

International Modern Urban Agriculture Experience and Its Enlightenment to China

Yan Ren

College of Economics and Management, Heilongjiang Bayi Agricultural University, Daqing, China, 163319

ABSTRACT. *Agriculture and rural development are the universal problems in the process of urbanization all over the world. Especially for China, the rural area occupies the vast area of the national plate. As an important part of China's economic development, agricultural economic development has always been concerned by the central and local governments at all levels. With the transfer of rural surplus labor force and the rapid growth of urban population, how to accelerate the development of rural modernization and the construction of new countryside according to the scientific development thought of "urban-rural co-ordination" is the most important. The development model of modern urban agriculture in Western countries provides a wealth of experience for the harmonious development of cities and agriculture in China, a valuable reference for New Rural Construction in China, and a new train of thought for many developed cities in China.*

KEYWORDS: *Modern Agriculture, Urban Agriculture, Urban-rural Co-ordination, Experience and Reference, Development Model*

1. Introduction

From the view of agricultural history, Modern agriculture originated in Western developed countries, and then developed at a rapid pace and accumulated rich experience. The oretical research on modern agriculture by foreign scholars is relatively mature. Whatever the famous "five-stage theory" (Friedrich List,1841) , "Weitz's development stage theory" (Raanan Weitz,1971), "Agricultural Development Stage Theory" (JohnW.Mello,1966) or "Hayami development stage theory" (Yujiro Hayami, 1988) , they all regard modern agriculture as the goal and important stage of agricultural development.^[1]The development pattern of modern agriculture varies from country to country. Potter (2003) argues that the American model was more land for fewer people, its main objective was to increase the productivity of Labour; the Japanese model was more people and less land, its main objective was to increase the unit output of agricultural products; the European Union model was medium-sized land and people, and its main objective was to

increase the productivity of Labour or land.^[2]

Urban Agriculture is an important component of modern agriculture and rural revitalization and the direction of modern agricultural development. The Acknowledged origin of Urban Agriculture was German "Citizen Plantation". The first scholar who put forward the concept of "urban agriculture" was Japanese scholar Shiro Aigulu (1935). Since then, a large number of scholars have studied modern urban agriculture. Kasper et al. (2012) discuss three major issues in the context of urban agriculture.^[3] Huang Jiao et al. (2018) believe that urbanization and urban agriculture have economic, social and ecological functions.^[4] Li Xuefen (2018) discusses the path of agricultural multi-function development from the perspective of new rural construction.^[5] Although it takes agricultural products as its terminal products, it differs from traditional agriculture in the following aspects: First, it has special regional characteristics-in the metropolitan area or among the urban groups; The second is functional conformity-with Ecological, leisure, cultural and other functions; the third is the relevance of science and Technology Application-forming the Form the characters of high-tech, intensive and Industrialisation.

To sum up, there is more literature on the experience of foreign modern agriculture in the existing literatures, and less literature on Chinese practice and its inspiration to China. The United States, Germany, France, the Netherlands, Israel in Europe, Japan, South Korea, Singapore in Asia and other agricultural developed countries are typical representatives of modern agriculture. Exploration and practice in this area have achieved significant results. Combining advanced experiences and practices has certain reference value for the implementation of modern agriculture strategies in China. Analyzing the development experience of modern agriculture in agricultural developed countries is important for China's development of modern agriculture.

2. International Experience in Modern Agriculture

2.1. Modern urban agriculture's Development experience in the United States

The United States is one of the most industrialized and urbanized countries in the world. The main organizational form of agriculture is family farms. With a more refined division of Labor, their productions are as specialised as those of big manufacturing companies, even among the 500 largest in America. The developed transportation industry has provided convenient conditions for the construction of the market network of agricultural products'sale, the perfect agricultural socialized service system and all kinds of agricultural production models promote the continuous development of agricultural products' production and logistics. The government also regulates and promotes the agricultural development through the law of agricultural products logistics, the policy of supporting agriculture and many fiscal and taxation policies. All of these policies have greatly promoted the development of modern urban agriculture in the United States. At present, modern urban agriculture in the United States accounts for 10 percent of its total area, and

the value of its agricultural products accounts for more than one third of the total value. Citizen Plantation is the main form of modern urban agriculture. It develops rapidly, which builds a bridge between farmers and consumers and promotes the development of local agricultural economy. In the development of modern American agriculture, the science and technology extension consists of the federal agricultural extension service, state agricultural extension stations, county extension offices, and agricultural colleges. These institutions disseminate the latest agricultural scientific and technological achievements through scientific and technological lectures, training courses, technical consultation, etc. ,spread agricultural knowledge to all farmers, including women and young people under the age of 20,train new type of farmers, guide famers in developing rural areas scientifically,in order to protect the environment and ensure the sustainable development of agriculture.

2.2. Modern urban agriculture's Development experience in European countries

As a region that industrialized and urbanized earlier than the United States, many countries in Europe regard modern urban agriculture as an important issue to coordinate urban and rural development and realize the multi-function utilization of land. Although the characteristics vary from country to country, the development of modern agriculture in European countries has benefited from a series of legal and policy measures formulated by government.

The "Citizen Plantation" in Germany is the earliest form of production organization in modern urban agriculture. Its main function is to provide the citizens with agricultural work experience and leisure spiritual enjoyment. Various farmers' cooperative organizations have ensured the close connection among the production, supply, marketing and technology of the citizen farm garden.

French agriculture is dominated by medium-sized family farms. The French government supports and develops various agricultural associations and encourages inter-farm land cooperation. Its modern agriculture mainly highlights its ecological, landscape, leisure and educational functions.

The Netherlands' Modern agriculture is a typical representative around the world. The agricultural sector contributes as much as 12 percent of its Gross Domestic Product. Its export of agricultural products per capita ranks first in the world. The cultivation of ornamental plants plays an important role in its modern agriculture. With the cooperation of agricultural logistics, the industry chain of agricultural products is complete, the level of intensive and deep processing is high.

Israel has the 21st highest population density in the world, with only 20 percent of its land area under cultivation, half of which is arid or semi-arid and requires irrigation. However, Israel has a well-established agricultural technology extension system and a modern information service system. The technology extension department funded by government raises farmers'educational level and popularize the latest technology to farmers through regularly training. These have led to a high level of agricultural modernization in Israel.

2.3. Modern agriculture's Development experience in Asian countries

Since the 1950s, Japan, South Korea, Singapore and other developed countries in Asian have entered the period of rapid urban development. The central government and local governments have different degrees of legal policy support in those country.

Based on the Compact urban space, Japan's urban agriculture is an urban "flower arrangement" agriculture, mainly concentrated in Tokyo circle, Osaka Circle and Zhongjing circle. The main forms are "Citizen Plantations" and agricultural parks which give priority to develop facility agriculture, processing agriculture, diversified agriculture and sightseeing agriculture. In the development of modern agriculture in Japan, there are not only agricultural improvement and popularization systems set up by the government at various levels, but also agricultural cooperative extension organizations set by farmers themselves.

South Korea promotes "green sightseeing" urban agriculture. The Scale of investment for this nature-oriented industry is a small, so it is of great significance in preventing the loss of the rural population to the cities or to other industries, and provides an opportunity for Rural Development.

Singapore focuses on building a modern and intensive agricultural science & Technology Park which relies on the state's investment, based on the advanced instruments and equipment, carries on the Agricultural Research and development, then it becomes Science & Technology Service Center in agricultural region through the technology radiation and enhances the domestic agricultural product supply the degree of self-sufficiency.

3. International Experience and its Enlightenment on the Implementation of Modern Urban Agriculture in China

The international experience shows that modern urban agriculture can play an important role in narrowing the gap between urban and rural areas, protecting the urban environment, promoting the harmonious development between urban and rural areas, ensuring the agricultural population, speeding up the process of agricultural modernization and building a new type of urban and rural society. Foreign studies on modern urban agriculture are based on the actual situation in the country. Countries in the actual practice have adopted different entry points to develop and improve modern urban agriculture and construction paths. However, whether it is the United States, Germany, France, the Netherlands, Israel in Europe, Japan, South Korea, Singapore in Asia, the development of Urban Agriculture is inseparable from government support and policy guarantees. On the basis of a good start, urban agriculture development in China will enter an accelerated development stage. In the next development process, in order to give full play to the function of modern urban agriculture in Production, life and ecology, This paper puts forward the following policy recommendations.

3.1. Formulate relevant policies to regulate agricultural development

The government should play a guiding role in the process of modern urban agriculture development. As a new agricultural method, the development of modern urban agriculture needs policy norms, administrative norms and the vigorous support from government, such as land policy, financial support, construction of agricultural service system, etc.. These policy norms and administrative norms should complement each other. The government has the responsibility to organize and coordinate the relevant departments involved in the construction of modern urban agriculture, such as the departments of agriculture, planning, development and science & technology, through its position in the whole administrative system. In addition, the government must give special support and consideration to key construction projects, such as those with outstanding economic, ecological and social benefits, resolutely clean up or ban problematic projects, such as those that cause serious pollution, duplicate construction and violate planning.

3.2. Overall layout according to local conditions

The government should take the leading role in guiding ideology, target orientation and development planning of urban agriculture. The positioning of urban agriculture is very important, only by determining the development direction according to the needs of the citizens and the objective reality of the city can we get twice the result with half the effort, so at the beginning of development, it is necessary to give full play to the advantages of resources in various places, to have a reasonable distribution, to avoid repeated construction and waste of resources. For this reason, when developing modern urban agriculture, all cities in China should adhere to the principle of top-level design, hire professional teams and draw up master plans. The development should be driven by planning.

Each city can rely on the local eco-agricultural Park, natural landscape and other platforms to form a well-planned, clearly defined function of the different urban agricultural functional circle. Cities can incorporate the development of leisure agriculture and rural tourism into their modern agricultural development plans, combining modern urban agricultural planning with General Land Use Planning, agricultural development planning, urban development planning and urban tourism planning to ensure the integrity, forward-looking and continuity of planning, promote the orderly development of modern urban agricultural resources, pave the way for the sustainable development of ecological resources.

3.3. Improve the service system and improve the service level

The developed information service system can connect agricultural production and market closely, communicate market information and coordinate commodity purchase. In the aspect of strengthening agricultural science and technology extension services, in addition to bringing in agricultural professionals and reforming local Agricultural Technology Extension Centre, Governments at all

levels can provide first-line farmers with agricultural technology, market information and investment guides by starting online agricultural consultations. In the aspect of strengthening the marketing of agricultural products, in addition to increasing publicity, new marketing methods could be opened up such as E-commerce, online trading and auction, so as to expand the space and field of agricultural products marketing. We should strengthen the building of enterprisers in agricultural enterprises, the leaders of enterprises will lead the peasants to develop urban agriculture and speed up the operation process of agricultural industrialization.

Acknowledgment

Heilongjiang Bayi Agricultural University In-school Nurture Project(Research on Agricultural Science and technology innovation improving agricultural competitiveness from the perspective of modern agriculture-A case study on Heilongjiang Reclamation area)

References

- [1] Susumu Yujiro, Vernon Ruttan. International Analysis of Agricultural Development. BEIJING: The Science Press, 2000:124-125.
- [2] Potter C. Agri-Environmental Reform in the United States and Europe. American Economic Review, 2003,82(1):34-51.
- [3] Kasper C, Rau A. Urban Agriculture Casablanca. Resilient Cities 2. Springer Netherlands, 2012.
- [4] Huang Jiao. A summary of the multi-functional evolution of agriculture in urban areas under the background of rapid urbanization in China. Resource Science, 2008, 40(4):664-675.
- [5] Lee Suet-fun. Sichuan new countryside construction and the agricultural multi-function development path research. Southern Agriculture, 2018,(1):93-94.