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A Study of the Industrial Development in Huazhong Agricultural High-tech Industrial Development Zone

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Abstract This paper illustrates the current situation and problems concerning the industrial structure in Huazhong Agricultural High-tech Industrial Development Zone, and analyzes the internal contradictions that exist in industry: small-scale land operation has become an inherent obstacle to the industrial development in Agricultural High-tech Zone; farmers are always in a passive position in industrial restructuring optimization; government's policy failures and rent-seeking behaviors have hindered industrial development; the research, popularization and application of agricultural science and technology is not suited to industrial development requirements. Finally, this paper makes the corresponding recommendations for industrial development in Huazhong Agricultural High-tech Industrial Development Zone.

Key words Huazhong Agricultural High-tech Industrial Development Zone, Industrial development, Recommendations

1 Introduction

At present, with the changes in the global economic situation, China's major investment and export-led economic development model has been severely challenged and constrained. In this context, the Hubei People's Government approved the establishment of Huazhong Agricultural High-tech Industrial Development Zone (hereinafter referred to as Huazhong Agricultural High-tech Zone) in April 2012. Huazhong Agricultural High-tech Zone is located in the west of downtown Jingzhou, adjacent to Jingzhou Chengnan Development Zone and New Harbor Industrial City, with a total area of 67.33 km^2. Supported by industry, technology and policy, Huazhong Agricultural High-tech Zone takes the modern agricultural development road featured by entity organization, business industrialization, production standardization and model ecologicalization. In 2017, it will be developed into the third state-level agricultural high-tech industrial development zone (following Yangling Agricultural High-tech Industrial Demonstration Area and Beijing National Modern Agricultural Science and Technology City) having a substantial lead in agricultural services, with advanced technology level, mature industry models, full-featured industrial functions, complete facilities, beautiful natural environment, prominent tourism features and coordinated development of social and economic benefits, which can help to promote Jingzhou's agricultural industry transformation and enhance the development of provincial agricultural industry. The construction of Huazhong Agricultural High-tech Zone is of great significance to promoting the development of rural industry in Jingzhou and even the whole central China.

2 Current situation of industrial development

2.1 Large proportion of primary industry and simple structure Huazhong Agricultural High-tech Zone is established based on Taihugang Farm in Jingzhou City. Taihugang Farm achieved GNP of 610.45 million yuan in 2014, and the ratio of primary industry to secondary industry to tertiary industry was 33 ∶ 33 ∶ 34. The output value of primary industry was 384.02 million yuan, with farming output value of 195.24 million yuan, forestry output value of 8.29 million yuan, animal husbandry output value of 86.87 million yuan, and fishery output value of 98.75 million yuan. From the characteristics of industrial transfer and division of labor, the farm is still at the end of industrial transfer, mainly dominated by traditional agriculture. The development of suburban modern agriculture by using suburban advantages is not obvious, and the application of new varieties, new technologies, new models and new equipments in the agricultural production is not enough, so it is imperative to re-plan the industrial layout of Huazhong Agricultural High-tech Zone.

2.2 Low level of deep processing of farm and sideline products and low added value At present, the processing of farm and sideline products in Huazhong Agricultural High-tech Zone is mainly concentrated in some traditional industrial types such as feed, oil and textile processing. The agricultural industry chain often has only a few links, the other links are absent or relatively weak, and the industrial agglomeration effect is weak; the technological content is low, operation is extensive and resource depletion is serious; the high value-added modern manufacturing industry is still in its infancy; the research and development for deep processing of agricultural products is insufficient. Notably, these links belong to a number of different areas, so that the connection between links is loose and the value of the industrial chain can not be fully reflected.

2.3 Insufficient application of modern science and technology in Agricultural High-tech Zone The so-called modern agriculture is to introduce the advanced production technology into the development of agriculture, and use the results created by science and technology to continuously improve the productivity and pro-

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duction quality of Agricultural High-tech Zone making it become the top demonstration park at home and abroad. The application of science and technology is not systematic and deep enough in the current traditional industries of Agricultural High-tech Zone. Although the agricultural technology knowledge training is held each year, the main agricultural production unit is still family. The current high-tech introduction in Agricultural High-tech Zone is still in the initial stage, and the introduction of all aspects of technology is not perfect, with great potential to be tapped.

2.4 Poor supporting capacity for industrial development At present, the relationship between various industries in Agricultural High-tech Zone is not very close, basically in a free development stage, never forming supporting industry junction. Consequently, large-scale enterprises may not be introduced as leaders to dominate the economic development of the whole region, and the producer services can not keep up. Therefore, it is necessary to improve the supporting measures for industrial development. High logistics cost is also an important factor restricting the development of industry, and the trade and processing base must be close to the international market as far as possible, in order to reduce production and transportation costs and improve operational efficiency. In addition, the smooth and convenient customs clearance logistics system has yet to be established and improved.

3 Inherent contradictions of industrial development

3.1 Small scale of land operation (i) Market risk. In the industrial development of Agricultural High-tech Zone, thousands of scattered market players are induced by market prices and interests and are pitted against each other, so that many farmers can not escape the market "trap". (ii) Natural risk. In the industrial development of Agricultural High-tech Zone, we will encounter a variety of natural disasters, such as flood, drought, frost, hail, cold, rain, pests and diseases, which cause losses to agricultural production. (iii) Financial risk. The capital stock is too small for farmers, and due to backward rural financial market, farmers are difficult to get funds, and the capital investment can not be obtained in the process of industrial development. (iv) Labor risk. The aging workforces have limited ability to accept new things, and they lack strong sense of innovation and change, hindering the development of high-tech agriculture.

3.2 Passive position of farmers Farmers should be the main forces of rural industrial restructuring, but they fail to properly form the consciousness of market players, and due to poor ability to participate in the market, they can only use the small space of local bazaars for intuitive feeling and determine their own production and operation project. In addition, the vast majority of farmers can barely dress warmly and eat their fill, with low level of capital accumulation, and their cultural quality or management capacity is poor, which brings a lot of problems to the agricultural credit and science and technology extension. Farmers are difficult to get new project support investment and technology, and all these have reduced the role of farmers as main forces in industrial development.

3.3 Government's policy failures and rent-seeking behaviors Currently, the management in the whole agricultural production process involves 10 administrative departments, and all administrative departments always take advantage of favorable conditions to make a gain. In addition to sectoral divisions, industry monopolies and localized frictional patterns, it not only leads to high cost of policy development, implementation and coordination, but also causes a significant waste of transaction costs. Due to excessive intervention of government, it tends to generate waste of resources and other issues. This situation is the government's policy failure.

3.4 Lack of efficient agricultural science and technology Throughout the international and domestic agricultural product market, the content of science and technology has become the decisive factor in the market competitiveness of agricultural products. The comparative benefit of agriculture is low, market competitiveness is weak, and the high quality and efficient agricultural technology is rare. Without changing this situation, the agricultural products with a comparative advantage will be difficult to become the competitive agricultural products. For this reason, we believe that the development of rural industry poses new demands and challenges on the future direction of agricultural research.

4 Goals and planning

Changes in the global economic landscape, supply-side structural reforms in agriculture and transformation of economic growth mode constitute the background of industrial development in Huazhong Agricultural High-tech Zone. This requires us to adhere to the agriculture-based planning characterized by diversified economic development, make full use of science and technology, give full play to local advantages, establish the industrial structure system with agro-processing as a pillar industry, develop pollution-free products, create a green advantage and build a new operating mechanism to achieve economic and social sustainable development. (i) The short-term planning is to give full play to advantages in resources and vigorously develop aquaculture; the medium-term planning is to develop the food processing industry and agricultural product processing service industry closely related to agriculture and resources; the long-term planning is to establish a food safety-oriented concept, create a green advantage and develop pollution-free products. (ii) The regional planning is to make full use of the city's strong demand for high-grade agricultural products to construct a modern new agricultural area integrating fresh agricultural production, horticulture, sight-seeing and tourism agriculture in accordance with the local conditions.

5 Recommendations

5.1 Adopting a variety of measures to optimize the industrial development (i) Making full use of scientific and technological progress to establish and develop new rural industrial system. It is necessary to increase investment in agricultural research to ensure its growth rate higher than the rate of economic growth; strengthen the construction of agricultural high-tech key laborato-

ries and engineering technology centers to ensure agricultural science and technology progress from the basic conditions; strengthen the training of technology professionals; fully understand the externality and social welfare nature of science and technology benefits; strengthen the institutional reform of science and technology units on the basis of government investment; reconstruct the new science and technology promotion network. (ii) Taking advantage of resources to build freshwater aquaculture into a competitive industry. It is necessary to highlight the regional characteristics, create local brand-name products and occupy domestic and foreign markets; give full play to the well-known advantages of aquatic fingerlings to build a national base of aquatic fingerlings; play the advantages of aquatic science and technology and guide aquaculture to develop from dinner table agriculture to tourism agriculture and health agriculture. (iii) Vigorously developing food processing industry and promoting industrial upgrading of Huazhong Agricultural High-tech Zone. With the end of the current era of agricultural products in short supply, Jingzhou City, as a major large grain and cotton base, has lost its advantages. From the current perspective of invigorating circulation, it is necessary to actively build the pillar rural economic industries dominated by food processing industry. Research shows that if Jingzhou increases the quality of agricultural products through processing to meet people's consumer demand, the poor food circulation contradictions can be overcome and considerable grain will not become a burden but become wealth.

5.2 Innovating upon operation and management system to promote industrial upgrading (i) Innovating upon agricultural management system, vigorously developing industrial management of agriculture and promoting the industrial upgrading of Huazhong Agricultural High-tech Zone. With "company + base + farmers" as a link, it is necessary to connect agriculture with other industries to promote industrial development. (ii) Focusing on private business mechanisms and innovating upon enterprise property right system and rural management system to promote industrial upgrading of Huazhong Agricultural High-tech Zone. It is necessary to deepen the reform of enterprise property rights system, transform government function, staff identity and enterprise mechanism, and form the private economy-based enterprise economic structure, to effectively promote economic development. (iii) Innovating upon rural financial system to promote industrial upgrading of Huazhong Agricultural High-tech Zone. Various financial institutions in rural areas should relax lending conditions, expand scale, simplify procedures and improve the security system, to effectively solve the loan difficulty for farmers. It is necessary to innovate upon the land financial system and raise social funds for the development of production. (iv) Innovating upon the agricultural production protection system and agricultural insurance system to promote industrial upgrading of Huazhong Agricultural High-tech Zone. It is necessary to vigorously improve the agricultural production and living conditions so that farmers enjoy equal national treatment; give the government's financial policy subsidies to make up for the loss of farmers' interests arising from unfair competition; build "joint co-insurance" and "cooperative insurance + reinsurance" agricultural insurance system.

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