

# Research on Green Finance and Optimization of Rural Industrial Structure in Zhaoqing City

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**Abstract:** Under the influence of the political and economic environment of "carbon peaking and carbon neutrality", green finance has not only become an important driving force for China's economic development, but also become a positive force to drive rural revitalization and promote the rural economy towards high-quality development. The economic situations at home and abroad are changing rapidly. Zhaoqing City has promoted the green development of the rural economy by relying on green finance, which is of practical significance to promote the rural revitalization of Zhaoqing City. Currently, the development of green finance in Zhaoqing City has the problems of incomplete credit reporting system, difficulty in developing large agricultural green financial products, insufficient professionals, low financial literacy of resident, large capital gap, lack of green financial supporting policies, etc. Therefore, perfecting the rural factor market and credit system and deepening publicity and education to improve farmers' financial literacy, leverage the capital market, expand the scale of rural green finance, promote the development of green finance in Zhaoqing City and optimize the agricultural industrial structure.

**Keywords:** Green Finance; Rural Revitalization; Rural Industrial Structure; Zhaoqing City

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## 1. Introduction

In the Opinions of the Central Committee of the Communist Party of China and the State Council on the Implementation of the Rural Revitalization Strategy issued by the State Council in 2018, the vital function of finance in rural revitalization had been emphasized. The source of funds must be solved to implement the strategy of rural revitalization. Therefore, the investment security system has been improved and the investment and financing mechanism has been innovated to accelerate the formation of the diversified investment pattern with preferential financial security, preferential financial focus and active social participation, aiming to ensure the increasing investment and the increasing total amount<sup>[1]</sup>. The guiding function of financial funds has been effectively played to effectively promote more investment of financial and social capital in rural revitalization. The role of the national agricultural credit guarantee system has been fully played; on the basis of the measures such as financial guarantee rate and compensation by reward, the credit enhancement function of guaranteed financing has been strengthened, the strength of support for new agricultural operation entities has been increased, aiming to guide more financial resources to support rural revitalization.

Nevertheless, people pay more attention to living environment and health while having made great achievements in rural revitalization. Therefore, the development concept of "lucid waters and lush mountains are invaluable assets" needs to be thoroughly implemented to change the production mode, optimize the industrial structure and promote green transformation. The Guidelines for Establishing the Green Financial System jointly printed and distributed by the seven ministries and commissions pointed out that, finance is the compass of economic development, the green financial system must be established and improved to give full play to the functions of capital market, such as optimization of resource allocation and service of real economy, and support and promote the construction of ecological civilization.

## **2. Strategic Significance of Developing Green Finance**

### **2.1 Connotation of Green Finance**

As a concept integrating finance, environmental protection and ecological construction, "Green Finance" was first proposed in the 1980s, aiming to achieve the goal of environmental protection while promoting economic growth by utilizing financial instruments. Essentially, on the basis of emphasizing financial as the material basis, green finance is committed to promoting economic and industrial development, reducing environmental pollution and achieving sustainable development in a low-carbon mode. On the basis of the research on the role of finance in rural economic development with the help of empirical analysis, JeanneneySG(2011) pointed out that, the rural finance is positively related to the local economic situation; in addition to the income from agricultural production, farmers can also utilize financial investment to increase income, which has driven the development of rural economy.

The Guidelines for Establishing the Green Financial System jointly printed and distributed by the seven ministries and commissions (including People's Bank of China, Ministry of Finance, etc.) clearly pointed out that, green finance refers to the financial services for investment and financing, project operation and risk management of projects in the fields of clean energy, energy conservation and environmental protection, green transportation, etc., as well as the economic activities to cope with climate change and improve the environment. Therefore, green finance is the important embodiment of the realization of high-quality economic development in the new era.

### **2.2 Formation Mechanism of Green Finance Promoting Rural Revitalization**

Domestic scholars have conducted a great number of researches on green finance and rural revitalization respectively. In terms of the formation mechanism of green finance promoting rural revitalization, the interaction and interrelation between the introduction of funds, the promotion of the development of "agriculture, rural community, and farmers" and the ecological environment have jointly promoted the rural revitalization.

Under the background of rural revitalization strategy, the rural areas have advanced production technology to rapidly grow industries and constantly expand the demand for funds. Rural financial institutions guide funds to participate in the development of rural economy and industry through utilizing insurance, credit, bonds and other financial instruments, aiming to effectively improve agricultural production conditions and improve the rural living environment. On the basis of further improving the rural financial system, rural green finance can meet the large demand for funds for rural revitalization.

Rural green finance can help the development of "agriculture, rural community, and farmers". The development of villages and towns in Zhaoqing lacks rural residents' assets and the concept of asset management, rural green finance can provide a large amount of financial assistance for villages and towns in Zhaoqing, especially rural areas, with an order to promote the development of rural industries and increase the income of rural residents. The perfection of rural financial system construction and the change of rural residents' financial concept have become one of the important ways to effectively solve the "agriculture, rural community, and farmers" problems.

The proposal of rural green finance aims to cultivate and develop energy conservation and environmental protection and green industries, focus on the low-carbon and sustainable development trend of the industry, and achieve the win-win situation in rural environment and economy through providing green financial services to various rural industries. Simultaneously, the development of rural green finance is conducive to promoting the effective treatment of local solid waste and industrial pollution, conforming to the concept of green environmental protection in the construction of ecological civilization.

### 3. Agricultural Industrial Structure of Zhaoqing City and Necessity of

#### Developing Green Finance

#### 3.1 Development Status of Rural Industrial Structure in Zhaoqing City

On the basis of tapping the local resources of Zhaoqing and combining the resource endowment and market demand of each assisted town, Foshan Municipal Assistance Headquarters in Zhaoqing City has promoted the organic combination of concentrated and continuous development of characteristic agriculture, abandoned land treatment and land circulation of 32 assisted towns, aiming to make "sleeping" land become "wealth field".

##### 3.1.1 Realization of Quality Improvement and Quantity Increase by

##### Characteristic Planting Industry

The provincial modern agricultural industrial park of camellia oleifera has been successfully declared, and a special support fund of RMB 50 million has been obtained. The advantages of "camellia oleifera" resource endowment have been brought into full play, with a planting area of 57,400 mu, an output value of RMB 210 million; 20,000 farmers have been driven, and the processing capacity of camellia oleifera is up to 2000 tons. On the basis of introducing the development mode of "company + cooperative + farmer" of leading enterprises, the agricultural linkage mechanism has been established and improved, 100,000 mu camellia oleifera planting area has been developed, so that the integrated whole industrial chain of camellia oleifera in western Guangdong can be established. (Compilation of Guangning County's 2021 Statistical Yearbook)

Moreover, farmers are driven to participate in the local characteristic agricultural industry through establishing the cooperative model. It can be seen based on the data analysis in Table 3.1 that, in 2021, Guangning County of Zhaoqing City led about 13,500 rural households to invest in the industrial development of sweet potato, asparagus, big hawthorn and sugar orange, they completed four agricultural planting production of 191,300 tons, realizing an output value of RMB 1.102 billion; The sweet potato industry has been successfully declared as a national geographic indicator, the famous, special and new agricultural product (public) brand of Guangdong Province has been founded, aiming to promote the modernization of agriculture in mountainous areas.

Table 3.1 Development Status of Characteristic Planting Industry in Guangning County, Zhaoqing City in 2021

Industry category	Cooperative(s)	Rural household(s)	Output (ten thousand tons)	Output value (RMB one hundred million)
Sweet potato	3	1000	6.75	5.07
Asparagus	3	4500	5.63	2.25
Big hawthorn	10	3000	1.5	0.6
Sugar orange	31	5000	5.25	3.1

Data source: Data Sorting Released by People's Government in Guangning County, Zhaoqing City in 2022

##### 3.1.2 Cultivation of the Management System of Modern Agriculture with Initial

##### Results

The leading role of leading enterprises has been fully played. As of Dec. 31, 2021, a total of 4 counties (Guangning County, Deqing County, Fengkai County, Huaiji County) in Zhaoqing City had 76 key agricultural leading enterprises (including 17 province-level enterprises, 30 city-level enterprises, and 29 county-level enterprises), 532 farmers' professional cooperatives (including 18 province-level demonstrative cooperatives, 12 city-level demonstrative cooperatives and 9 county-level demonstrative cooperatives), and 198 family farms (including 11 city-level demonstrative family farms). Its intensive, large-scale, commercialized

and other radiating and driving roles have been played to constantly expand the main agricultural management team and promote the rapid development of agriculture and rural economy in Zhaoqing City.

### **3.1.3 Accelerating Agricultural Brand Construction**

In the process of promoting the development of agricultural modernization, on the basis of grasping with "three products and one standard", Zhaoqing City is committed to improving the quality of agricultural products and the corresponding safety level, establishing brand awareness, accelerating the cultivation of agricultural brands, actively guiding farmers to plant green pollution-free agricultural products, and cultivating new agricultural product brands in vegetable and fruit planting, livestock and poultry breeding, etc. Simultaneously, the Certificate of Protection of Ecological Origin Products has been formulated with the "Xibei Live Pig" of Bayi Ecological Farm; 3 "Vegetable Basket Bases" in Guangdong Province have been established.

## **2. Necessity of Developing Green Finance in Zhaoqing City**

### **2.1 Further Enhanced International Competitiveness of Agricultural Products**

The deepening construction in Guangdong, Hong Kong, Macao, Greater Bay Area and the combination of green economy and green finance are conducive to further improving the quality of urban and rural green economy development in Zhaoqing City, further breaking the international "green barrier" and improving the international competitiveness of agricultural products in Zhaoqing City. In accordance with the measures of China for the supervision and administration of inspection, testing and quarantine of agricultural and sideline products for food supply to Hong Kong and Macao, the relevant regulations and standards of Hong Kong and Macao, and the integrated laboratory construction scheme, the unified quality and safety standard system for agricultural and sideline products in Greater Bay Area has been established. On the basis of docking with the standards in Hong Kong and Macao, the inspection and testing center for agricultural and sideline products has been built to promote agricultural and sideline products enterprises in Zhaoqing and surrounding regions to entrust testing centers for testing. The technical connection between the registered business entities and the inspection and testing institutions has been strengthened. The agricultural standardized production demonstration system has been established to further cultivate "reputation farms" and "reputation processing plants", and explore and establish the mechanism of "GAP certification of scale farms". Drawing a bead on markets in Guangzhou, Shenzhen, Zhuhai Hong Kong and Macao, create a batch of high-end brands of green food and organic agricultural products, build a whole process quality and safety control, clean and traceable production system, and encourage and support qualified production and processing bases to develop into high-end brands. Zhaoqing (Huaiji) Green Agricultural and Sideline Products Distribution Base has formed a whole chain supervision system in terms of the regulatory measures for various links, such as manufacturing, processing, transportation, warehousing and distribution of agricultural and sideline products.

### **2.2 Construction of Supply Chain Service System for Agricultural and Sideline**

#### **Products**

Green finance and sustainable development are interdependent, which can promote the change of sales methods, realize intensive management, promote the change of traditional economic development mode, and respond to the needs of economic development in the new era with the help of the integrated development with green economy. Accelerate the construction of the regional platform integrating the functions of agricultural and sideline products storage, processing, inspection and detection, and distribution, improve the modern agricultural product logistics system and supply chain service system, strengthen urban and rural transportation logistics and infrastructure construction, strengthen the connection between rural roads and transport hub stations and yards in the distribution base, accelerate the construction of public agricultural products cold chain logistics infrastructure backbone network, link the city's urban nodes and the supply and marketing system of agricultural and sideline products, promote the inclusion of high-quality agricultural and sideline products in local and surrounding areas into the scope of distribution, complete processing, inspection and

detection, trading, fresh-keeping, logistics and distribution in Zhaoqing, and deliver to the core area of Guangdong, Hong Kong, Macao, Greater Bay Area, Southwest China and the international market.

## **2.3 Further Expanding Ecological Industry**

Gaoyan District Jinli Town and Sihui City Dasha Town have become provincial central town pilots. RMB 580 million has been invested to build a beautiful rural demonstration belt along the provincial corridor, becoming a model project for rural revitalization in the province. The popularization rate of harmless household toilets in rural areas has reached 99.9%. Taking Guangning County, Deqing County, Fengkai County and Huaiji County as subjects, adhere to ecological priority and green development, develop ecological industries that adapt to ecological functions, promote industrial ecology and ecological industrialization, vigorously develop modern agriculture, health tourism, green building materials, food processing and other industries, and build an ecological industry demonstration area. Accelerate the integrated development of leisure agriculture and rural tourism, promote the development of major development platforms and industrial parks in the region, reasonably guide the transfer of permanent population in the region to the "Belt and Corridor" and cities and towns, and focus on the construction of rural revitalization demonstration zone in Greater Bay Area.

## **3. Existing Problems of Green Finance in Supporting the Development of**

### **Agricultural Industrial Structure in Zhaoqing City**

#### **3.1 Imperfect Credit System, Difficulty in Developing Green Financial Products**

##### **Related To Agriculture**

Small-scale rural industries and enterprises cannot meet the access conditions for bank credit. Zhaoqing has prominent problems in agricultural industry chain and supply chain, which has been fully exposed during the COVID-19 epidemic situation since 2019. At that time, a large number of green agricultural products were once seriously unsalable. Besides, it has insufficient effective collateral. It is difficult to confirm the land property right, mortgage, provide effective collateral and others for operation subjects of the counties. Most subjects use fixed assets as collateral, such as transferred land and self owned homestead, which are difficult to realize guarantee mortgage. However, there is a risk of default in the multi-household co-guaranteed credit, which does not meet the mortgage loan conditions of financial institutions, resulting in that most farmers and enterprises are difficult to meet the bank credit access threshold.

Compared with industrial products, agricultural products have high natural risk attributes, and such products are vulnerable to natural disasters and insect diseases with relatively low production profit margin, hence farmers still need to increase their incomes. Compared with the disposable income of about RMB 20,000 per capita of rural residents in Guangdong Province in 2021, the per capita disposable income of rural residents in Zhaoqing City was RMB 19,726.49, the income gap had narrowed further. The per capita disposable incomes of Guangning County, Deqing County, Fengkai County and Huaiji County are RMB 17,139, RMB 22,232, RMB 16,856 and RMB 18,047 respectively. Most young adults choose to work in Guangzhou and other first-tier cities due to the relatively low per capita income, as a result, the hollowness and aging of rural areas are serious, and the development of financial products is more difficult than that of cities.

#### **3.2 Lack of Professionals, Residents' Financial Literacy to Be Improved**

The government departments and financial institutions are still in the exploration stage of green finance. However, green finance is an interdisciplinary subject, there is a lack of local professionals who are both proficient in finance and know environmental protection, so it is difficult to integrate the economy with the environment. Currently, most practitioners of green finance industry in Zhaoqing City and even in China are practitioners of traditional financial industry, they lack the relevant knowledge of environmental protection and environmental economy, and are unable to accurately evaluate the environmental risks, leading to the development of green finance in Zhaoqing City only staying on the surface. On the basis of the comprehensive development of rural green finance in

Zhaoqing City, the number of green financial talents that have not been improved seriously hinders the development of green finance.

The problem of digital financial exclusion has not been fundamentally solved. Rural residents in Zhaoqing City need to improve their financial literacy, they lack the awareness of taking advantage of digital financial service platform; there is also a gap between them and urban residents in terms of financial behavior, financial attitude and financial skills. Speaking from the financial behavior, the proportion of rural residents in Zhaoqing City using bank self-service equipment in the past year was 35.88%, lower than 13.84% of that of urban residents; speaking from the financial attitude, the proportion of rural residents in Zhaoqing City who believed that "credit should not be excessively expanded, and should be carefully maintained" reached 83.07%, lower than 8.21% of that of urban residents (91.27%). Speaking from the financial skills, the proportion of rural residents in Zhaoqing City who are "unclear" about financial products or services is 22.8%, which is 9.51% higher than that of urban residents (13.29%). (Investigation and Analysis Report on Financial Literacy of Chinese Consumers in 2021, Zhaoqing City People's Government Portal, 2022). Simultaneously, the relatively few counterpart financial products of "agriculture, rural community, and farmers" and the unsatisfactory innovation and promotion of digital inclusive finance have restrained the development of green finance to a certain extent.

### **3.3 Large Funding Gap, Lack of Supporting Policies for Green Finance**

In accordance with the statistics issued by the national environmental department, there is a huge capital demand for green finance, which requires about RMB 3-4 trillion of investment each year. As a result, the market development means of green finance become the main force due to the limited driving force of financial funds. With the economic and social development and the expansion of green capital demand, simply relying on large financial institutions can no longer meet the development needs, and there is a huge funding gap in green finance.

Speaking from the practice of urban and rural areas in Zhaoqing City, the economic development needs to be improved, and there is a serious outflow of funds due to the limited financial capacity. The income of general public budget in Zhaoqing City in 2021 was RMB 14.6 billion, while the expenditure of general public budget exceeded RMB 430.9 billion; The loan-to-deposit ratio of financial institutions is far lower than the average level of Guangdong Province, resulting in a disadvantage in terms of funds and difficulties in giving full play to financial functions. Green finance presents the status quo of exceeding supply, and there are financing difficulties and fund shortage problems in social development. Generally speaking, the development of rural green finance in Zhaoqing City has a large funding gap, which does not match the actual development needs.

Zhaoqing Municipal Government has actively explored green financial innovation oriented to the "carbon peaking and carbon neutrality" goals, issued the Guiding Opinions on Strengthening Financial Support for Green and Low Carbon Development of Scientific and Technological Innovation Enterprises together with the Zhaoqing City People's Bank of China, and successively issued relevant macro policies that can promote the development of green finance; however, it lacks the macro policy guidance for rural green financial development, especially at the micro level of operability. Therefore, Zhaoqing City needs to issue detailed guidance policies for green finance to support high-quality development of rural economy, aiming to effectively guide the investment of green finance.

## **4. Countermeasures for Green Finance to Support Rural Industries to Achieve High-quality Development in Zhaoqing City**

### **4.1 Improvement of Rural Factor Market and Credit System**

Promoting the market flow and value manifestation of various factors of villages and towns in Zhaoqing City, effectively develop multiple functions of villages and towns, enhance the ecological value, social value and cultural value of villages and towns, promote agricultural efficiency, farmers' income and rural greening, and provide more collateral for financial institutions to carry out rural green financial business. Build an upgraded version of the rural credit system in Zhaoqing City, speed up the construction of rural credit reporting system and "agriculture, rural community, and farmers" credit reporting database, enhance the legal awareness and credit awareness of rural enterprises and villagers. Attach importance to the protection of seed source areas, water source areas and the construction of geographical indications for agricultural products, improve the construction of various mechanisms such as rural market transaction, rural property right confirmation, agricultural land circulation, ecological asset value evaluation in Zhaoqing, and

gradually form a more standardized standard system for green villages, green agriculture and green finance.

Improving the existing financial incentive and subsidy policies for agricultural modernization, industrialization, greening and rural construction, promote the establishment of various green funds, rural revitalization funds, risk sharing funds and industry guidance funds in the forms of financial loan discount, financial capital participation, PPP, etc., encourage commercial banks to expand rural credit supply, encourage insurance companies to carry out agricultural insurance, catastrophe insurance and environmental pollution liability insurance, encourage agriculture related enterprises to go public for financing or issue green bonds.

## **4.2 Deepening of Publicity and Education, Improvement of Farmers' Financial**

### **Literacy**

The talent gap of green finance will arise while agricultural economy moves towards high-quality development. Speaking from the future development trend, all districts and counties of Zhaoqing City should introduce more policy documents in relevant fields and measures such as talent introduction, for the sake of reserving and cultivating more talents of green finance and giving full play to the spillover effect of knowledge. Secondly, in addition to the continuous professional knowledge education, financial institutions should also strengthen the training of employees on energy conservation and emission reduction and green development, and then speed up the training process of compound talents.

On the basis of the deepening of publicity and education, financial institutions should actively cooperate with county governments, village committees and educational institutions to build a financial education organization mechanism that meets the needs and habits of rural areas. Meet the actual needs of farmers, optimize financial products and service experience, and attract and promote the enthusiasm of farmers to actively participate in financial literacy education through simple, easy-to-use and effective financial supply. Expand the form and scope of financial literacy education by making full use of scientific and technological means, provide personalized contents focusing on different segments, and improve the quality and effect of publicity and education.

## **4.3 Leveraging of Capital Market, Expansion of Rural Green Financing Scale**

Guide financial institutions to expand the issuance of green bonds. Increase incentives for green bond issuers, improve supporting mechanisms such as standard identification, information disclosure, etc., strictly regulate the identification of the green degree of the green bond subjects, strictly prevent "green washing" and "green floating" in green bonds, accelerate the formation of a more professional and reputable third-party evaluation and certification agency, encourage agricultural enterprises in Zhaoqing to expand input and output through green bonds.

Secondly, create the rural internet financial ecosystem. Relying on financial ecology cloud technology and "Management Cloud Platform for Rural Collective Funds, Rural Collective Assets and Rural Collective Resources", improve the management level of financial agricultural subsidies and the transaction efficiency of rural property rights; improve the online financing scene to better meet the financial needs of agricultural enterprises and farmers.

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