



Rural Complex Promotes High-quality Integrated Development of Primary, Secondary, and Tertiary Industries in Rural Areas

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Abstract. On March 11, 2021, the Fourth Session of the 13th National People's Congress (NPC) voted to adopt the 14th Five-Year Plan, which defines the guiding ideology of China's economic and social development in the future, focuses on building a green and ecological economy, and puts forward a series of security suggestions around this target. In the context of the 14th Five-Year Plan, this paper takes the rural complex in Guizhou as the breakthrough point to explore the boosting role of the rural complex and the integrated development of industries as well as the risk management and control. By taking coupled symbiosis theory as the theoretical basis, this paper aims to provide strategies for the orderly development of agriculture, industry and service industries, manage and control risks as much as possible, and achieve the orderly advancement of Guizhou's rural complex in the development of industrial integration.

Keywords: rural complex, coupled symbiosis theory, industry integration

1 Introduction

Distinguish from the past extensive economic development period, our country has entered the era of intensive economic development, which also requires the society to improve the resources integration ability of the whole industrial chain, emerge along the trend, relying on the pastoral complex to boost industry integration development into a mainstream of the current economic development. However, faced with the intrusion of many external problems such as the COVID-19 epidemic and ecological imbalance, the risks of industrial integration and capital investment have greatly increased. Therefore, there are two problems that need to be solved in this paper: one is to adapt to the current social development background and rely on rural complex to promote the implementation of industrial integration; Second, in the process of successfully realizing the above mentioned, we should reduce the resources and cost

elements of project implementation by means of multi-party interaction and assistance, and reduce the risks brought by uncertain factors as much as possible. In other words, the risk control of the above content can provide a solid guarantee for the rural complex in Guizhou to promote the industrial integration and development.

2 Overview of Rural Complex

In 2017, the No.1 central document proposed the concept of rural complex for the first time, supporting the qualified rural areas to construct rural complexes with farmers' cooperatives as the main carrier, allowing farmers to fully participate and benefit, and integrating circular agriculture, creative agriculture, and agricultural experience. Open pilot demonstrations through channels such as agricultural comprehensive development and transfer payments of rural comprehensive reform.^[1] In the actual implementation process, the rural complex combines modern technology with new agriculture, new tourism, and new communities to form a comprehensive rural development model that integrates agriculture, tourism and the rural area, which is an important supplement to urban social development. In essence, the rural complex takes the agriculture as the starting point, and integrates industry and service industries to form a cross-industry and cross-domain integration bond, further promoting the economic development and industrial transformation in rural areas, and the coordinated development of the primary, secondary and tertiary industries in the region.

3 Analysis of the Relationship between Integrated Industrial Development and Risk Control Promoted by Rural Complex

At present, the rural complex to promote the development of industrial integration has begun to develop and advance across the country thanks to the support of the state and some scholars have carried out research very clearly. Among them, Yang Lin, Zhu Jie, focused on the application of rural complexes in the capital economic circle.^[2] They found that the Beijing-Tianjin-Hebei region took advantage of the driving role of the rural complex to expand the characteristic landscape resources in an innovative way, combining the characteristic grain and oil crops, functional flowers, health care and other crops with the rural complex, and combining with the derivative industries of plant resources, which makes people's economic income to achieve a more diversified growth. Nevertheless, considering the complex external environment in the past two years, the raging COVID-19 pandemic since 2020 has restricted the possibility of the rural complex forming a considerable economic and income-generating development. Meanwhile, the impact of the catastrophic flood event on the primary industry in Zhengzhou, Henan Province in 2021 and the resistance to the internal economic cycle in Nanjing due to the impact of imported epidemics from abroad, all of which indicate that strengthening risk management and control will become an important engine for economic development. The relationship between the two is analyzed as follows:

3.1 Relevance Promotion

Events such as flood disasters, ecological imbalances, and imported cases from abroad have had a great relevance promotion effect on economic development at home and abroad. Relevance promotion itself is just a magnifier. In a favourable external development environment, domestic and foreign economies can achieve good development through positive effect of relevance promotion. However, in a non-favourable environment, the influx of unfavourable factors can greatly weakened the momentum of economic development through the effect of relevance promotion, and even destroyed the scale of the industry that had been painstakingly built.

3.2 The Butterfly Effect

In meteorology, butterfly effect refers to the movement of butterfly wings, which leads to changes in the air system around it and the generation of weak airflow, which in turn causes corresponding changes in the air around it or other systems, resulting in chain reactions and ultimately leading to great changes in other systems. In the real market, due to the difference of location factors, the process of exporting technology and other elements from the eastern economic zone to the central and western economic zones inevitably has a different state of regional development. For example, when the supply of agricultural products declines in the central region, the input of vegetables and grains in the eastern region will cause market shocks, and the scope and time of such impact are positively correlated with the speed of the Chinese government in solving the problem. In the real market, such fluctuations are often more than one, but multiple problems occur at the same time, and even show a phenomenon similar to the butterfly effect in meteorology, which means that the development of the new economic model will be restricted by the original economic ecology and economic model at the macro and micro levels. Therefore, it is necessary to clarify the utility mechanism of risk management and control in the transformation process of the new and old economic models to ensure that such a butterfly effect phenomenon can be targeted.

3.3 Symbiosis

Every major crisis will destroy a large part of the original economic model and economic molecules, but it will also breed a more dynamic economic structure that is beyond the past. In other words, crisis and opportunity symbiotic with each other and present a balanced relationship. The process of industrial integration built on rural complexes also follows the principle of coexistence of crises and opportunities. Therefore, it is necessary to strengthen risk management and control, gain opportunities from crises as much as possible, and take advantage of the synergistic symbiosis of complexes to jointly deal with external adverse risk like ecological imbalances, epidemic spread, etc.

From the analysis of the above three points, we can see that while relying on the rural complex to become a booster of industrial integration, it is also necessary to strengthen the construction and development of the risk management and control mechanism, and

give full play to the synergistic role of the two. Only in this way can the sustainable development of China's new economic model in the new era be guaranteed.

4 Theoretical Analysis

4.1 Feasibility analysis of using the coupled symbiosis theory to support the development of industrial integration

To understand the coupled symbiosis theory, it is first necessary to clarify the concept of coupling. Coupling is usually used to refer to one or more phenomena of mutual influence and cooperation between two or more units and systems, and a dynamic equilibrium process of transferring energy from one direction to another direction through the coupling effect between each other.

The process of promoting industrial integration of rural complex is the process of mutual influence and energy transfer among related industries or multiple systems involved in the integration. According to the performance, mode and elements of coupling, it can be divided into multi-field coupling, energy coupling, public coupling, marker coupling, control coupling, external coupling, internal coupling, data coupling and indirect coupling. Due to the influence of various internal and external factors, the strength of coupling between different objects is not the same, and the process of coupling energy transmission and the final coupling result will also be different.

Therefore, the researchers further introduce the concept of symbiosis here to further solve the difficulties encountered in the research content of this topic. The German biologist once put forward the symbiosis theory for biological problems. He emphasized that the basic elements of the theory are symbiotic environment, symbiotic model and symbiotic unit. Interaction between the elements form interaction media such as symbiotic environment, symbiotic model, symbiotic unit, and symbiotic interface etc. which is also the core content of symbiosis theory. ^[3]

4.2 Theoretical analysis on supporting the integrated development of rural complex industry using risk management and control theory

The above-mentioned theory proves the value of the rural complex as an industrial booster in the early stage of industrial integration. How to solve the problem of risk management and control then on the basis of the development of this industry? Generally speaking, the main considerations of risk management and control are risk avoidance, loss control, risk transfer and risk retention. However, for a complex economic project like rural complex, the above four considerations are far from enough. Researchers believe that effective risk management and control of a huge industrial system requires continuous expansion of the connotation and extension of risks, and management need to be based on large industries, large layouts and general directions, so that risk management and control are deeply integrated with the primary, secondary, and tertiary industries. By establishing a multi-dimensional integrated risk management and control model, a top-down supply chain system relying on the latest big data, cloud platform and other technologies with real-time risk monitoring will be further

formed, which runs through multiple disciplines, escorting the development of rural complex industrial integration in terms of mechanism and technology.

In the view of researchers, after a few years of vigorous promotion and policy support, industrial integration in all parts of the country has been better developed. In Jiangxi province in promoting the construction of rural complex project, the industrial facilities was perfected, public environment construction and service supporting function upgrade, around 123 industry of industrial construction orderly, make the connection between the industry more closely, the 123 industry to further depth fusion.^[4] Nanchang County also takes the construction of cultural park as an opportunity to introduce supporting industrial projects such as fruit tree picking, realizing the integrated development of cultural and tourism industries; By building agricultural industrial infrastructure, Gao'an Pastoral Complex not only improves the quality of agricultural production, but also organizes farmers to participate in the modern division of labor system through industrial integration and drives the common development of local collectivises.

However, there are still many problems in the tertiary industry, especially in the deep integration with the tertiary industry, such as industrial data scheduling problem, personnel structure optimization problem, etc. The pastoral complex as the medium can better lay a solid foundation for industrial integration and solve the problems encountered in the coupling with the tertiary industry. However, in view of a series of uncertain factors since 2021, the theory of risk management and control is added to the discussion of this paper, which makes the research direction, perspective and practice more realistic.

5 Relevant Countermeasures for High-quality Construction of Rural Complexes

The 14th Five-Year Plan proposes that great effort should be made to vigorously develop the ecological civilization, people's livelihood and well-being, and national governance to ensure the economy achieves new results and the entire social civilization level is newly improved. Based on this, the countermeasures are proposed as follows:

5.1 Exploring the developmental advantages of agriculture in the rural complex by using the coupling mechanism

Taking rural areas of Guizhou as an example, different from the labor resources and technical resources of cities, vast rural areas have their own unique advantages in terms of in regional environment and aptitude endowment, which means that rural areas in Guizhou have extremely broad development space. The development of the countryside requires the integration, addition and exploration of the element resources of land and environment, so as to realize the expansion of the rural complex. The above-mentioned development paths are further divided into external coupling and internal coupling. External coupling emphasizes the communication and integration of

the internal and external environment of the countryside, and focuses on exploring the connecting role of public transportation to provide support for subsequent rural tourism and freight transportation. In terms of internal coupling: (a) ensure the diversification of business forms. Multi-format development is to make full use of the multiple advantages of the rural areas itself, integrate regional space, resources, ecology and other elements to create a symbiotic unit; (b) the essence of rural development is to provide people with enough food and good employment. Therefore, it is necessary to deeply grasp the keynote of rural development and ensure the normal operation of the internal blood supply mechanism for regional development; (c) integrate multiple rural formats to form a new format for rural development that integrates characteristic agriculture, tourism agriculture, and ecological agriculture.

5.2 Exploring the differences in regional resource endowments, starting from agriculture and gradually turning to industry and services

The biggest feature of natural resources is scarcity and difficulty in recovery, which means that most of the local resource endowments unique to Guizhou are not renewable. Therefore, while making full use of the cultural resources of ethnic minorities and the natural resources of Guizhou's landscape to develop tourism, it is necessary to strengthen the determination to transform and realize the development from agriculture to industry on the basis of tourism, and this process is also a process full of challenges.

First, the internal supply of supporting facilities can promote the development of local industries in Guizhou. Agricultural machinery, sightseeing equipment, etc. needed for the development of agriculture in rural areas can be produced, researched and developed by local enterprises, and the penetration of industrial elements can be used to improve the value of the agricultural industry. It is more conducive to the rapid formation of the ecological chain within the rural area, and benefit from the dividends of technology and capital transferred from the developed regions, fully enjoy the advantages of industrial clusters from the Yangtze River Delta and Pearl River Delta regions, incubate the internal supply chain, and give full play to the advantages of industrial concentration formed by the coupling of industry and agriculture.

Second, with the continuous development and progress of rural agriculture in Guizhou, the spillover effect of the industry will appear. This effect includes the expansion of native products and service network, the gradual development of industrial chains such as tourism and service industry chains, and science and technology centers for technology R&D. ^[5]The spillover effect requires the accumulation and improvement of basic industries. To reach the current level of development in developed regions, this process still requires 10 or even 30 years of accumulation and precipitation.

Third, when adopting the coupled symbiosis theory, it is often necessary to combine the symbiotic environment, symbiotic unit, symbiotic interface and symbiotic model. That is to say, in order to realize the development process of agriculture-industry-service industry in rural areas of Guizhou, it may form a development model of single linear characterized by from the point to surface, or a symbiotic business model of multi-industry development with agriculture as the mainstay industrial and service industry as a supplement, or a symbiotic development model in which the 3

major industries rely on a symbiotic format to develop independently. No matter what kind of development model it is, it requires the policy and financial support of the local government and the wisdom and sweat of the local people. The development of rural business in Guizhou needs to start from agriculture. As for whether to integrate rural complexes from single linear, multiple linear or other dimensions, it also needs to be decided according to the actual situation of each place.

5.3 Taking risk management and control as the starting point to improve the booster for the integrated development of rural complex

From a macro perspective, the promotion of the rural complex in the development of industrial integration requires a process from quantitative change to qualitative change, that is to say, it is necessary to integrate various agricultural elements in the rural complex to provide guarantees for quantitative and qualitative changes. The quantitative change to qualitative change can be divided into two stages. The first stage is that industry nurturing agriculture, and the second stage is that the integrated development of industry and agriculture generates regional service industries. Since the main driving force comes from endogenous factors, it also possesses good capability of resisting risks in the face of rapidly changing external environmental disturbances.

How to improve the risk management and control capabilities of the rural complex? It is a truism that risk factors are hidden in every development link of the rural complex. With the development and integration of the rural complex, the process of value transfer stimulates the expansion, alienation and even fission. In response to the above-mentioned problem of risk expansion, the third part of this paper mentions that risk management and control can be achieved by means of risk transfer, risk retention, risk avoidance, and risk control. A new problem on how to realize risk identification, control, grasp and treatment and who should be the main body of implementation arise then. For this point, researchers have collected a large amount of data and believe that they can start from the following aspects:

(i) To form a regional online service platform to provide various services such as technology, law, medical care, and education for regional rural complexes, and to promote the integrated development of industries; (ii) To formulate various strategies in their development at different stages by the regional management as the administrative unit area of the rural complex is defined as the scope. Subsequently, the key positions are mainly held by internal personnel to reduce the input of external personnel as much as possible, so as to prevent the backbone from being poached by external capital. In addition, it is also possible to make up for the lack of technology, capital and other elements through external employment and other means; (iii) To timely understand the maturity of industry development for the identification, grasp and control of risks, grasp the direction of industrial development, observe and monitor the risks in time that can be retained, take precautions to prevent them before they occur, and actively think about whether there will be new opportunities after entering the next stage. In addition, it is necessary to improve the ability to transform risks in an all-round way, which is an important means of risk management in rural complexes.

For some hidden risks, it is necessary to do a good job of risk transfer and avoidance treatment, control the risk transfer within a safe range through value chain transmission, or use risk avoidance methods to curb the deterioration of risks and to avoid adverse situations in rural complexes. As for those risks that need to be solved urgently, it is necessary to take risk control measures to ensure the effectiveness of risk control.

6 Conclusion

Relying on the role of rural complex, the integration of rural industries in Guizhou has achieved a richer level of development from scratch, from single vertical integration to mixed integration. In essence, this is a great leap from theoretical conception to practical application. This paper discusses step by step from following four aspects, i.e. the overview of the rural complex, the relationship between the rural complex and risk management and control, the theoretical part, and the strategy part, all of which provide a strong theoretical support for the Guizhou rural complex in promoting the development of industrial integration. This also reflects the theoretical significance and practical value of the research that this paper lies.

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