

**The World Food Prize's Youth Leadership program**

**The function orientation and implementation of urban  
agriculture development**

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## **Abstract**

This paper focuses on the functional orientation and development of urban agriculture. By comparing the different development situations of small family farms and Tayuanzhuang Tong Fu Rural Demonstration Park, it finds that industrial integration, financial support and policy support are important factors affecting the development of this agricultural form, which can help provide feasible suggestions for the future development of urban agriculture.

**Key words:** urban agriculture; Industrial integration; Tayuan Village Tong Fu Mode.

With the development of the national economy and the improvement of people's living standards, the demand for agricultural consumption experience is further strengthened and the development of urban agriculture is promoted to a new level. Urban agriculture is an agricultural form which is mainly based on urbanized areas and surrounding areas, using agricultural resources and agricultural landscapes, supported by agricultural high-tech, marked by facilities, parks, greening and standardization. It is popular these years with the goal of improving agricultural production efficiency, developing diversified agricultural operations, and optimizing the regional ecological environment, and integrating the development of primary, secondary and tertiary industries. It is an agricultural form with productive, living, humanistic functions and a high degree of intensification. This paper investigates the urban agriculture around Shijiazhuang, explores the development of different urban agricultural forms under different business models, and analyzes the key factors affecting the development of urban agriculture.

## **1. Overview of urban agriculture**

### 1.1 Classification of urban agriculture

According to agricultural functions, it can be divided into agricultural parks, sightseeing agricultural parks, citizen agricultural parks, leisure farms, education agricultural parks, high-tech agricultural parks, forest parks, folk sightseeing parks, folk farms, etc. It can be divided into central area agriculture, corridor area agriculture, isolated area agriculture and peripheral area agriculture according to the region.

### 1.2 Urban agricultural function

#### 1.2.1 Production function

Also known as economic function, it mainly refers to providing high-quality, hygienic and pollution-free fresh products to meet urban consumption demand, with strong ability to earn foreign exchange and value-added, while increasing urban employment opportunities, optimizing industrial structure, and increasing agricultural production to increase farmers' income.

#### 1.2.2 Life function

Also called social function, it mainly provides urban residents with places and opportunities to contact nature, experience agriculture and leisure tourism, promotes cultural exchanges between urban and rural areas, and meets people's spiritual and cultural needs. It can also provide urban residents with places and opportunities to contact nature, experience agriculture, sightseeing and leisure, and help enhance the cultural connotation and educational function of modern agriculture and the demonstration radiation effect.

#### 1.2.3 Ecological function

Also called protection function, It mainly refers to giving full play to the characteristics of cleanliness, cleanliness, beauty and green, creating a beautiful and pleasant ecological landscape, improving the natural environment, maintaining ecological balance, improving the quality of the living environment, acting as a green isolation belt in the city, preventing and controlling urban environmental pollution, so as to maintain a fresh and quiet living environment, and the product is conducive to preventing excessive expansion of the city.

### 1.3 Current situation of urban agriculture development in China

In recent years, China's modern industrialization and urbanization have developed rapidly, the process of urban-rural integration has accelerated, and urban agriculture has emerged and developed rapidly. The development of urban agriculture in China began in the 1990s and has developed rapidly in more than 20 years of exploration and practice. Industrial systems, such as urban gardening, urban breeding, urban agricultural product processing, urban leisure tourism, urban agricultural services, and urban agricultural science popularization, have been formed all over the country. There are two main business models:

#### 1.3.1 Mainly for profit

This model is suitable for areas with vast sparsely populated areas, developed industries and insufficient labor. It is following the development path of agricultural modernization, which started with agricultural mechanization and aimed at improving labor productivity and commodity rates. This model can produce high-quality agricultural products with high added value by improving labor productivity and commodity rate, provide people with high-quality leisure, sightseeing and tourism sites, and bring considerable economic benefits. Urban gardening, urban breeding, urban agricultural product processing, and urban leisure tourism

all belong to this model

### 1.3.2 Mainly for public welfare

This mode mainly displays and demonstrates practical technologies with high scientific and technological products and has the functions of science popularization, leisure and sightseeing. The embodiment of values in agriculture is not blindly pursuing economic benefits, and the countryside full of green and sunshine has become the main resort place, and food is an important part of life. This kind of urban agriculture regards experience, leisure agriculture and the environment as the key to the development of urban agriculture, and vigorously promotes rural leisure and vacation, which not only meets the spiritual needs, but also increases income. Urban agricultural services and urban agricultural science popularization all belong to this model.

Urban agriculture has played an important role in ensuring urban food security, enriching citizens' spiritual and cultural life, and improving urban ecological environment. First, the ability to guarantee agricultural products has been greatly improved. Taking the improvement of the "vegetable basket" product guarantee ability as an important task for the development of urban agriculture, we have strengthened the integrated construction and development of production, transportation and sales, and ensured the demand of urban residents for high-quality agricultural products. Second, it has vigorously promoted agricultural modernization. By making full use of urban capital and technological advantages, and through policy support, we have guided various high-quality resource elements to gather in urban agriculture, and promoted the application of advanced technology and equipment in the agricultural field. Third, it has effectively promoted the coordinated development of urban and rural areas. Comprehensive agricultural productivity has significantly increased, farmers' income has continued to grow rapidly, rural public services have significantly improved, and the material and spiritual needs of urban and rural residents have been met.

In the process of rapid development of urban agriculture in China, there are also some problems, such as unbalanced development, relatively simple development model, lack of innovation and characteristics, lack of talents and labor force, and lack of development stamina; The application of science and technology is not extensive enough.

## **2. Case Analysis of Urban Agricultural Development**

In recent years, in the process of developing urban agriculture, Shijiazhuang has cultivated a number of modern agricultural parks with high concentration of leading

industries, strong cohesion of modern elements, prominent product brand effect and diverse mechanisms of linking agriculture with farmers and enriching people, with the goal of expanding the ecological life function of agricultural production, meeting the consumption needs of urban and rural residents and enhancing the vitality of agricultural supply. At the same time, a number of small family farms have also emerged, The two models present different development status.

### 2.1 Development status of small farms around the city

Taking Hui Geng Ecological Farm as an example, Hui Geng Ecological Farm is located in Song cun Village, Yuhua District, Shijiazhuang City. It was founded by Hebei Hui Geng Agricultural Technology Company, and will not operate after several years of development. Hui geng Ecological Farm used to adopt the organic planting method of "traditional Chinese medicine farming+ natural farming+ enzyme farming", without the use of chemical fertilizers, pesticides and hormones, and truly achieved pollution-free and pollution-free. The farm's picking garden covers an area of 150 mu. More than 30 kinds of health preserving vegetables, fruits, grains are planted in the park for tourists to pick. It also undertakes various activities such as parent-child research, camping, barbecue, catering, entertainment, and so on. It has been in a great development for a while. However, with the urban planning and construction, the land is occupied, and Hui geng Ecological Farm can no longer be found.

Through visiting other mature farms, such as the Purple Garden Family Farm and Happy Farm, they have operated well in the past few years. Due to the epidemic situation in recent years and other reasons, the current operation is still in a maintenance state, and only seasonal single industries such as retained barbecue or picking, which is not sustainable enough.

### 2.2 Analysis of small farms around cities

2.2.1 The industry is too single. The Alfalfa Family Farms and Happy Farms now have only a single industry such as picking or grilling, which will increase the competitive pressure, resulting in many competitors in a small operating market, making it more difficult for the farm to survive. At the same time, it will make the farm too dependent on a certain industrial market. Once there is turmoil in the industry or the competitiveness of the company's own products weakens, the company will face huge operational risks. On the other hand, it cannot attract customers (tourists) through a variety of experiential activities, so that the farm withdraws from the market in the fierce competition.

2.2.2 Resource constraints have not been effectively solved. In recent years, social capital has increased year by year in urban agriculture, but most of it has entered large-scale breeding, modern industrial parks, etc. Some small farms still have difficulty in raising funds,

especially in the case of the epidemic, some family farms cannot make ends meet, can only survive, cannot expand renewable production, their competitiveness has declined, and some will miss opportunities for development due to financial problems.

### 2.2.3 Policy support needs to be strengthened.

In recent years, a series of supporting policies and measures have been introduced to accelerate the development of urban agriculture. However, efforts still need to be made to promote the transformation and application of policies and guide farmers to follow the policy oriented development of industries. At the same time, the main suppliers of agricultural products are mostly decentralized farmers and small farms, which are small in scale and weak in strength. Policies related to promoting large-scale operation need to be innovated. Failure to make full use of the policy will lead to the farm's inability to develop together with the focus of national concern, and the policy advantage cannot be used to reduce production and operation costs, resulting in limited farm development. In 2012, the General Office of the Ministry of Agriculture issued opinions on accelerating the development of urban modern agriculture, and introduced a series of safeguard measures such as government investment. The area once occupied by Hui Geng Family Farm has now become a real estate development zone, indicating that Hui Geng has failed to optimize site selection and follow up the policy direction.

## **3. Investigation and Research on Tong Fu Rural Revitalization Demonstration Park**

### 3.1 Development overview

Tong Fu Group has cooperated with village enterprises in Tayuanzhuang, Zhengding County, and established Tayuan Village Tong Fu Mode. In the form of cooperation alliance, it has introduced the whole industrial chain of the primary, secondary and tertiary industries. While improving modern agricultural planting, leisure tourism, research education, farmer training and other projects, it has carefully planned to build large-scale pastoral health care parks, cultural performance parks and other projects to stimulate scientific research, culture, tourism, health care, health food production, grain processing and other business activities.

Tong Fu Group signed cooperation agreements with farmers to provide farmers with scientific and professional guidance in seed, technology and fertilizer through the mode of "company+ base+ cooperative+ farmers" and the creation of a joint operation mode, accelerate the wide spread of advanced agricultural technology, and drive the cultivation of wheat, vegetables, miscellaneous grains, etc. With an area of more than 100,000 mu around

Shijiazhuang, radiate and drive nearly 20000 surrounding farmers, and further expand the source of farmers' income. Tong Fu has kept the industrial chain entity in the county, left more jobs in the countryside, and further broadened the sources of income for farmers. The villagers have increased their income and gained a sense of happiness in the development of the industry. With Tayuan Village as the center, the number of villages benefiting from the project is increasing, and the surrounding original industries are upgraded, so other related industries are also developing rapidly. While providing high-quality agricultural products for urban and rural residents, it also attracts tens of thousands of tourists to visit and study every day.

### 3.2 Successful experience

#### 3.2.1 Multi industry integration

First one is modern agriculture. It develops and applies various advanced technologies such as aerosol cultivation, three-dimensional cultivation, A-frame hydrodynamic circulation cultivation frame, intelligent environmental control system, DFT cultivation, etc. to agriculture. At the same time, five ecological cycle modes will be created: three-dimensional compound cycle, plant factory edible fungus cycle, fish vegetable symbiosis cycle, undergrowth breeding cycle, manure straw organic fertilizer fruit vegetable cycle.

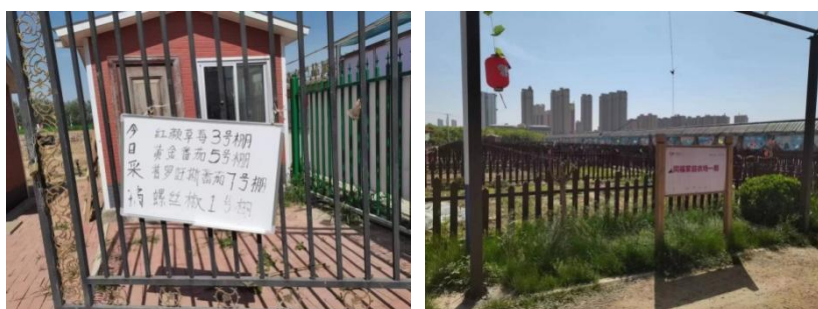


The second is healthy food. Use smart farms, picking gardens, family farms and other sites for agricultural production. Tong Fu fruits and vegetables are planted in the soil improved by organic fertilizer and delivered directly from the field, which is safe and healthy.

The third is chain catering. Leading four series of products, agricultural and sideline products include ecological green fruits and vegetables, fresh meat, high-quality grain, etc.; The health food series includes bowl porridge, canned porridge, juice drinks, protein drinks, dairy drinks, etc.; Special food series include aviation food, high-speed rail food, special food for diabetics, etc.; Catering food series include Tong Fu Steamed Bun Workshop, student nutrition meal, thousand porridge products, etc.



The fourth is cultural tourism and health care. The purpose of leisure and entertainment can be achieved by using such places as under forest breeding, cute pet paradise, and four season picking. Tourists are attracted through picking products, holding egg picking under the forest, fishing in the water, feeding animals and other colorful experience activities. It uses research place, multi-function hall and other places to realize the function of education demonstration.



### 3.2.2 Financial support

Tayuanzhuang Village has good agriculture, industry, village appearance and other resources, in accordance with the idea of "leading the village with enterprises, promoting enterprises with villages, two-way linkage, mutual benefit and win-win", starting from the integration of village and enterprise advantageous resources, using the idle resources in the village to invest in shares, on January 5, 2020, and Tong Fu Group jointly established Hebei Tayuanzhuang Tong Fu Agricultural Technology Co., Ltd., Tong Fu Group currency funds accounted for 70% of the shares, Tayuanzhuang Village used the village's collective construction land and idle assets to contribute 30% of the shares, Build the Tayuanzhuang Tong Fu Rural Revitalization Demonstration Park to promote the deep integration of primary, secondary and tertiary industries. After nearly 30 years of development, Tong Fu Group has become a modern enterprise group integrating rural revitalization and modern agriculture, health food, chain catering, cultural tourism and health care, and has sufficient strength to provide financial support for Tayuanzhuang.

### 3.2.3 Policy support

The "Tayuanzhuang Tong Fu Model" accelerates the empowerment of rural revitalization, which is in line with the concept of comprehensively promoting rural



revitalization proposed in the Central Document No. 1 in 2021, giving full play to enterprise resource endowments, realizing the rationalization of urban and rural resource allocation, continuing the existing cultural heritage, and adding new rural genes, providing a strong impetus for our province to accelerate the rural revitalization strategy.

On July 11, 2013, when General Secretary inspected Tayuanzhuang Village again, he put forward a request: "You should enter the well-off society ahead of time in the country, turn agriculture into industrialization, pension into marketization, and tourism into standardization." Along the development path guided by General Secretary, Tayuanzhuang village has made efforts in many ways and "thrived on three sides" in agriculture, pension, and tourism projects.

## **4.Summary**

The development of urban agriculture plays a positive role in promoting the transformation and upgrading of industrial structure, improving agricultural economic efficiency, and promoting the coordinated development of urban and rural areas. Therefore, we should seek breakthroughs from the following aspects.

### **4.1 Actively promote industrial integration and development**

Based on the development of urban demand, integrate the local cultural and tourism planning, attract projects, promote the integration of multiple industries, create new values and new development directions of urban agriculture.

### **4.2 Actively expand investment and financing channels**

The development of urban agriculture cannot be separated from financial support. We should actively encourage all kinds of social funds to participate in urban agriculture through equity participation, cooperation, independent investment and other ways, promote the diversification of investment subjects, and provide capital support for the development of urban agriculture.

### **4.3 Actively strengthen policy support and guidance**

Issue targeted policies to create a policy and institutional environment conducive to the development of urban agriculture from the aspects of planning, development channels, preferential projects, and enhance the driving force for the development of urban agriculture.

Urban agriculture is the direction and trend of modern agricultural development and a potential agricultural type. It is necessary to constantly expand industrial functions, innovate

development models, promote advanced technology, gather high-quality production factors, and promote urban agriculture to develop towards industrialization, marketization and standardization.

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