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Issues of Eco-agricultural Industrialization for Big Qinling Eco-city Cluster

WANG Dong*

Department of Sports Training, Xi'an Physical Education University, Xi'an 710068, China

Abstract Firstly, the necessities of ecological agriculture development in Big Qinling Eco-city Cluster were discussed. Then, condition endowment of eco-agricultural industrialization in Big Qinling Eco-city Cluster was analyzed from the aspects of basic conditions and differential endowment of eco-agricultural industrialization. Finally, specific forms and functional orientation of eco-agriculture were pointed out. Countermeasures for the eco-agricultural industrialization in Big Qinling Eco-city Cluster were put forward. Firstly, the government guidance and the media publicity should be strengthened. Secondly, financial support for the eco-agricultural industrialization in Big Qinling Eco-city Cluster should be enhanced. Thirdly, branding strategies of eco-agricultural products in Big Qinling Eco-city Cluster should be implemented as soon as possible.

Key words Big Qinling Eco-city Cluster, Ecological agriculture, Conditions endowment, Branding strategies, China

Under the background of western development, there is rapid development in Guanzhong–Tianshui Economic Zone, Xian–Xianyang New Area, and Chengdu–Chongqing Economic Zone. And the emerging eco-city clusters with Big Qinling as the center has become a good regional development strategy. Big Qinling Eco-city Cluster, together with Guanzhong–Tianshui Economic Zone and Chengdu–Chongqing Economic Zone, has become a protection for China towards the global climate change, as well as the needs of natural, social and economic sustainable development in China. Big Qinling covers Gansu, Shaanxi, Sichuan, Henan, Hubei and Chongqing in midwestern China, and more than ten prefecture-level cities such as Xi'an and Baoji. This city cluster not only determines the future ecology of Qinling which is the largest ecological security barrier in central China, but also determines the future direction of urban development in China. At present, how to protect and utilize the eco-environmental resources in Big Qinling has become an important strategy for the urban development around Qinling. Due to the special location and ecological attributes of Big Qinling Eco-city Cluster, Big Qinling might be divided into the development region with limitation, or the non-development region, according to the National Land and Spatial Function Zoning, which also brings along new constraints and challenges to the construction of regional industry system in this region. Therefore, construction of agriculture, especially the environment-friendly and resource-saving eco-agricultural systems, has become a real and pressing problem. Based on the discussion on the feasibility and problems during the construction of eco-agricultural industrial system in Big Qinling Eco-city Cluster, countermeasures for the construction of eco-agricultural industrialization were put forward from various aspects.

1 The inevitability of developing eco-agriculture in Big Qinling Eco-city Cluster

Eco-agricultural industrialization is a new stage of eco-agricultural development, which takes organic unity and balance of ecological, social and economic benefits as a premise. Its principles are the coordination of rural economic development and agro-ecological environment protection, and the coordination of natural resources protection and value-added protection. Within the carrying capacity of ecosystem, ecological and regional strengths and products comparative advantages should be fully exerted; and modern agricultural industry with high economic and environmental benefits should be developed^[1]. Eco-agricultural industrialization is neither the simple pursuit of agro-economic development, nor the improvement of ecological environment. It should organically combine the economic development and environmental protection, realize the agricultural high yield, high quality, low cost and sustainable development, and achieve the virtuous circulation of the ecological system^[2]. Development of eco-agricultural industrialization has two significant characters; one is the environmental problem and the other is the economic problem. Requirements of agricultural sustainable development have led to the emergence of eco-agricultural industrialization. Among all sectors of the national economy, relationship between agriculture and eco-system is the most close. Agriculture takes ecological environment as the production environment and a certain ecological system is an important part of the production process. Therefore, once agricultural ecology was damaged and the environment was polluted, the survival and development of us and future generations would be seriously affected.

China is a developing country with large population and few cultivated land. After the reform and opening up, the focus on economic indicators has enhanced the vulnerability of the environment, so that the self-restoring capacity of environment has significantly reduced. Some rural areas and ecological function

areas even have serious environmental problems and ecological disasters. Thus, sustainable development of agriculture can not be guaranteed. And a green and eco-agricultural development path with low carbon should be selected. At the same time, eco-agricultural industrialization should also be adopted in order to realize relatively high efficiency and effectiveness during agricultural production. In other words, eco-industrial system of modern agriculture should be established which provides the most regional ecological benefits, social benefits and economic benefits; and the appropriate supporting platform should also be set up.

Big Qinling Eco-city Cluster has the conditions and resource endowments to develop ecological agriculture.

2 Conditions endowment analysis on the eco-agricultural industrialization in Big Qinling Eco-city Cluster

2.1 Basic conditions for the eco-agricultural industrialization in Big Qinling Eco-city Cluster

2.1.1 Abundant natural resources and ecological conditions. Carrying capacity of the environment must be enhanced when developing ecological agriculture. The popularization of resource-saving agriculture and environmental protection has further enhanced the carrying capacity of environment in Big Qinling Eco-city Cluster. On the one hand, the popularization has reduced the agricultural demand for resources; and on the other hand it has lowered new environmental damage. Firstly, location and natural resource endowment are strongly complimentary to each other in Big Qinling Eco-city Cluster. Abundant natural resources have ensured the sustained and stable economic growth and have provided a stable foundation for the overall economic growth. Otherwise, resources would affect the economic system of the whole society. Natural resources influence the spatial-temporal layout of industry. Big Qinling Eco-city Cluster has extremely abundant water and biological resources, offering the natural conditions of developing ecological agriculture. Secondly, development of ecological agriculture has fairly good ecological environment. Big Qinling Eco-city Cluster is preparing for the joint declaration of Big Qinling Ecological Economic Zone, which will turn the regional biological resources into economic benefits through a specific industrial system in order to develop ecological civilization.

2.1.2 Relatively good experience and realistic foundation. Cities around Qinling, especially the major cities in Shannxi Province, are the important place of origin for Chinese civilization. Farming civilization first appears in these cities. Besides, due to the inconvenient traffic among cities, the backward logistics and the poor industrial civilization, these cities have established green industry system with ecological agriculture as the main body. Under the support of government compensation and financial transfer payment, they have achieved relatively good agricultural economy and ecological benefits, have accumulated many development experiences, have established some agricultural cooperative economic organizations, and have hedged the risks inherent in agriculture by modern finan-

cial instruments^[3]. With the establishment of characteristic industrial gardens and the industrial transfer of major economic zones, leading industries and agricultural processing enterprises have obtained good developing opportunities, and some have even established their own brands. At the same time, with the input in national infrastructure and the adjustment of agricultural industrial structure, problems in informatization and the circulation of agricultural products have gradually been solved. All these have laid solid foundations for the development and industrialization of the ecological agriculture in Big Qinling Eco-city Cluster.

2.2 Different endowments of the eco-agricultural industrialization in Big Qinling Eco-city Cluster

Different endowments of the eco-agricultural industrialization in Big Qinling Eco-city Cluster is mainly reflected in two aspects. Firstly, Guanzhong Area of Shaanxi Province, which is the main body of Big Qinling Eco-city Cluster, is rich in scientific and intellectual resources and has laid solid foundation for the development of ecological agriculture. Secondly, system innovation from all levels will inject new impetus into the agricultural progress of Big Qinling Eco-city Cluster, which is mainly reflected in the innovation of urban and rural overall planning system and the inclusiveness development of Qinling Region. Innovation of rural public goods construction and mode, especially that the improvement of traffic has provided the basis for the environment-friendly industrial transfer in Qinling Area. Cities in Big Qinling Eco-city Cluster have enhanced their discourse power in national development strategies by administrative cooperation. All these have provided good basis for the construction and development of agricultural industry system in Big Qinling Eco-city Cluster.

3 Mode and countermeasures for the eco-agricultural industrialization in Big Qinling Eco-city Cluster

3.1 Mode for the eco-agricultural industrialization in Big Qinling Eco-city Cluster

3.1.1 Specific forms of ecological agriculture in Big Qinling Eco-city Cluster. There are two key factors affecting the development of ecological agriculture in Big Qinling Eco-city Cluster. One is the consideration of local conditions, the rational layout, and the attention to characteristics^[4]. The other is that resource saving and environment friendly have been internalized during the increase of products, that is, the environment friendly of agricultural industry system. Therefore, based on the advanced experiences of other regions, Big Qinling Eco-city Cluster has to gradually develop resource-saving and environment-friendly modern ecological agriculture according to natural conditions and ecological dominance, and has to establish eco-agriculture demonstration project and modern eco-agriculture leading area. The hinterland cities in Big Qinling should develop characteristic agriculture, sightseeing agriculture and leisure agriculture, establish several agricultural production bases, and submit applications for green certification and a healthy image. Therefore, eco-agricultural construction should not be established into a simple model of circular economy, but should be an ecological agricultural in-

dustry and brand symbiotic system with differentiations; and industrial and brand externalities should be exerted in Big Qinling Eco-city Cluster. At the same time, resources conservation, economic friendly, and farmers' income increase should be coordinated, in order to finally realize the optimization of industrial structure, the purification of agricultural production, the savings of input, and the beautification of environment. The modern ecological agriculture also accords with the practical situation of Big Qinling Eco-city Cluster.

3.1.2 Function orientation of the ecological agriculture in Big Qinling Eco-city Cluster. Establishment mode of Big Qinling Eco-city Cluster should have two functions based on the ecological protection and resource conservation. Firstly, production function of agriculture should be fully exerted, and ecological agriculture should be taken as the basic leading industry in Big Qinling Eco-city Cluster. Secondly, the economic function of agriculture should be exerted. In other words, the beautiful landscape in Big Qinling should be utilized to develop various leisure agriculture, sightseeing agriculture and so on, in order to enhance the economic functions of agriculture, expand the social and cultural functions of agriculture, and establish multi-dimensional agriculture. Therefore, eco-agricultural industrialization in Big Qinling should take production as the leading factor, and pay attention to resource saving and environment friendly, in order to promote the sound and rapid development of agriculture and to fully exert the ecological value of Big Qinling Eco-city Cluster.

3.2 Countermeasures for the eco-agricultural industrialization in Big Qinling Eco-city Cluster

3.2.1 Strengthening the government guidance and the media publicity. Administration of Big Qinling Eco-city Cluster is decentralized or centralized, which leads to the complex benefit game of industrial policies. Thus, administrative centers at all levels should establish cooperative sense and win-win concept, seek common ground while accepting the existing differences, and together develop the eco-agricultural resources in Qinling Area. In other words, governments should do well in the following aspects: firstly, Ecological Agriculture Development Committee should be established in Big Qinling Area; the members could be government officials, industry members and experts, and the committee should become the highest authority and advisory body of agricultural development in this region. Secondly, forum and fair of ecological agriculture should be held regularly in Big Qinling Area; and Big Qinling ecological agriculture brand should be established. Thirdly, taking a certain city as the center of Big Qinling Eco-city Cluster, eco-agricultural leading zone should be established; and the ecological and green agricultural brand should be registered on the basis of leading enterprises. Then, according to the consumer network and the external effect of brand, eco-agricultural industry cluster brand and the place of origin image should be set up. At the same time, eco-agricultural industry in Big Qinling can not be developed without a favorable environment and cooperation mechanism. Therefore, cooperation and exchange mechanism for local governments should be established as soon as possible, in

order to share the resources and information, and to bring the construction of eco-agricultural industry into the overall planning of regional economic development in Big Qinling Area. Moreover, ecological resources or historical culture in Big Qinling should be explored in order to extract and protect the origin meaning of agriculture, to carry out integrated communication by diversified media, and to enhance the popularity of eco-agricultural products and brands in Big Qinling, especially the multi-dimensional reputation.

3.2.2 Strengthening the financial support for eco-agricultural industrialization in Big Qinling Eco-city Cluster. Development of Big Qinling eco-agriculture needs a large amount of capital. However, the economy is backward and the financial system is not perfect in Big Qinling due to the national functional zoning. Thus, the financial transfer payment of government should be strengthened, in order to carry out ecological compensation for Big Qinling Eco-city Cluster, and to turn the ecological contribution into economic value. Then, these funds should be used for the development of ecological agriculture, in order to ensure the ecological balance and resources saving. Thus, a virtuous circle has taken shape. Secondly, government sectors should fully exert the adjustive function, enhance the credit propaganda, improve the financial consciousness of enterprises, regulate the behavior of enterprises according to the law, actively help the financial institutions to implement financial debt, and create a good finance ecological environment. At the same time, the enthusiasm of the financial sectors should be stimulated and the financial services of financial sectors should be guided. The financial bottleneck problems in eco-agricultural industrialization in Big Qinling could be solved only when the trust and cooperation among government, financial sector, and enterprise were strengthened. Thirdly, private finance should be developed vigorously. Considering the costs and benefits, state-owned commercial banks are unwilling to provide more financial services and financial supports. But the private capital and private finance know the local enterprises well, and have common benefits and interests with these local enterprises^[5]. Therefore, it was suggested that central government should introduce relevant laws and regulations as soon as possible, in order to ensure the sustainable development of private financing, and to cultivate it into an important force for the eco-agricultural industrialization in Big Qinling Eco-city Cluster. However, it is more urgent to strengthen the supervision of private financing institutions, in order to let the private finance and lending develop into a healthy track and development model.

3.2.3 Implementing eco-agricultural brand strategy as soon as possible in Big Qinling Eco-city Cluster. At present, foods and agricultural products industries in China have revealed many problems under the increasing awareness of food safety. Thus, consumers have paid great attention to the safety of agricultural products during the whole supply chain. There is necessary relation between the safety of agricultural products and the agricultural production environment and input in agricultural elements. If all the elements and links were safe, the safety of ecological and green agricultural products could be ensured.

Besides, due to various food crises, consumers are more dependent on a trusted brand. But there are many problems in agricultural brands at present. Firstly, most of the agricultural enterprises and regions lack the awareness of product brand, and even destroy the agricultural products at will. Secondly, the market offers something bogus, and the consumers do not trust in some of the agricultural brands. In general, due to the unique location, Qinling Area has the ecological conditions, climate factors and geographical endowments to develop ecological agriculture; these different factors should be combined with the demand characters of consumers, in order to create eco-agricultural brands, to exert the brand effects, to realize the all-win results of enterprises, regions and consumers, and to promote the industrialization and sustainable development of ecological agriculture in Qinling Area.

4 Conclusion

Eco-agricultural industrialization in Big Qinling Eco-city Cluster is a complex project, which needs the cooperation and collaboration of all links and subsystems. Starting from the agricultural development status of Big Qinling Eco-city Cluster, the necessity and feasibility of ecological agriculture development in Big Qinling Eco-city Cluster were discussed. Then, factors and endowment of developing eco-agriculture in Big Qinling Eco-city Cluster were analyzed. Finally, specific forms, functional orientation and concrete countermeasures for developing eco-agriculture in Big Qinling Eco-city Cluster were put forward. The major disadvantage associated with the key influencing factors of developing eco-agriculture in Big Qinling Eco-city Cluster was that the empirical research methods should be adopted in future research.

(From page 36)

3 Conclusion

First, the cotton futures price, and China's cotton spot price as well as Xinjiang's cotton spot price, are in line with the characteristics of "peaked kurtosis and thick tail" of the most of the financial time sequence. The mean value and standard deviation of cotton futures price sequence $\{ZF\}$ are the greatest; the mean value and standard deviation of Xinjiang's cotton spot price sequence $\{X328\}$ are the smallest. 0.992 662 of correlation between cotton futures price and China's spot price is greater than 0.987 444 of correlation between cotton futures price and Xinjiang's spot price.

Second, through ADF unit root test and two-step co-integration test, we get that there is long-term equilibrium relationship between cotton futures price and China's cotton spot price, between cotton futures price and Xinjiang's cotton spot price. Through Granger causality test, we get that cotton futures price is the cause of changes of China's cotton spot price and Xinjiang's cotton spot price.

Third, through error correction model, we get that 8.572 6% of adjustment force when China's cotton spot price deviates from long-term equilibrium is smaller than 11.3% of

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adjustment force when Xinjiang's cotton spot price deviates from long-term equilibrium. This indicates that the short-term adjustment ability of China's cotton spot price is lower than that of Xinjiang's cotton spot price. Fourth, through impulse response and variance decomposition analysis, we get that the discovery function of cotton future price plays much greater role in the cotton market of China than in the cotton market of Xinjiang. The cotton futures price gives play to the price discovery function on the spot price.

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