

Family Farms and Modern Industrialization in China: Analysis of the Shanghai Songjiang Area as a Case Study

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Abstract

Accompanied by the continuous transformation of the industrial structure, massive rural labor in China has begun their migration to nonagricultural industries. This huge transfer of rural labor has shown a positive pushing influence on the transformation of China's industrial structure, creating a timely opportunity to the development of agriculture and the structural transformation of the rural area. This paper investigates the interrelations between the transformation in the industrial structure and the rural-urban labor movement, and provides an in-depth analysis of the unique advantages of the family farm system as well as its bottlenecks by exploring the practices of the Songjiang family farm system in Shanghai as a case study.

Keywords: agriculture, family farm, industrialization, China

1. Introduction

According to the Industrial Structure Evolution Theory of Kuznets, with the development of economy, the employment shares of the primary, secondary, and tertiary industries will shift by following a regular fashion.¹ Generally, the employment share of the primary industry will fall continuously, and that of the secondary industry will first rise and then fall, while that of the tertiary industry will rise consistently and steadily. According to existing data, the cross-sectoral shifts in labor shares in China follow exactly the same pattern.²

As shown in Figure 1, from the point of the range of the industrial structure adjustment, the share of production (in percentage) of the primary industry in total GDP grew slowly from 28.2% to about 34% during 1978–1983 and then gradually declined to 10.1% in 2012, nearly two-thirds down. Meanwhile, the production share of the secondary industry in GDP fluctuated between 40% and 50%. In contrast, the production share of the tertiary industry in GDP rose steadily from 23.9% in 1978 to 44.6% in 2012.

1 The primary sector (industry) refers to agriculture, forestry, animal husbandry and fishery and services in support of these industries. The secondary sector (industry) refers to mining and quarrying, manufacturing, production and supply of electricity, water and gas, and construction. The tertiary sector (industry) refers to all other economic activities not included in the primary or secondary industries.

2 Data source: 2013 National Statistical Yearbook on NBS website.

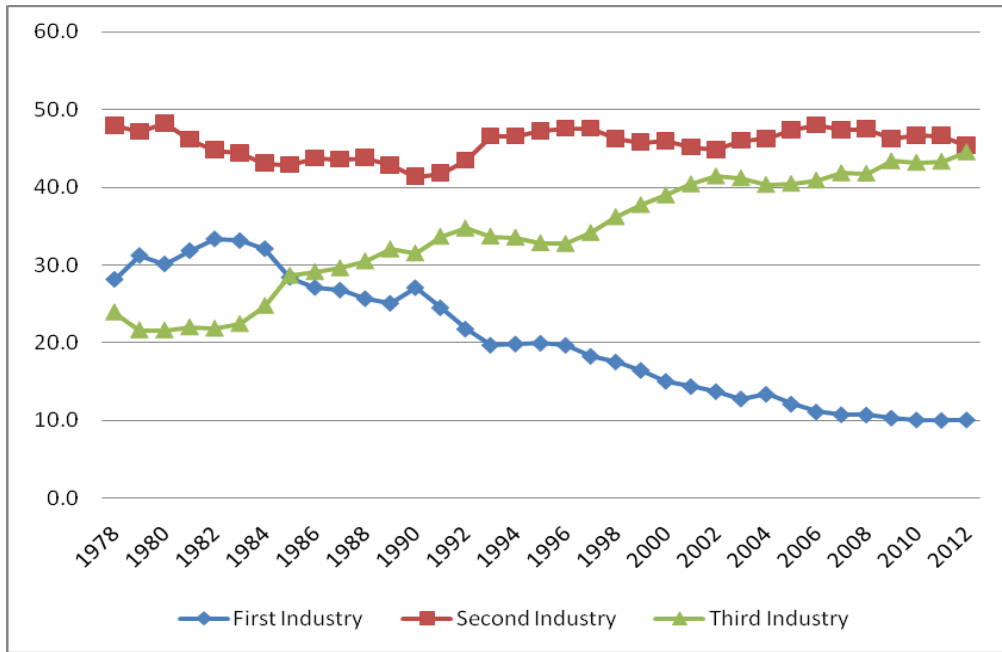


Figure1. Production shares of the three industries in GDP (1978–2012)

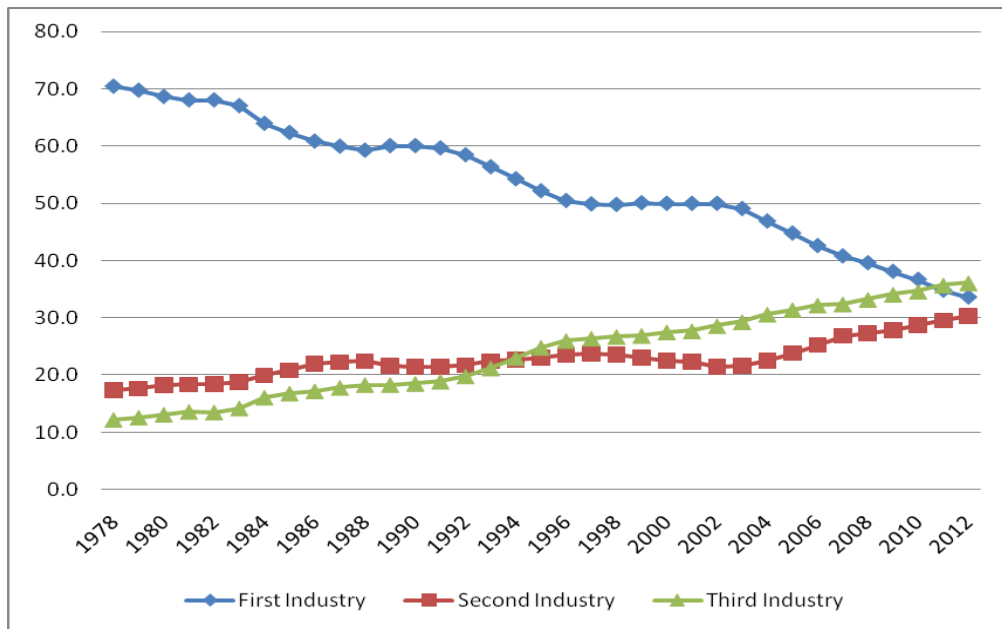


Figure 2. Employment shares of the three industries in total employment (1978–2012)

In Figure 2, we depict the employment shares of the three industries in total employment. As shown in Figure 2, the employment share of the primary industry dropped to 33.6% in 2012 from 70.5% in 1978. And the employment share of the tertiary industry jumped to 36.1% in 2012 from 12.2% in 1978.

In conclusion, the direction of industrial structure adjustment and the trend of the movement of agricultural labor force are mutually consistent. From the perspective of the speed of change, the

production share of the primary industry fell at an annual rate of 2.83% during 34 years. Specifically, from 2004 to 2012, average annual decline rate reached 3.41%. Accompanying this, the employment share of the primary industry declined at an average annual rate of 2.14% during 1978–2012, and one of 4.12% during 2004–2012. We can see that the speed of rural labor transfer and the rate of shrinking of the primary industry in the national economy are also mutually consistent. These data reveal a close relation between the structural transformation and labor distribution across the three industries to a certain extent.

Overall, since the reform and opening-up of China, cross-sectoral structural transformation and the trend of rural labor transfer evolve in tandem. Namely, the production share of the primary industry has been falling and the corresponding agricultural employment has been falling too. The proportion of the tertiary industry production keeps rising, while the labor shares of the secondary and tertiary industries are also rising steadily.

There are mass domestic study researches on the relationship between the labor transfer and industrial structure adjustment. Ye (2006) analyzed the relationship between rural labor transfer and industrial structure, concluding that there is obvious interaction relationship between them. First, there exists the "push" and "pull" effect. Given non-farm employment wage is higher than farming income at home, farmers turn to work in non-agricultural industries considering comparative advantage, which is called "pull" effect to labor transfer. Rural labor transfer will have "push" effect on the industrial structure adjustment at the same time, as the existence of a large number of transferred labors requires development of non-agricultural industries to provide more jobs. Huang (2012) adopted elasticity coefficient method to predict the future scale of labor demand based on the analysis of the adjustment of industrial structure and the labor supply environment of Shanghai, finding that the total future demand for labor in Shanghai is increasing while labor demand in primary industry is decreasing and secondary industry demand for labor increases slightly and the third industry needs a large amount of labor.

This paper investigates the interrelations between the transformation in the industrial structure and the rural-urban labor movement, and provides an in-depth analysis of the unique advantages of the family farm system as well as its bottlenecks by exploring the practices of the Songjiang family farm system in Shanghai as a case study. By doing so, we evaluate the feasibility of extending the family farm system to other regions in China.

2. Theoretical Discussion in the Context of the Chinese Economy

Even a cursory look would convince one that the Chinese economy presents an ideal example of what the Lewis growth model describes as a dual economy (Lewis, 1954; Islam & Yokota, 2008). If here we use the "urban-rural" dichotomy to capture the Lewis dualism, the first disparity between the two industries, urban and rural, is that essentially the same type of labor generates higher productivity in the urban than in the rural industry. This implies that the marginal product of labor in the urban industry, denoted MPL^U , is greater than that in the rural industry, denoted MPL^R , that is $MPL^U > MPL^R$. This inequality implies that overall output can be increased by shifting labor out of the rural and into the urban industry, which is a fundamental departure from the neoclassical assumption of perfect factor mobility and equalization of factor returns. The second disparity between the two industries is about income determination. In the urban industry, income is determined by the rule $w^U = MPL^U$, where w^U denotes the wage rate in the urban industry. In contrast, in the rural industry, it is assumed that $w^R > MPL^R$, where w^R denotes the wage rate in the rural industry, in which income determination follows what is called a "kinship/community rule". This is a second departure from the neoclassical economy. Generally, two conditions are necessary for the disparities to occur. One is the existence of an abundant supply of labor in the rural industry,

in relation to other production factors such as land. The other is the existence of a certain restriction on free mobility of labor from the rural to the urban industry.

Demographic imbalance associated with overpopulation or a surplus of labor supply in the rural industry often prevails in developing countries (Islam & Yokota, 2008). China is no exception. Restrictions on labor mobility can be either formal or informal, and can come from either side of the rural or urban industry. In the rural industry, numerous informal customs tend to hamper migration of labor to the urban industry. In the specific case of China, the household registration system (or otherwise called the *Hukou* system) is a formal barrier to the rural-urban labor migration, on top of the numerous informal barriers (such as social customs). In addition, higher living costs in the cities, loss of familial, social and environmental benefits, and entry restrictions by the urban industry and by the authorities of urban areas where the urban industry resides, all pose serious barriers to the rural-urban labor migration. Given this, the assumption that $MPL^U > MPL^R$ is not difficult to justify. To understand the other assumption, $w^R > MPL^R$, we see that institutional settings of various kinds can give rise to the “kinship/community” rule. Family farms (which is the very focus of the current study), for example, by engaging in output maximization rather than profit maximization, may push the employment of labor to very low marginal product levels. In the case of China specifically, the Communes allow the “wage” to have a “sharing” feature and be higher than the marginal product of labor, so that the condition $w^R > MPL^R$ can prevail. Given all this, the dual structure of the economy is therefore characterized by the condition

$$MPL^U = w^U > w^R > MPL^R \quad (1)$$

The dualism of the economy allows the expansion of the urban industry by absorbing the rural labor without having to raise the urban wage level. The relocation of labor from the rural to the urban industry increases MPL^R without increasing w^R and w^U provided $w^U > w^R > MPL^R$ holds. Only when the flow of labor pulls up MPL^R so high that it catches up with w^R , further flow of labor will result in increases of w^R , which then create pressure for w^U to rise. In their extension of the Lewis Model, Ranis and Fei (1961) suggest that the marginal product of the rural industry goes through three phases. In the first phase, MPL^R is zero so that the shift of labor out of the rural and into the urban industry does not lead to any reduction in the total output of the rural industry. The second phase begins when MPL^R becomes positive. The second phase ends and the third phase begins when MPL^R catches up with w^R , and any further flow of labor now pushes up both the marginal product and wage level in the rural industry to more or less the same degree.

In applying the Lewis model to the specific situation of China, one is confronted with several complications owing to China’s special institutional characteristics.³ First, the theoretical “rural-urban” division of China does not fully coincide with its empirical “rural-urban”, “modern-traditional”, or “agriculture-industry” division. On the one hand, a large number of informal enterprises exist using pre-industrial technologies in the urban industry, while on the other hand, the rural industry is heterogeneous owing to the continuous emergence of township and village enterprises that use industrial technologies right inside the rural areas. Second, ideally, the Lewis model assumes that the labor flow proceeds in an unrestricted fashion as industrialization deepens. However, this assumption is not necessarily true for the China case because of the presence of the *Hukou* system. Although over time the *Hukou* restrictions have been somewhat lifted, the system still remains and the current situation is not one of free labor mobility from the rural to the urban industry. Third, the situation is further complicated by the fact that China is currently neither under central planning or a complete market system. The complicated institutional characteristics in China would make related discussions more subtle and challenging, but

³ See, for example, Islam and Yokota (2008) for a more detailed discussion.

meanwhile provide more opportunities for researchers to explore the impacts of institutional factors on the process of industrialization and the expansion of the urban industry in China.

Having discussed the dualism of the Chinese economy, we can now move on to a theoretical discussion of the dynamic evolution of the urban-rural dual structure, of which our central focus is dynamic comparative advantage. We formalize the dynamic intersectoral structural transformation and the accompanying shift of comparative advantage across the rural and urban sectors by outlining the model of Lim and Feng (2005). We use $A(t)$ to denote the number of farms in the agricultural (rural) sector at time t , where, for simplicity, all farms are assumed to be identical and produce the same amount of output. Let the intrinsic growth rate of the agricultural sector be r_A , which is the rate at which the agricultural sector would grow in isolation, without receiving the positive or negative impacts from the manufacturing (urban) sector. The rate r_A , however, may depend on factors such as the institution and social infrastructure. We use A^* (which can be called the carrying capacity) to represent the physical upper limit to the number of farms that may exist in the agricultural sector, according to resource constraints. The logistic growth of the agricultural sector follows

$$\dot{A} = r_A(1 - A/A^*)A = (r_A - a_A A)A \quad (2)$$

where we define $a_A = r_A/A^*$.⁴ Now suppose the two sectors, agriculture (rural) and manufacturing (urban), are mutually supportive or complementary, such that

$$\dot{A} = (r_A - a_A A + a_M M)A \quad (3)$$

$$\dot{M} = (r_M - m_M M + m_A A)M$$

where $M(t)$ represents the number of manufacturing firms (at time t).⁵ The non-trivial equilibrium for the system in (3) is given by

$$\bar{A} = \frac{A^* + \alpha M^*}{1 - \alpha\beta} \quad (4)$$

$$\bar{M} = \frac{M^* + \beta A^*}{1 - \alpha\beta}$$

which can be proven that provided the equilibrium in (4) is stable, then with mutually beneficial intersectoral spillovers, we end up having $\bar{A} > A^*$ and $\bar{M} > M^*$, where, again, A^* and M^* are the maximum sizes of agriculture and manufacturing when the sectors are each left to grow independently.⁶

The model of Lim and Feng (2005) above lends support to the view of Akamatsu (1962) about intersectoral complementarities. A positive stimulus from the agricultural sector promotes growth of the manufacturing sector. In the specific case of China, the agricultural reforms initiated the early 1980s triggered great output and productivity growth in agriculture. Rising farm incomes led farmers to invest in labor saving farm technologies so as to release labor to manufacturing. The

⁴ A dot over a variable denotes the growth rate. The term $(1 - A/A^*)$ reflects intrasectoral competition, by which as the number of farms approaches the potential A^* , the actual per unit growth rate $r_A(1 - A/A^*)$ tends to zero.

⁵ We define $m_M = r_M/M^*$, in which r_M is the intrinsic growth rate of the manufacturing sector and M^* is its carrying capacity. The parameters a_M and m_A each capture the respective intersectoral interaction, both of which are assumed to be strictly positive.

⁶ We define $\alpha = a_M/a_A$ and $\beta = m_A/m_M$.

complementarities between the sectors contribute to a structural transformation of the economy. If we measure structural transformation by an increase in the ratio of the equilibrium level of manufacturing to that of agriculture, then it can be proven that the ratio \bar{M}/\bar{A} rises if an increase in the positive intersectoral coefficient from agriculture to manufacturing (m_A) or a decrease in the positive intersectoral coefficient from manufacturing to agriculture (a_M) occurs. If the manufacturing sector alters the share of its output that is supplied to agriculture as inputs, then a_M falls. Agriculture now requires more of other inputs, e.g. labor, to support its expansion, which in turn reduces the amount of labor to be released to manufacturing. The expansion of agriculture thus incurs a higher opportunity cost in terms of manufactured goods forgone. Likewise, resource transfers from agriculture give rise to an increase in the positive intersectoral coefficient from agriculture to manufacturing m_A . In the specific case of China, increasing farm incomes brought about by agricultural reforms facilitated investment in labor saving technologies, which enabled underemployed farm labor to be released to manufacturing at a low opportunity cost in terms of farm output forgone (Shi, Yao, Zhang, Hsueh, & Woo, 1993). This situation indicates that if comparative advantage resides originally in agriculture, then structural transformation implies a relative shift in comparative advantage from agriculture to manufacturing. This is because a rise in m_A expands the manufacturing sector at a low opportunity cost with respect to agricultural output forgone while a fall in a_M forces the agricultural sector to expand at a higher opportunity cost. As manufacturing expands at a lower opportunity cost relative to agriculture, comparative advantage shifts from agriculture to manufacturing.⁷

3. The Family Farm as an Operating System in Agriculture

Along with the processes of industrialization, urbanization and modernization of the Chinese economy as well as the continuous improvements in agricultural technology and the substantial rural-urban labor flows, an inevitable trend has been to develop moderate scale agricultural management through land circulation. The third plenary session of the 17th Central Committee puts forward the goal of developing various forms of moderate scale management and developing new operating subjects such as professional farmers, family farms and farmers' professional cooperative associations in regions where the basic conditions are met. Also it was pointed out to cultivate and develop the new type of agricultural management subject—family farm in the first policy document from national Central government in 2013.

The concept of family farm originates from European and American countries, representing big and medium farms working on agricultural production that were ran by families. Existing family farms' definition and scale varied in different countries. In China, generally speaking, family farm refers to a new type of agricultural management subject with family member as the main labor force, engaging in agricultural production of scale, intensive and commercialization, and the agricultural income as main source of income for the family. (From the ministry of agriculture rural economic system and operation management).

So far China has confirmed the fundamental characters of family farm, which are operated by families, moderate scale, agriculture as main career and intensive production, namely management of farm should be made by household mainly using family labor, production management should be in moderate scale, specialized, standardized, intensively, and with high level of commercialization. Last the agricultural production and operation unit should take agricultural production and operation income as the main source of income. These also match with the general definition of family farm perfectly. Currently countries whose agriculture is modernized in the world take the family farm as the major food production organization. At the same time, family farm is completely in line with the

⁷ See Lim and Feng (2005) for a more detailed discussion.

nature of household-contract responsibility system, and can fully motivate farmers to farm in unit of household, which is a future trend of deepening development of household-contract responsibility system.

Family farm is advantageous to keep the subjectivity and initiative of farmers. First, family farm still retains the advantage of enthusiasm of the household contract responsibility system while taking family as the basic business unit. Farm incomes are all owned by the family, minimizing the agency cost. Second, intensive agricultural cultivation require diligence, as well as great care and attention, which can only be offered by family agricultural management. Internal communication and cooperation are more convenient, facilitating family members to collaborate, and concern about farms. Finally, due to the close relationship between operating situation and peasant family livelihood, household operating resilience and persistence is formed. Farmers are willing to take the initiative to learn professional knowledge, improve their experience and knowledge level, engaged in agricultural production persistently in primary industry.

Family farm is advantageous for intensive, scale, and industrialized operation. First of all, family farm operators are commodity producers. In order to increase economic benefit, they are bound to specialize production of farming products which are suitable in this area, thus promote agricultural production to the direction of regionalization and specialization, broking the production pattern of “small but complete”. The scale of family farm is much larger than the traditional contract area, which averages at 100 mu in each farm, altering the traditional pattern of trivialization and paving the way for mechanized operation and implementation of unified management. Secondly, as a basic management unit of regional agricultural development, family farm holds the advantages of standardization and unification management, making it possible for the introduction of modern agricultural technology and application, as well as social service system construction. Finally, transverse union between family farms is beneficial to the introduction of modern enterprise system, to get rid of the original “one family one type” management style. Instead, we can apply modern management ideas to the production and business operation activities, to create and retain agricultural products brands, so as to implement the industrialization of agriculture, and improve the market competitiveness and international competitiveness of agricultural products in China.

Zhang (2003) argues that family farm not only realizes the separation of land use rights and management rights, but also drives dispersed management to intensive management development. Family farm run agricultural production in a modern way; transform traditional agriculture with injection of large amounts of money. Family farms introduce technology to increase application of agriculture science and technology, modern management mode to manage agricultural production. It can be concluded that family farm is the most suitable modern production organization form of agricultural production in our country at present.

4. The Development of Family Farms in Shanghai Songjiang Area

4.1 The Labor Transfer in Songjiang

Songjiang district is located in the Southwest of Shanghai downtown, and upstream of Huangpu River with a total area of 604 square kilometers. Songjiang is a large agricultural county in the past, which will keep hundreds of thousands of acres of arable land currently and in the future. As is located in the outskirts of such a big city, there are a lot of non-agricultural employment opportunities for local farmers. Salary income just accounts for about 75% of the farmers' total income in Songjiang, with farmers' dependence on land become weaker. Land is farmed either by the elderly, or transferred to farmer in the same village or those who came from other provinces loosely. There are only 5572 people directly engaged in agricultural production out of 189000 rural labor individuals in Songjiang district, accounting for 2.9% of the total rural labor force. In the first half year of 2013, number of the second industry practitioners in Songjiang district reduced from

447278 to 419434 in first half year of 2012, 6.23% smaller than last year. While number of the third industry practitioners increased from 59758 to 67254 in first half year of 2012, 12.54% greater than last year, showing a fast growth. At the same time, proportion of the second and the third industry practitioners in total employment of three industries continues to vary. The proportion of Secondary industry in total employees fell to 86.16% from 88.19% in the previous year by 2.03%, whereas the third industry ratio rose to 13.81% from 11.78% last year, adding 2.03%. However, the first industry has dipped by 2.8%.⁸ (See Table 1)

Table1. Employment in three industries and each proportion (Unit: per/%)

Industry	Number of employment			Change of proportion		
	First half year of 2013	First half year of 2012	Growth rate	First half year of 2013	First half year of 2012	Variation
First	139	143	-2.80	0.03	0.03	-
Second	419434	447278	-6.23	86.16	88.19	Decrease: 2.03%
Third	67254	59758	12.54	13.81	11.78	Increase: 2.03%

Data Source: Songjiang Statistic Bureau Reference, <http://www.stats-sh.gov.cn/fxbg/201307/259763.html>

4.2 Major Methods for Developing Family Farms in Songjiang District

Family farm in Songjiang district, Shanghai refers to the kind of agricultural production and operation form with a production unit of one peasant family from the same administrative villages, or collective economic organization in the same village (generally one couple or two or three family labor), engaged in activities of food production or pig-breeding. The family farm operator is a yeoman relying mainly on domestic labor.

The author went to Yexie and Xinbang town, Songjiang district with a team member respectively, interviewing Han Mayor of Xinbang, and Zhu, director of agricultural service center. After that we talked with family farmers face to face including Uncle Yu who has retired from his family farm, Master Yu who is has a planting and pig-raising family and also Master Xu, who is has a machine-combined family farm. Last we visited Xinbang Peony Garden of Songjiang. From these experiences we obtained a large amount of first-hand information. Songjiang initiated grain family farm business model from second half year of 2007. Now we'd like to summarize what we know about the development of Songjiang family farm in the research as follows.

4.2.1 *Regulating the Circulation of Land*

Songjiang non-farm employment is above 99%, which enables the land circulation. In accordance with the "voluntary and paid" principle, Songjiang promoted to encourage farmers to entrust their contracted land to village committee for unified circulation, thus to collect farmers' land for scale operation, and handing these lands to farmers who are really interested in engaging in agricultural production and operation. At the same time the government pays attention to protect the interests of the transfer farmers. As food prices rise rapidly, family farm incomes increase year by year. In order to adjust interests between the operators and contractors, land circulation fee changed from the original fixed 600 RMB per mu to actual market price of 250 kg rice (allowing some moderate regional floating). Land transfer fee vary with the grain price, thus the interests between land-outflow farmers and family farmers are regulated by market, to realize healthy and stable development of the family farm.

⁸ Data Source: Songjiang Statistic Bureau Reference, <http://www.stats-sh.gov.cn/fxbg/201307/259763.html>

4.2.2 Establishing the Entry/Exit Mechanism

According to the “Instructional advice of further consolidation on the development of family farm in Shanghai Songjiang”, qualifications of family farm operators are specifically described, such as household registration request, age limit, technique and experience requirements of the operator and so on. Since there are more and more applicants, exceeding the plan amount, Songjiang became to introduce democratic selection mechanism, namely let the retired veteran cadres, old villagers and old republican evaluate applicants democratically, and chose those best. Besides, family farm are required to have production management assessments for 2-3 times a year, while assessment standards include whether rice yield is up to standard, whether the farmland environment are conserved well, and if the "three-thirds system" for soil improvement is executed. If the unqualified inspection standard number is reached, exit mechanism shall be effective. Finally, those pig-raising combined farming and machine combined farming family farms which meets the requirements can extend their leasing management contracts for 5 to 10 years. These provide system guarantee for the optimization of family farmers' management quality, improving the overall team skills.

4.2.3 Insisting on a Moderate Scale Operation

Songjiang target the scale of family farms on the size of 100 - 150 mu under the consideration of current production capacity of mainly yeomans given the existing agricultural machinery equipments, as well as analysis of the food prices, policy subsidies, production costs, economies of scale and the rural non-agricultural labor condition. In 2013, songjiang family farm's averaged operation scale is 113 mu. On the one hand, income of the agricultural operator is higher than the income of migrant workers, which is beneficial to the stability of the family farm operator team. Moderate scale need to be insisted or if farm income is too exorbitant, then it's easy to cause the land circulation reflux. On the other hand, the scale should be consistent with the current agricultural mechanization ability and family farm production capacity, to realize reasonable allocation of labor force and arable land under the current production condition and improve the labor productivity.

4.2.4 Implementing Social Supporting Services

According to the production requirements, songjiang offered before, during and after service for the family farm. One is to set up food supply seed breeding base, (three existing), and rice seeds are offered in district-level uniformly. Coverage rate of improved varieties of rice is 100%. The second is to strengthen agricultural machinery operation service, including setting up agricultural machinery professional cooperatives, to provide full mechanization service for rice production of family farms, and implement the agricultural machinery service mode of "big machine to be mutually used, small machine to be family-owned ". The third is to strengthen agricultural materials supply services, establish agricultural materials chain supermarkets, and provide prevention and control pesticides and send home services to family farms uniformly. The fourth is to provide grain-drying service. Every food administration Bureau has drying machine, with drying ability at more than 1600 tons every 8 hours. Paddy rice are sent directly to collection spots of grain drying after being harvested, solving the trouble of drying back at home of family farms. In addition, the agricultural service center in every town of songjiang district will offer regular technical guidance, operation and management training, as well as agricultural finance and meteorological information broadcast services, etc.

4.2.5 Strengthening the Policy for Subsidy Support

From land circulation to selling food, Shanghai Treasury Department and songjiang district Treasury Department both offer financial subsidies. For example, subsidy about 462 yuan will be provided for per acre of circulated land (262 yuan is from the central, municipal and district level fiscal subsidies, another 200 yuan has been altered as assessment bonus, which will be issued only

the assessment is qualified). In addition, subsidy rate of agricultural machinery purchase can be as high as 80%. Agricultural materials supermarket and food drying service also enjoys special allowance. Others include pig-raising combined farming promotion bonus, loan discount for family farm, rice insurance subsidies, etc. It is estimated that government subsidies account for about 20% of the total income of family farms, excluding farm machinery subsidy, drying fees, subsidized fertilizers, etc. Songjiang district also go with the Times, transferring the fixed subsidies into inspection rewards, to encourage family farms to have high production competition, promote straw counters-field, agricultural seeding machinery and new agricultural technology. Those who meet the requirements of the assessment of the farm can receive bonus. These not only ensure favorable safeguard for the whole production process of the family farm, but also play a positive role in continuously improving the level of family farm production and management.

5. The Feasibility of Family Farm Operations

So far, from the achievements of planting family farms and pig-raising combined and also machinery combined family farms in Songjiang district, the prospect of family farm is promising. Its fundamental development mode is becoming efficiently formed and has been promoted to Jinshan, Fenxian and Jiading, as well as Chongming district all over Shanghai. Other provinces are also fasten the pace of circulating land and began pilot family farms and new kinds of operating system. Songjiang itself is continuing to perfect family farm system and take family farm as the main operating unit of boosting agricultural modernization in finding and solving new problems. Then are there any disadvantageous or beneficial factors to promote Songjiang mode to other places?

Songjiang rice-planting family farm is a newborn thing of rural revolution, also it's a representation of production relationship adapts to productivity development request. The action of Songjiang developing family farm has something in common which can be promoted and also some unique parts. The common parts are that only those areas which have sufficient non-agricultural transfer and agricultural productivity in accordance with socialization service level can build family farms. The unique parts include the feedback of Songjiang finance strength to agriculture, as well as the attention local leaders paid on agriculture and forecast of policies.

5.1 Favorable Factors

5.1.1 *Mass Agricultural Labor Transfer*

It is acknowledged that labor and land is the fundamental production factors and neither can be lacked. Land circulation and scale operation requires the transfer of agricultural labor from land, altering the labor-land relationship from "labor excess land" to "land excess labor", to release the long term pressure of labor on land, separate land contract right and operating right, and enlarge the operation scale of arable land of farmers. This requires local secondary and third industry have abundant employment absorbing ability. The reason why Songjiang district was able to explore the family farm is not only owed to the farming supporting preferential policies of the local government, but also its location in the suburb of Shanghai, with huge employment opportunities. Thus before we consider the possibility of promoting family farm promotion, we must first analyze agricultural labor transfer potential factors such as its size and speed.

Propulsion of urbanization and industrialization needs the support of industry, whether industrial, commercial and trade services, or processing of agricultural products, industrial agglomeration is the foundation of the urbanization. Without supporting industry, rural labor force has no way to be shunted, and population is difficult to gather and land is unlikely to be circulated. Therefore to develop family farms, first, second and third industry should be developed, and then speed up the

transfer of agricultural labor force to other industries. Only when farmers have a stable career and income in cities and towns, will they be willing to rent out land voluntarily. If farmers are forced to rent out land and can't find stable jobs, then they won't live by and lose their land, basic living insurance while income is declining.

As a result, it is stressed that labor transfer is a natural process, which shall be induced by local economy development. The government should not put pressure on farmers by executive orders or force farmers to hand over the land, instead shall ensure their contract right and at the same time, provide sufficient employment space and employment opportunities. In the backdrop of the industrial adjustment, Labor continues to flow from the first industry to the others, especially the third industry, and thus the overall trend is advantageous to the promotion of family farm. However, resources and situation differ in different areas, so advantages and disadvantages are to be evaluated to decide when and how to develop family farms.

It is firmly believed that promotion of family farm should be based on high proportion of non-agricultural employment, namely abundant labor transfer. In Songjiang, non-agricultural labor accounts for over 90% of total employment, which is the primary condition. Labor of first industry should be transferred to other industries directly or indirectly, and then vacant land can be released to accelerate circulation. Of course it is close related to economic development.

5.1.2 Land Circulation on a Regular Basis

So far, land circulation rate has achieved more than 60% all over Shanghai. Other provinces in China also began its pace of circulation. With more and more policies and regulations, it will be more common and reasonable in the future. The separation of contract right and operation right requires government's policies design to be forward-looking, and pay much attention to justice and balance of interests. So far general circulation duration is relative long and mostly more than 10 years. Circulation fee is calculated at the purchasing price of 500 kilograms rice, which will float with the market price. This ensures the income forecast of farmers who rent out their lands, thus reducing the risk of breaking contracts and withdrawing their land.

5.2 Bottlenecks

5.2.1 The Local Financial Support

The central, municipal, and local finances have invested a lot of money and offered comprehensive subsidies on the before, during or after productions of crops from the starting launch to present mature operation of family farms. Whereas this financial strength is not common in other towns, as a result, government shall introduce family farm gradually, instead of "subsidize enormously" in case that local finance is unable to bear, and it does no good to the stable long-term development. Besides, capital using and delivery needs supervision, and whether there is the case that "same content with different forms" to obtain the government subsidies.

5.2.2 Agricultural Talent Training

At present, the ages of Songjiang family farm operators are mainly distributed between 40 to 60 years old. Even given Songjiang family farm application is more and more hot, a few white-collar workers will leave work in the city and consider returning to farming, planting vegetables or other crops, whose birth year are around late 70s and 80s. The younger agricultural generation of 90s, apart from individual exceptions, rarely considers coming home to have a career, even with a salary not higher than family farm's. But for the purpose of career development or considering other social psychological factors, they still try to stay in the city. Agriculture related specialized undergraduate or graduate students either find a job which is not in agriculture, or stay in institutions or university to do research, rarely take up agricultural production. This means that, even if the current "agriculture successor absence" problem can solved, then how about the next generation? We

should gradually change the national consciousness of agriculture status of falling behind the second and the third industry, being aware of that physical labor is as glorious as mental labor, which is worth to be a life of business. This consciousness shift is far more important and has more profound influence than preferential agricultural talent employment policies.

To sum up, in the process of promoting family farm, we must take actual circumstances, clear demand into consideration with specific measures according to local conditions, rather mandatory administrative propulsion, but take kinds of experience for reference, to explore a variety of models of new agricultural management subjects, promoting agricultural modernization.

6. Concluding Remarks

The processes of urbanization and industrialization in China are constantly gaining momentum. Accompanied by the continuous transformation of the industrial structure, massive rural labor has began their immigration to nonagricultural industries in big towns and cities. This huge transfer of rural labor not only meet the demand for lower class jobs in city construction projects, but also has a positive pushing influence on the transformation of China's industrial structure, creating a timely opportunity to the development of agriculture and the structural transformation of the rural area. Given these calls of the new era, reform and innovation of the operating system in agriculture has been deepening. Family farms have shown their thriving vitality and tremendous potential in this new reform era. One necessary premise of reform and innovation in the agricultural operating system is the non-agricultural trend of rural labor. This paper has aimed to explore the interrelations between the transformation in the industrial structure and the rural-urban labor movement, and provide an in-depth analysis of the unique advantages of the family farm system as well as its bottlenecks by exploring the practices of the Songjiang family farm system in Shanghai as a case study. In addition to this, we have also discussed the possibility of applying the family farm system to other regions in China.

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