

Planning and Design of Modern Agricultural Industrial Park Based on Rural Revitalization Strategy -A Case Study of Fenghuang, Mingshan, Ya'an, Sichuan Province

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Abstract. To develop the countryside, the industry must be revitalized. Modern agricultural industrial park, as an important content of implementing the rural revitalization strategy and deepening the agricultural supply-side reform during the "14th Five-Year Plan" period, requires high attention to the multi-functionality of rural agriculture, organically combining the multi-functionality of agriculture with the improvement of rural infrastructure, the soundness of rural functions, and the industrialization of rural agriculture, avoiding the weak functionality of traditional agriculture, strengthening the strong functionality of smart agriculture and functional agriculture, realizing the organic integration of urban and rural elements, and making rural development comparable to urban development. Taking the planning and design of the modern agricultural industrial park in Fenghuang, Mingshan, Ya'an, Sichuan Province as an example, this paper starts from the current situation of the development of modern agricultural industrial parks in China, explores the existing resources of Fenghuang Village, analyzes its industrial development trend, and then plans and designs the planning and operation strategy, planning positioning, spatial layout and other aspects, in order to provide reference for the local government and the innovative development of modern agricultural industrial parks.

Keywords: rural revitalization; modern agriculture; industrial park; planning and design.

1. Preface

Organization of the Since the rural revitalization strategy was put forward, it has attracted the attention of scholars from all fields across the country[1]. Rural revitalization, as the general program for China's rural development in the next 30 years, follows the 20-word general guideline of "prosperous industry, livable ecology, civilized rural style, effective governance, and affluent life", establishes and improves the mechanism and policy system for integrated urban-rural development, and accelerates the modernization of agriculture and rural areas[2]. The successive implementation of documents such as the "Opinions of the CPC Central Committee and the State Council on Implementing the Rural Revitalization Strategy" and the "Rural Revitalization Strategy Plan (2018-2022)" further promoted the development of rural revitalization work. In February 2023, the 25th central document guiding the "three rural" work was issued, proposing to promote the high-quality development of rural industries, cultivate new industries and new forms of business in rural areas, continue to support the creation of agricultural industry strong towns, modern agricultural industrial parks, and advantageous characteristic industry clusters, support the construction of national demonstration parks for rural industry integration development, and deepen the construction of agricultural modernization demonstration zones[3]. This shows the importance and urgency of rural revitalization.

At present, the number and scale of modern industrial parks in China are increasing, and the industrial structure is gradually optimizing, achieving a lot of gratifying results, and safeguarding China's food security bottom line to a certain extent. Generally speaking, China is in the golden stage of investing huge energy in the development and construction of modern agricultural industrial parks[4]. However, compared with other industries, the development of modern agricultural industrial parks still has many defects. Generally speaking, the planning of agricultural

industrial parks will design and arrange them in rural areas. Due to the fact that the flow of urban and rural elements is not very smooth, there are common problems such as incomplete talent team, low comprehensive management efficiency of the park, and low production level. The development of modern agricultural industrial parks faces problems such as non grain and homogenization of industries, low degree of industrial integration, low participation of farmers, and single financial capital. It is necessary to strengthen planning guidance, industrial coordination, factor allocation, and efficiency improvement[5]. This will also be the key consideration factor for the future development of modern industrial parks.

This paper is based on the development status and impact of modern agricultural industrial parks in China, and selects the planning and design of the modern agricultural industrial park in Mingshan District, Ya'an City, Sichuan Province, to explore the key points of the planning and design of modern agricultural industrial parks, and the important significance for the development of county-level areas. Ya'an City is located on the west side of the Sichuan Basin, and is known as the "throat of western Sichuan", the "gateway to Tibet", and the "corridor of ethnic groups". It has a natural and good ecological agricultural development advantage. The government concentrates its efforts and accelerates the promotion of green agricultural development in the whole area of Ya'an. As a demonstration area for rural revitalization, Mingshan District relies on the advantages of tea resources and high-quality ecological background, actively responds to the government's call, and strives to build a modern agricultural industrial park, with the aim of achieving rural industrial revitalization, and providing reference value and design scheme template for rural industrial revitalization with high-quality ecological background.

2. The development of modern agricultural industrial parks in my country

Section Headings

Modern agricultural industrial parks are extended from the traditional agricultural parks, with certain agricultural foundation, location advantages, and industrial development conditions, forming a cluster area with a relatively complete industrial chain in space, integrating various functions such as scientific research and innovation incubation, agricultural production, leisure and entertainment, ecological protection, demonstration and service, etc. into an industrial park[6]. According to the current domestic development situation, modern agricultural industrial parks optimize and aggregate rural resources, further improve the utilization efficiency of agricultural resources, avoid the waste of rural ecological resources and protect the ecological environment. Modern agricultural industrial parks promote the integration of the three industries in rural areas, providing more employment opportunities, income sources and marketing channels for local villagers.

2.1 Development status of modern agricultural industrial parks

Modern agricultural industrial parks are an important engine for rural revitalization development. In recent years, the government has issued a series of relevant policy documents on the construction of modern agricultural industrial parks, showing that the state attaches more and more importance to the construction and sustainable development of modern agricultural industrial parks.

Various regions across the country actively responded to the national call and issued a series of policies to promote the development of modern agricultural industry. For example, Beijing issued the "Implementation Plan for Comprehensively Promoting Rural Revitalization and Accelerating the Modernization of Agriculture and Rural Areas", proposing to create 5 national-level modern agricultural industrial parks, 15 municipal-level modern agricultural industrial parks and strong towns of agricultural industry, upgrade 7 national agricultural science and technology parks, and build about 100 agricultural science and technology demonstration bases[7].

2.2 Functional characteristics of modern agricultural industrial parks

Modern agricultural industrial parks are advanced demonstration parks that promote rural development by integrating the development of the primary, secondary and tertiary industries in rural areas, supported by smart technology, and combined with scientific management. Compared with traditional agricultural parks, they have multiple functions such as social, economic and service.

2.2.1 The social function of incubating scientific and technological achievements and cultivating talents

Advanced technology is one of the foundations of development. Modern agricultural industrial parks pay great attention to technological innovation and incubation. The advanced technologies and management techniques developed can not only be displayed and used in the park, but also use their high-tech advantages to serve as a training base to provide technical training to local villagers, link farmers and lead farmers, help villagers improve their agricultural technical level, achieve the purpose of building a rural talent team, and realize the radiation of technology[8]. The promotion of achievements is an important means to test the effectiveness of technology. The advanced technologies and management methods are publicized and trained, radiating and driving the surrounding villagers and modern agricultural industrial parks to develop together, and gathering resources such as funds, talents, and markets.

2.2.2 Economic functions that enhance rural economic benefits

Modern agricultural industrial parks generally rent rural collective construction land, which on the one hand, will bring rental income to the countryside, and on the other hand, will also provide corresponding employment opportunities for local villagers, and increase their economic income. At the same time, modern agricultural industrial parks have a relatively complete research and development, processing, sales and logistics industrial chain, as well as enterprise marketing management methods, which have a stronger brand effect and price competitiveness when products are pushed to the market[9]. Through government subsidies, market guidance, it is easy to reduce costs, improve quality, establish brands, strengthen marketing, ensure higher economic benefits of modern agricultural industrial parks, and reflect their good economic function.

2.2.3 Provide service functions for high-quality production and lifestyle

With the mental trauma caused by the COVID-19 epidemic, more and more people are longing for a healthy and ecological pastoral life. Modern agricultural industrial parks have the characteristics of ecological friendliness, intelligent management, and sustainable development. The agricultural production environment has been greatly improved, and there are many leisure scenes with ornamental and experiential features. Combining with the increasingly popular rural tourism market, leisure countryside and immersive agricultural experience have become important branches of the rural tourism industry. By using some of the production scenes of modern agricultural industrial parks to upgrade and transform, they can form distinctive tourist attractions and promote the development of "agriculture + tourism and leisure". In addition, modern agricultural industrial parks, as carriers of technology incubation, can be combined with education and research scenes to realize the integration of theory and practice teaching methods, which can better enable students to master relevant knowledge, stimulate students' interest in science and technology, and promote the development of "agriculture + research and education".

3. Research objects

3.1 Overview of Mingshan District

Mingshan District is closely connected to Chengdu City in terms of location (shown in Figure 3-1), thus having a broad market element exchange. However, Qianjin Town is located in the

southeast mountainous area, with less transit traffic across administrative boundaries, and needs to connect with the core area through secondary roads. Mingshan District has a developed road system, which makes Qianjin Town have more contacts with the surrounding towns, and forms an industrial linkage with Cheling Town and Hongyan Township in the spatial structure.



Figure 3-1 Location map of Mingshan District (source: self-drawn by the author)

3.2 Overview of planning base

The planning area (shown in Figure 3-2) is Fenghuang Village, Qianjin Town, Mingshan District. The planning base is 515 acres of land, including about 40 acres of collective construction land and nearly 475 acres of basic farmland [10].

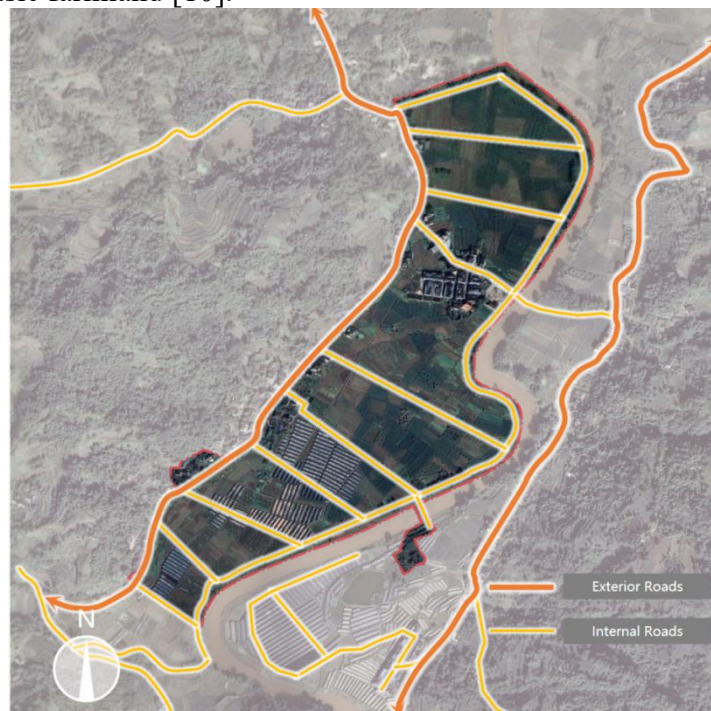


Figure 3-2 Planned base plan (source: Internet + self-drawn by the author)

Fenghuang Village is located in the northeast of Qianjin Town, Mingshan District. It is a typical mountainous and hilly area, with a dam and a river (Yanzhen River) sandwiched between two mountains. It has a beautiful environment and fresh air. It is 3.5 kilometers away from Changzhen and 3.5 kilometers away from Mingshan Railway Station and Chengdu. The Ya Expressway is about 5 kilometers long, covering an area of 7.2 square kilometers, and has good location advantages. The village has 9 villager groups. At the end of 2021, there were 725 registered households with 2,366 people. The village has 1,500 acres of cultivated land, 3,200 acres of tea garden planting area, and 2,200 acres of forest land. Focusing on the construction ideas of one town, one park, and one village, one product of the district committee and district government, the whole village uses party building to lead the rural revitalization of the morel planting industry as a carrier, and gradually promotes the development plan of Fenghuang Village's "Sea of Fungi and Flowers" to truly achieve "industrial development" When it becomes prosperous, farmers' pockets will bulge, social capital will gather, and the rural environment will be beautiful." This is a win-win situation.

3.3 Base situation analysis method analysis

3.3.1 "S" (strengths) advantages

Transportation resources: The external transportation is good, but the internal transportation needs to be improved. The external roads of the base (shown in Figure 3-3) are mainly connected by the Chengdu-Chongqing Ring Expressway, the Development Avenue and some village roads. The current village roads in the site have been hardened and have a strong appearance. The internal road system of the base is relatively complete, with multiple field roads, and the riverside road is expected to develop into a landscape road.



Figure 3-3 Base transportation location map (source: Internet + self-drawn by the author)

Agricultural resources: Fenghuang Village has rich characteristic agricultural resources. The main sources of income for the village are tea (mainly in the Zonggang Mountain area and Liangshan), morel mushrooms (along the banks of the Yanzhen River in Luoba and Fenghuangba), rapeseed, rice and crisp red plums, as well as migrant workers' income. The existing planting area of morel mushrooms is more than 300 mu: "According to the lowest yield of 400 jin per mu of morel mushrooms, and the average selling price of 60 yuan per jin, the total value of morel mushroom planting in the whole village is 7.2 million yuan. At the same time, it solves 300 migrant workers' positions for the local labor force and weak labor force, and the annual migrant workers' fees amount to more than 750,000 yuan." The planting area of crisp red plums is more than 420 mu. In June 2020, it merged with the provincial-level poverty-stricken village and reorganized the

village. Now, all 81 households and 211 people who have been registered and filed have been lifted out of poverty.

Table 3-1 Planting situation of important agricultural products in Mingshan District (Source: modified by the author)

important agricultural products	Planting scale (mu)	Main distribution areas
Morels	7000	Qianjin Town (the town where the planning area is located)
tea	12000	Maohe Township
vegetable	5000	Baizhang Town
All season fruits	2000	Cheling Town

According to the "Mingshan District's 14th Five-Year Plan for Promoting the Modernization of Agriculture and Rural Areas (Draft for Soliciting Opinions)"[10], Qianjin Town is one of the few grain and mushroom industry development bases in Mingshan District, and is planned as a characteristic grain and mushroom planting area. Fenghuang Village, Qianjin Town, as one of the main carriers of morel mushroom cultivation, has built nearly a hundred mushroom planting greenhouses, laying a solid foundation for the key development of grain and mushroom industry, and the breeding and research of morel mushroom seeds.

Natural resources: Fenghuang Village has an excellent rural natural environment. It not only has mountains, forests, waters, and fields, but also simple rural customs and free air. It has a rural natural environment that contrasts greatly with the city, and also has enough rich space for grain and mushroom development.

Tourism resources: The tourists within the province are highly sensitive to the tourism environment, and the tourism demand of tourists from outside the province is highly inducible. According to statistics, the tourist source market of Qianjin Town mainly comes from Mingshan District and Tianquan County, Baoxing County and other cities in Ya'an City, followed by cities in Sichuan Province such as Chengdu, Leshan, Meishan and other cities in the surrounding areas of Ya'an.

3.3.2"W" (weaknesses) disadvantages

Supporting facilities for related industries are incomplete and it is difficult to attract investment. Some mushroom cultivation greenhouses have been built inside the planned base (shown in Figure 3-4). Although the foundation for the development of the grain and fungi industry is in place, the supporting facilities for related industries are still not complete. There are difficulties in attracting investment for modern agricultural industrial park projects. High-cost construction and high-consumption project investment further squeeze the profit margin of the park. It is difficult to resist the risks of strong market competition. The circulation of urban and rural factors is not smooth, and it is difficult to achieve the integration effect of the industrial chain and industrial integration. The level of development is not high [11]. At the same time, facing the problem of structural hollowing out of the village population, talent introduction is another major problem.



Figure 3-4 Aerial view of the planning area (source: self-photographed by the team)

3.3.3"O" (opportunity) development opportunities

Policy opportunities: The Sichuan Provincial Party Committee issued the "Opinions on Accelerating the Construction of the Modern Agriculture "10+3" Industrial System and Promoting the Transition from a Large Agricultural Province to a Powerful Agricultural Province", and the "Committee of the Ya'an Mingshan District Committee of the Communist Party of China on Formulating the National Economic and Social Development Plan of Mingshan District of Ya'an City" "Recommendations on the Fourteenth Five-Year Plan for Social Development and the Long-term Goals for 2035", accelerate the improvement of the energy level of famous mountains, optimize the quality of famous mountains, build famous mountain brands, promote high-quality development of agriculture and rural areas, base on the actual conditions of famous mountainous areas, and closely Focusing on the goal of basically realizing agricultural and rural modernization, it is proposed to prepare an agricultural industrial park design plan. Fenghuang Village is a key village for rural revitalization. By seizing policy opportunities, rural development has ushered in a golden period.

Market trends: The development of the grain fungus industry not only ensures national food security, but also represents health and ecology. People's pursuit of healthy lifestyles in the post-epidemic era has led to an increasing market demand for morels. The circulation of urban and rural elements is relatively smooth, and rural tourism has become a trend. There is a lack of high-quality rural tourism products in famous mountainous areas. The construction of Fenghuang Village Agricultural Industrial Park will gradually realize the development plan of "Sea of Fungi and Flowers" and develop farmhouses, homestays, and picking (Strawberry, morels, crisp red plum, etc.) experience and other rural tourism, contributing to the development of tourism in famous mountainous areas.

3.3.4"T" (threats) threats

Threat of insufficient talents: Modern agricultural industrial parks are upgraded from traditional parks. The integration of technological innovation is one of the main features. Therefore, the development reserves have high professional talents to participate in it. However, the construction of rural talent teams is still under development. Agricultural production and operation personnel have low education levels, generally low cultural quality and low scientific and technological levels, and lack systematic mastery of modern agricultural technologies such as mechanization, intelligence, and informatization. This has led to The awareness of modern agricultural production is relatively weak, which restricts the development of the industry.

Threat of insufficient funds: The construction of the base's modern agricultural industrial park requires a large capital investment. In addition to the initial fixed cost investment, the later operation and maintenance costs also account for a large proportion. Its funds mainly come from government project subsidies and lack diversified and efficient investment and financing channels. Financing bottlenecks such as limited government subsidy funds will, to a certain extent, affect the park's construction process and lead to a lack of funds, causing the modern agricultural industrial park to fall into passive development and slowing down the standardization and quality construction process of the park.

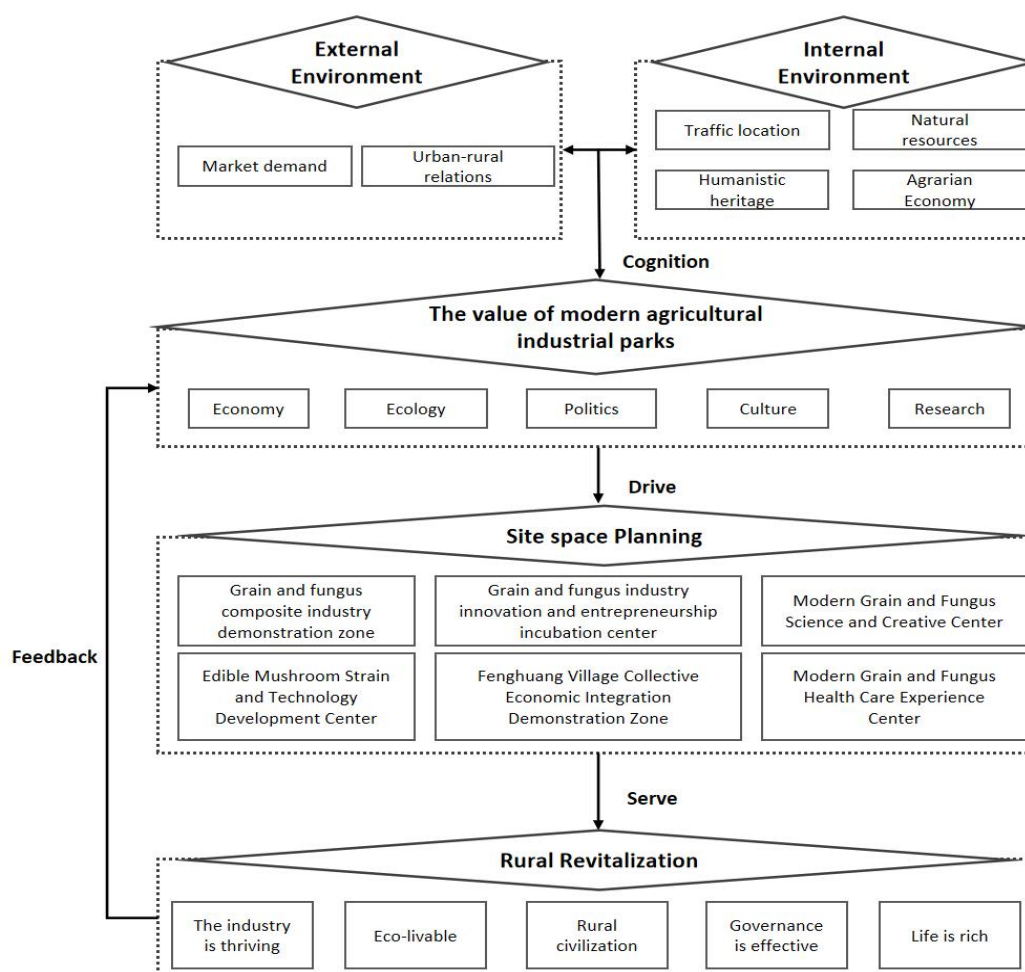
4. Planning and design of modern agricultural industrial park

4.1 Plan business strategy

Modern agricultural industrial parks are an important carrier and starting point for the development of modern agriculture. With its beautiful environment, advanced facilities, and leading technology, modern agricultural industrial parks represent the development direction of modern harmonious agriculture and are a highlight project in realizing rural revitalization [12].

Fenghuang Village not only has mountains, forests, waters, fields, and villages, but also has simple folk customs, free air, a rural natural environment that is in great contrast with the city, and

ample space for the development of food and fungi. The village mainly produces tea (mainly in Zonggangshan area and Liangshan), morels (Luoba and Fenghuangba on both sides of the Yanzhen River), rapeseed, rice and crispy red plums and other specialty plantings, as well as income from migrant workers. There are morels growing area of more than 300 acres. The current agricultural production in Fenghuang Village is still based on the traditional model dominated by farmers, with a low factoryization rate. The crop planting model and production model are in urgent need of updating and upgrading. With a good location, strong agricultural foundation, market call, and national policy support, we can find a path suitable for the development of the grain and fungus industry in Fenghuang Village.



Cognitive framework of spatial planning of modern agricultural industrial parks

Figure 4-1 Cognitive framework of spatial planning of modern agricultural industrial park (source: self-drawn by the author)

4.1.1 Create the image of "characteristic village"

On the basis of protecting and utilizing the natural environment of the village, we should build and improve the infrastructure of Fenghuang Village to provide an important guarantee for rural development, deeply explore the excellent farming history and culture of Fenghuang Village, and use beautiful natural resources and complete infrastructure as a Provide strong support and promote the cultural development of Fenghuang Village and create a characteristic image of Fenghuang Village.

4.1.2 Create village-level characteristic plots

Based on the unique resource conditions and farming cultural characteristics of Fenghuang Village, and relying on the village, pastoral, waterfront and other environments, we plan to upgrade the functional zoning of the modern agricultural industrial park, combine it with good folk customs and culture, create a rural leisure tourism area, and enhance accommodation, Dining and leisure entertainment facilities.

4.1.3 Cultivate rural characteristic industries

Rural revitalization is inseparable from industrial prosperity. Relying on the existing edible fungi planting foundation in Fenghuang Village, we will vigorously develop intercropping of food fungi, extend the agricultural product processing industry, rural leisure tourism, expand the food fungus processing and manufacturing industry, and improve the development efficiency of the edible fungi industry.

4.2 Planning and positioning of modern agricultural industrial park

Based on the development advantages of industrial resources in famous mountainous areas, with grain and fungus cultivation as the core, through agricultural modernization and upgrading, we provide specialized and quality services, realize smart grain and fungus production, promote the linkage and integration of the three industries, and develop study tourism, health care experience, etc. Service industries supporting pastoral communities. Create a smart food and fungus composite industry demonstration base that integrates modern agriculture, planting and cultivation, scientific display, and health care with efficient technology leadership and demonstration role. The first is to take modern agriculture with standardized planting of grain fungi as the main function, and the cultivation of morels as the core basis, highlighting the differentiated advantages of resources; the second is to take the research and development of grain fungi germplasm technology as the leading function, driven by scientific and technological innovation, to strengthen the cultivation of high-quality varieties, to enhance market competitiveness; the third is to build ecological leisure and vacation products with pastoral communities focusing on wellness and vacation as an extended function, featuring ecological fields and mountains and forests.

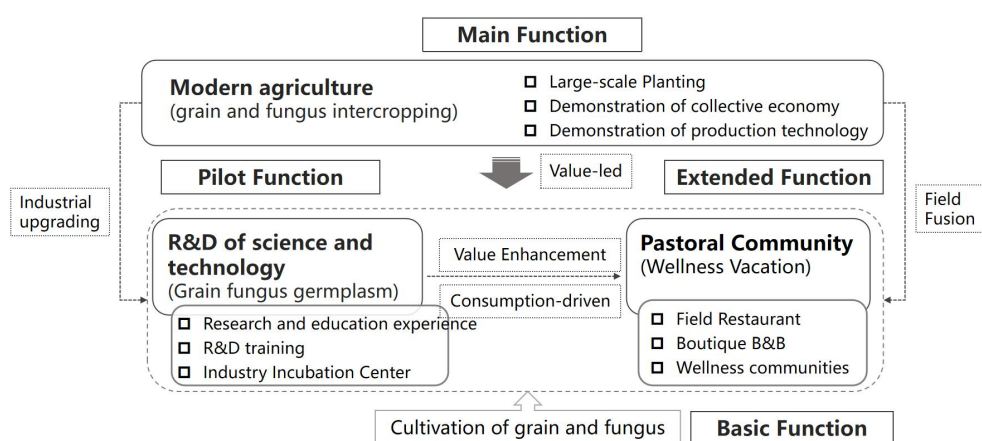


Figure 4-2 Planning and positioning idea map (source: self-drawn by the author)

4.2.1 Create a full-chain agricultural development model

The agricultural full-chain development model focuses on a chain of agriculture from agricultural planting, production to market, that is, creating a full agricultural chain from farmland to table, including building good fields, selecting good seeds, cultivating good land, producing good products, and playing good cards. Sell at a good price.

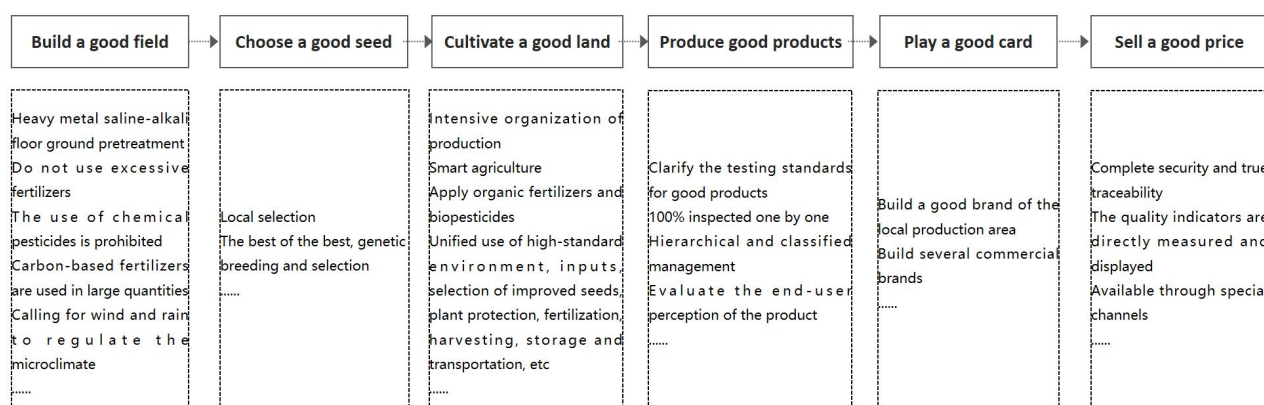


Figure 3-3 Agricultural whole chain diagram (source: self-drawn by the author)

4.2.2 Smart agriculture development model

Through IoT devices, we provide precise planting, visual management, and intelligent decision-making for agricultural production. Comprehensively perceive and interconnect farmland, crops, planting, farms, livestock, breeding, environment, sales and other information to achieve standardized production management, establish digital production models, use big data to serve intensive agriculture and breeding industries, and improve agriculture Overall production efficiency.

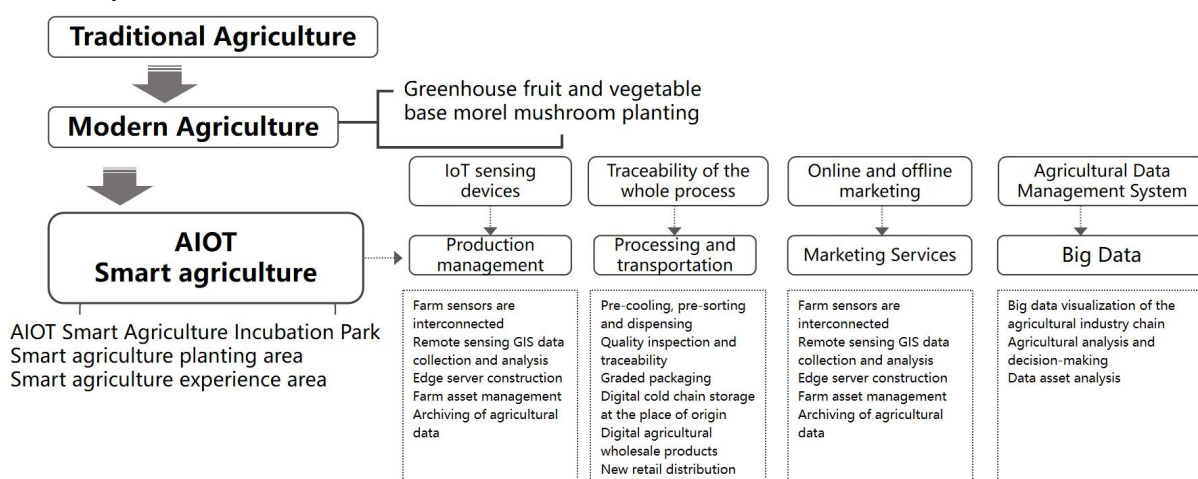


Figure 4-4 Smart agriculture development model diagram (source: self-drawn by the author)

4.2.3 Efficient agricultural development model

Introduce advanced agricultural breeding technology into the modern agricultural industrial park to increase the yield of food crops in the park and local areas; introduce energy-saving and water-saving irrigation technologies such as modern agricultural sprinkler irrigation and drip irrigation; improve the level of intelligence in the modern agricultural industrial park, and design and invest intelligent control technology to enable remote control Observation and control. Based on the actual situation, the agricultural park construction will introduce greenhouses suitable for local climate characteristics as a demonstration, such as greenhouse demonstration gardens, greenhouse science and education parks, etc., and then promote and use them in the park when the technical conditions are mature.

4.3 Functional section layout

Four major planning themes support the development of the design base: with modern smart agriculture as the carrier, the grain fungus cultivation industry as the core, high-quality health care experience as the enhancement, and collective economic demonstration as the soul, activate the

endogenous power of sustainable rural development and achieve industrial revitalization. Therefore, the industrial spatial layout of the planned base is divided into the Grain and Fungi Composite Industry Demonstration Zone, the Fenghuang Village Collective Economic Integration Demonstration Zone, the Edible Fungi Strain and Science and Technology Development Center, the Grain and Fungi Industry Innovation and Entrepreneurship Incubation Center, the Modern Grain and Fungi Science Popularization and Cultural Innovation Center, and the Modern Grain and Fungus Health Care Experience Center (Figure 4-5).

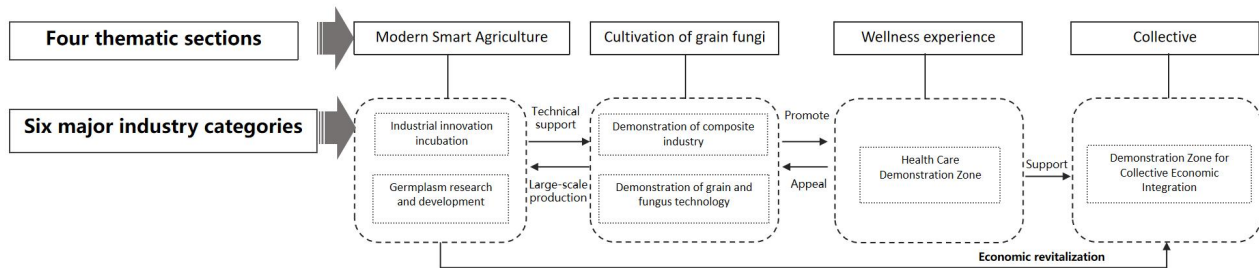


Figure 4-5 Functional section model diagram (source: self-drawn by the author)

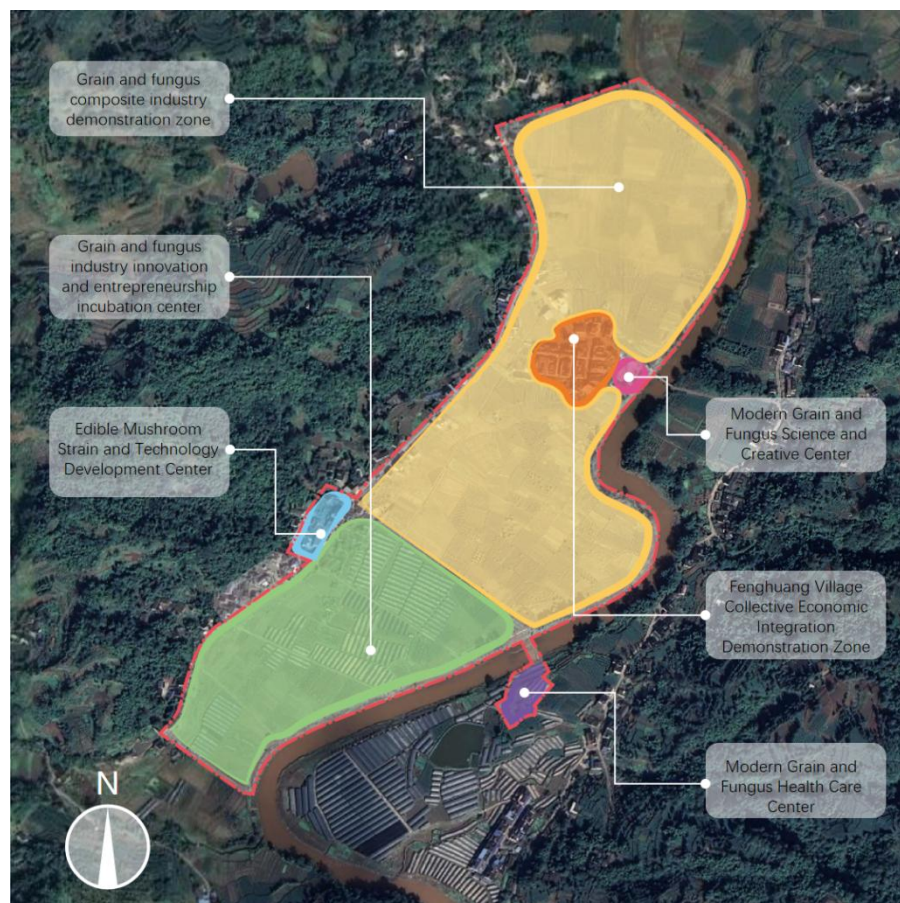


Figure 4-6 Functional structure layout of the modern agricultural industrial park (source: self-drawn by the author)



Figure 4-7 Floor plan of the modern agricultural industrial park (source: self-drawn by the author)

4.3.1 Grain and Fungus Composite Industry Demonstration Zone

Based on basic farmland, we will add edible fungus cultivation on the basis of grain seeds and grains to solve the problem of "non-grain" farmland and achieve a virtuous cycle within agriculture to carry out grain planting and edible fungus cultivation.

4.3.2 Fenghuang Village Collective Economic Integration Demonstration Zone

Make full use of the idle buildings in Fenghuang Village, carry out micro-modification of the buildings, combine the material distribution function, and provide corresponding service-oriented housing to create a 1173 collective economic incubation demonstration area.

4.3.3 Modern Food and Fungi Science Popularization and Creative Center

Combined with the original buildings in Fenghuang Village, a modern food and fungi science cultural and creative center will be built. As an important cultural exhibition space in the village, corresponding infrastructure will be established to hold regular cultural activities.

4.3.4 Edible Fungi Strain and Technology Development Center

A provincial-level standardized breeding farm for improved fungi will be constructed in accordance with GMP certification standards, which can serve as a platform for the transformation of experts' achievements in cultivating new varieties of fungi. Development Center.

4.3.5 Grain and Fungi Industry Innovation and Entrepreneurship Incubation Center

Combined with the original greenhouses, we will create an innovation and entrepreneurship incubation center for the grain and fungi industry. We will vigorously promote new varieties of demonstration fungi industry and their supporting technologies, train professional technicians and new farmers, and provide rental services to support mass entrepreneurship.

4.3.6 Modern Food and Fungus Health Care Experience Center

Based on the natural ecological environment, fungi industry resources, pastoral landscape, fungus production content and local culture in the park, the intrinsic meaning of tourism, leisure and sightseeing is injected into the park to create a wellness experience with the theme of "Food and Fungi" center.

4.4 Traffic route organization

4.4.1 Grain and Fungi Industry Visiting Flow Line

In order to facilitate tourists to visit the grain and fungi industry, a grain and fungus industry tour route is planned with the grain and fungus composite industry demonstration area as the main visiting area. The route covers the modern food and fungi health care center, the food and fungi industry innovation and entrepreneurship incubation center, the edible fungi strain and technology development center, the food and fungi composite industry demonstration area, the Fenghuang Village collective economic integration demonstration area, and the modern food and fungi science popularization cultural and creative exhibition center. Show tourists the full-line production situation of the grain and fungus industry to achieve the purpose of popular science research.

4.4.2 Pastoral Health Visiting Flow Line

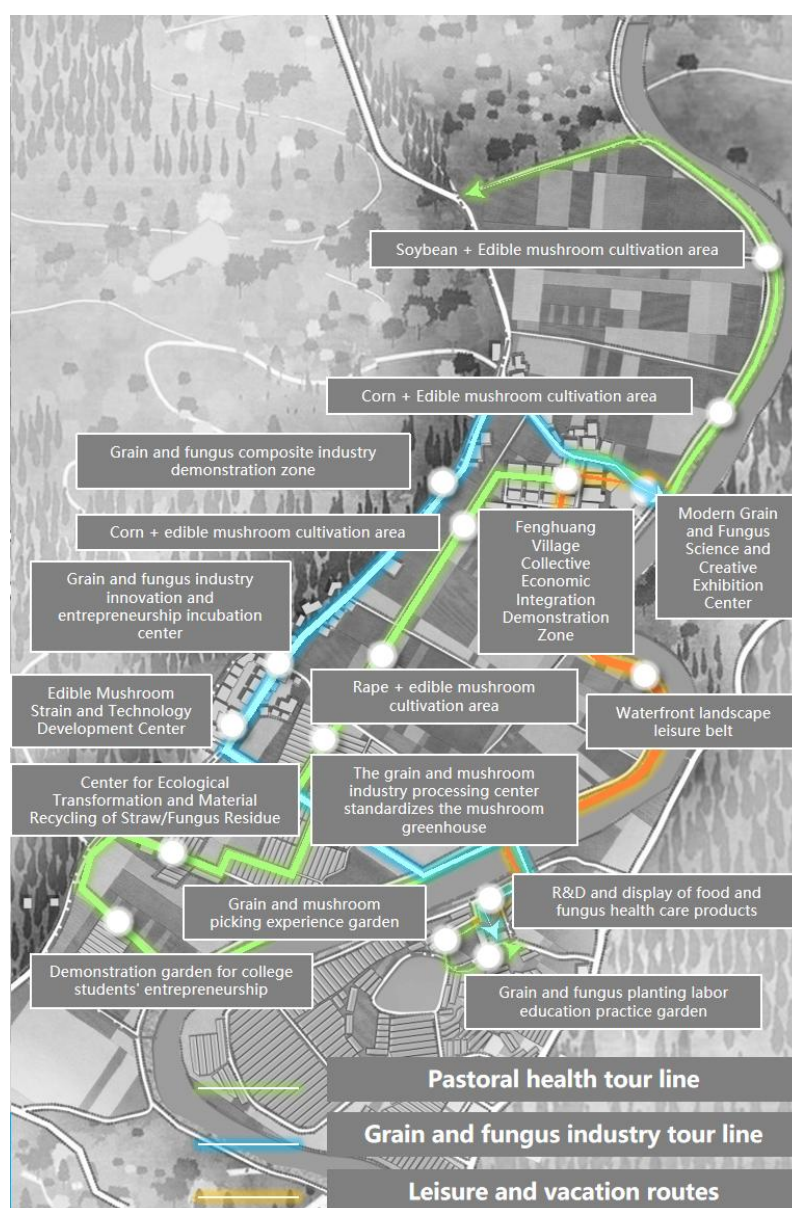


Figure 4-8 Tour route map (source: self-drawn by the author)

In order to facilitate tourists to experience the pastoral scenery, a pastoral health visit flow line is planned with points and lines. You can experience agricultural production while visiting the grain and fungus agricultural production process. The line covers the entire modern agricultural industrial park, covering soybean + edible fungus cultivation area, corn + edible fungus cultivation area,

modern food and fungi science cultural and creative exhibition center, Fenghuang Village collective economic integration demonstration area, corn + edible fungus cultivation area, rape + Edible fungi cultivation area, grain fungus industry processing center standardized mushroom greenhouse, straw/mushroom residue ecological conversion and material recycling center, college student entrepreneurship demonstration garden, grain fungus health care product research and development display area, grain fungus picking experience park, grain fungus planting Practice garden.

4.4.3 Leisure and vacation tours

For tourists who come here for leisure vacation, planning a leisure vacation tour route is also crucial. The tour route mainly focuses on science popularization, viewing, leisure and entertainment. It covers the modern food and fungi science exhibition center, Fenghuang Village collective economic integration demonstration area, waterfront landscape leisure zone and modern food and fungi health care experience center.

5. Important impact of modern agricultural industrial park planning and design on Mingshan District

The planning and design of agricultural industrial parks is very important to regional development. It can promote the development of local agriculture, improve agricultural production efficiency, increase farmers' income, and promote the development of local economy. In addition, agricultural industrial parks can also attract foreign investment, promote the development of related industries, form industrial clusters, and improve the competitiveness of the entire region.

5.1 Ensure the optimization of agricultural industry production

The No. 1 Central Document once again raised the issue of ensuring agricultural production and safety. The planning and design of the modern agricultural industrial park addresses the current inefficiency problem of traditional agricultural development and utilizes integrated innovations such as technology, talents, and funds to not only improve the quality of local agricultural products and provide consumers with high-quality food guarantees, but also promote the sales of local specialty agricultural products. Expand the scope and reduce risk factors in the development process.

5.2 Increase villagers' income and support rural economic development

The planning and design of the modern agricultural industrial park will definitely bring changes to local villagers in many aspects, including the methods used in the agricultural production process and the improvement of economic benefits. By participating in the construction of the park, villagers can learn advanced agricultural production technologies, achieve sustainable development of ecological resources, and improve the quality of agricultural product production. In addition, the construction of modern agricultural industrial parks can change the backwardness of Fenghuang Village to a certain extent, gradually promote the development of related industries, increase employment opportunities, expand income channels, and bring more favorable development factors to the economic development of Fenghuang Village.

5.3 Extend the industrial chain and promote sustainable and integrated development of regional economy

After making full use of local advantageous resources, adopting advanced information development technology, and forming a complete development model, we can actively promote the coordinated and integrated development of rural primary, secondary, and tertiary industries. Practice shows that when a certain region develops the agricultural tourism industry, not only does it not produce many negative factors, but it also solves the problem of seasonal agricultural income by relying on local natural resources, spreading traditional culture, and driving the sales of agricultural products. The construction of the modern agricultural industrial park in Mingshan

District has deeply cultivated farming culture and folk culture, promoted the economic development of Fenghuang Village, and was rated as an "Excellent Village for Key Rural Revitalization Assistance in Sichuan Province". It also radiates and drives the development of surrounding villages and realizes industrial development. The goal is to make rural areas prosperous, farmers' pockets bulge, social capital gather, and the rural environment beautify.

6. Summary

At present, under the background of rural revitalization strategy, modern agricultural industrial parks have become an important starting point to promote the transformation, development and upgrading of traditional agriculture, promote the integration of urban and rural industries, and promote the common prosperity of rural areas. However, the development of modern agricultural industrial parks still faces problems such as insufficient talents, technological research and development bottlenecks, and funding shortages. The most critical problem lies in the differences in local policy systems and top-level designs. Therefore, this article takes the planning and design of the modern agricultural industrial park in Fenghuang Village, Mingshan District, Ya'an City, Sichuan Province as an example, in order to bring a different smart template to other regions or rural development.

Fund Projects

Ningxia Natural Science Foundation (No.: 2020AAC03046)

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