

High-Quality Development of Agricultural Industrialization in Sihui City, Zhaoqing: A SWOT Analysis

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Abstract: To effectively address the challenges faced during the transition to agricultural industrialization, this paper analyses the internal strengths (S), internal weaknesses (W), external opportunities (O) and external threats (T) that have emerged in the development of agricultural industrialization in Sihui City, Zhaoqing, using the SWOT analysis method. On this basis, it identifies the WO turnaround strategy as the optimal development orientation for Sihui City at the current stage and puts forward targeted optimization paths. The research findings can offer references for the high-quality development of local agricultural industrialization.

1. Introduction

Agricultural industrialization is a vital lever for revitalizing rural industries at the county level, and a key pathway to improving the quality and efficiency of agriculture and ensuring stable income growth for farmers. Existing research has found that agricultural industrialization is a market-oriented, modern agricultural management mechanism that relies on new types of agricultural operating entities, integrates all stages of agricultural product production, processing and sales, and promotes the intensive allocation of agricultural resources and the integrated development of the industrial system (Hou, 2003^[1]; Niu, 2006^[2]; Jiang, 2013^[3]). As a key county-level node within the Guangdong-Hong Kong-Macao Greater Bay Area, Sihui City has, by capitalizing on its unique natural conditions and geographical advantages, developed a specialty agricultural system centred on sugar oranges and orchids, with these speciality industries having begun to take shape in terms of scale and branding. However, agricultural industrialization in Sihui City remains in a critical phase of transformation and upgrading, with issues such as incomplete agricultural industrial chains, a shortage of talent and insufficient development resilience being particularly prominent.

In order to accurately identify the internal conditions and external environment for the development of agricultural industrialization in Sihui City, this paper, based on field research and

interviews, employs the SWOT analysis method (Du, 2008^[4]; Guo, 2007^[5]; Sun, 2015^[6]; Zhang, 2026^[7]), which has been widely applied in agricultural production. It systematically analyses the city's strengths, weaknesses, opportunities and threats, and puts forward optimization strategies for its local agricultural industrialization, thus providing references for the high-quality development of county-level agricultural industrialization.

2. The SWOT Analysis of Agricultural Industrialization

2.1. Internal Strengths

2.1.1. Significant Geographical Advantages

Sihui City is fully integrated into the Guangdong-Hong Kong-Macao Greater Bay Area, the Pearl River Delta Economic Zone and the Guangzhou Metropolitan Area, serving as a key conduit for connecting the Bay Area's consumer market with industrial relocation from the Pearl River Delta. A convenient transport network (the Guangzhou-Foshan-Zhaoqing Intercity Railway and the Xijiang Golden Waterway) has reduced the transport distance for agricultural produce, facilitating the rapid delivery of speciality agricultural products to core consumer markets. This has laid a solid geographical foundation for the development of a regional distribution centre and processing base for agricultural produce, whilst also providing convenient and reliable support for the distribution of speciality agricultural products such as sugar oranges and orchids.

2.1.2. Excellent Natural Resources

Sihui City has a subtropical monsoon climate, characterized by abundant sunlight and heat, plentiful rainfall, and soil and water conditions suitable for the growth of crops such as citrus and orchids. Known as the "Hometown of Chinese Citrus", Sihui boasts a long-standing history of sugar-orange cultivation. Its sugar oranges enjoy a strong reputation for superior quality and have obtained national geographical indication certification. The orchid industry in Shigou Town has formed an industrial cluster, earning the town the title of a well-known professional orchid town in Guangdong Province and fostering a large-scale and specialty industrial layout. On the whole, Sihui enjoys prominent comparative advantages in agricultural resources and high public recognition for its specialized industries, which lays a solid resource foundation for local agricultural industrialization.

2.1.3. Solid Brand Foundation

Sihui City is home to two national geographical indication products: Sihui Sugar Oranges and Sihui Gonggan Oranges. It also boasts a number of 'Guangdong-Hong Kong-Macao Greater Bay Area Vegetable Basket' bases and products certified under the 'Two Products and One Standard' scheme. The city's specialty agricultural product brands enjoy high recognition and a consistently positive reputation, offering a foundation for brand premium and market-oriented promotion, thereby providing strong support for industrialization, standardization and brand development.

2.1.4. Strong Policy Support

Sihui City has actively aligned its efforts with the Rural Revitalization Strategy and the '12221 Agricultural Product Production and Marketing System', introducing a range of support policies, including measures for industrial park development, brand cultivation and cold-chain logistics subsidies. It has also drawn up a number of supporting documents to ensure that all incentive schemes, subsidies and credit support policies are effectively implemented.

2.2. Internal Weaknesses

2.2.1. Short Industrial Chain

At present, Sihui's agricultural sector is still dominated by primary-level production including crop cultivation and livestock breeding, while high-value-added segments such as agricultural product deep-processing, pre-cooked food development, functional food R&D, and agricultural cultural-creative products remain underdeveloped. Flagship products including sugar oranges and orchids are mainly sold as raw commodities. The industrial chain is poorly extended, the value chain stays at a low-end level, and the industry exhibits weak risk resistance, which hinders the full realization of the economic value of these specialty agricultural products.

2.2.2. Low Level of Organization

Agricultural production in Sihui is still predominantly carried out by small-scale farmers operating in a dispersed manner. Land is fragmented, planting standards are inconsistent, and production management remains relatively extensive. Farmers' cooperatives lack standardized operations, whilst leading enterprises are generally of limited scale and have weak capacity to drive industry growth. The link between small-scale farmers and modern agriculture is insufficiently close, resulting in low levels of industrialization, intensification and standardization across the sector, which constrains the overall upgrading of the industry.

2.2.3. Insufficient Technology Transfer

Although Sihui City has built cooperative ties with research institutions including South China Agricultural University and the Guangdong Academy of Agricultural Sciences, the transformation rate of agricultural scientific and technological achievements remains low. Modern agricultural technologies such as smart irrigation, green pest control, pest monitoring and digital management are only being trialed in a small number of demonstration bases. Most farmers still rely on conventional farming methods, which leads to low-precision production, inefficient resource utilization and unsatisfactory output performance. Accordingly, the industry-empowering effect of technology has not yet been fully unleashed.

2.2.4. Shortage of Specialized Talent

Rural areas in Sihui City face a substantial outflow of young and capable labor, leading to a pronounced ageing of the agricultural workforce. There is a critical shortage of new-generation agricultural talents equipped with professional capabilities in agricultural technology, e-commerce, business administration and brand operation. Grassroots agricultural extension services are constrained by insufficient funding and inadequate on-site support. Consequently, farmers cannot obtain continuous professional guidance concerning production techniques, pest and disease prevention, and standardized management, which restricts the quality improvement and upgrading of local agriculture.

2.2.5. Insufficient cold chain infrastructure

Cold-chain storage, origin-site pre-cooling, and grading-sorting facilities are largely concentrated in urban zones and major industrial parks, while cold-chain infrastructure coverage across most rural producing areas remains insufficient. This leads to poor post-harvest preservation capacity for fruits, vegetables and floricultural products, accompanied by relatively high distribution losses. Such bottlenecks hinder market expansion outside the region and weaken product competitiveness.

2.3. External Opportunities

2.3.1. The Greater Bay Area Offers Vast Market Potential

The Guangdong-Hong Kong-Macao Greater Bay Area features a dense population and strong purchasing power, where consumer demand for green, eco-friendly, geographical-indication and high-quality agricultural products keeps growing. Located close to the core markets of the Greater Bay Area, Sihui City can leverage its geographical strengths to build a direct supply base for high-quality agricultural products targeting the Bay Area market. By adopting business models including contract farming, direct procurement and supply, and premium gift-box sales, Sihui can steadily expand the market share of its specialty agricultural products, which creates enormous market opportunities for industrial expansion and upgrading.

2.3.2. Diversified Sales Channels

Live-streaming e-commerce, short-video-driven sales, community group buying and cross-border e-commerce are continuing to penetrate rural areas, fundamentally transforming traditional wholesale sales models for agricultural produce. Orchid e-commerce in Sihui City has already achieved economies of scale, whilst online sales of sugar oranges continue to grow. E-commerce platforms have effectively broadened sales channels for specialty agricultural products, enhanced brand visibility and provided fresh impetus for the industrialization, marketization and branding of the agricultural sector.

2.3.3. Enhanced Efficiency through Integration of the Three Sectors

The integration of agriculture, culture and tourism, represented by agricultural study-tour programs, rural sightseeing and wellness-oriented tourism, has emerged as a mainstream trend in rural industrial development. Endowed with high-quality resources including the Orange Scenic Area, Citrus Rural Complex, Orchid Sightseeing Base and Suijiang Blueway, Sihui City enjoys sound conditions to develop fruit-picking experiences, agricultural study tours, rural tourism as well as agricultural cultural-creative industries. Such resources facilitate the functional transformation of local agriculture from mere production-oriented output toward multi-dimensional values covering production, ecology and cultural tourism, which greatly raises the overall added value of the agricultural sector.

2.3.4. Prominent Policy Benefits

Guangdong Province continues to increase financial investment in modern agricultural industrial parks, specialized industrial clusters, cold-chain logistics, branded agriculture and agritourism integration projects, whilst guiding social capital and commercial capital from the Greater Bay Area to invest in modern agriculture in rural areas. These sustained policy, financial and project benefits provide vital external support for Sihui City to address industrial shortcomings, extend industrial chains and cultivate new business models.

2.4. External Threats

2.4.1. Prominent Production Risks

Sugar oranges, the pillar industry of Sihui City, are susceptible to destructive diseases such as Huanglongbing. The spread of such diseases would seriously undermine industrial stability. Meanwhile, frequent extreme weather, including typhoons, torrential rains, high temperatures and

cold waves, commonly causes yield losses including fruit drop, frost damage and waterlogging. Given the inherent instability of agricultural production, natural and biological risks have become major hidden hazards restricting the sustainable and stable development of the industry.

2.4.2. Pressure from Brand Competition

The citrus industries in neighbouring regions such as Guangxi and Qingyuan are continuing to expand, with large quantities of low-priced fruit flooding the market and creating homogenized competition. Furthermore, some fruit from outside the region is being sold under the ‘Sihui Sugar Oranges’ brand without authorization. As the local traceability system remains underdeveloped and protection of the designation of origin is insufficient, the distinctiveness and premium pricing power of Sihui’s specialty brand have been weakened, resulting in damage to its brand value.

2.4.3. Significant Market Volatility

Due to insufficient supporting facilities for value-added processing and warehousing, Sihui’s specialty agricultural products are vulnerable to oversupply and price slumps during harvest peaks. Small-scale farmers are not covered by effective contract guarantees and price-hedging mechanisms, leaving their incomes highly exposed to market volatility. As a result, the overall market-risk resilience of the agricultural sector remains fragile.

2.4.4. Insufficient Human Resources

The Guangzhou-Foshan metropolitan area offers significant employment advantages, leading to a continuous outflow of young people from rural areas. As a result, there is a chronic shortage of professionals specializing in agricultural production, management, e-commerce and processing. This talent gap is difficult to bridge in the short term, hindering the development of new business formats and models in modern agriculture and posing a potential threat to the long-term sustainable development of agricultural industrialization.

3. Strategic Options Based on SWOT Analysis

In summary, while Sihui City’s agricultural industrialization is endowed with abundant external opportunities, it is restricted by prominent internal weaknesses. The core developmental contradiction lies in that inherent deficiencies in industrial chains, technological systems, talent reserves and infrastructure substantially constrain the exertion of local agricultural resource advantages. Compared with the SO growth strategy, ST diversification strategy, and WT defensive strategy, the WO turnaround strategy is identified as the most feasible and optimal pathway for the current high-quality development of agricultural industrialization in Sihui City.

3.1. Extending the Industrial Chain

Capitalizing on provincial and municipal supportive policies for rural industrial development and focusing on core specialty sectors including sugar oranges and orchids, Sihui City should introduce agricultural deep-processing projects and support the expansion and upgrading of local leading agricultural enterprises. It is essential to develop high-value-added products such as agricultural snacks, agro-cultural and creative derivatives, and pre-cooked meals to restructure the current agriculture system dominated by primary agricultural products. These measures can effectively mitigate product homogenization and price volatility, while comprehensively improving the operational efficiency and risk resilience of the local agricultural industry.

3.2. Strengthening Business Entities

Local authorities should actively promote the moderate transfer and centralized management of rural land use rights, and standardize the operational norms of farmers' professional cooperatives. By prioritizing the cultivation and expansion of leading agricultural enterprises, the government can improve the interest linkage mechanism of “enterprise + cooperative + household” and establish a standardized industrial operation model with unified production criteria, graded sorting procedures and integrated sales systems. Such institutional improvements can effectively address the drawbacks of fragmented, small-scale household farming, further enhance the intensification, standardization and large-scale development of local agriculture, and consolidate the foundational conditions for industrial upgrading.

3.3. Promoting the Practical Application of Science and Technology

Sihui City should further deepen industry-university-research collaboration with universities and research institutes to accelerate the field application and popularization of advanced breeding technologies, green pest management approaches, and digital agricultural equipment. Efforts should be scaled up to promote smart irrigation, intelligent growth monitoring, and virus-free seedling cultivation, alongside regular technical training for local farmers. These initiatives effectively raise overall standardized production capacity and mitigate key developmental bottlenecks, including low technological transformation efficiency and insufficient agricultural productivity.

3.4. Improving the Talent System

By leveraging local talent support policies, the city should build entrepreneurship platforms for returning rural talents and attract young entrepreneurs through financial subsidies, venue guarantees and preferential credit policies. In cooperation with local educational institutions, targeted talent training programs should be launched to cultivate professional talents in emerging fields, including agricultural technical services, e-commerce operation and brand marketing. These efforts can consolidate the grassroots agricultural technical team and foster a long-term talent support system for rural industrial development.

3.5. Addressing Infrastructure Shortcomings

With support from provincial special funds for agricultural infrastructure, Sihui City should optimize rural industrial transportation networks to cut logistics and distribution losses. Targeted measures should be adopted to address weaknesses in rural cold-chain systems by deploying complete facilities for origin pre-cooling, commodity grading and sorting, as well as warehousing and fresh-keeping preservation. Building a full-coverage cold-chain logistics system can substantially reduce post-harvest losses of fruits, vegetables and flowers, broaden external market channels, and comprehensively improve the core competitiveness of local specialty agricultural products.

4. Conclusion

This paper systematically analyses the development trends of agricultural industrialization in Sihui City using the SWOT analysis method. The findings reveal that agricultural industrialization in Sihui possesses multiple advantages in terms of location, resources, branding and policy support. It also benefits from favourable external opportunities, including the expansion of the Greater Bay

Area market, the upgrading of e-commerce channels, the integrated development of the primary, secondary and tertiary sectors, and prominent policy incentives. However, internal shortcomings include short industrial chains, low levels of organization, weak technology transfer, a shortage of talent and inadequate cold-chain infrastructure, whilst external threats include natural production risks, homogenized competition, market volatility and labor outflow. Based on a comprehensive assessment, Sihui City must, at this stage, adopt the WO transformation strategy as its core development orientation. By leveraging external advantages to address internal shortcomings, it should drive the transition of traditional crop and livestock farming towards standardized, branded and high-value-added modern agriculture, thereby facilitating the high-quality development of agricultural industrialization at the county level.

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