as well as the supervision mechanism of the third-party certification system. Several strategies at different levels promoted the growth of this sector. In this process, the export-oriented enterprises that developed during the first stage played an important role in the development of China's organic sector. As a result, China's organic agriculture industry became recognized internationally and also attracted more domestic attention. 3) After 2010, China's domestic market for organic products has grown rapidly. By the end of 2013, it became the fourth largest market in the world, with retail sales of organic products in China reaching 17.5 billion Chinese yuan. On the other hand, with the introduction of the Law of the People's Republic of China on Specialized Farmers Cooperatives and the rise of consumer groups in the domestic market, China's organic agriculture diversified away from export dominance to co-existing ownership structures. More and more groups, such as farmers' cooperatives and consumer groups, are now involved in this sector.

China's path to organic agriculture has a distinct feature of so-called advantage of backwardness, coincident with the theory of late-comer economic development raised by Gerschenkron (1962), in which he made the key idea of economic backwardness and argued that a country backward relative to more developed countries did not go through the same stages in the process of industrialization. Specifically, the tension created by the relative backwardness takes a political form, motivates institutional innovation, and leads to capital intensive, rather than labor intensive, methods of production. It also encourages large-scale production and dependence on borrowed, advanced technology. Gerschenkron also stressed that state intervention could compensate for inadequate supplies of capital, skilled labor, entrepreneurship, and technological capacity in relatively backward countries seeking to modernize.

Similar opinions about the advantage of backwardness can also be found in the

discussion between Yang (2000) and Lin (2003), who agreed that the huge technological and industrial gaps between China and developed countries also underscore China's advantages of backwardness, which turn into a driving force for sustained economic growth. These characteristics are reflected in the development of organic agriculture in China. First, export opportunities stimulated the growth of organic agriculture in China in the 1990s. Second, with the introduction of advanced cultivation techniques and internalization of existing management systems in developed countries, China needed only a decade to establish a sound third-party certification system with national regulations and standards. Third, the improved management system facilitated large capital injections in the organic sector and nurtured its prosperity in China's domestic market. Meanwhile, China's top-down food safety system also accelerated its expansion in the market. Fourth, with market maturity, China's unique characteristics have gradually spawned more players, such as independent farmers' organizations and an increasing number of consumer groups participating in the organic sector.

Chapter 3 Enterprise Behavior in China's Organic Agriculture

Export-oriented Enterprise - Shandong Boxing Longsheng Food Co., Ltd.

In this case Longsheng Company is chosen as a typical export-oriented organic enterprise. Following a large investment in organic conversion and farmland expansion, Longsheng Company's business became profitable after 2005. After 2010, the company significantly expanded its farmland to 1,279.6 hectares.

Longsheng Company tried "contract farming" on its Xingfu Farm in its early stages of development. This contractual partnership with local farmers is common in the Eastern coastal area of China, where the economy is relatively developed. However, because of the difficulty in overseeing every sub-contracted farmer, the company changed its strategy, adopting "direct farming" across all production bases.

After 2010, Longsheng gradually shifted its marketing strategy from taking only overseas orders to focusing mainly on the domestic market. One reason for this change was that it takes time to fully convert developed farmland to organic cultivation. During this conversion period, the company's strategy was to grow grain crops, such as wheat and corn, for the domestic market and then begin vegetable rotation when the farmland was fully converted. A second reason was the increasing difficulty of maintaining organic certifications to meet the specifications of international orders. Specifically, the company

had to maintain organic certifications of NOP, JAS, and EU, which necessitated hiring professionals and spending additional money and time.

The increasingly strict requirements of the Japanese import system, the positive list system which includes normal monitoring inspections, strengthening monitoring inspections and inspection orders, increased the export risk, leading the company to abandon its Japanese business in 2009. Since China's domestic organic market has been growing quickly in the last decade, Longsheng Company is putting more focus on the domestic market. However, Longsheng Company's expansion in the domestic market also encountered many problems. First, organic certification alone is not enough to expand sales because of the presence of counterfeit products in China's domestic market. Second, labor shortages and problems with achieving large-scale, mechanized operations for growing organic vegetables slowed its development. Third, because organic farming requires greater technical support, professional management is very important for the company's further development.

Domestic Market Enterprise - Haobao Organic Agricultural Co., Ltd.

Haobao Company, in Yunnan Province, is a typical organic food company in China's domestic market. Different from Longsheng Company, Haobao Company adopted "direct farming" initially, because it leased land from Daleju village, the Haobaoqing base, which was originally a large, barren, unfarmed hillside for nearly 12 years.

Originating from a city-level organic farm, the Haobaoqing Eco-Agricultural Company (predecessor of Haobao Company), led by Mingyi, was committed in its early years to producing organic products locally and promoting local community development. In 2012, injection of non-agricultural capital made the company adjust its strategy from a local business to one with sales branches across the country, which rapidly expanded its production bases. Since then, Haobao Company has been gradually expanding its sales to the whole country. This strategic change obviously features "conventionalization" of the organic sector, as discussed earlier.

However, such a rapid expansion led to several problems. First, the company invested too much money in expansion, resulting in funding strand breaks. As a result, the company had to abandon two of its production bases in 2015. Second, selling products only through membership limited the company's sales expansion. Compared with Longsheng Company, which entered the market in 2003, Haobao Company's entry into the market in 2012 was

too late. According to our earlier research, the number of organic producers competing in China's domestic market in 2014 had reached 7,526 - nine times the number in 2008. This explains Haobao Company's inability to expand sales channels. It also suggests that the new investors' expansion strategies are short-sighted. The expansion also was limited by the fact that Yunnan province is located in the inland area of Southwest China, whose market is not as developed as in China's East coast area. Moreover, a great imbalance exists between the amount of certified organic products and the company's supplements for its members, which has raised concerns that the company may be selling products that are not certified as organic. This opportunistic behavior is not uncommon in China's domestic market, but it is a potential threat that may slow down the development of the organic agriculture industry.

Chapter 4 Farmers' Cooperative in China's Organic Agriculture

FS Organic Farmers' Specialized Cooperative

In this section we studied the formation of organic rice production center of Wuchang City in Heilongjiang province. Afterwards, we use the case of FS Cooperative to discuss the characteristics and roles of farmers' specialized cooperatives during this process. Success of this formation attributed to the introduction of basmati rice and promotion of cultivation techniques from green rice to organic rice, most of which was led by Wuchang government. Rice private enterprises have taken responsibility on expanding rice sales channels since the privatization of rice business began in the 1990s. With high-quality seed and organic materials controlled by rice private companies, farmers were enclosed to work for those companies on rice production bases. However, as contract price was set for sales and technical guidance on organic farming was provided, farmers' organizations have developed on various levels. Meanwhile, with several rice companies competing in this area, farmers have more initiative to sell their products to companies that can provide a higher purchase price.

This study put focus on FS Cooperative. As an exclusive marketing cooperative set up by an organic fertilizer company at first, with the help from local government, FS Cooperative gradually got independent from HF Company. Both the technical department of township government and HW Company had played a significant role in this process. As a result, the cooperative has covered more than 60% of the paddy fields, and its members' income has been well protected with a contract price.

Since the competition of rice business in Minle Township is very fierce and the production base is in flux, it is difficult for a company to control farmers for their own interests only by controlling the production materials. Under these circumstances, independent farmer's cooperatives have developed their own organic businesses by taking over "contract farming" from large agribusinesses, which should not be regarded as a coincidence. Development of FS Cooperative is a good model to promote further cooperation between local governments and farmers.

Dai Village Organic Agricultural Specialized Farmers' Cooperative

In 2003, Dai Village was a poor, undeveloped area dominated by a small, agricultural economy where farmers were not well-organized. With support from ZAAS and the establishment of the Dai Cooperative in 2006, the village has been continuously converting its land for organic farming. Known as the "Dai Village Model", the success of the Dai Cooperative reveals that small farmers, if well-organized, can carry out organic farming activities in China. Characteristics of the Dai Cooperative can be summarized as follows.

First, unlike the FS Cooperative in Minle Township, where production base of organic rice has been well-developed, Dai village is located in a relatively backward region. To organize small-scale farmers engaging in organic production activities and to expand sales, powerful leadership is necessary. In this case, both ZAAS and the villagers' committee played an important role in land transfer and in the promotion of organic technology.

Second, because Dai village is located in the Shanghai and Nanjing metropolitan economic zone, some farmers are part-time farmers. Only half of the farmers' income is earned from agricultural operations on their own farmland, which is different from the FS Cooperative, where the farmers' main business is growing organic rice. In this case, two types of organic farming were developed by the Dai Cooperative. For rice cultivation, it set up eight paddy field operating teams; for other products, it entered into contracts with members. This strategy, while ensuring the management of paddy fields, can also be effective in the development of other organic varieties. Although the cooperative cannot handle all of its product sales, it has promised to cover all certification costs. The lack of professional personnel seems to be an "inborn weakness" of a farmers' organization. College graduate village officials may help to a certain extent, but after they leave the village at the end of their three-year term in office, problems still exist.

It should be noted that the introduction of high-quality Koshihikari rice helps a

cooperative expand its sales channels, although 33% of the Dai Cooperative's organic rice in 2012 was packed with the "Guangmei" mark and then transported to another Shanghai company. Moreover, the Dai Cooperative has been working on a contract with another large company to produce organic glutinous rice in the future. When it comes to farmland expansion and seeking cooperation with other companies, questions of maintaining its independence and ensuring quality control are important for the cooperative's future development.

Chapter 5 Participatory Guarantee Systems (PGS) in China's Organic Farming: A Case Study of Little Donkey Farm, Beijing

Accompanied by increased international trade, third-party certification has become the norm in most organic markets. However, smallholder producer groups in developing countries are increasingly unable to bear the human resource and financial costs of the management systems and documentation required for a third-party certification. In order to solve this problem the participatory guarantee systems (PGS) is developed. The concept of PGS was introduced by the IFOAM on the first "International workshop on alternative certification" organized in Brazil in 2004. It is considered as low-cost alternatives to third-party certification. As introduced by the IFOAM, "Participatory Guarantee Systems (PGS) are locally focused quality assurance systems. They certify producers based on active participation of stakeholders and are built on a foundation of trust, social networks and knowledge exchange". According to the latest data from IFOAM, by the end of 2013, there are 46,756 producers worldwide involved in PGS, 17,256 of which have been certified through the PGS by IFOAM. India and Brazil are the two countries with the highest number of organic producers involved in PGS, roughly 4,000 in each. PGS has gained recognition in the past few years, and is now viewed by many as one of the most promising tools to develop local organic markets.

PGS came to China in the form of Community Supported Agriculture (CSA), which represents a partnership of mutual commitment between a farm and a community of supporters that provides a direct link between the production and consumption of food. Usually, supporters cover a farm's yearly operating budget by purchasing a share of the season's harvest and in some cases they assist with the farm work. In return, the farm provides a healthy supply of seasonal fresh produce.

PGS officially came to China when Little Donkey Farm was established in 2009. Since

then, in just the past few years, this model has sprung up in big cities of China. At present, China's CSAs have entered a rapid development period. According to the latest statistics, there are nearly 163 organizations involved in CSA in China, including 121 producers, 13 consumers groups, 21 farmers' markets, and four restaurants. Although in different forms, they share five basic principles: healthy production, trust, mutual assistance, local, and direct sales.

The case of Little Donkey Farm highlights a new way to promote organic farming in rural areas near big cities in China. Here, short food supply chains connect local producers directly to consumers. Having consumers participate in the farm's daily activities, third-party organic certification is no longer necessary. Meanwhile, the local community grows, as does trust in the local food network. The establishment of local food systems also helps promote small-scale farmers' production activities. While consumers share the production risk by prepaying before the production season, production costs are reduced by establishing a trust relationship instead of third-party certification.

Through continuous development of the organic sector during the past two decades, China's domestic market for organic products has been gradually expanding, which has led to more players entering this sector. With rising consumer awareness about food safety, more and more consumer groups tend to develop their own marketing links; in this case, a direct link with local producers is established. This trend has led to China's organic agriculture sector having its own characteristics, different from the international trend toward globalization. In this case, we can see that more social values have been added to organic farming, such as the promotion of local production and consumption as well as support for small farmers' production, which helps reduce the urban-rural divide. With growth in the domestic market and an increasing number of CSA farms being established around major cities, consumer groups' participation has become a driving force that cannot be ignored. This supports the development of local organic agriculture, brings additional value to this sector, and returns organic agriculture to its origin as a social movement with principles supporting health, ecology, fairness, and care.

Chapter 6 Summary and Conclusions

This research investigates the development of organic agriculture in China and the various models of organic producers in this sector. As the organic tea from Lin'an county of Zhejiang province was exported using the Netherlands' SKAL certification, organic

agriculture in China has been rapidly developing. In 2013, China's domestic market of organic products was the fourth largest in the world, with retail sales of 17.5 billion Chinese yuan. In 2014, China became the fourth largest organic farming country in the world, maintaining 2.1 million hectares of agricultural land dedicated to organic agriculture. Over the past decade, China's organic agriculture sector has shown a different trend, with diversification away from the dominance of the export-oriented companies that marked the sector's initial stages to the co-existence of various ownership structures such as the company leading model, the farmers' cooperative model and the model of alternative certification, the latter being the participatory guarantee systems.

The research in this dissertation provides two important contributions to the literature that enhance the understanding of China's diversity and also the complexity of the development paths of its organic agriculture and the different models of organic production. This research had two objectives: 1) to gain a specific understanding of the current situation in China's organic farming and to summarize its characteristics and 2) to analyze the different models of organic production in China and investigate of each model for its specific features.

Specific approaches to the study are as follows: First, the historical development of organic farming in China was reviewed. Following this, in order to develop a better understanding of the sector from a producer's viewpoint, a statistical analysis was implemented, using the collected data on organic certifications. Then, five cases were chosen for a further study. For each case, the main factors that contributed to the development of organic farming were investigated and the author also addressed key investment issues, the adoption of organic standards and certifications, and the marketing and sales strategies.

On the basis of the findings, two main arguments have been made:

First, I argue that with the Chinese government gradually improving the organic certification system and the rise of consumer awareness on the environment and food safety, over the past decade, China's organic sector has been moving away from being dominated by export-oriented companies to becoming a more diverse sector. This may lead this sector in China to have its own special features, that is, a reverse development process not only different from the Global North but also from the other emerging economies.

One of many reasons behind this is the Chinese government, which has played an important and active role in developing its organic sector. Over its short period of

development, certified organic production in China has undergone significant changes. Since the establishment of the People's Republic of China in 1949, Chinese agriculture has been confronted with the challenges of maintaining a steady supply of food for a growing population and creating a healthy natural environment on the other. Several strategies of promoting sustainable agriculture have been taken during this process, in which the Chinese government is shifting its role from putting in place top-down requirements to developing market-based standards. At first, China's strategy of Chinese Ecological Agriculture focused more on principles and demonstration models, and then the green food strategy, which is considered halfway between chemically produced food and organic food production, was made aiming at developing the actual products for the market. When the high Grade-AA green food encountered a bottleneck in the export market, the Chinese government made rapid progress in building a solid system of third-party certification for organic products, which included state-level regulations and organic production standards. Cooperation in promoting organic agriculture has been organized at different levels. In addition, the government's role in developing a rural land rental market and promoting agro-industrialization and vertical integration has contributed to positive outcomes in organic agriculture.

An increased awareness of food safety and rising demand for healthy products in the domestic market in the 2000s caused China's organic agriculture to shift its focus from being export-oriented to gradually expanding in the domestic market. Our analysis of the 13,126 organic certificates shows the current situation of organic production and its distribution in China. In addition, the emergence of Participatory Guarantee Systems (PGS) and Community Supported Agriculture reflect the rise of civil society in China. Compared with the development of organic agriculture in the Global North, which emerged mainly through initiatives by individual farms and NGOs, then became more commercialized and conventionalized in the global market, the Chinese organic sector shows a pattern of reverse development. That is, China's organic agriculture diversified away from the dominance of large agribusinesses at the initial stages toward the co-existence of various ownership structures.

My second investigative approach was to analyze the different models of organic producers in China, using five case studies. Companies in the company leading model are more inclined to adopt direct farming for their productions, leaving contract farming being gradually internalized in farmers' organizations and other groups. In the farmer's

cooperative model, small-scale farmers have greater autonomy and also play a greater role in decision-making. The CSA case indicates that there is an emergence of value-based initiatives that pay attention to the broader values of organic production and highlight the importance of direct interactions between consumers and farmers that is based on building relationships of trust. All the case studies contribute to our understanding of the diversity and complexity of China's development paths of organic agriculture.

In the case of Longsheng Company, after a large investment in organic conversion and farmland expansion, its business began to become profitable after 2005. The company significantly expanded its farmland after 2010. Since then, it gradually shifted from exporting to focusing on the domestic market. The case of Haobao Company shows a company's rapid expansion process in China's domestic market. Originally a city-level organic farm, it expanded its sales to the whole country. Although its organic certification level cannot keep pace with its expansion, the company's development reflects the current situation in China's organic industry. Both companies have adopted "direct farming" as their main production strategy. They abandoned "contract farming" for several reasons. First, the increasingly improved third-party certification system makes it difficult for companies to maintain organic cultivation activities through "contract farming" with farmers, especially in the area of supervision and quality control. In another words, "contract farming" raises management costs during expansion because it is difficult to monitor every single sub-contracted farmer. In such cooperation between companies and farmers, most farmers do not understand the essence of organic production, which may lead to contamination of their organic products when contracted farmers secretly use chemical fertilizers and pesticides to complete their production contract. Second, farmers' specialized cooperatives have formed rapidly, following the 2007 introduction of the Law of the People's Republic of China on Specialized Farmers Cooperatives. Independent farmer's specialized cooperatives have developed their own organic businesses, which takes over "contract farming" from large agribusinesses. This phenomenon is reflected in the case of the FS Cooperative. As competition in the rice business in Minle Township is fierce and the production base is in a state of flux, it is difficult for a company to control farmers' production for their own interests. "Contract farming", in this case the exclusive marketing cooperatives, leaves more space for the development of independent farmers' cooperatives.

In the case of farmer's cooperative, we can see that the Chinese government has played

an important role in establishing a supportive environment for cooperative development, mainly through implementing the Law of the People's Republic of China on Specialized Farmers Cooperatives and by developing a series of favorable policies and providing various forms of financial and non-financial support. Under the model of the farmer's cooperative, the village administration or the farmers themselves organize organic producer associations and provide technical support to their members. From this viewpoint, organic agriculture is considered a viable approach that can be suitable for small landholders. Although it is considered that the high cost of organic certification and its extensive requirements have made it difficult for small households in China to independently operate organic farms, in the two cases with the direct involvement of farmer's organizations, farmers appear to have more wholly adopted organic farming practices and consequently appear to have better results. Leadership in the farmers' cooperatives is well accepted by its members as a means of improving both their cultivation and marketing. In the case of the FS Cooperative, as an exclusive marketing cooperative in the previous stage, with the help from township government, it gradually grew independent from the HF Company. Known as the "Dai Village Model", the success of the Dai Cooperative reveals that if well organized, small farmers can conduct organic farming activities in China. Several points should be noted in regard to the development phase. First, to ensure smooth land transfer and the promotion of organic technology, powerful leadership is needed. Second, when it comes to the diversity of organic products, farmers' cooperatives may not be as efficient as large agribusinesses, which have both more financial strength and systematic management. The Dai Cooperative solved the problem of these shortcomings by developing two operating systems with members. While this strategy ensures good management of paddy fields, it can also be effective in the development of other organic varieties in a farmers' organization. From this perspective, the farmers' cooperative model has integrated "contract farming" into its own systems. However, the lack of professional personnel seems to be the "inborn weakness" of a farmer's organization. Support from the government seems important for its further development.

The case of Little Donkey Farm explores a new way to promote organic farming in rural areas situated around big cities. In this case, short-chain farming was developed so as to directly connect local producers with consumers. In this type of setup, having consumers participate in the farm's daily activities made third-party organic certification no longer necessary, and more social values have been added to organic farming, such as the

promotion of local production and consumption as well as support for small farmers' production, which helps reduce the urban-rural divide. The increasing number of CSA farms in China indicates the rise of China's civil society and its demand for more involvement in organic agriculture movements.

All these research findings lead to recommendations for policy-makers and other stakeholders to better understand and benefit from various ownership structures in China's organic agriculture, especially in the area of involving more small-scale farmers in this growing industry.

As discussed about the basic values of agriculture, the agricultural sector ought to comprise the cultivation activities used to sustain and enhance human life and the reproductive interactions between humanity and nature. However, this connection is getting destroyed as the human race progresses. On one hand, the twentieth century saw a great growth in agricultural produce with the rapid advancement of technology. In contrast, industrial agriculture has been developed to support global food chains in the process of economic globalization. In the book *Capital: A Critique of Political Economy*, Marx criticizes this trend of commercialized agriculture for having brought about physical and mental destruction to humanity. The relationship between man and nature has been threatened by modern farming activities such as chemically intensive production, large-scale monoculture, and long-distance transports. The overuse of fertilizers and pesticides has reduced organic substances and degraded the soil quality of farmlands, having led to a series of problems such as resource exhaustion, destruction of the eco-environment, and food safety. Under such circumstances, the organic agriculture movement was initiated to improve the relationship between humans and nature. However, with the increasing use of non-agricultural capital injections and off-farm inputs, the institutionalization of organic farming through third-party certification systems was reducing the social movement components and was excessively being incorporated in conventional agriculture, resulting in the loss of its original values and ideals. Hopefully, our research on China's organic agriculture will shed light on the sustainable development of human society and be used as discussion material to further develop the organic movement.