Urban Agriculture development in Minhang, Shanghai

Urban agriculture development in China is still dominated by municipal and local government, and other stakeholders play a comparatively less important role. This situation is changing however. The MPAP (Multi-stakeholder Policy Development and Action Planning) and FStT (From Seed to Table) programmes of the RUAF Foundation have contributed to a fundamental shift over the last ten years, particularly in the RUAF China network cities, which include three pilot cities and ten dissemination cities. Minhang district in Shanghai is a good example of a newly emerging approach in China of government-led, but participatory urban agriculture development.

Urban agriculture in Minhang

Minhang is one of Shanghai’s 18 urban districts and the city’s second-largest economic entity. Located in the centre of Shanghai Municipality, Minhang has a well-developed traditional manufacturing and hi-tech industry, such as aerospace technology and biopharmaceuticals. Most of the district’s farmlands are located in the southeast alongside the Huangpu River, and these plots have been reduced to a total of around 5,000 ha, accounting for less than 13.5 percent of the district’s land area (farmland accounts for 32 percent of Shanghai Municipality as a whole). A total of 77,000 farmers in Minhang generate an agricultural output value of USD 70.5 million per year, accounting for only 0.4 percent of the district’s GDP (the average for Shanghai districts is 1.9 percent). But the farmers’ net income per capita in Minhang is much higher than for farmers in the municipality as a whole (respectively USD 2470 and USD 1890).

Urban agriculture in Minhang is facing both the constraints and opportunities of its location. Major constraints are: 1) decreasing availability of arable land (a reduction of 7.6 percent in 4 years); 2) relatively lower productivity on farmland compared to other land uses (the input-output rate in agriculture is only 1/6 of other economic sectors, while that of small-scale farming is even worse); 3) increasing labour cost and high competitiveness of other jobs (making educated young people reluctant to become engaged in farming); 4) general small-scale of production, which makes it difficult to attract (commercial) finance for investment (such as for upgrading technologies).

However, the context also provides some good opportunities: 1) The multifunctional role of urban agriculture in the urban system is increasingly recognised by the city government. 2) There is a huge market and high demand among urban citizens for fresh and healthy food and for other niche products such as tourism destinations. 3) The protection of farmland and the practice of urban agriculture provide employment for vulnerable groups such as migrants and the elderly. 4) Increasing financial support, particularly through government subsidies, makes multifunctional urban farming interesting for some young entrepreneurs who are willing to invest time and efforts in this potentially high-return business.

The intervention and implementation of MPAP and FStT programmes

At the time RUAF started its MPAP programme in Shanghai in 2005, it was recognised that a number of changes were necessary in order to develop urban agriculture. To start with, urban agriculture requires more and diverse actors than traditional (rural) agriculture. RUAF introduced the MPAP programme in Minhang to help the district government identify major stakeholders and encourage them to become involved in the development of urban agriculture. In Minhang, at least three categories of stakeholders should be included: 1) government authorities, at municipal, district, town/township, and village levels; 2) practitioners, such as farmers, collectives and enterprises; and 3) support organisations, including universities, research institutes and market organisations. District government, village commissions (including cooperatives and some key agro-enterprises), Jiaotong University and the Agriculture Service Extensions were selected as key players in the MPAP programme and formed the core team. Through the RUAF, external linkages were created to other cities in China, such as Beijing and
Chengdu, as well as to cities in Europe, Japan and Taiwan.

RUAF continued to support this multi-stakeholder process of action planning under the subsequent FStT programme, but added support to practitioners in improving their income and efficiency through technical and organisational changes. These changes were identified by a local team, consisting of RUAF China Regional Centre based in Beijing, Minhang Agriculture Commission, Jiaotong University, China Agriculture University and the two towns Maqiao and Pujiang, which have been intensively involved in RUAF programmes and government agro-schemes in the last five years. In Minhang, five key areas of interventions were adopted by district government departments, agro-focused towns, villages and cooperatives. These interventions were: 1) joint strategic master planning both in sectoral and spatial dimensions by inviting high-profile institutions and experts to become involved; 2) establishment of cooperatives (to realize economies of scale and gain government support for training, finance, insurance, technologies, and marketing); 3) provision of innovative technical assistance to urban producers, such as by introducing a system in which each technician takes care of 7-10 farm households; 4) innovative financing schemes for urban agriculture based on a diversification of financing resources, such as mobilizing more social capital into urban agriculture businesses by establishing some preference policies; and 5) introduction of a tracing system to improve food safety. This latter system encompasses the whole chain, including production, transportation, trading, and the consumer market. The tracing and certification commitments are usually carried out by a third party such as municipal inspection departments.

**Major changes and progress**

Through these RUAF programmes, participatory government-led urban agriculture in Minhang district has developed significantly in the last five years.

**Strategic planning**

The government in China continues to play a dominant role in development, and strategic planning is therefore still important, particularly for urban agriculture in the relatively better-off district of Minhang. Unlike before, much attention is now given to the multi-functional role of agriculture in the peri-urban settings, its sectoral and spatial restructuring, and the participation of key actors in this process. In addition, external planners have been invited to participate in this planning process. Traditionally government planners focused predominantly on production and completely ignored the actors involved.

This change is demonstrated by the latest Minhang Spatial Plan for Urban Agriculture Development (2010-2020), which was jointly developed in 2009 by RUAF China at the Chinese Academy of Sciences and local government. The focus in this comprehensive development plan is on high-quality production, environmental protection and recreation, and on stakeholder participation. Two agricultural zones have been identified and designed (see figure 2): a recreational agricultural zone close to residential areas, with room for agro-tourism, and a so-called “Pujiang Modern Agriculture Industrial Zone”, which incorporates both more intensive production and a modern design for sightseeing for urban residents. This large-scale green farming landscape is located close to the grounds of Shanghai World Expo 2010.

*Figure 2 Minhang spatial plan of urban agriculture development (2010-2020)*

Planning is also well coordinated with other major policy frameworks and regulations, such as the Agriculture Industrial Policy, in which urban agriculture is seen as a way to enhance profit and farmers’ income and facilitate the development of specific niche agricultural products, and the Small Town (peri-urban) Planning Framework, in which urban agriculture forms part of integrated urban-rural planning and development.

As part of these plans, a series of infrastructural improvements for agricultural development have already been carried out. By the end of 2010 more than 1,527 ha of farmlands had been improved in terms of increased production (through the use of machinery for paddy rice, which increased from 42 percent in 2008 to 98 percent in 2010), ecological production and the introduction of irrigation systems for vegetables.

**Formation of cooperatives and agro-enterprises**

The importance of cooperatives was emphasised during the FStT programme in Minhang district. They are seen as an effective organisational step in urban agriculture development. The formation of cooperatives was based on villages or on agro-practices. The government enthusiastically encouraged this development and provided support in capacity building related to management, organisation and technological innovation. As a result, the number of agro-cooperatives in Minhang more than doubled from 38 in 2008 to 84 in 2010. The income of farmers in the cooperatives was also 3-5 percent higher than that of the un-organised farmers. Overall farmer household income per capita in Minhang in 2010 reached 18,500 RMB (about 2,000 Euros), which was a 20 percent increase compared to 2008.
Besides the formation of cooperatives, the government also encouraged the development of large-scale agro-enterprises, and supported farmers especially in acquiring land and obtaining financial support. Many agro-enterprises were thus able to expand their businesses in Minhang. Some 9,000 additional jobs in agro-related activities have been generated in the last two years. Currently there are 26 large-scale agro-enterprises in the district, six of which are very large.

Thanks to the improved peri-urban infrastructure in Minhang and the relatively rapid increase in farmers’ income, the growth in income disparity between urban and rural areas in Minhang has gradually slowed down. According to an independent third-party evaluation of the performance of local government in 164 counties in China (in strengthening urban-rural integration and reducing the gap between them), Minhang ranked No.1, and 81.4 percent of the farmers in Minhang are satisfied with the government services.

**Provision of effective technical assistance**

Currently in Minhang 88 agro-service stations with 288 extension teams provide technical assistance to farmers related to agro-technologies, marketing, food quality control and recordkeeping. Under the RUAF programmes an improved technical assistance scheme has been developed, in which each technician provides services to 7-10 farm households throughout a full production period. In the past, technicians were not specifically appointed to certain farm households, so none took responsibility for improving farmers’ skills and performance. During the period 2008-2010, various training courses on agricultural planning and management were organised, and up to 8,000 cooperative farmers received technical training.

In collaboration with Shanghai Agricultural College, Jiaotong University and the Minhang Agricultural Institute, new farming experiments were developed and served as demonstrations for the farmers, on testing and dissemination of high-quality seeds for paddy rice, vegetables and horticulture.

**Design of innovative financing schemes**

A series of innovative financing schemes was developed under the RUAF FSTT programme and suggested by the RUAF financing study, such as a guarantee fund and interest discount for a general agriculture production loan; an unemployment insurance and pension to farmers in cooperatives; financial institutions and relevant enterprises are stimulated to set up “small village banks” to provide financial support services to cooperatives, and cooperatives are encouraged to sell their products directly to communities and working units by giving a free ground rent.

**Improvement of food safety**

Based on the assessment conducted under the FSTT programme and the high standards related to food safety set at the Shanghai World Expo 2010, Minhang established a good system for monitoring food safety in the production and supply of agricultural products for the Expo. Given its location near the Expo sites, Minhang was designated as the food supply base in Shanghai during the event. The quality tracing system for all Minhang agricultural production and the certification system set up for entering the market in Minhang district are still in operation. Up to 20 percent higher income can be obtained by selling certified products.

In 2010, the satisfaction rate for quality vegetables was 99.8 percent for all the markets in Minhang. Green Certification increased from 400 ha in 2008 to 1,300 ha in 2010 and 39 cooperatives were approved to sell green products. Farmer collectives are encouraged to explore markets, adapt their production to the quality criteria in new markets and to establish or improve their marketing channels, preferably directly to consumers. The Minhang government assists in branding locally grown food (quality labels) and in stimulating consumers to eat locally produced quality food. The number of communities and working units involved in the former has increased from zero in 2008 to 30 in 2010.

**Conclusions and some experiences**

Minhang is a special case of urban agriculture development because of its natural and social settings. Its practices and approaches may not be fully relevant to other urban regions in developing countries, but the following lessons learnt may be relevant to other contexts.

- A strong government is critical for a government-led development approach. The local government must be consistent and transparent; and the integration and institutionalisation framework must be strong enough to assure fluctuation risks can be effectively avoided when changes take place in the local government.
- A systematic and comprehensive planning process is required to make sure the interests and benefits of various stakeholders can be guaranteed, and the initiatives and innovations of most stakeholders can be mobilised. RUAF’s MPAP and FSTT programmes were important in facilitating this process in Minhang.
- Policy formulation on multifunctional urban agriculture needs to take into account both sectoral and spatial dimensions, as well as other policy frameworks and get more support from external resources.
- A multi-stakeholder participatory approach can also be applied and implemented in a government-dominated society like China, as long as a common mission can be clearly identified and disseminated among various stakeholders.
- Close monitoring and evaluation of the activities and final products, including food safety tracing and certification as in Minhang, by independent third parties enhances the performance of local government and other actors, given the third-parties’ neutral position and impartial judgement in testing and certifying, which in turn boosts fair competition among all the players.

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