

Research on The Development Path of Rural Manufacturing under The Rural Vitalization Strategy

Zhen Zhang¹

¹ Department of Mechanical Engineering, Hebei University of Water Resources and Electric Engineering, Cangzhou, 061000, China

* Corresponding author: Zhen Zhang (Email: zhangzhen7016@163.com)

Abstract: In response to the problem of unbalanced and insufficient development between urban and rural areas, China has proposed a rural vitalization strategy. The rural manufacturing industry, under a combination of economic and social conditions, has taken shape. Since rural manufacturing can absorb rural labor and improve farmers' income, it has become one of the main supports for rural industrial vitalization. In order to improve the problems of high resource consumption and pollution in rural manufacturing, this paper takes the construction of specialized villages as a development path, and studies the enhancement of industrial agglomeration in rural manufacturing. In order to promote the implementation of the strategy of rural vitalization smoothly, it is necessary to put forward various suggestions and initiatives to promote the transformation and development of rural manufacturing.

Keywords: Rural vitalization, Rural manufacturing, Development path, Specialized village.

1. Introduction

At present, China's unbalanced and inadequate development is the most prominent problem in the countryside. First of all, the stage of oversupply and undersupply of agricultural products coexist. The quality of agricultural supply needs to be improved. In the second place, farmers' ability to adapt to productivity development and market competition is insufficient. The construction of a new type of professional farmers needs to be strengthened. Besides, the rural infrastructure and livelihood areas owe more. The rural environment and ecological problems are more prominent. The overall level of rural development needs to be improved. Last but not least, the national system of supporting agriculture is relatively weak. The task of rural financial reform is heavy. The mechanism of reasonable flow of factors between urban and rural areas needs to be improved [1].

Rural vitalization strategy is a strategy proposed in the report of the 19th Party Congress. Issues relating to agriculture, rural areas, and rural people are fundamental to China as they directly concern our country's stability and our people's wellbeing. Addressing these issues should have a central place on the work agenda of the Party, and we must prioritize the development of agriculture and rural areas [2].

The purpose of implementing the rural vitalization strategy is to adhere to the priority development of agriculture and rural areas. To build rural areas with thriving businesses, pleasant living environments, social etiquette and civility, effective governance, and prosperity, we need to put in place sound systems, mechanisms, and policies for promoting integrated urban-rural development, and speed up the modernization of agriculture and rural areas [3].

2. Overview of Rural Manufacturing Development

Especially for China, Manufacturing is the basic industry of national economy. "Made in China" is known worldwide. The development of manufacturing directly affects the

development of national economy in China. As a receiver of rural labor, rural manufacturing has a strong ability to absorb rural labor. As one of the main supports for the rural vitalization, rural manufacturing has a broad development space. Rural manufacturing also holds great potential to drive profound economic and social changes in the countryside [4].

2.1. Rural Manufacturing Development Process

The development of rural manufacturing has taken a long time. At the beginning of the founding of the country, the country's rural areas were mainly agricultural. After the reform and opening up, the country began to encourage the development of light industry. On the basis of agriculture, farmers extend along the chain in a forward and backward direction. To reduce costs, farmers engage in the manufacturing of agricultural machinery to enhance basic agricultural production. Farmers mainly process and produce agricultural products, promote the development of sales and social services, increase added value and expand profit margins. Rural manufacturing began to flourish. With the development of market economy, manufacturing industry develops from big cities or key industrial cities to small and medium-sized cities. During this period, the low-end industrial chain of manufacturing spilled over into rural areas within the urban radiation range. With China's accession to the WTO in 2003, "Made in China" went global. Manufacturing has developed rapidly throughout the country. The rural manufacturing industry has expanded to breadth and depth, and has developed a certain scale [5].

2.2. Favorable Conditions for The Development of Rural Manufacturing

The rural manufacturing industry has been able to develop as a result of a combination of conditions. In summary, there are three main conditions.

2.2.1. Limitations of Natural Conditions on Agricultural Development

Some villages lack natural resources. The development of

planting and animal husbandry within the agricultural category is limited. Taking the rural areas of Cangzhou as an example, Cangzhou is adjacent to the Bohai Sea. Because Cangzhou area is located in the siltation plain, the alkalization is serious. The terrain of Cangzhou area is "funnel shape". Salt and alkali deposit easily. 2.1 million acres of the city's 3.5 million acres are saline. Plants are usually rooted no more than 60 cm. Beyond 60 cm, they will wither when they touch the saline layer. The vast rural land in the eastern part of Cang County is highly saline. There are few varieties of crops that can be grown. Agricultural output efficiency is low. Farmers' household income is low. Therefore farmers' subjective willingness to engage in other industries to increase their income is strong.

2.2.2. Increased Mechanization of Agriculture

According to the results of the third national agricultural census in Hebei Province, there were 75,500 combine harvesters in the province in 2016. 48% growth occurred compared to 2006. Agricultural production efficiency has increased significantly with the rise of agricultural mechanization. The result is a decrease in agriculture's dependence on human labor. Surplus labor also increases. Part of the surplus labor force moved to the city to engage in manufacturing, service industries and other industries. Part of the surplus labor force stays in rural areas. Driven by market demand, farmers move upstream and downstream from agriculture to the industrial chain. Farmers engage in industries including rough processing of agricultural products, finishing processing of agricultural products, logistics sales of agricultural products, and manufacturing and maintenance of agricultural machinery and equipment. Based on this situation, farmers expand to the manufacturing of agricultural processing equipment. Some rural areas gradually realize the integration of one and two industries.

2.2.3. Improvement of Rural Infrastructure

In recent years, the construction of rural transportation, water supply, electricity, network and other infrastructure has been accelerated. By the end of 2016, 99.99% of villages in Hebei Province had well-developed roads. 83.41% of the main roads in the villages have been installed with street lights. All villages are electrified. 94.05% of villages have broadband Internet access. 93.03% of townships have centralized or partially centralized water supply. The improvement of roads guarantees the transportation of raw materials and products. The improvement of water and electricity supply guarantees the resources needed for manufacturing. The improvement of communication network guarantees the timely access to industry information. With the improvement of rural infrastructure, the development of rural manufacturing has embarked on a fast track.

3. Problems in The Development of Rural Manufacturing

3.1. The Bottleneck of Traditional Manufacturing

Rural manufacturing is relatively backward. Rural manufacturing is still dominated by traditional manufacturing. In particular, the traditional manufacturing industry with low technology content is a consumptive and polluting industry. Traditional manufacturing is accompanied by energy consumption and environmental damage in the process of development. At present, China still insists on the priority

development of agriculture in the countryside. As a result, traditional manufacturing is severely constrained by the countryside's own resources. The development mode of traditional manufacturing industry is not in line with the purpose of rural vitalization strategy, which is to build an ecologically livable rural area.

3.2. Insufficient Technical Level of Practitioners

Since China is still at the stage of developing countries, the development of urban and rural areas is unbalanced. A large number of rural talents are moving to the cities. Compared with 2010, the proportion of urban population in 2020 increased by 16.13% according to the seventh national census bulletin of Hebei Province.

4. Development Path: Orderly Promotion of Manufacturing-Type Specialized Village Construction

By analyzing the current situation and problems of rural manufacturing, the development of rural manufacturing has a positive effect on improving farmers' income, narrowing the gap between urban and rural areas and promoting rural economic development. Rural manufacturing meets the requirements of rural vitalization strategy. The development of rural manufacturing cannot be simply and rudely restricted, despite its many problems. Restricting rural manufacturing will lead to a significant reduction in the income of a large number of farmers and a further widening of the income gap between urban and rural areas. Lower incomes accelerate the rural labor exodus. A suitable path for the development of rural manufacturing should be explored. Through guidance and management, the rural manufacturing industry develops healthily and serves rural vitalization. By virtue of guidance and management, the rural manufacturing industry develops healthily and serves rural vitalization. By analyzing the development patterns at home and abroad, this paper studies the manufacturing-type specialized village as the development path of the rural manufacturing.

The formation of specialized villages began with the One village one product movement in Oita Prefecture, Japan in the late 1970s. One village one product movement means that a village vigorously promote local specialization and specialization, from local resources and conditions. As a result, the village has one or several leading products or characteristic brands with high level of development and obvious characteristic advantages [6].

The formation of specialized villages has gone through two stages. Initially, it is mostly formed spontaneously. The formation mechanism is driven by the industrial competent people. There are three main categories of industrial competent people: a class of returning migrant workers, who have accumulated industrial experience in the process of urban employment; a class of agricultural and sideline industry founders, who have accumulated capital and market channels in their operations; and a class of village cadres, who have certain political and social resources. When the industrial competent people profited from the development of secondary industry, other farmers entered the same industry with the purpose of increasing their income. The scale of the industry is gradually expanded [7].

Later, the formation of specialized villages transformed into an orderly promotion. The formation mechanism is

mainly two ways: village collective coordination and local government promotion. Village collectives play a direct demonstration role by introducing special industries, mobilizing a few farmers to try their hand at entrepreneurship, and nurturing capable industrialists. When the industry is developed, the village collective provides public services within the village in terms of integrating fragmented land rights, providing socialized services and building village markets. Village collectives boost industrial development by providing public services. There are many ways for local governments to serve the construction of specialized villages, which can be divided into two main areas. On the one hand, local governments build regional town-level and county-level "professional markets" to provide conditions for the growth and further proliferation of specialized villages. On the other hand, local governments provide various public services. These public services include technology, security, market, environmental health, quality monitoring, finance, etc. This is an important condition for the further development and growth of the industry.

The agglomeration of manufacturing-type specialized villages is influenced by a combination of imitative innovation, network linkages, economies of scale and division of labor, and government action. It acts differently at each stage of the agglomeration of specialized villages. In the early stage of specialized village development, farmers with entrepreneurial spirit become the pioneer professional households through imitation and innovation. Then other farmers imitate the pioneer farmers. As a result, specialized villages are formed. The specialized village has a good radiation and driving effect on the surrounding villages. It prompts the surrounding villages to imitate and innovate. The specialized village has been effectively replicated. A new specialized village is derived. The emergence of new specialized villages has led to the formation of a larger cluster of specialized villages, which may further develop into specialized towns. Specialized town is a township economy based on the advantages of specialized production of one or more products. Specialized towns promote the establishment of regional brands. Most of the diffusion of expertise relies on networking based on social relationships. With the increase in the number of specialized villages and the expansion of the scale of specialized villages, agglomeration gradually appears in space. Based on the cumulative effect of horizontal and vertical linkages, the agglomeration area forms economies of scale. The external effect of economy of scale attracts farmers to join. The accession of farmers promotes the development of specialized villages and accelerates the agglomeration of specialized villages. When the scale of specialized villages is expanded to a certain extent, the division of labor among specialized farmers emerges. The division of labor facilitates the diffusion of innovation in technology. In a specific place and environment, the circular cumulative effect of the path dependence of economies of scale and division of labor is realized. The role of the government in the early stage of the development of specialized villages is mainly reflected in the aspects of guidance and support, infrastructure, and preferential policies. In the mature stage of the development of specialized villages, the role of the government is mainly reflected in the construction of public platforms and the cultivation of an innovation environment. In general, the agglomeration of manufacturing-type specialized villages is the spatial union of specialized villages based on economies of scale and division of labor. This agglomeration is not only

caused by the spontaneous formation of farmers, but also promoted by the government. Furthermore, this agglomeration is based on imitative innovations and network connections.

Specialized villages are the basic path for the development of characteristic industries. The social foundation of specialized villages is small farmers, and they serve small farmers, which is the uniqueness of specialized villages. Specialized villages have the characteristics of market-oriented, large-scale operation and high organization. The importance of specialized villages is that they form an industrialized development path with small farmers as the mainstay by absorbing the market from the bottom up.

5. Conclusion

5.1. Strengthening of Advantageous Industries

Advantageous industry is the industry with strong comparative and competitive advantages. It is a comprehensive manifestation of comparative and competitive advantages. It is also the industry with the most obvious phenomenon of industrial agglomeration in the region. The advantageous industry is also the one with the most obvious industrial agglomeration phenomenon in the region. Therefore, bigger and stronger advantageous industries can promote the further development of industrial clustering. The most important thing to develop advantageous industries is to strengthen the macro planning guidance. In view of the differences in resource endowment of each region, we should formulate a good development plan for advantageous industries, reasonably guide industrial development, avoid homogenization of products and circumvent the negative effects of industrial market competition. Secondly, the existing advantageous industries should be appropriately tilted in terms of land, capital and policies. The development of advantageous industries cannot be achieved without the help of the government. If tilted to the advantageous industries from various aspects such as land, capital and policies, it can provide strong support for the development of the advantageous industries and promote the level of industrial agglomeration. Again, we should increase the cooperation of inter-regional industries. Inter-regional industrial cooperation is an indispensable link to make the advantageous industries bigger and stronger. There are differences in the degree of development of advantageous industries in different regions. The mutual matching of industries enables the realization of industrial regional cooperation. We should increase information exchange, make up for the deficiencies in the development of advantageous industries, promote the overall improvement of the industry, and strengthen the advantageous industries.

5.2. Establishment of Demonstration Bases

Governments at all levels can establish rural manufacturing demonstration bases. The government uses the base as the center for the integration and association of resources. The demonstration base strengthens the spatial agglomeration of manufacturing-based specialized villages further. The base builds a platform for displaying scientific and technological achievements. Meanwhile the base cultivates highlight projects. On the basis of improving funds, venues, personnel and other guarantees, the base encourages personnel from various scientific research institutes to carry out research, experiment, demonstration and promotion work. All kinds of

exhibition services should be actively involved. With the help of exhibition platform and field display, the transformation and application of scientific and technological achievements in manufacturing industry should be accelerated. All kinds of media publicity work should be strengthened to fully demonstrate the transformation of scientific research results and the effectiveness of science and technology services, and to improve the display and influence of the work. In addition, the base cultivates leading enterprises. Leading enterprises drive the overall industrialization of specialized villages. Through the establishment of the government platform and the leadership of leading enterprises to form a joint force, we guide professional cooperative organizations to join and cooperate across regions. Infrastructure development by leading companies should be supported. Effective forms of realization of rural manufacturing development should be regulated.

5.3. Cultivation of Industrial Talents

The means to cultivate talents is industry-academia-research. The goal of cultivating talents is to improve the quality of farmers. The main role of farmers should be given full play. We should accelerate the development of rural education, especially vocational education. At the same time, we should increase the cultivation of practical talents in rural areas. Demand-driven should be the principle. With regional advantages and characteristics of the leading industries as the focus, science and technology training and popularization should be vigorously carried out to improve innovation capabilities. Relying on farmers' cooperative organizations, leading enterprises, and specialized business service organizations, services combining individuality and commonality should be carried out to enhance the efficiency of technical training. The college can closely integrate with governmental functions in the work of innovation team building and knowledge updating project for professional and technical personnel. Professional and technical personnel to carry out medium and long-term training can be achieved. The College explores resources such as laboratories, science and technology demonstration bases and libraries to popularize science and technology to the public. The college

introduces foreign talents and teams. The college encourages teachers and students from relevant colleges and universities to help rural areas. Using activities such as teaching, internship and social practice during holidays, we will set up spots, time, people and projects to help the poor with science and technology and send technology to the countryside. The marriage of science and enterprises promotes the transformation of achievements. The government encourages research institutes to set up economic entities, and gives preferential treatment such as tax exemptions.

Acknowledgment

We thank Cangzhou Association For Science and Technology. This work was supported by 2022 Cangzhou Science and Technology Innovation Research Topics under grant no.177.

References

- [1] X. Ye, *The General Principles of the China's Rural Vitalization Strategy in the New Era*. Reform, 2018.
- [2] X. B. Wang. *On the Main Theories Innovation of A Report at the 19th National Congress of the Communist Party of China*. Journal of Kaili University, 2018.
- [3] Y. Chen, G. Wang, W. Sun. *Agricultural Status and Agricultural Development in the Rural Revitalization Strategy*. Issues in Agricultural Economy, 2018.
- [4] E. Li, X. Li. *Relationships and Evolving Networks of Rural Manufacturing Clusters: A Case Study in Yucheng County, Henan Province of China*. Chinese Geographical Science, 2011.
- [5] C. Wang, X. Feng. *Study on the Environmental Effects of Rural Manufacturing Structure Evolution*. Journal of Shandong Institute of Commerce and Technology, 2022.
- [6] J. Qiao, J Yang. *Recent Progress in the Specialized Village Study of China*. Human Geography, 2013.
- [7] Kiyoto Kurokawa, Fletcher Tembo and Dirk Willem te Velde. *Donor support to Private sector development in sub-Saharan Africa: Understanding the Japanese OVOP Programme*. Japan International Cooperation Agency, 2008.