

A New Approach in Xiaotangshan, Beijing¹

As a country with a very large population and relatively small amount of arable land, agriculture has always occupied a very important position in China's economy



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Agricultural workers are preparing the organic fertiliser

Periurban Agriculture Development in China

Throughout history, the food supply in China has been very fragile. This situation did not change when the Communist Party came into power in 1949. After 1949, China began its serious development programme for industrialisation in order to catch up to other country levels. Much more investment was put into the industrial economy and as a result, food shortages in China became so bad that many people died of hunger in the early 1960s. The Chinese central government realised that a balance between industry and agriculture was necessary: “walking on two legs” became a popular guideline for regional development of industry and agriculture in China in the 1960s.

In order to promote this mutual support of industry and agriculture, and at the same time the integration of the urban and rural economies, China reorganised its spatial arrangement for the first time, by enlarging the administrative boundaries of most of its cities. For example, the total administrative area of Beijing was

enlarged from 4,822 km² in 1956 to 16,808 km² in 1958, which included ten urban and periurban districts as well as eight counties. As a comparison: in 1949, the total area of the city was just about 63 km², including only four traditional urban districts.

This sparked the development of periurban agriculture in China. Thus, “suburban agriculture” (a term often used by Chinese scholars), is located mainly in the periurban areas and is fully oriented to urban demand: the production of vegetables, fruit, milk, fish, livestock and poultry, as well as some high value-added grain products such as various beans. Suburban agriculture is labour-, and relatively capital-intensive with a high level of productivity. It has absorbed many rural labourers and provided a stable and diversified food supply to the urban residents in terms of quantity. More than 70% of non-staple food in the city, mainly consisting of vegetables and milk, was produced by the city itself in that time in the 1960s and 1970s. Periurban agriculture played a big role in this practice

Nevertheless, the food supply in China remained insufficient, until the “People’s Commune”² was dissolved and a privatised agricul-

tural production system had been restored in the 1980s. Stimulated by this new system, which allowed farmers to make their own decisions regarding agricultural production, the food supply situation in China improved a lot. Many rural surplus labourers began to migrate to cities due to the high productivity of agriculture there and the small amount of farmland per capita. By around 1990, the food shortage in China, in terms of quantity, came to an end. However, in terms of quality, problems remained.

These changes up to the in the 1980s and the end of food shortages provided a powerful engine for urbanisation in China in the 1990s. Many new cities were born and many existing cities, particularly the big cities, further grew, both in population and area. Subsequently, more rural people migrated to cities for a better life. This process promoted the further development of periurban agriculture, due to: 1) urban growth creating a larger demand for diversified agricultural products; 2) rural migrants replacing the cheaper labour force in periurban agriculture as many of these farmers started to work in the industrial economy; and 3) competition for the scarce land between different economic activities making the periurban agricultural production more capital-intensive.

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In the late 1990s, a turning point took place, bringing a new development in periurban agriculture in China. Instead of paying attention to the *quantity* of food supply, people started to prioritise according to the *quality* of food supply. China began to apply the concept of food security into its planning agenda and regarded it as a new strategy. Food security in China means a sufficient, sustainable, accessible, diversified and nourishing supply. Periurban agriculture is important for food security in China.

Different municipal governments carried out programmes aimed at modernisation of the periurban agriculture sector. For example, in Beijing, as well as in Shanghai, agriculture-oriented science and technology development and demonstration parks were established. Xiaotangshan modern agricultural demonstration park in Beijing is one of these.

Agro-tourism became the most dynamic component of periurban agriculture

Agro-tourism became the most dynamic component of periurban agriculture in China in the last five years, thanks to China's rapid economic development (growth of household income, increase of private car ownership and longer public holidays). In fact, agro-tourism has become more important than agriculture itself in terms of employment and income in some parks in Beijing³.

XIAOTANGSHAN MODERN AGRICULTURE DEMONSTRATION PARK IN BEIJING

Xiaotangshan town (see map) used to be a royal resort during the Qing dynasty, with its abundant hot springs and beautiful landscape⁴; it has long been famous for its agro-tourism. In 1998, the municipal government of Beijing decided to develop a large modern periurban agriculture demonstration park around Xiaotangshan. According to the master plan, the park will include Xiaotangshan town, another three towns nearby, as well as 45 villages, covering an area of 112 km² with a population of more than 40,000.

Starting in 1998, a series of infrastructure projects were put into place. By 2001, the

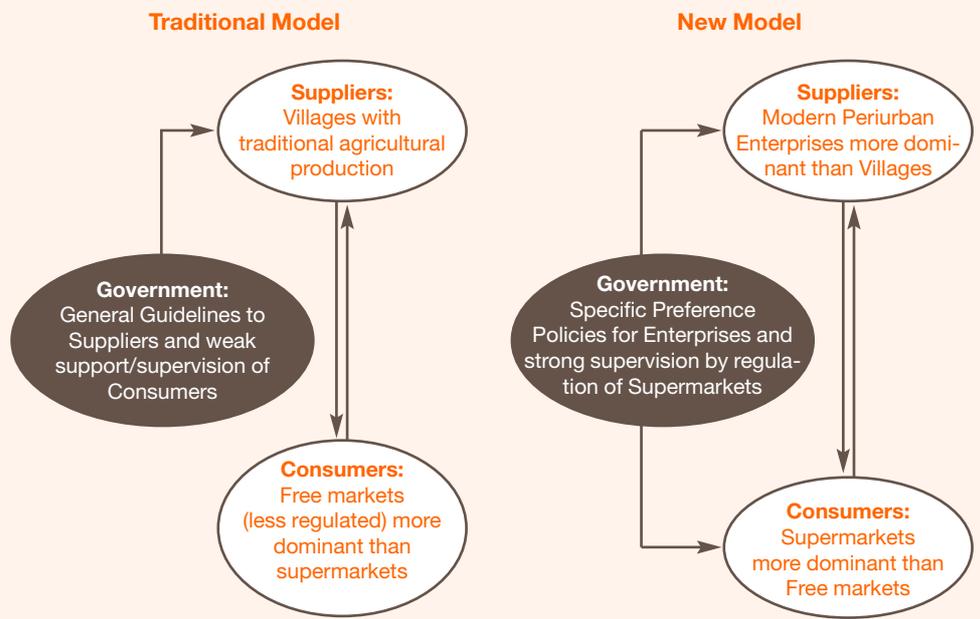


Figure 1: Comparison of Two Approaches to Periurban Agriculture

initial phase of the construction was completed and the park was opened to the public. In order to provide better service to the urban market, the park was further divided into eight sub-zones with each having its own focus. The eight sub-zones are classified as follows:

Precision agriculture zone: In this demonstration zone, all production processes like irrigation, fertilisation, etc. are monitored and managed by a nerve centre equipped with (GPS, GIS and RS) technologies, where it is demonstrated that yields per ha may increase by 18-30 percent at a lower cost.

Flower producing zone: Many popular and high value flowers, such as the lily, rose and chrysanthemum, are planted according to market demand, in this

zone. Currently, the producing capacity of the zone is 6 million plants, excluding the largest flower nursery in Asia.

Tree nursery zone: This area of 156 ha is one of the largest tree nurseries in China and in Asia; the zone can provide 2 million young trees each year to the urban market, with a variety of species.

Aquaculture zone: Technologically supported by the national engineering centre for freshwater fishery, this zone is famous for its development of new aquatic products with green feed. Sturgeon is currently the main product.

Lamb raising zone: In this zone of about 67 ha, 30 million RMB (Equivalent about to 3.6 million US Dollars) has been invested into infrastructure to raise 800,000 lambs per year. As an important component for local economic restructuring, all lines of service, from lamb breeding to mutton processing, can be offered within this zone.

Seed zone: To speed up the economic restructuring of the surrounding rural areas and to enhance the value of their agricultural products, the seed zone was designed to provide rural farmers with high quality seeds of selected flowers and crops. Currently, orchids and strawberries are dominant specialisations.

Agricultural product-processing zone: Guided by urban market demand, agricultural products are carefully processed in this zone, and sent to various supermarkets in wholesale packaging. These



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Israel Tomato: small in size but high in juice density

products are usually put in special counters with a higher price than usual in the supermarkets.

Agro-tourism zone and programme:

Centred around the historical royal resort and the beautiful hot springs, various zones are included in the agro-tourism programme. It also offers hotels and venues for meetings, training and leisure activities.

The modern agriculture park in Xiaotangshan region is proving to be very successful. In the past three years, it has already attracted 51 enterprises to operate their business in the various zones, with a total investment of 3 billion RMB Yuan. Up to 100,000 people have visited the park. It is expected that in the coming five years, more than 500 million RMB Yuan will be further invested in the infrastructure. In 2008, when the Olympic games take place in Beijing, the park will be one of the most important green food production areas in Beijing and in China.

The success of the park demonstrates that periurban agriculture can play a large role in urban economic development, not only in terms of employment

and economic return but also regarding ecological capacity-building. Greening the city provides high quality, fresh air and prevents further urban sprawl, which in many cases cannot be effectively carried out in Chinese cities, due to the high pressure of rural migration. In fact, no adequate urban growth can be realised in China, unless the periurban land is properly developed. The modern agriculture park in Xiaotangshan has been designated as a national model by the central government in China.

The Xiaotangshan model has advantages over the traditional practice of periurban agriculture in China. Instead of being passively integrated into the urban regime, this new approach is actively merging both rural and urban systems, with governments and enterprises playing a key role. It thus enhances its function and productivity, and improves urban-rural relations. The success of the park lies in the following components.

Firstly, a strong push and promotion from all levels of government is a precondition and necessity, particularly in the initial stage when kick-off investment and preferential policies are needed. For example, in the park, all hi-tech enterprises enjoy a tax-free status during the initial operating period, and a tax reduction for some years afterwards (similar to other industrial enterprises in hi-tech development zones in China).

Secondly, the active involvement of enterprises determines the success of the practice. As key players, enterprises act as a platform between suppliers and consumers, providing services to both villagers and urban residents. With the advantage of comprehensive and intensive utilisation of the land resources, and effective quality controls in its production systems, the economic return of the modern periurban agriculture can be 30-50 times higher than before.

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Thirdly, the participation and support of local farmers are basic requirements for smooth development. The local farmers not only provide labour but also the permission of land leasing as they collectively own the land.

CONCLUSIONS

Agriculture will continue to require attention in China where the large population and relative scarcity of farmland remain a potentially big threat to national security. The growing concern for food security in recent years has promoted the development of modern periurban agriculture.

Enlarging the city administrative boundaries strengthens the integration of urban and rural economies, and gives periurban agriculture room for development. Eventually, periurban agriculture will become part of the urban economy as the city grows and expands further.

Periurban agriculture has multiple functions. The fast increase in demand for "green" products makes modern periurban agriculture highly profitable. Agro-tourism becomes increasingly important in urban society as urban households get richer, have more leisure time, and concern for the environment.

The development of the modern agriculture park in Xiaotangshan demonstrates that support by the government, the leading involvement of enterprises, and the active participation of local farmers comprise a new and successful approach to periurban agricultural development. It is a successful way to address the two big issues of urban-rural economic integration and sustainable city region development at once.



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Greenhouse flower production

Notes

- 1) The author would like to give his special thanks to the Chinese Academy of Sciences for its research grant on Periurban Development in China (Grant No. KZCX2-SW-318-02) and the RUAF programme for its activities in China.
- 2) The "People's Commune" was the basic government organisation in rural China from 1958 to 1984. It normally consisted of many villages and had the responsibility to operate the collectively-owned assets, including land and other capital assets. The basic idea of the people's commune was to create an equal society, where assets were owned by people, and the benefit was more or less equally distributed among these people. However, this practice proved to be less efficient in terms of productivity. "To eat from one big pot" discouraged people's own initiative.
- 3) Historically, we have experienced the agriculture-based economy, industry-based economy and service/information-based economy. Now we are entering into the experience economy, in which people would like to participate in or experience many activities for amusement rather than for just making a living. To participate in periurban agriculture will be one good option or could be a future trend as people's affinity with nature grows.
- 4) In traditional Chinese culture, the Royal Palace, home of the emperor, the son of heaven, (such as the Forbidden City in Beijing) was usually regarded as dragon's head, while its northward direction was regarded as a blessed place since they were in line with the dragon's backbone. Xiaotangshan is located precisely to the north of the Forbidden City with a distance of less than 30 km away.