

Rural Revitalization and the Transformation of Xinhui Chenpi Industry: A Case Study of Policy Implementation and Development Pathways

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Abstract: This paper examines the transformation and development of the Xinhui Chenpi industry under the rural revitalization strategy in China. The study highlights the significant growth of the industry, with the annual production of chenpi reaching approximately 7,000 tons and the total output value surpassing 26 billion yuan in 2024. The paper proposes strategies to foster sustainable growth in industries facing challenges such as inefficient production processes, inconsistent product quality, and a lack of policy awareness among operators. These strategies include optimizing support policies, enhancing regulatory frameworks, and leveraging digital technologies for brand building and market expansion. The research contributes to understanding the development trajectory of the Xinhui Chenpi industry and provides insights for policymakers and industry practitioners.

Keywords: Rural revitalization; Industrial transformation; Policy optimization; Digital marketing

Online publication: October 14, 2025

1. Introduction

The chenpi produced in Xinhui District, Jiangmen City, Guangdong Province, boasts a thousand-year-long heritage and has been recognized as a national geographic indication product as well as a traditional Chinese medicinal herb, renowned for the saying, “a thousand years of ginseng, a hundred years of chenpi.” In recent years, the implementation of the national rural rejuvenation strategy has significantly accelerated the development of the chenpi industry, as evidenced by scientific research confirming its health benefits and the industry’s expansion into new product categories. In this background, Jiangmen City, in its 2024 Government Work Report, clearly put forward the goal of promoting the “six characteristics of advantageous agricultural industries” chain output value of more than 80 billion yuan of the goal. As the first of these six industries, chenpi industry, through the integration of the whole industry chain development and synergistic cooperation towards the construction of China’s “Chenpi Capital” and “International Chenpi Trading Centre.”

However, as the scale of chenpi industry expands, the cultivation, processing, preservation, marketing, and branding of chenpi are confronting novel challenges. At the same time, products pretending to be Xinhui Chenpi have appeared in the industry, and these problems threaten the quality and development of Xinhui Chenpi.

2. Research dynamics at home and abroad

Zhang ^[1] pointed out in her study that the revitalization of the Xinhui Chenpi industry should optimize the support policy system, improve the institutional mechanism, and build a “government-enterprise-agriculture” cooperation mechanism. During the implementation of support policies for the Xinhui Chenpi industry, challenges arise, including an imperfect policy system and inadequate policy promotion. Zhang proposed measures to revitalize the Xinhui Chenpi industry, refining the policy framework and promotional strategies, further enhancing policy guidance through cultural revitalization as the overarching principle. Yuan et al. ^[2] suggested that the chenpi industry should adhere to the core of the long-term development of the industry, excavate the inner core of the product, start from the traditional and even the investment value of the chenpi culture, and make the Xinhui Chenpi into a cultural symbol of the Xinhui area, and they try to explore the foreign market, using the culture of “overseas Chinese” as a carrier. Liu et al. ^[3], through their study of the Xinhui Chenpi Industrial Park and other cases, reached the following conclusions: Firstly, the establishment of a well-known public brand; secondly, the formation of industrial parks to expand this brand effect; and finally, an in-depth understanding of the industry chain’s development, with the government specializing in supporting industry chain specialists to carry out systematic sorting. Chen ^[4] mentioned in his own research, to enhance Xinhui Chenpi brand communication, we can leverage China’s rapidly developing “cloud economy,” focusing on e-commerce, social media, and live streaming as key network marketing channels. By embracing digital technology, we can empower the Xinhui Chenpi brand and elevate its profile beyond the regional level. A regional brand influence outside the region.

Second, the current situation of Xinhui Chenpi industry development is characterized by significant growth and diversification ^[5]. According to recent reports, the industry has experienced a substantial increase in total output value, with the total industrial chain output value reaching 261 billion yuan in 2024, a growth of over 13% compared to the previous year ^[6]. This growth is attributed to the industry’s transformation and the implementation of innovative strategies such as the “1+3+N” party organization system, which has successfully integrated over 3,000 business entities and 1,200 party members within the industry chain ^[7]. Additionally, the industry has seen a notable impact on employment, with over 70,000 jobs created and an average income increase of 22,000 yuan per person.

2.1. The Xinhui citrus cultivation and Xinhui Chenpi industry have a significant scale and historical development

According to historical data, the area of Xinhui citrus cultivation has fluctuated over the years, with notable changes in production and industry growth. For instance, in 2007, the cultivation area was 3,000 mu, which increased to 100,000 mu by 2019. The industry has also seen substantial growth in terms of output value, reaching 2.61 billion yuan in 2024, indicating a robust and expanding industry.

To gain recognition as a genuine Xinhui Chenpi, adherence to the principle of “Xinhui citrus, Xinhui production, stored in Xinhui for three years” is mandatory. According to the local standard of Guangdong Province (DB44/T 604-2009), Xinhui Chenpi should be planted in twelve districts, including Huicheng Jieban, Dazhe Town, and Siqian Town of Xinhui District, Jiangmen City, Guangdong Province. Xinhui Chenpi is famous for its

large oil cells and full oil chambers. During harvesting time, chenpi is classified into three types: peel from green tangerines, peel from partially ripe (two red) tangerines, and peel from fully ripe (big red) tangerines, each with distinct edible and medicinal values.

In recent years, the impact of the epidemic and the popularity of the TV series “Rampage” have increased awareness of the concepts of “health maintenance” and “disease treatment” associated with Xinhui Chenpi, thereby propelling the rapid development of the Xinhui Chenpi industry. In the past three years, the planting area of Xinhui Citrus has doubled. As of December 2024, the planted area is 143,000 mu (People’s Government of Xinhui District 2025), and the annual production of Xinhui Chenpi is about 7,000 tons. There are more than 6,000 farmers involved in citrus cultivation, alongside over 300 cooperatives and 3,972 business entities associated with the tangerine peel industry. According to industry projections, the annual output value of the citrus industry in China is expected to increase from RMB 14.5 billion in 2021 to RMB 26.1 billion by 2024, reflecting a robust growth trend, and will drive more than 78,000 people to start their own businesses, with a per capita income increase of more than RMB 26,000 (Guangdong Science and Technology Network 2025).

2.2. Xinhui Chenpi industry chain and next stage development goals

Xinhui District, Jiangmen City, boasts a lengthy and storied tradition in citrus cultivation and chenpi processing, upon which a more comprehensive industrial chain has been established through the creation and incubation of industrial parks, including citrus seedling breeding, citrus fruit production, chenpi deep-processing, and other links. As of October 2023, over 300 enterprises in Jiangmen City have been approved to use the Xinhui Chenpi geographical indications, making it the city with the highest number of such enterprises in the province. The Xinhui Chenpi industry has evolved significantly, expanding from the initial cultivation of Xinhui citrus to encompassing a diverse range of deep-processed products. These include innovative offerings such as chenpi spices, chenpi wines, chenpi pastries, chenpi Pu’er tea, and chenpi enzymes, among others. This diversification is supported by the industry’s robust growth, as evidenced by the 45% increase in overseas sales and the projected 20% growth in production by 2025. The industry’s expansion is also contributing to economic development by creating job opportunities and driving employment, with over 70,000 individuals benefiting from the growth of the Xinhui Chenpi sector. It has completed the transition from a single agricultural product to a diversified range of deep-processed products, and has been developing with the specialty industries of the local area and the neighboring regions. At present, the wide range of Xinhui Chenpi products has seen significant growth, with their international “friend circle” expanding as evidenced by a 56.9% year-on-year increase in export value ^[8]. Xinhui Chenpi, as the main raw material, involves six major fields, namely medicine, food, beverage, health, culture and tourism, and finance, and is subdivided into 35 categories totaling more than 100 series of products. The Xinhui Chenpi industry sector has emerged as a key industry in Jiangmen City and a foundational pillar in Xinhui District, contributing significantly to the local economy.

2.3. Promotion of the culture of the same source of food and medicine and brand building of chenpi

Li Shizhen, in his renowned Compendium of Materia Medica, highlighted the medicinal value of Xinhui Chenpi, a substance deeply rooted in cultural heritage and widely recognized for its therapeutic properties. During the COVID-19 pandemic, the esteemed academician Zhong Nanshan and other experts have recognized the significant health benefits of Xinhui Chenpi, a vital traditional Chinese medicine. Its demand for health maintenance and

wellness has skyrocketed, establishing it as a globally recognized health care product, particularly for respiratory health. At the same time, the development of the Xinhui Chenpi industry also led to the growth of local cultural tourism. At the same time, with the historical precipitation of overseas Chinese in Wuyi Jiangmen area, Chenpi has emerged as a bridge connecting locals with overseas Chinese, as well as compatriots in Hong Kong, Macao, and Taiwan, fostering regular communication and close ties with their hometown. It serves as a unique cultural bearer, embodying the heritage of both the local community and individual families, effectively promoting the Xinhui Chenpi overseas market promotion and brand building.

In Jiangmen City, Xinhui Chenpi-related enterprises have obtained a number of important certifications and honours, with 98 enterprises certified as GAP planting bases. Xinhui Chenpi has topped the “China’s Regional Agro-industrial Brand Influence Index” for three consecutive years, and in 2024, Xinhui was awarded the title of “Chenpi Capital of China,” with 35 enterprises sharing this honor. Xinhui was awarded the title of “China Chenpi Capital” in 2024, and 46 products of 35 enterprises were awarded Guangdong Famous Brand (Guangdong Science and Technology Network 2025).

The rapid development of the Xinhui Chenpi industry is supported by the latest data, with the total output value reaching 26.1 billion yuan in 2024, marking a growth rate of over 13% compared to the previous year. This growth has been consistent, with the industry’s output value reaching 23 billion yuan in 2023 and 230 billion yuan in 2023, indicating a robust upward trend. Additionally, the industry has created employment opportunities for over 70,000 people, further highlighting its significant economic impact. Under the influence of the role of media such as TV dramas and the government’s cultural promotion activities, more and more people recognise the value of Xinhui Chenpi, leading to a significant increase in its demand. As the industrial chain improves and diversified deep-processed products are launched, Xinhui Chenpi’s application fields broaden, leading to notable achievements in brand development. For instance, Xinhui Chenpi, recognized as the first category of chenpi in China to be safeguarded under the China-Europe Geographical Indications Agreement, is set to benefit from a reduced export tariff to the EU of just 3% by 2025. This change is anticipated to significantly boost its overseas sales by 45% ^[9]. In addition, the total output value of the Xinhui Chenpi industry experienced a remarkable surge, increasing from 10.8 billion yuan in 2021 to 23 billion yuan in 2023—a growth rate of 113%, as reported by various sources, and boosted employment for over 70,000 people. The awarding of several honors, such as Geographical Indication and Pollution Free Certification, has also significantly boosted the local cultural tourism industry. Overall, the Xinhui Chenpi industry is making great strides forward, gradually becoming an important pillar of the local economy and a cultural symbol. However, some problems have been exposed in the process of development. These problems encompass flawed management mechanisms, limited policy understanding, varying product quality standards, and inadequate regulatory frameworks ^[10]. If the problems are not found and solved in time, they may inhibit the long-term healthy development of the Xinhui Chenpi industry and even affect its competitiveness and brand image in the market.

3. Challenges to the development of the Xinhui Chenpi industry

A decade-long analysis of the Xinhui Chenpi industry reveals a trend of diversification, with the sector experiencing growth and innovation in various aspects such as product applications, technological advancements, and market expansion ^[11]. Despite the emergence of some head enterprises such as Xinbao Tang, Ligong, Chenpi Village, Hongdatang, Qiaobao, etc., due to historical reasons, most of the production of Xinhui citrus is family-

based, with a small scale of planting, and the processing is basically completed by the traditional handwork, with simple and empirical methods. The current rehousing and management mode hinders the integration of automation, informatization, and intelligent technology, thereby impacting the overall advancement of the Xinhui Chenpi industry's level.

3.1. Efficiency and effectiveness: There is still room for improvement in the scientific and technological standards of chenpi production and processing

External factors like land nature, geography, and environmental protection, as well as internal factors such as slow advancements in planting mechanization, intelligence, and science, hinder the growth of high-quality citrus production, leading to significant quality fluctuations and limited planting efficiency^[12]. Planting efficiency is further constrained by imperfections in the cooperative system and farmers' insufficient willingness to participate. Despite the adoption of the "company + farmers" model by some enterprises, the contractual binding force remains weak, leading to frequent breaches that dampen farmers' enthusiasm for planting. Moreover, advancing chenpi processing technology poses a significant challenge for the Xinhui Chenpi industry. The processing process of Xinhui Chenpi includes harvesting, opening skin, drying, anti-skinning, tanning, storing, turning, storing, aging, and sweeping the scoop of ten processes. In addition to harvesting, peeling, turning, and other processes that need to be completed manually, the "drying" and "tanning" processes, crucial for chenpi processing, are still primarily conducted through open-air drying. This makes the quality of the finished products susceptible to weather changes, sometimes leading to wastage and decreased production. Although drying technology equipment exists, not all chenpi is processed through dryers, or the original texture may be compromised. Technologically speaking, the mechanization and automation levels remain low, leading to limited product added value. Furthermore, the science and technology contribution rate of the entire industrial chain falls behind compared to other industries. Despite achieving certain results through cooperation with numerous universities and scientific research institutions, the scientific and technological process of chenpi processing still requires further enhancement.

3.2. Policy cognition: Management mechanism to be optimized, the implementation of support policies is imminent

According to the Outline of the 14th Five-Year Plan and 2035 Vision for National Economic and Social Development of Xinhui District (hereinafter referred to as the "Outline"), the government of Xinhui District will focus on supporting citrus farmers as well as individuals in the production and management of Xinhui Chenpi. In the Outline, the Jiangmen Municipal Government proposes to consolidate and provide new funds totaling RMB 650 million to promote the development of six distinctive and advantageous agricultural industries, including chenpi, an initiative that aligns with the strategic direction of the Central Government's Document No. 1, which aims to guide the revitalization of the agricultural industry and promote rural revitalization. According to the Jiangmen City 2023 Government Work Report, the government has implemented a series of concrete measures and allocated significant funding to boost agriculture and rural revitalization. Initiatives such as the "Bai Qian Wan Gongcheng" aim to establish a model for agricultural development, focusing on strengthening agricultural industry chains and promoting the growth of specialized and high-value agricultural industries. The report also highlights the government's commitment to safeguarding food security and advancing the modernization of agriculture, as evidenced by the substantial investment in agricultural projects and the promotion of agricultural industry development, as well as the financial system's efforts in improving the level of funding protection and optimizing

the performance management of the funds, jointly offer robust backing for the premium advancement of the agricultural sector. Moreover, to address the capital start-up and loan problems faced by operators in the chenpi industry, the Administrative Committee of Xinhui Chenpi Industrial Park launched the “Chenpi Guarantee Loan” loan support program.

With the government’s financial support and a series of related policies, the traditional chenpi industry in Xinhui has achieved a significant leap in transformation and upgrading, as evidenced by the industry’s robust growth and the attainment of a 26.1 billion yuan total output value in 2024. However, it is regrettable that many operators of Xinhui Chenpi still lack knowledge of the support policies; there is still a need to more vigorously promote the depth and breadth of policy dissemination, as well as the implementation of inclusive measures^[13].

3.3. Operation and sales: Standardized brand building, develop information field marketing

In October 2006, Xinhui citrus and Xinhui Chenpi were granted geographical indication protection, marking the government’s heightened attention to market irregularities and regulatory oversight; however, the market remains plagued by substandard products, adulteration, price hikes, and other illegal and disorderly conduct, severely disrupting market order. Although government regulators, such as the Xinhui District Market Supervision Administration, continue to carry out special rectification of the chenpi industry, aiming to further regulate the business order of the industry. However, confusing labelling, frequent trademark infringements, unauthorized use of geographical indications, and false propaganda regarding Xinhui Chenpi and its derivatives have not only persisted but also worsened, seriously impairing the rights and interests of consumers as well as the industry’s image. In 2024, Xinhui District Market Supervision Bureau inspected 26 key enterprises and issued four rectification notices, as well as filed cases for two offences (Xinhui District Government Portal 2024). Regulating the trading market of Xinhui Chenpi proves challenging. Market disorder in Xinhui Chenpi not only undermines its brand image but also erodes consumers’ trust in the product, thereby hindering the further development of the Xinhui Chenpi industry.

On the other hand, with the advent of the new generation of information technology, the “Internet +” sales and operation mode for chenpi has started to penetrate the industry; however, the majority of Xinhui Chenpi sales still depend on traditional face-to-face trading methods, thereby limiting market expansion. Sales of Xinhui Chenpi are predominantly centered in the Pearl River Delta, Hong Kong, Macao, and San Francisco, USA; whereas the market in northern China and other areas remains untapped. Moreover, the sales channels remain restricted to traditional methods, lacking broad diversification into various networks, thereby hindering further market expansion. Simultaneously, the product sales model is disconnected from modern digital marketing techniques, making it challenging for potential customers to access and purchase Xinhui Chenpi via e-commerce platforms or social media, thereby further constraining the market’s development potential.

3.4. Regulatory model innovation: Promotion of new technologies and the establishment of legal protection systems are an ongoing journey that requires continuous adaptation and development

Xinhui Chenpi, as an agricultural product, requires special storage and aging conditions, is hard to quantify or pre-package, involves multiple processing steps, and faces uncertainties in production, sales, and consumer demand, complicating regulation and traceability in circulation. However, there is still a lack of clear standards and a basis for testing the authenticity of Xinhui Chenpi. Currently, there is a lack of a scientific quantitative method for

determining its vintage, posing significant challenges to the maintenance and supervision of the Xinhui Chenpi brand. By establishing a new technology promotion and operational supervision model, we have created an anti-counterfeiting and traceability supervision mechanism, as well as a natural aging management system for Xinhui Chenpi, which has been effectively implemented through the digital traceability management system, and broadened the sales channels of Xinhui Chenpi, to enhance the brand influence of Xinhui Chenpi, a geographical indication agricultural product, and boost its economic impact.

4. Development of Xinhui Chenpi industry path research

Cultivate the core of Xinhui Chenpi industry development by leveraging the unique processing techniques and natural conditions of Xinhui, strengthen the foundation of the chenpi industry through the establishment of processing clusters, and promote the development of advanced processing technologies to fundamentally solve the contradiction between efficiency and effectiveness of chenpi industry development ^[14].

Strengthening the industrial foundation and promoting the development of processing clusters constitute the core essence of Xinhui Chenpi industry development. To this end, it is necessary to establish a seed source protection zone, which is dedicated to the protection and development of the seed source of Xinhui Chenpi, and to regulate the production process through the formulation of strict standards to ensure that the product maintains the original ecological high quality, which is a key initiative to strengthen the industrial foundation. In addition, through the establishment of Xinhui Chenpi Industrial Park in the Modern Industrial Park, we attract enterprises specializing in deep processing and nurture industry leaders, thereby expediting the establishment of Xinhui Chenpi industrial clusters in line with emerging business models.

Simultaneously, the pianpi industry's infrastructure will undergo an upgrade, leveraging the establishment of a smart, supervised warehouse facility and the Xinhui pianpi logistics hub, thereby enhancing the efficiency of storage and logistics management and safeguarding the seamless operation of the supply chain. Leveraging advancements in precision agriculture and digital technologies, we enhance the cooperative framework of company + base + farmer to bolster organizational efficiency and market competitiveness of the Xinhui Chenpi industry chain.

On one hand, it integrates sensor and big data technology to create a digital regulatory framework, encompassing the entire spectrum from planting, harvesting, processing, packaging, to distribution and sales ^[15]. The traceability management platform connects government regulators and users of all links in the industry chain, using the multi-center, distributed storage, and tamper-proof characteristics of blockchain technology to achieve efficient synchronization of information and multi-party verification. Leveraging blockchain and big data technologies, the citrus supply chain ensures data authenticity across production, processing, and tracking stages, enhancing circulation supervision and consumption traceability, thereby providing robust data support for market analysis and informed decision-making.

On the other hand, it leverages cutting-edge information technology to revolutionize the marketing model of the Xinhui Chenpi industry, employing innovative marketing tools like live broadcast e-commerce to bolster digital marketing efforts, applies big data and artificial intelligence to promote the digital branding of Xinhui Chenpi industry, and enhances the exposure of Xinhui Chenpi online and improves the purchasing experience of consumers by cooperating with netizens, KOLs, and other key opinion leaders. Offline, the culture and health benefits of Xinhui Chenpi are promoted to consumers, enhancing brand recognition through a mix of online and

offline events, including tasting sessions and informative health talks. Through these measures, the sales network of Xinhui Chenpi will be more extensive and the market potential will be further released.

At the same time, strictly implement the “Jiangmen Xinhui Chenpi Protection Regulations,” starting from the biological properties of Xinhui Chenpi, production process, origin environment, geographic landmarks and brand value, integrating the regulatory force, establishing a multi-level regulatory team, linking multiple departments to organically cooperate with, and synergistically promote, and constantly innovate to provide legal protection for the market order, and provide a well-ordered operating environment for the development of Xinhui Chenpi industry.

Finally, attention should be given to fostering industry autonomy and strengthening self-regulation. By leveraging the role of Xinhui Chenpi industry associations, it is possible to raise entry thresholds, improve regulatory mechanisms, and promote dynamic management across the production, processing, and distribution of Xinhui Chenpi. On the basis of relevant industry self-discipline, further promote self-correction, self-supervision, and form a good, orderly development and consensus within the industry, thereby ensuring the healthy and sustainable growth of the Xinhui Chenpi industry.

In addition, enterprises are encouraged to collaborate with universities and scientific research institutes to conduct research on Xinhui Chenpi-based medicinal food and big health products, and to transform these research achievements, with the aim of nurturing talents for the burgeoning 100 billion big health industry.

Aiming at the new field of big health, encouraging enterprises, universities, and scientific research institutions to conduct research on Xinhui Chenpi big health products and transform their achievements, while exploring the establishment of an industry-academia-research center for Xinhui Chenpi; on the one hand, aiming to promote the formation of a medicine-food-tea-health industry chain and cluster, enhance the medicinal value of Xinhui Chenpi, and increase the value-added of chenpi products. It strengthens the cultivation of various talents in the chenpi industry chain, thereby promoting the growth and development of the “chenpi + medicine” industry.

5. Conclusion

Our findings reveal that Xinhui Chenpi industry’s transformation under China’s rural revitalization strategy demonstrates how traditional agricultural products can achieve modern revitalization through a synergistic blend of policy support, technological innovation, and cultural heritage preservation.

The successful transformation trajectory of Xinhui Chenpi highlights three critical factors: first, the integration of traditional knowledge with modern processing technologies has enhanced both product quality and production efficiency; second, the strategic implementation of support policies, particularly through the “government-enterprise-agriculture” cooperation model, has created a robust ecosystem for sustainable development; third, the industry’s embrace of digital marketing technologies and geographical indication protection has strengthened its brand positioning both domestically and internationally.

However, challenges remain, including technological limitations in processing, policy awareness gaps among operators, market irregularities, and the need for enhanced regulatory frameworks. Looking forward, the industry’s sustainable development will require continued investment in research and development, particularly in the application of AI and blockchain technologies for quality control and traceability. Additionally, strengthening industry self-regulation mechanisms and expanding into international markets through the China-EU Geographical Indications Agreement will further solidify Xinhui Chenpi’s global reputation.

This study offers valuable insights for policymakers and industry stakeholders seeking to revitalize traditional

agricultural products in the context of rural development, demonstrating how cultural heritage can serve as a foundation for economic modernization and rural prosperity.

Funding

Research on the Digital Transformation of the Xinhui Dried Tangerine Peel Industry under the Rural Revitalization Strategy (2023HSQX100)

Disclosure statement

The author declares no conflict of interest.

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