

# *A Study on the Transformation and Optimization Path of Agricultural Industrialization in Didou Town, Sihui City, Zhaoqing*

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**Abstract:** The transformation of agricultural industrialization is a key path to improve agricultural production efficiency, increase the added value of agricultural products and enhance agricultural competitiveness, and it has an important strategic value for realizing farmers' income increase and high-quality development of rural economy. This paper takes Didou Town, Sihui City as an example, investigates the dilemmas faced by the transformation of its agricultural industrialization through field research, and provides theoretical support and practical guidance for developing agricultural industrialization in Didou Town.

## 1. Introduction

Modern agriculture has significant advantages in enhancing productivity, securing supply, promoting resource use, and rural economic development. Agricultural industrialization helps to encourage the development and growth of special industries in rural areas and contributes to rural revitalization. As a traditional agricultural city, Zhaoqing, Guangdong Province, has actively responded to the policy call to adhere to the priority development of agriculture and rural areas, vigorously implement the strategy of rural revitalization, and accelerate the modernization of agriculture and rural areas. With a long history of peanut cultivation, Didou Town has introduced high-end agricultural projects, such as high-end grapes, perfumed lemons, and nuts, and driven agricultural industrialization through leading agricultural enterprises.

Agricultural industrialization is the basic way to modernize agriculture and rural areas and to promote rural revitalization (Li & Fan, 2024)<sup>[1]</sup>. Existing studies have found that there are constraints to agricultural industrialization transformation such as insufficient capital investment, shortage of talent, weak scientific and technological innovation, difficulties in land transfer, weak infrastructure, and high market risks (Kong, 2023<sup>[2]</sup>; Yan, 2023<sup>[3]</sup>; Zeng & Mai, 2024<sup>[4]</sup>). The research site of this paper, Didou Town, Sihui City, as a representative town of agricultural industrialization transformation, has a solid foundation in the agricultural industry and is currently making some breakthroughs in achieving agricultural industrialization transformation, but at the same time, there are constraints similar to those that have been studied.

Through field visits questionnaire surveys, and face-to-face in-depth exchanges with local farmers and business leaders, this paper explores the constraints of agricultural industrialization transformation in Didou Town, Sihui City, and puts forward optimization suggestions to help the transformation of agricultural industrialization in Didou Town and even the wider region, and to promote the realization of rural revitalization and common prosperity.

## **2. Current research on agricultural industrialization**

### **2.1. Meaning of agricultural industrialization**

According to Luo et al. (2024), agricultural industrialization is a systematic form of market-oriented promotion of production specialization, layout regionalization, and operation marketization under the conditions of market economy<sup>[5]</sup>. Zhong et al. (2024) argued that an agricultural industrialization consortium can solve the problems of the organization mode of agricultural industrialization and promote the development of agricultural industrialization<sup>[6]</sup>. Based on existing research, agricultural industrialization in this study refers to a production model that focuses on the role of the market, enterprise-driven farmers, integration of production, supply, and marketing, and that can help agriculture and farmers increase their income.

### **2.2. Impact of agricultural industrialization on farmers**

Agricultural industrialization plays a positive role in promoting agricultural efficiency and farmers' income. The creation of modern agro-industry parks has significantly increased the total per capita income of farming families (Sun et al., 2024)<sup>[7]</sup>. Starting from the three stages of agricultural industrialization: before, during, and after, Xing & Chen (2021) conducted an empirical study using research data and a binary logistic model, and the results found that agricultural industrialization can significantly improve the problem of farmers' income<sup>[8]</sup>. Zhang & Wang (2020) used the super-marginal analysis method to construct a development path model of agricultural industrialization based on the evolution of the division of labor in the agricultural industry chain and analyzed the absorption effect of agricultural industrialization on labor transfer and employment<sup>[9]</sup>.

### **2.3. Constraints to the transformation of agricultural industrialization**

Firstly, small farmers do not have enough negotiation space when facing new business entities. Liu (2024) argues that it is necessary to adhere to the theory of smallholder solidity so that smallholders have specific production skills and special products to improve competitiveness<sup>[10]</sup>. Secondly, the rural financial service system is lagging. Yan (2023) takes Hubei Province as a sample and puts forward countermeasure suggestions such as innovating financial products and matching the financial needs of agricultural individualization. Third, the linkage mechanism is not well developed, the financial support is not guaranteed, the extension of the agricultural industry chain is insufficient, and the rural talent system is not perfect<sup>[3]</sup>. Kong (2023) puts forward the corresponding countermeasures to accelerate agricultural industrialization in Xing'an League by comparatively studying the current situation of the development of the agricultural industry in Xing'an League, and puts forward the corresponding countermeasures of accelerating agricultural industrialization in Xing'an League from the aspects of establishing and improving the benefit linkage mechanism, increasing the financial support for agriculture, promoting the extension of the agricultural industry chain, and perfecting the system of rural talent training. Fourthly, the leading power of leading enterprises is insufficient<sup>[2]</sup>. Zeng & Mai (2024) used the DEA and Tobit model

to explore its operational efficiency and related influencing factors and proposed that the government needs to optimize the market and allocation of resources, and the enterprise needs to strengthen the innovation and scale of development<sup>[4]</sup>.

### 3. Research results and analyses

The town of Didou was selected for this investigation as an example to study the industrialization of agriculture, which is located in Sihui City, Zhaoqing City, Guangdong Province, in the northern part of the city of Sihui. The questionnaires were sent out 245, 245 were recovered, and the valid questionnaires were 231. The villages visited included 12 villages such as Didou Village, Lianping Village, Sangui Village, and Dachunzhong Village. The age of respondents mainly covered the old, middle-aged, and young generations. After summarizing and analyzing the data, the current status of agricultural industrialization transformation in Didou Town was found as follows.

#### 3.1. Low level of agricultural industrialization

Although Didou Town has developed a number of large-scale agricultural enterprises, the traditional model of small-scale, scattered, and household-based production and operation remains largely unchanged. There is a lack of large agribusinesses and industrial clusters to provide effective support. The links related to the processing and circulation of agricultural products remain weak, the industrial chain is short, and the added value is low. As a result, the overall level of agricultural industrialization still needs significant improvement.

The results found that the degree of participation in agricultural industrialization is low, and farmers mainly participate in agricultural industrialization by leasing land to agricultural industrialization enterprises (N=57) or selling products through agricultural industrialization channels (N=23). This shows that despite the huge development potential of agricultural industrialization, it is still in its infancy in Didou Town, with a large number of farmers and agribusinesses failing to participate fully in it.

#### 3.2. Lack of young labor for agricultural production

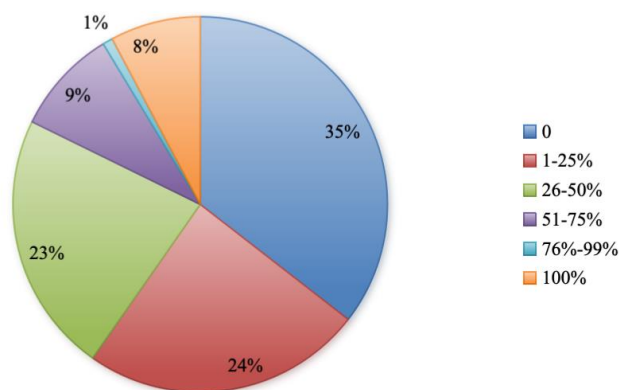


Figure 1: Percentage of household labour involved in agricultural production.

The distribution of labor in agricultural production among rural households in Didou Town shows a significant imbalance, with as many as 35% of households having no labor involved in agricultural production, and only 18% having more than 50% of their family members directly

involved in agricultural production, suggesting that agricultural production faces a shortage of labor (see Figure 1). Agricultural production is mostly limited to subsistence and small-scale cultivation, especially of vegetables and food crops, to meet the basic needs of the family.

With the acceleration of urbanization, a large number of young and middle-aged laborers are flowing to the cities, and the rural labor force is aging seriously, leading to a shortage of young and middle-aged laborers in agricultural production. This not only affects the efficiency and quality of agricultural production but also restricts the promotion and application of new agricultural technologies and models and limits the development of some labor-intensive agricultural industries.

**3.3. Supporting public infrastructure and agricultural technology to be improved**

Some rural areas are lagging in the construction of public infrastructure, such as aging farmland water conservancy facilities and inconvenient transportation, which affects the scale, mechanization, and information development of agricultural production. At the same time, there is a shortage of agricultural technical personnel, and advanced agricultural technology and equipment are difficult to widely use, resulting in slow improvement of agricultural production efficiency and quality.

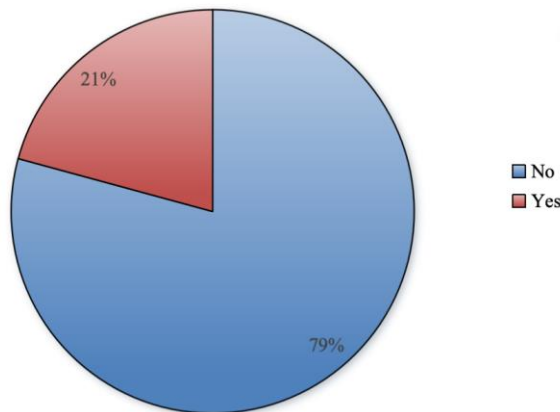


Figure 2: Whether villagers have special agricultural skills.

Figure 2 shows that although the government has provided technical training to villagers, there is still a significant shortage of agricultural skills mastery, with only 21% of respondents indicating that they have agricultural-related skills. Such as trillium cultivation, pest control and grafting techniques, etc. Up to 87% of participants said they had not received professional training in agricultural skills, which directly restricts the development of agricultural industrialization in Didou Town and affects the quality and yield improvement of agricultural products. Although the Government is committed to improving infrastructure, the implementation of measures such as restricting the erection of sheds for storing agricultural tools has, to a certain extent, caused inconvenience to villagers' farming.

**3.4. Limited enhancement of farmers' income**

Although Didou Town has taken a series of measures to promote the industrialization of agriculture, the growth of farmers' income from agricultural production has been limited because of the low level of industrialization of agriculture, the shortness of the industrial chain, and the low added value of agricultural products. In addition, farmers are less organized and in a weaker position in market transactions, making it difficult for them to share in the value-added gains from the processing and circulation of agricultural products.

Many farmers participate in agricultural industrialization by handing over their land to production teams or big growers, and although they receive dividends, the amount is small. As many as 64% of respondents think that the industrialization of agriculture has not significantly increased their household income(see Figure 3). This relatively simple and rudimentary way of participating in the transformation of agricultural industrialization has not enabled farmers to obtain considerable benefits, and has largely constrained their motivation to participate in agricultural industrialization.

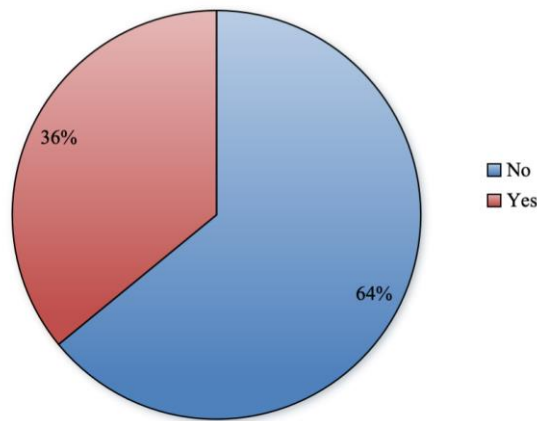


Figure 3: Whether the agricultural industrialization has increased farmers' incomes.

### 3.5. Government support and guidance for agricultural production needs to be strengthened

In the process of the development of agricultural industrialization, the supporting and guiding role of the Government is crucial. Although the Government has introduced several policies to support and benefit agriculture, there are still shortcomings in the implementation, precision, and continuity of those policies. The government's capital investment in agricultural industrialization is relatively limited, making it difficult to meet the development needs of agricultural enterprises professional farmers' co-operatives, and other business entities.

The villagers of Didou Town mainly grow vegetables and grains. There is less production suitable for agricultural industrialization, such as flowers, fruits, livestock, poultry, and aquaculture. Talking with farmers, we learned that they generally lack effective guidance in their planting decisions, and tend to plant traditional or market-saturated crops, which are often difficult to bring considerable economic returns. The Government's role in guiding agricultural industry planning, market information services and branding needs to be further strengthened.

## 4. Responses and recommendations

### 4.1. Cultivating and growing agricultural industrialization business entities

Preferential policies have been formulated to attract strong agricultural enterprises, and diversified means of support have been applied to help them expand their scale of production, improve product quality, and expand their market share. It also strengthens the guidance to farmers' village committees and brigades, guiding them to improve their internal management systems and standardize their operating procedures. At the same time, it encourages qualified farmers to join the family farm, to give policy support and professional and technical guidance, and to promote its in-depth collaboration with other business entities.

## **4.2. Optimizing the structure of the agricultural industry**

Combining local characteristics, highlighting specialty agriculture, cultivating specialty agricultural products such as delphinium, nuts, night-scented flowers, etc., according to local resources and market demand, and increasing investment in research and development. Efforts should be made to promote industrial integration by developing agricultural product processing industries, extending the industrial chain to increase added value, and leveraging natural landscapes and folk culture to develop leisure agriculture and rural tourism. In addition, it is also necessary to improve the quality and safety supervision system of agricultural products, strict supervision of all aspects of production to sales, to ensure the quality and safety of agricultural products.

## **4.3. Strengthening agricultural infrastructure**

Didou Town must repair and renovate aging irrigation facilities, build new high-efficiency water-saving irrigation projects, and invest human, material, and financial resources to widen rural roads. In addition, it must promote the transformation and upgrading of power grids, update equipment and lines, and guarantee a stable supply of electricity. In terms of communication network construction, fiber-optic cables, and base stations should be laid to achieve full broadband coverage and eliminate communication blind spots.

## **4.4. Strengthening agricultural science and technology support**

Collaboration among agricultural enterprises, research institutes, and universities should be advocated to focus on cultivating new varieties and technologies that meet local needs. It is necessary to establish a perfect agricultural science and technology extension service system, strengthen the construction of extension teams, and innovate extension methods. Training courses should be held to improve farmers' scientific and technological literacy and production skills, cultivate new types of farmers, and provide talent support for agricultural industrialization.

## **4.5. Increase the strength of capital investment**

It is necessary to increase the government's financial support and rationally plan the investment of funds in key areas such as agricultural infrastructure, industrial development, and scientific and technological innovation. Financial institutions should increase credit support, innovate financial products, lower the threshold for loans, simplify procedures, and improve approval efficiency. At the same time, the development of preferential policies to create a favorable environment to attract social capital investment, protect the rights and interests of farmers, and regulate the operation of capital.

## **5. Conclusion**

With the in-depth implementation of the rural revitalization strategy, a series of good policies have provided strong support and guarantee for agricultural industrialization transformation. Agricultural industrialization in Didou Town is still in the primary stage, and there are still many problems.

Given the current predicament, this paper proposes that Didou Town should continue to base itself on its unique resource endowment, give full play to its geographical advantages, increase investment in agricultural infrastructure construction, strengthen scientific and technological innovation and talent training, and vigorously promote the extension and expansion of the



agricultural and tourism industry chain and other optimization proposals.

The challenges faced by the transformation of agricultural industrialization in Didou Town, Sihui City, have a certain universality in most rural areas nowadays. Through the in-depth exploration of this typical case in this study, it is hoped that it can provide a reference for the transformation of agricultural industrialization in rural villages in China and better realize agricultural industrialization to help rural revitalization.

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