

A Study on Precision Agricultural Assistance for Small and Micro Livestock Enterprises in the Greater Bay Area in the New Marketing Environment: A Case Study of Xian Tang Gu Family Farm

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Abstract: As the rural revitalization strategy is vigorously implemented, exploring precision agricultural assistance pathways for small and micro livestock enterprises in the Greater Bay Area becomes crucial in the emerging marketing landscape. This study examines the Xian Tang Gu Family Farm in Dianbai District, Maoming City, Guangdong Province, as a case study. Through on-site research and data analysis, it explores how rural-specific resources can facilitate precision agricultural assistance and enhance marketing strategies for small and micro livestock enterprises. The study finds that Xian Tang Gu Family Farm has achieved certain results in rural revitalization and poverty alleviation, but still faces problems such as single product sales channels, weak agricultural product brand power, and insufficient financing thinking and ability. In response to these problems, this study proposes counter suggestions such as broadening sales channels, strengthening brand construction and certification, introducing digital tools, and making full use of national inclusive financial policies, in order to provide references for other similar enterprises, and to promote small and micro livestock enterprises to better serve the rural revitalization strategy and achieve sustainable development of rural industries.

Keywords: Rural revitalization; One Village—One Product; Small and micro livestock enterprises; New marketing

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1. Research background

Precision agricultural assistance is a key initiative in addressing national rural poverty alleviation and rural revitalization strategies. With the development of science and technology and the emergence of new marketing formats, precision marketing for agricultural assistance has become an important driving force in promoting the marketing of agricultural products, increasing farmers' income, and boosting rural revitalization. The 20th National Congress of the Communist Party of China emphasized "prioritizing agricultural and rural development, promoting urban-rural integration, and facilitating the flow of urban and rural elements" ^[1]. It also emphasized developing rural characteristic industries and broadening channels for farmers to increase their income and become wealthy. Industrial revitalization is the material

foundation of rural revitalization and is essential for forming a green, safe, high-quality, and efficient rural industrial system, providing a solid industrial support for farmers' continuous income growth. It is important to act in accordance with local conditions and capabilities, and to adhere to the concept of "new, unique, small, and exquisite" by promoting the integration of industry and ecology, and by connecting farmers with the industry for shared prosperity.

In the new era, marketing has evolved from the traditional model of advertising, selling, and promoting to a new model centered on customers. This new model leverages new technologies, media, customer groups, and demands to reshape the relationship between enterprises and consumers, as well as consumption patterns. It subtly addresses hidden consumer pain points, captures consumers' minds, evokes resonance, and forms long-term connections and dependencies. Among these changes, e-commerce innovation has become a crucial vehicle. It revolves around new technologies, media, customer groups, and demands to reshape the relationship between enterprises and consumers. By establishing super IPs and creating brand self-media matrices, it aims to enhance traffic and repurchase rates.

2. Project status research

From June 9 to 10, 2023, the project team visited Xian Tang Gu Family Farm in Naho Town, Dianbai District, Maoming City, to conduct a special investigation into the "One Village—One Product, One Town—One Industry" professional village construction for the egg-laying industry in the rural revitalization strategy. The team also explored how to rely on the local characteristic resources for further development.

The research subject was Xian Tang Gu Family Farm in Dianbai District, Naho Town. Established in March 2013 and located in Xinjing Village Committee of Dianbai District, Naho Town, the farm has a total investment of 2.8 million yuan, covers an area of about 50 mu, and has two egg production areas. It currently has over 32,000 laying hens, of which over 24,000 have started laying eggs, with a daily egg production of over 22,000 eggs^[2]. In December 2019, the farm was rated as a "2019 Provincial Demonstration Family Farm" and became the base for the 2020 Xin Tang "One Village—One Product" egg-laying project (with a construction grant of 728,113 yuan). In 2020, Zhuhai's Wanshan District, the designated poverty alleviation unit for targeted poor villages in Guangdong Province, invested 1 million yuan in poverty alleviation funds^[3].

In terms of personnel, technology, and equipment, Xian Tang Gu Family Farm has hired two professional technicians and two rural practical and versatile talents. It is equipped with three enzyme-controlled feeders, one chicken manure dryer, one harmless degradation machine, one 30-kilowatt generator, one set of feed processing equipment, two vehicle and pedestrian disinfection channels, and over 2,300 square meters of enclosed water-curtain sheds. The comprehensive personnel and equipment provide significant technical support for building a modern farm.

In terms of modern production models, the farm employs standardized and eco-friendly methods by utilizing modern facilities and advanced machinery to reduce costs, boost egg output, and enhance product quality. It uses additive-free natural feed to ensure product quality from the source. Additionally, the farm develops circular agriculture by cooperating with local neighboring villagers: purchasing raw feed like rice bran and corn from them and selling chicken manure for their agricultural use. This circular model reduces chemical fertilizer use, improves soil quality, protects the local ecology, and generates sustainable economic benefits (see **Figure 1**).

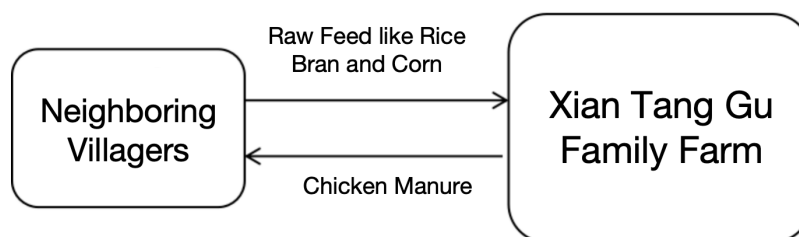


Figure 1. Mutual benefit for family farm business model

In terms of applying rural revitalization and poverty alleviation policies, the farm actively participates in the rural revitalization strategy. By leading over 60 local breeders in scientific farming, it has helped each household increase its annual income by over 100,000 yuan, achieving a win-win situation in social, economic, and ecological benefits. In 2020, in accordance with the requirements of the “Three-Year Action Plan for Winning the Poverty Alleviation Battle (2018–2020)” by the Provincial Committee and Government, Zhuhai’s Wanshan District invested 1 million yuan in poverty alleviation funds to support the farm’s development of the “One Village—One Product” poverty alleviation project. It has established long-term and operational revenue-sharing mechanisms, improved the quality of poverty alleviation projects, and promoted stable income growth.

3. Existing problems

3.1. Limited product sales channel

The farm primarily raises White Leghorn chickens, supplying eggs to the market. Profits are mainly derived from direct sales to farmers’ markets via local wholesalers. However, a critical challenge constraining the farm’s economic viability is the existence of government-mandated price controls. These regulations impose a strict upper limit on the price of eggs sold in farmers’ markets, capping it at 5 RMB. This controlled pricing mechanism results in the farm’s profit margin being considerably diminished when compared to prevailing industry benchmarks. For instance, industry data reveals that farms operating without such price restrictions typically achieve a profit margin that is 30–40% higher, primarily due to their ability to adjust prices in response to market dynamics such as increased production costs and fluctuating consumer demand.

3.2. Weak brand power of agricultural products

The farm’s egg-laying equipment is relatively rudimentary, and it lacks brand-building and certification awareness. It has not applied for the “Three Qualities and One Standard” certification (“Green Food,” “Organic Food,” “Harmless Agricultural Products,” and “Geographical Indication of Agricultural Products”). Although it has registered the “Xian Tang Gu Eggs” trademark, the farm’s weak brand influence fails to create significant added value.

In today’s market, brands serve as key identifiers for consumers. A case in point is a farm that obtained organic certification and effectively built its brand. It achieved a 50% increase in profit margin within two years. The lack of branding and certification puts the farm at a disadvantage in the market. Consumers are often willing to pay a premium for certified and well-branded products. Without these elements, the farm struggles to differentiate its products and capture a larger share in the competitive market ^[4].

3.3. Weak financing thinking and ability, failure to utilize national inclusive finance policies

During communication with the farm’s head, the project team found that expanding the scale of egg-laying and upgrading equipment requires significant capital. Although the farm received 1 million yuan in poverty alleviation funds, its capital accumulation and information access are limited.

The lack of effective connection with such financial mechanisms has not only hindered the farm’s physical expansion but has also limited its ability to engage in more sophisticated market-oriented activities such as brand building and product differentiation. As a result, the farm remains at a competitive disadvantage in the dynamic poultry market, where both scale and brand play pivotal roles in determining long-term sustainability and profitability ^[5].

4. Countermeasure considerations

4.1. Broadening sales channels in the new marketing environment

To address the issue of limited sales channels, the project team recommends expanding the reach of agricultural specialty

products through live-streaming and adopting an integrated sales model combining “platform sales + live-streaming + short-video marketing.” Collaborative online and offline live-streaming events, such as “Naho Mountain Delicacies” and “Xian Tang Gu Good Products Consumption Assistance,” can be organized with multiple villages. High-quality online promotion platforms like WeChat public accounts and mini-programs can be developed to release product and brand information, interact with consumers, and improve marketing accuracy and conversion rates ^[6].

4.2. Trademark registration and “three qualities and one standard” certification

To tackle the weak brand influence of agricultural products, the team advises promptly applying for the “Xian Tang Gu Eggs” trademark and related ones, laying the foundation for future “Green Food” certification applications. The farm can contact the Dianbai District Bureau of Agriculture and Rural Affairs’ Agricultural Quality Division to learn about relevant requirements. During the trademark application waiting period, it should adjust its production process and standards to meet certification requirements.

4.3. Adopting digital tools

The adoption of cutting-edge technologies such as big data, cloud computing, and the Internet of Things has revolutionized the production and processing of specialty agricultural products. With these technologies, farms can achieve precise control over every stage of production, from monitoring soil conditions and climate factors to optimizing feeding regimes and disease prevention measures. This ensures consistent product quality and maximizes resource efficiency.

By creating an immutable ledger that records every transaction and movement of agricultural products from the farm to the consumer’s table, blockchain technology enables full traceability. This enhances consumer trust in specialty agricultural products, as buyers can verify the origin, production methods, and quality certifications of the products they purchase. A case in point is the successful implementation of blockchain-based traceability systems by several leading agricultural enterprises. These systems have not only improved consumer confidence but have also enabled premium pricing for products with verifiable quality and safety credentials ^[7].

4.4. Using national inclusive financial policies to expand financing channels

To address weak financing thinking and ability, the team suggests that the farm head follow the “Guangdong Rural Revitalization” official website and its official WeChat account for real-time policy information. The team also introduced existing loan and financing policies, such as the “Eight-Point Action Plan” for promoting inclusive finance in the eastern, western, and northern regions of Guangdong in recent years. These include building county-level comprehensive credit centers, credit villages, rural financial (insurance) service stations, and rural agricultural assistance withdrawal points, as well as promoting rural property mortgage loans, “Government–Bank–Insurance” cooperative agricultural loans, small-amount guaranteed fiscal interest-subsidy loans for women, and financial poverty alleviation loans. The farm can apply for relevant interest-subsidy loans based on its own conditions.

5. Conclusion

This research has identified key challenges faced by small and micro livestock enterprises. By integrating insights from the new marketing environment, it proposes strategies for enhancing sales channels, product branding, and financial financing mechanisms. It provides development ideas for similar projects in the current social and economic environment and has certain reference significance.

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Disclosure statement

The authors declare no conflict of interest.

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