

Research on Development of Agricultural Science and Technology Parks in Xingwen County

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Abstract. This paper aims at researching on development of agricultural science and technology parks in Xingwen county. To achieve it, field surveys were applied and we suggest and advise that the science and technology parks in Xingwen county should be based on "one park, three districts and six bases" and its functional positioning and overall layout are also given out. Finally, the local government should be guaranteed the parks development from financial, science and technology and talents.

Introduction

The last 40 years saw agricultural industry in Xingwen County has developed rapidly. However, it has also being faced a series of problems. Firstly, poverty alleviation in Xingwen has entered a critical period. Xingwen County is located in the remote mountainous area of the junction of Sichuan, Yunnan and Guizhou. It is a provincial planning County for centralized development of poverty in minority areas of Sichuan Province, old revolutionary areas of Sichuan Province and Wumeng Mountains. The poverty-stricken areas cover 15 townships and 236 administrative villages in the whole county. The Fifth Plenary Session of the Eighteenth Central Committee of the CPC proposed that by 2020, under the current standards of our country, all the rural poor must achieve poverty alleviation and eradicate regional poverty. However, Xingwen County has a wide range of poverty, a deep degree and great resistance to poverty alleviation. As an overall strategic task, poverty alleviation in Xingwen County has entered a decisive stage. Secondly, building a well-off society in an all-round way has entered a critical period. To achieve the goal of building a well-off society in an all-round way by 2020 is a strategic task that must be accomplished during the 13th Five-Year Plan period. In 2016, Xingwen achieved a GDP of 8.78 billion yuan, 163 times that of 2011. From 2011 to 2016, the GDP of Xingwen County increased by 9.6% annually. Although Xingwen County has the conditions and foundation to achieve the goal of building a well-off society in an all-round way by 2020, it also faces the following difficulties and challenges: (1) 70% of the county's areas are mountainous areas dominated by karst landforms so its ecological environment is fragile; (2) the distribution of natural resources such as land is scattered; (3) the downward pressure of economic growth is greater; (4) social and economic development is unbalanced, uncoordinated and unsustainable. Due to time constraints and heavy tasks, it has entered a critical period for Xingwen County to build a well-off society in an all-round way. Thirdly, agricultural industry transformation and upgrading enters acceleration period. In the 13th Five-Year Plan of modern agricultural development, Xingwen County put forward that the reform, innovation, transformation and upgrading. Agricultural parks, linkage of rural industries, branding of agricultural products, capitalization of rural property rights and integration of towns and villages are the general directions of agricultural and rural development. By actively adjusting the structure of agricultural industry, speeding up the development of characteristic and advantageous industries, constructing of modern agricultural industry system, promoting the integration of rural primary, secondary and tertiary industries. It can bring out the good development of modern agriculture. At present, the agricultural development situation in Xingwen County is good, but there are still some problems as follows: single planting structure, low degree of standardization, insufficient extension

of science and technology, low degree of mechanization, low added value of agricultural products. Therefore, the development of modern agricultural industry in Xingwen County is facing the urgent need of transformation and upgrading. Fourthly, urban-rural development has entered a period of integration. In 2016, the per capita GDP of Xingwen County was 22,738 Yuan, an increase of 8% over that of 2015. This shows that Xingwen has a good foundation for the development of urban-rural integration, and the relationship between urban and rural areas is accelerating from interaction to integration. However, in general, there are still problems of urban-rural differences and urban-rural dual division in the county's system and mechanism. In 2016, the urbanization rate of the county was only 36.04%. There are still deficiencies in rural infrastructure, public service construction, agricultural technology research and development and extension system, rural social governance mechanism and rural financial service system. This is the main bottleneck affecting the development of modern agriculture in Xingwen, and the integration of urban and rural development will provide an important guarantee for the development of agricultural industry, change the rural landscape, and enhance the well-being of farmers.

Necessarity of Planning and Building Agricultural Science and Technology Park in Xingwen County

It is not difficult to see that the choice of a suitable way of modern agriculture development in Xingwen County is the first problem to be solved. Because China has a vast territory and great differences among regions, choosing the road of agricultural modernization has always been the focus of attention and controversy. Some scholars believe that agricultural modernization lies in agricultural mechanization; others believe that it lies in urbanization of rural population. Only by transferring more rural labor force to cities and towns and achieving stable employment, can we lay a foundation for agricultural modernization. And some scholars put forward reforming rural land system to achieve moderate scale management of agricultural land. More scholars believe that the path of agricultural modernization depends on the integration of urban and rural development. However, we believe that in terms of the actual situation of Xingwen County, the planning and development of agricultural science and technology park is the correct choice to realize its agricultural modernization.

A. Planning and Construction of Agricultural Science and Technology Parks Will Help to Alleviate Poverty.

The planning area is mainly agricultural population, involving 15 townships, 57 poor villages and 14 577 precise poor households. After the completion of the project, under the guidance of the Agricultural Science and Technology Park, farmers will adopt appropriate science and technology and production methods to develop local high-quality and characteristic agricultural industry. On the one hand, each poverty-stricken village can develop a leading industry; on the other hand, each poor farmer with conditions can master 1 to 2 agricultural practical technologies and participate in a planting or breeding project. This can not only expand the income channels of farmers' families, but also improve their income by absorbing the poor into the agricultural industry and ultimately help them out of poverty.

B. Favorable to Science and Technology to Promote the Prosperity of the People.

The starting point and goal of planning and construction is to build a modern agricultural industry system in Xingwen County, which is conducive to increasing farmers' property income. In the process of planning and construction of agricultural science and technology parks, local governments will increase policy and financial support for agriculture, which is conducive to safeguarding and developing the interests of farmers. While applying modern agricultural science and technology to transform agricultural industry and improve agricultural economic benefits, the park construction also pays attention to strengthening farmers' agricultural technology training and production guidance, so that farmers can share modern scientific and technological achievements, which will contribute to the sustainable improvement of farmers' income. In addition, the planning and construction of agricultural science and technology parks will focus on promoting comprehensive rural public services and new rural construction, and promoting water, electricity,

roads, natural gas, housing and environmental improvement to villages and households. In a word, the construction of Xingwen Agricultural Science and Technology Park will promote the prosperity of the whole county from the aspects of technological environment, economic environment, policy environment, social environment and ecological environment.

C. Favorable to Science and Technology to Lead Agricultural Industry Transformation and Upgrading.

Agricultural Science and Technology Park will carry out overall planning and construction of agricultural industry in Xingwen, and provide scientific and technological support for selenium-rich grain and oil, black-bone chicken, bamboo forest, sericulture, Miao medicine and other industries. Through the transformation and upgrading of the traditional agricultural superior characteristic industries, accelerating the construction of agricultural standardization base, expanding and strengthening the leading industries, and doing a good job in the characteristic industries. As far as the mode of industrial development is concerned, agricultural science and technology parks will pay more attention to relying on science and technology, and promote agricultural modernization with planting scale, standardization of production, commercialization of agricultural products, marketing branding and industrialization of management. As far as infrastructure construction is concerned, the park will pay more attention to overall planning and promote the standardization of agricultural production. As far as the construction of agricultural products market is concerned, the park will pay more attention to the construction of new agricultural management system and product brand system, speed up the link of industrial chain, thus forming a new mode of agricultural industry development. In a word, the planning and construction of Xingwen Agricultural Science and Technology Park will effectively lead the transformation and upgrading of Xingwen Agricultural Industry.

D. Favorable to Science and Technology to Promote the Transformation of Big Agricultural Counties to Strong Agricultural Counties

The plan will transform the existing plantations, aquaculture farms and agricultural products processing points in terms of varieties, methods and technologies, formulate development ideas according to production conditions, and promote advanced and practical agricultural production-increasing and quality-guaranteeing technologies around high-quality, high-efficiency and high-yield, so as to provide technical guarantee for the production of agricultural products in the county, including grain production. On the one hand, the park will increase the construction of high-standard basic farmland to enhance the comprehensive grain production capacity. On the other hand, the park will do a good job of docking production and marketing, promote the integration and development of the first, second and third industries in rural areas, and lead the agricultural production, farmers' income and ecological development to synchronize with demonstration. In a word, the park will focus on the main line of "improving quality, increasing efficiency, stabilizing grain and increasing income sustainably", and highlight the main direction of "stabilizing production capacity, adjusting structure and changing mode". The construction of agricultural science and technology parks will become a strategic way to promote the transformation of Xingwen from a big agricultural county to a strong agricultural county.

Functional Positioning and Overall Layout of Agricultural Science and Technology Park in Xingwen County

A. Functional Positioning.

1) Model of Science and Technology Helping to Eliminate Poverty in Wumeng Mountain Area.

Agricultural science and Technology Parks implement the development strategy of overall planning and integration of urban and rural areas. Adhere to the Miaoxiang style, highlight the taste around the topography and landform, highlight the applicability around the individual requirements, carry out the transformation of the industrial belt style and environmental governance. We should adhere to the leadership of Party building, industry feeding back agriculture, city supporting rural areas, cultivate and expand industrial bases, promote industrial development and increase farmers' income. To narrow the gap between urban and rural areas in income, employment,

education, health care, consumption and government public investment, change the long-term dual economic structure between urban and rural areas, and provide a good model and reference for the construction of new countryside in Wumeng Mountains, Sichuan.

2) Support of Science and Technology to Promote Agricultural Modernization in Xingwen.

Based on the regional characteristics of Xingwen Miao culture, Xingwen County Agricultural Science and Technology Park will introduce modern agricultural science and technology, and layout modern agricultural industry according to local conditions. After the completion of the park, a series of modern agricultural projects will be matched, relying on the cooperation between the park and domestic scientific research institutes, as well as the scientific research foundation and technical support of the park, attracting a large number of agricultural science and technology projects. In a word, the introduction of technology and projects in agricultural science and technology park will create favorable conditions for the agricultural production and social and economic development of Xingwen, and provide strong technical support for the modernization of Xingwen agriculture.

3) Platform for R&D, Promotion and Demonstration of Science and Technology.

One is technology research and development platform. The park will tackle key technical problems that restrict the development of Xingwen agriculture, develop and improve related technologies, and become a technological research and development platform for the development of modern agriculture in Xingwen County. The second is to promote the display platform. Make full use of the advantages of location and platform of the park, and display the regional characteristic agricultural products, special fruits and forests, and other special products through the park, so as to bridge the marketing of characteristic agricultural products. Thirdly, standardization demonstration platform. The park carries out technological research and development on standardized facility agriculture, characteristic forest and fruit, black chicken breeding, characteristic seedling and medicine breeding, processing and refining, ecological forest and bamboo breeding and comprehensive development, builds standardized agricultural demonstration zones, and guides farmers to standardize planting and breeding.

4) The Carrier of Science and Technology.

Relying on vocational schools and other training institutions, integrating scientific and technological resources, building modern agricultural science and technology training positions, and encouraging farmers to use entrepreneurial innovation. Through the construction of parks and related projects, we should strengthen the transformation of scientific and technological achievements, speed up the landing speed of scientific and technological projects, increase employment posts, and raise the per capita income level, so as to build a scientific and technological carrier for the comprehensive construction of a well-off society in Xingwen.

B. Overall Layout.

Agricultural science and technology parks are closely surrounded by the layout of Yixu high-speed belt, with Liwangshan Town, Gongle Town, Gusong Town and Taiping Town as the main radiation driving the overall development of Xingwen Agricultural Science and Technology. The overall planning of the science and technology parks is based on the structure of "one park, three districts and six bases".

1) One Garden.

Build an agricultural science and technology park. Take ancient Song Town as the center, covering the whole area of Xingwen. Building the office building of the Administrative Committee of the Modern Agricultural Science and Technology Park, the research and development of agricultural science and technology, the processing center of agricultural products, the base construction and the construction of scientific and technological system, etc., concentrating on introducing, displaying, demonstrating and training new varieties of modern agriculture and their planting techniques, and bringing new modern agricultural concepts such as facility agriculture, three-dimensional circular agriculture and sightseeing agriculture into play. Its related technologies are disseminated to park enterprises and farmers.

2) Three Districts.

The first is the core area. Planning and building the core areas of Liwangshan Town, Gongle Town, Gusong Town and Taiping Town along the Yixu Expressway will be carried out, and the integrated demonstration centre of agricultural scientific and technological achievements, the research and development base of crop science and technology, the breeding and breeding base of characteristic livestock and the extension platform of agricultural science and technology will be constructed. Meanwhile, experts'institutes, scientific research buildings, scientific and technological applications and training will be improved simultaneously. Infrastructure and service functions such as the center. The second is the demonstration area. Relying on the Chengdu-Guizhou Railway, a demonstration area will be built around the core areas in Wuxing Town, Lianhua Town, Qilin Miao Township, Dahe Miao Township and Daba Miao Township, and an industrial science and technology demonstration area with Miao Township's characteristics will be built relying on the existing natural conditions of each township. Finally, the radiation area. Centered on the integration of agricultural science and technology in the core area and guided by the industrial development in the demonstration area, Shihai Town, Xianfeng Miao Township, Jiusi Town, Yuxiu Miao Township and Zhou Jia Town are developing synchronously. The radiation area and the core area form a complete set of industries, focusing on the development of modern logistics, Miaoxiang leisure cultural experience industry.

3) Six Bases.

First, selenium-rich grain and oil base. It is planned to build a 100,000 Mu standardized selenium-rich rice demonstration base and a 50,000 Mu standardized rape demonstration base in Gongle Town and Wuxing Town. Second, Xingwen Black Bone Chicken Base. We will build breeding and breeding bases for black chickens in Yuping Town and other places. With the model of "government + enterprise + cooperative + peasant household", processing enterprises are encouraged to produce and support the growth of new business entities, so as to promote the development of Xingwen black-bone chicken industry in the whole world. Third, ecological forest and bamboo base. Construction of an ecological bamboo base of 1 million mu in Xianfeng Township and other towns. Fourth, high-quality sericulture base. In Zhoujiazhen and other places, two mulberry seedling rapid breeding bases have been built with 50 mu each, a standardized mulberry garden area of 55,000 Mu and a three-dimensional mulberry garden area of 40,000 mu. Fifth, characteristic base of Miao medicine. In ancient Song Town and other places, 100,000 mu of Miao medicine production base will be built. Miao medicine planting will be combined with tourism and health care, and further processing plants of Miao medicine will be established in Taiping Miao area. Sixth, agricultural and forestry products processing base. Based on the Xingwen Miaoxiang Industrial Park in Taiping Town, a 10 square kilometre processing base for agricultural products is planned and constructed. The industrial functions of "processing-logistics-marketing" are perfected with various breeding bases to complete the construction of the whole agricultural industry chain.

Supporting Policies and Guarantee Measures

A. Supporting Policies.

One is land policy. On the premise of not changing the nature of collective ownership of land, changing the use of land and not harming the contracted rights and interests of farmers, the park should transfer land in the form of leasing, subcontracting, stocking and swap on the basis of "legality, voluntariness and compensation". The park should build a transfer service platform, establish and improve the transfer market and land evaluation system of land contractual management rights, and strengthen the standardized management of land transfer. Priority shall be given to key agricultural industry projects, construction projects of business entities and import projects of technical support on land for examination and approval. The Second is tax policy. The park should conscientiously implement preferential tax policies and measures of governments at all levels. According to the project investment quota, ecological benefits, scientific and technological content and the number of employment attraction and other indicators, to enjoy the corresponding

preferential policies. The second is agricultural subsidies and insurance policies. We should reform the existing agricultural subsidy policies and improve the implementation rules of grain storage, financial support, agricultural insurance and other supportive policies. Strengthen supervision and management, and give full play to the stimulating and supporting role of the national policy of strengthening agriculture and benefiting farmers. We will continue to expand the variety and coverage of financial support for agricultural insurance, incorporate fruits, vegetables, tea, sericulture and other agricultural products into local characteristic agricultural insurance, and improve the level of compensation for policy-based agricultural insurance.

B. Guarantee Measures.

First, financial security. Local governments should pool funds for the construction of parks through various channels to ensure that projects are completed on time. The second is the guarantee of science and technology. We should fully mobilize the enthusiasm of local scientists and technicians to ensure the upgrading of science and technology innovation ability of the park and provide technical support for the construction of modern agriculture in the park. Third, the guarantee of talents. It is necessary to provide intellectual support and talent guarantee for the construction of the park through training, salary promotion and other measures.

Conclusion

Xingwen County should promote and realize the development of modern agriculture by planning and constructing agricultural science and technology parks. The overall layout of modern agricultural science and Technology Park in Xingwen County should be "one garden, three districts and six bases". Its function orientation should be the model of science and technology to help out of poverty and tackle the key problems in Wumeng Mountains, the support of science and technology to promote the modernization of Xingwen agriculture, the platform of scientific and technological research and development, promotion and demonstration. In order to ensure the planning and construction of the park, local governments should provide policy support and measures from the fields of land, capital, science and technology, and human resources.

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