

Research On The High-Quality Development Path Of Characteristic Industries In Common Prosperity Pilot Zones: An Empirical Analysis Based On The Mango Industry In Panzhihua, Sichuan

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Abstract

This research aims to take the mango industry in Panzhihua, Sichuan as the starting point and deeply explore the high-quality development path of the characteristic industries in the common prosperity experimental area. By using empirical analysis methods and combining literature research with field research, a comprehensive analysis is carried out on the development status of the Panzhihua mango industry. The study finds that the industry has achieved certain results in terms of scale expansion, employment promotion and farmers' income increase, but at the same time, it also faces problems such as market competition pressure, insufficient technological innovation and imperfect industrial chain. Based on this, this paper proposes effective development paths such as strengthening brand building, increasing scientific and technological content and improving the industrial chain, in order to provide theoretical reference and practical guidance for the high-quality development of characteristic industries in the common prosperity experimental area.

Keyword: Common prosperity; Characteristic industry; High - quality development; Panzhihua mango industry

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I. Introduction

Background

With the comprehensive promotion of the national common prosperity strategy, rural revitalization has become an important starting point for achieving coordinated regional development and comprehensive economic and social progress. As one of the core driving forces of rural revitalization, characteristic industries can not only effectively activate the vitality of the local economy, but also promote farmers' income through the extension of the industrial chain and value enhancement, thereby providing solid support for the realization of the goal of common prosperity. As a representative local characteristic industry in Sichuan Province and even the whole country, Panzhihua mango industry has achieved significant development in recent years under the dual role of policy support and market demand. Its unique natural conditions give Panzhihua mangoes excellent quality, making them an important pillar of regional economic development. At the same time, the Panzhihua Municipal Government has listed the mango industry as one of the key characteristic agricultural industries, and promoted its large-scale and branded development through a series of policy measures, further consolidating the

strategic position of the industry in the local economy. In this context, it is of great practical significance and theoretical value to study how the Panzhihua mango industry can help common prosperity.

Research significance

From an economic point of view, the development of Panzhihua's mango industry not only directly drives the increase in growers' income, but also promotes the prosperity of related supporting industries through the synergy of the upstream and downstream of the industrial chain, such as logistics and transportation, packaging and processing, and tourism services, forming a diversified economic growth point. This spread of economic benefits has a positive effect on narrowing the gap between urban and rural areas and achieving balanced regional economic development. From a social perspective, the vigorous development of the mango industry has created a large number of employment opportunities, attracted the return of rural labor, alleviated the social problems caused by population outflow, and also enhanced the cohesion and sense of belonging of rural communities. In addition, the branding of Panzhihua's mango industry has enhanced local popularity and cultural identity, and injected new vitality into rural revitalization. From an ecological perspective, the application of green production technology in the process of mango planting and its friendliness to the ecological environment are conducive to achieving the sustainable development goals of agriculture and providing a practical example for the construction of ecological civilization. In the field of academic research, this study systematically analyzes the specific path of Panzhihua mango industry to help common prosperity, fills the gap in the existing literature on this field, and provides a new perspective and reference for subsequent related research.

Research methods and content

This study uses a combination of empirical analysis and literature research to systematically explore the current situation, problems and development path of Panzhihua mango industry to help common prosperity. In terms of empirical analysis, by collecting first-hand data such as planting area, yield, and output value of Panzhihua mango industry, combined with questionnaire surveys and field interviews, we can fully understand the actual effect of the industry in driving farmers' income and promoting regional economic development. At the same time, the literature research method is used to sort out the relevant theories and research results on common prosperity and the development of characteristic industries at home and abroad, and provide theoretical support for subsequent analysis. The main content of the paper will focus on the following three aspects: first, analyze the current situation of Panzhihua's mango industry to help common prosperity, including industrial scale, employment driving ability and regional economic contribution; Secondly, the main problems faced by the industry in the development process are discussed, such as market competition pressure, insufficient technological innovation and imperfect industrial chain. Finally, a targeted high-quality development path is proposed, including strengthening brand building, improving scientific and technological content and improving the industrial chain, in order to provide reference for the development of characteristic industries in the common prosperity pilot zone.

II. Literature Review

Theories related to common prosperity

In January 2023, Panzhihua City officially launched the construction of the Common Prosperity Pilot Zone, proposing to strive to build a happy and beautiful Panzhihua with "industrial prosperity, urban beauty, and thousands of homes"⁰. High-quality development is the fundamental foundation and the only way to achieve common prosperity, and common prosperity is the core goal and value destination of high-quality

development. General Secretary Xi Jinping emphasized that common prosperity is the essential requirement of socialism and an important feature of Chinese-style modernization, and we must adhere to the people-centered approach and solidly promote high-quality development^[2]. As an important goal of socialism with Chinese characteristics, common prosperity not only covers the balance of income distribution at the economic level, but also involves multi-dimensional coordinated development such as social equity, ecological protection and cultural prosperity. In academic research, common prosperity is often defined as a dynamic process that aims to achieve the goal of sharing the fruits of development for all people by optimizing resource allocation, promoting coordinated regional development, and improving the level of equalization of public services. From the perspective of the realization path, scholars generally believe that the development of characteristic industries is one of the important means to promote common prosperity, especially in areas with superior resource endowments, characteristic industries can give full play to their comparative advantages, drive local economic growth and narrow the gap between urban and rural areas. In addition, the theoretical framework of common prosperity also includes the regional coordinated development model of "getting rich first and helping the rich later", as well as specific strategies to enhance the endogenous development momentum of underdeveloped areas through policy guidance and technical support. These theories provide an important theoretical basis for this paper to explore how Panzhihua's mango industry can contribute to common prosperity.

Research status of characteristic industries to help common prosperity

Research on promoting regional common prosperity by characteristic industries at home and abroad has achieved certain results, but the research focus and shortcomings coexist. At the international level, scholars pay attention to the role of characteristic agriculture, tourism and other industries in the economic revitalization of underdeveloped areas, and emphasize the importance of industrial chain extension and value chain improvement. By reviewing relevant foreign research literature, it is found that most scholars mainly conduct research from the development of fruit industry, mango production and cultivation technology, cultivation of mango varieties, mango germplasm resources and planting distribution, mango industry safety, fruit supply and trade issues^[3]. Some studies have pointed out that the branding and marketization of characteristic agricultural products can effectively increase farmers' income, and promote the overall improvement of the regional economy through the coordinated development of the upstream and downstream of the industrial chain. However, these studies mostly focus on the analysis of the economic benefits of a single industry and less on the comprehensive assessment of social and ecological benefits. In domestic research, the relationship between characteristic industries and common prosperity has been discussed more deeply, especially in the context of rural revitalization strategy, focusing on the effectiveness of industrial policies, the construction of interest linkage mechanisms, and the long-term mechanism of farmers' income increase. However, there are still some shortcomings in the existing research, such as insufficient attention to the sustainability of the development of characteristic industries and weak research on the coordinated development of industries between different regions. These questions provide an entry point for this paper to further explore the common prosperity effect of Panzhihua's mango industry.

Panzhihua mango industry research status

At present, the research on Panzhihua's mango industry mainly focuses on industrial scale, market sales and technology application, but there are still obvious research gaps. In terms of industrial scale, studies have shown that the planting area and output of Panzhihua mango have shown a steady growth trend in recent years, becoming one of the important pillar industries of the local economy. However, most of these studies

remain at the level of descriptive statistical analysis and lack in-depth discussion of the driving factors of industrial growth. In terms of market sales, scholars pay attention to the brand building and market expansion of Panzhihua mangoes, emphasizing the important role of e-commerce channels in promoting product sales. However, the existing research on the dynamic analysis of market demand changes and consumer preferences is relatively limited, and it is difficult to fully reveal the development potential of the mango industry on the market side. In addition, in the field of technology application, the research focuses on the improvement of planting technology and the optimization of pest control measures, while the attention to the back-end links such as processing technology and cold chain logistics is relatively insufficient. Domestic scholars mainly focus on production and cultivation technology, mango varieties, mango germplasm and planting distribution in the study of the mango industry, while there is little research on the development of the mango industry^[3]. In general, the existing research has not systematically explored the comprehensive role of Panzhihua mango industry in helping common prosperity, especially in the integration of industrial chains, benefit distribution mechanisms and social effect assessments, and there are obvious gaps in the evaluation of social effects, which need further in-depth research.

III. The Development Status And Policy Background Of Panzhihua Mango Industry

Industrial development status

Industry scale

As an important part of local characteristic agriculture, the Panzhihua mango industry has shown a significant growth trend in terms of planting area, output and output value in recent years. According to relevant statistics, as of 2022, the planting area of Panzhihua mangoes has exceeded 500,000 mu, nearly tripling from ten years ago. At the same time, the annual output has also exceeded 300,000 tons, with an average annual growth rate of more than 8%, showing a strong development momentum. From the perspective of output value, the total output value of Panzhihua's mango industry has exceeded 2 billion yuan, accounting for the proportion of the total local agricultural output value increasing year by year, becoming one of the important engines to promote regional economic development. This growth trend not only reflects the effectiveness of Panzhihua's mango industry in terms of scale expansion, but also reflects the gradual improvement of its competitive position in the national mango market. In addition, with the advancement of planting technology and the increase in market demand, the variety structure of Panzhihua mango has been continuously optimized, and the planting proportion of high-end varieties such as "Kate Mang" and "Jinhuang Mang" has increased significantly, further improving the overall economic benefits of the industry.

Industrial structure

The industrial chain of Panzhihua mango industry covers multiple links such as planting, processing and sales, and a relatively complete division of labor and cooperation system has been formed between each link. In the planting process, Panzhihua relies on its unique geographical and climatic conditions to form a production model based on large-scale planting. At present, there are a number of large-scale mango planting bases in the city, using modern irrigation technology and pest control methods to ensure the stability of mango quality and the sustainability of yield. In the processing process, although the Panzhihua mango industry is still dominated by fresh fruit sales, the development of deep-processed products has gradually attracted attention in recent years. For example, the output of processed products such as mango juice and dried mango has increased year by year, providing new growth points for extending the industrial chain and increasing added value. In the sales link, Panzhihua Mango expands the market through a combination of online and offline, not only establishing stable sales channels in major cities in China, but also gradually opening up the international

market. Especially with the help of e-commerce platforms, the brand influence of Panzhihua mango continues to expand and become one of the specialty agricultural products favored by consumers. However, it is worth noting that the technical level and product diversity of the Panzhihua mango industry in the processing process still need to be improved, especially in the field of high-end processed products, which provides room for improvement in future development.

Policy background

National strategic needs

The report of the 20th National Congress of the Communist Party of China clearly stated that "the development of rural characteristic industries is one of the important ways to increase farmers' income and become rich", and made it the core content of the comprehensive rural revitalization strategy^[4]. This strategic deployment provides a clear direction for the development of characteristic agricultural industries in various regions. The report emphasizes that it is necessary to promote the diversification of rural economy and enhance the comprehensive efficiency and competitiveness of agriculture through the development of characteristic agricultural industries, so as to promote the realization of the goal of common prosperity^[5].

As an important part of regional characteristic agriculture, the development of Panzhihua mango industry not only meets the national requirements for optimizing the agricultural industrial structure, but also conforms to the concept of "green development" proposed in the report. Through scientific planning and policy support, Panzhihua's mango industry has made significant breakthroughs in variety improvement, technological innovation and market expansion, further consolidating its leading position in the national mango industry. In addition, the state's proposal to strengthen agricultural modernization provides a policy basis for the introduction of advanced technology and improved production efficiency in the Panzhihua mango industry^[4].

The national top-level strategy provides a policy basis and direction for the development of rural characteristic industries. The 20th National Congress of the Communist Party of China wrote "agricultural power" into the report for the first time, emphasizing that "strong agriculture makes the country strong", and the revitalization of rural industries is the premise and foundation of strong agriculture^[4]. The revitalization of modern agricultural industry must take the "three rural" road of strengthening agriculture, revitalizing agriculture, and rich agriculture, keeping in mind the purpose of industrial parks to be surnamed, farming, serving agriculture, and revitalizing agriculture, and finally realize the comprehensive revitalization of rural areas.

The Strategic Plan for Rural Revitalization (2018-2022) clearly proposes to vigorously develop advantageous areas for characteristic agricultural products and promote the transformation and upgrading of the agricultural industry^[5]. This policy has created favorable conditions for the Panzhihua mango industry to expand the planting scale and extend the industrial chain. At the same time, the "14th Five-Year Plan for Promoting Agricultural and Rural Modernization" proposes to accelerate the progress of agricultural science and technology and promote modern agricultural technology, which is highly consistent with the needs of Panzhihua mango industry to improve its technical level and enhance market competitiveness^[5].

The state also supports the development of the agricultural industry through financial subsidies, tax incentives and other measures, providing financial guarantee for the Panzhihua mango industry. The implementation of these policies will not only help improve the scale and intensification of the mango industry, but also effectively reduce production costs and increase farmers' income, thereby laying a solid foundation for the realization of the goal of common prosperity.

Science and technology are the primary productive forces and an important support for building modern agricultural parks^[4]. The state has always attached great importance to leading rural revitalization and

development with agricultural science and technology, so that scientific and technological achievements can benefit farmers. Highlight scientific and technological support, use big data, artificial intelligence, 5G, Internet of Things and other innovative production models for the purpose of revitalizing agriculture with science and technology, strengthening agriculture with science and technology, and rich farmers with science and technology; Take the initiative to strengthen docking and cooperation with scientific research institutions, strengthen basic cutting-edge technology research, and improve the conversion rate of achievements^[4].

As an important strategy to promote farmers to share the dividends of the digital economy, the construction of digital villages has a significant positive impact on farmers' income^[6]. According to data from January to July 2025, the national online retail sales of agricultural products increased by 7.4% year-on-year, becoming an important growth pole of the rural economy^[7]. During the same period, the per capita disposable income of rural residents reached 13,680 yuan, an increase of 6.2% over the same period last year, which directly reflects the supporting role of e-commerce in increasing farmers' income^[7].

Indicator name	numeric value	year-on-year growth rate
Online retail sales of agricultural products	-	7.4%
per capita disposable income of rural residents	13,680 yuan	6.2%
Coverage of express delivery services in administrative villages	95%	This is an increase of 18 percentage points over 2022
Number of rural online merchants	19.5 million	6.4%

This table is the main indicator of rural e-commerce development from January to July 2025

Local policy support

The Panzhihua Municipal Government has provided important support for the rapid development of the mango industry through the implementation of active financial subsidy policies. Specifically, the municipal government has formulated a detailed subsidy plan for mango planting, processing and sales to encourage farmers and enterprises to expand production scale and improve product quality.

In the planting process, the government will give a planting subsidy of 500 yuan per mu to farmers in the new planting area, and an additional 300 yuan of technical subsidy for farmers who adopt efficient water-saving irrigation technology. In the processing process, the government has set up special funds to support enterprises to introduce advanced processing equipment and technology, and the subsidy amount can reach up to 30% of the total equipment investment.

According to the data, since 2018, the municipal government has invested more than 200 million yuan in financial funds, which has directly driven the increase in mango planting area by nearly 20% and the number of processing enterprises by more than 15%. These subsidy policies not only effectively reduce the production costs of farmers and enterprises, but also significantly improve the overall scale and economic benefits of the industry, providing a strong guarantee for the realization of the goal of common prosperity.

Land policy and scientific and technological support policies are another important starting point for the Panzhihua Municipal Government to promote the development of the mango industry. In terms of land policy, the municipal government prioritizes ensuring the demand for mango industrial land by optimizing land use planning. The municipal government clearly stipulates that mango planting bases and processing parks that meet the industrial development plan can enjoy preferential policies such as land transfer fee reduction or installment payment^[8]. This policy effectively solves the bottleneck of land use in the development of the mango industry and provides a space guarantee for the large-scale development of the industry.

At the same time, the municipal government also vigorously supports the scientific and technological innovation of the mango industry, and encourages enterprises to cooperate with universities and scientific research institutions to carry out key technical research through the establishment of special scientific research funds. In recent years, the municipal government and Sichuan Agricultural University have carried out the project of "Panzhihua Mango Variety Improvement and Efficient Cultivation Technology", successfully cultivated a number of new varieties with strong adaptability and high yield, and promoted planting throughout the city. These scientific and technological achievements not only improve the quality and yield of mangoes, but also significantly enhance the brand influence of Panzhihua mangoes and inject new momentum into the sustainable development of the industry.

Types of policies	Specific measures	Subsidy standards	Implementation effect
Planting subsidies	Subsidies for new planting areas	500 yuan per mu	Planting area increased by nearly 20%
Technical subsidies	Efficient water-saving irrigation technology	300 yuan per mu	The level of production technology and resource utilization efficiency have been significantly improved
Processing equipment subsidies	Introduce advanced processing equipment and technology	30% of total equipment investment	The number of processing enterprises increased by more than 15%
Land policy	Land transfer fee is reduced or paid in installments	Customized according to the scale of the project	Solve the bottleneck of industrial land and promote large-scale development
Supported by science and technology	Cooperate with scientific research institutions to carry out technical research	Set up a special scientific research fund	Cultivate a number of new varieties, and the quality and yield have been significantly improved

The mango industry in Panzhihua City mainly supports policies and effects

IV. Research Content

Basic analysis of the development of Panzhihua mango industry

Historical evolution and location conditions

Industrial origin and policy drivers

The origin of the Panzhihua mango industry can be traced back to the thirties of the twentieth century, when it was first brought back to Renhe Dahe Commune from Southeast Asia by the Ma gang for cultivation, and then gradually developed through multiple introduction experiments^[9]. In 1960 and 1963, the Xichang area hot crop institute was introduced from Hainan twice, and experimental sites were established in Honggreen Farm in Huili County and Binggu Town in Miyi County for trial cultivation. In 1964, Bingcaogang Farm in Panzhihua Special Zone introduced mangoes from Hekou Farm in Yunnan Province for adaptive planting. These early explorations laid the foundation for subsequent large-scale development. In the 90s of the 20th century, with the support of policies, mangoes in the Panzhihua area began to develop on a large scale, and the planting technology became increasingly mature. In the 21st century, the government has further promoted the development of mango industrialization and explored the development model of "company (association) + base + farmer", which has greatly promoted the growth of the industry^[10]. In addition, the policy also helps the development of mango variety breeding, adaptability research, processing and sales through financial support, scientific and technological investment, etc., making Panzhihua an important mango production base in China.

Location advantages

Panzhihua is located at the junction of the Panxi Rift Valley at the junction of Sichuan and Yunnan, and this unique geographical location provides a significant location advantage for the development of its mango industry^[11]. First of all, Panzhihua is located on both sides of the Jinsha River, with convenient transportation, which is convenient for the transportation and circulation of mango products, which can effectively reduce logistics costs and improve market response speed. Secondly, as the center of the important resource development zone of the "Golden Triangle" bordering Yunnan, Guizhou, and Sichuan, Panzhihua has a broad market radiation, and its mango products can not only cover the southwest region, but also expand to the national market through convenient transportation networks^[12]. In addition, the geographical environment of Panxi area also provides unique conditions for mango planting, such as the characteristics of high altitude and high prototype inland mountain planting areas, which makes Panzhihua mangoes unique in quality and further enhances their market competitiveness. This location advantage not only promotes the development of the mango industry, but also provides strong support for the extension of related deep processing and sales links.

Natural and human conditions in the production area

Climate, soil and other resource endowment advantages

Panzhihua is located at 26 degrees north latitude and belongs to the southern subtropical dry and hot river valley climate, and its unique climatic conditions provide a unique environment for the growth of mangoes. With about 2,300 to 2,700 hours of sunshine per year, an annual accumulated temperature of more than 6,600 °C, and a frost-free period of more than 300 days, this sufficient light and heat resource not only prolongs the photosynthesis time of mangoes, but also promotes the accumulation of nutrients in the fruit^[13]. In addition, Panzhihua has a large temperature difference between day and night, and has a strong temperature inversion effect in winter and spring, which helps to reduce the occurrence of pests and diseases, and at the same time improves the sweetness and taste of mangoes. Studies have shown that the sweetness value of Panzhihua mango is generally around 19%, which is significantly higher than that of other producing areas^[12]. In terms of soil, the Panzhihua agricultural area is between 1000~1800m above sea level, with complex and diverse landform types,

mainly mountainous, and the soil types are mostly red soil and purple soil, which are rich in minerals and well drained, providing an ideal environment for mango root development. Therefore, Panzhihua's natural endowment not only determines the excellent quality of its mangoes, but also lays a solid foundation for its industrial development.

labor, cultural traditions and other social capital

The Panzhihua area has abundant labor resources, which provides important support for the development of mango planting and related industries. According to relevant studies, the number of rural labor force in Panzhihua City is sufficient, and with the increase of agricultural technology training in recent years, the skill level of workers has gradually improved and can meet the needs of modern mango cultivation^[14]. In addition, the local cultural traditions of Panzhihua also contain elements related to mangoes, such as the custom of treating mangoes as auspicious symbols, which not only enhances the emotional attachment of fruit farmers to mango planting, but also injects profound cultural connotations into the formation of industrial characteristics^[15]. In the context of the rural revitalization strategy, the Panzhihua Municipal Government has further improved the comprehensive quality of the labor force and agricultural production efficiency by organizing various training activities and promoting green energy projects such as photovoltaic power generation, thus creating favorable conditions for the sustainable development of the mango industry. To sum up, labor resources and cultural traditions together constitute an important social capital for Panzhihua's mango industry, providing a guarantee for its dominant position in market competition.

variety structure and industrial chain status

Main planting varieties and adaptability analysis

The main mango varieties cultivated in Panzhihua City include Kate, Giro, Kent, Jinbaihua, Hong Guifei, Jinhuang, Tainong No. 1, Aiwen, and Haydn^[16]. These varieties all show strong adaptability, especially in river valleys below 1,500 meters above sea level, and their growth conditions are extremely suitable. As one of the main varieties, Katemango is known for its late maturity characteristics, the ripening period is usually from late July to late September, and the listing time is concentrated in July~October, which is 2~3 months later than other production areas, which makes Panzhihua mango have a clear competitive advantage in the market^[17]. In addition, Katemango is favored by growers for its high yield and excellent quality, with a single fruit weight of more than 1 kg, delicate flesh, high sweetness, and strong disease resistance, and excellent performance in the climatic conditions of Panzhihua. Jilu Mango is mainly characterized by its early ripening characteristics, which can ripen from late June to early July, filling the gap in the early market, and its fruit has a beautiful appearance and high commerciality, making it suitable for fresh food and processing^[16]. As another important variety, Kent Mango has become one of the high-quality varieties in the Panzhihua mango industry with its thick flesh, low fiber and good taste. Overall, these main varieties have shown good adaptability in the natural environment of Panzhihua, laying a solid foundation for the development of the local mango industry.

Planting-processing-sales chain maturity assessment

From the perspective of planting, the Panzhihua mango industry has gradually moved towards standardized planting, and some bases have passed Good Agricultural Practices (GAP) certification, and the application of comprehensive supporting technologies has been promoted to improve the level of planting management^[17]. However, pest control still faces certain challenges, especially in the context of frequent extreme weather, the frequency and degree of pest and disease prevention have increased, which puts forward higher requirements for planting technology^[18]. In the processing process, the Panzhihua mango industry chain

is still weak, the number of processing enterprises is limited, and the product types are relatively single, mainly concentrated in the primary processing field, such as dried mango and mango juice, etc., and the deep processing capacity is insufficient, failing to give full play to the added value of mango resources^[19]. In addition, the technical level and equipment update speed of the processing link are relatively lagging behind, which restricts the development of the processing industry. In the sales process, Panzhihua Mango relies on the combination of e-commerce platform and offline market to broaden sales channels. In recent years, with the rapid development of e-commerce, Panzhihua mango has achieved nationwide sales coverage through the Internet platform, but low logistics efficiency is still an important factor restricting its development, especially in the case of inconvenient transportation, extreme weather frequently leads to transportation interruptions, affecting the timely supply of products^[18]. Overall, the Panzhihua mango industry chain has a certain foundation in the planting process, but it still needs to be further improved in the processing and sales link to enhance the maturity and competitiveness of the overall industrial chain.

Industrial benefits and problem diagnosis

Empirical analysis of economic and social benefits

The Panzhihua mango industry has played an important role in promoting local economic development and increasing farmers' income, and its economic and social benefits are mainly reflected in the following aspects:

output, sales and contribution of farmers' income

According to the content of the Panzhihua Panguo (Mango) Industry Development Conference held on August 5, 2025, the scale of Panzhihua mango planting ranks among the top three in the country, and the scale of late-ripening mangoes ranks first in the country, forming an industrial system of early, middle and late ripening varieties. Up to now, the city's mango planting area has reached 1.03 million mu, with an output of 600,000 tons, driving the per capita income of fruit farmers to increase by more than 10,000 yuan. In recent years, with the improvement of planting technology and the promotion of brand building, mango production and sales have shown a steady growth trend. Mango planting has become an important source of income for Panzhihua farmers, effectively improving farmers' living standards and narrowing the income gap between urban and rural areas.

The driving effect of cultural and tourism integration

Panzhihua's Mango Festival is a local agricultural cultural event, and the 2025 event revolves around the "sweet industry", integrating multiple contents such as industrial display, cultural experience and consumption assistance.

The holding of the Mango Festival has made Panzhihua's mango brand and city image widely publicized, attracting a large number of media attention and tourists to experience it, and improving the city's popularity and reputation. With the mango industry as the core, combined with agricultural tourism, picking experience, cultural exhibitions and other activities, it has created an agricultural tourism experience chain integrating "flower appreciation, fruit picking, and research", enriching the supply of tourism products and promoting the deep integration of agriculture and tourism. During the Mango Festival, the increase in tourists has led to the development of service industries such as catering, accommodation, and transportation, promoting the growth of the local economy. At the same time, the exhibition and promotion of mango products have also promoted the sales and brand promotion of agricultural products.

Through the Mango Festival, Panzhihua has established cooperative relations with domestic and foreign enterprises and institutions, broadened the sales channels of agricultural products, and promoted regional economic cooperation and development. Various activities held during the period, such as industrial development conferences, technical exchanges, signing ceremonies, etc., are aimed at showcasing the achievements of the mango industry, providing tourists with a rich cultural experience, and enhancing the attractiveness of cultural and tourism activities.

Critical problem identification

Although the Panzhihua mango industry has achieved remarkable results, it still faces some urgent problems that need to be solved:

Technical bottlenecks

Pests and diseases such as mango black heart disease, malformation, and orange fruit fly pose a serious threat to yield and quality. For example, black heart disease has an incidence of up to 30% in some orchards, causing the inside of the fruit to brown and become inedible. Although experts have developed a light and simplified control technology that combines microporous high-pressure injection fungicides, water-retaining agents and fungicides (such as water-retaining agent tablets have an effective rate of 75% in the prevention and treatment of deformities), there are still problems in actual promotion of farmers' dependence on traditional chemical pesticides and insufficient penetration rate of new technologies. According to the 2025 survey, only 20% of orchards use modern monitoring equipment such as intelligent insect information detection and reporting systems and spore traps, and most small-scale farmers still rely on manual inspections and empirical judgments. This will lead to the fact that the mangoes grown by individual farmers cannot be used as an economic subsidy for life.

The disease resistance of the main cultivar Katemango is weak, and the alternative species such as Ruihua No. 5 and Renong No. 18 have been bred through hybridization and obtained the right to new plant varieties, but it takes 8-9 years from the laboratory to large-scale planting, and the current promotion area is only more than 2,000 mu, which is difficult to quickly alleviate the pressure of diseases.

Most small orchards only carry out simple grading, ripening and packaging, and lack advanced storage and preservation technology, resulting in perishable fruits and high loss rates. Cold chain logistics is not perfect: the lack of modern refrigerated transportation equipment and pre-cooling facilities affects the long-distance transportation and market supply of mangoes, and only some villages that have formed the mango industry (such as Hunsala village) have a complete set of cold chain transportation technology, which can be transported over long distances, and most self-employed people can only sell in smaller markets, or wait for fruit vendors to buy at low prices.

Market risk

The planting area of Kate Mango accounts for more than 80% of the city, and the maturity period is concentrated in August and September, forming direct competition with mid-ripening varieties in other production areas across the country (such as Guangxi and Yunnan). On average, a mango tree bears 50 to 60 fruits, with a total weight of more than 100 pounds, and the good ones can reach 300. But the mango tree costs 150 and is not produced until 2 years later. In the use of pesticides, there will be more than 10 times a year, especially before and after the flowering period, which will be applied once every half month. In terms of chemical fertilizers, water-soluble fertilizers are applied about 3 times a year. For farmers, the biggest difficulty at present is the labor problem. Moreover, Panzhihua mango growers have no say in the price of mangoes, and

their annual income is unstable. Farmers are more conservative, fertilizer prices have risen in the past two years, farmers' costs have risen, and for new pesticides and fertilizers, in the absence of endorsement, they tend not to use^[13], which will lead to the pricing power of mangoes being more affected by the market.

On July 22, 2025, the price of Sichuan Panzhihua mango (Kate Mang) was 1.63 yuan/jin, up 0.08 yuan/jin or 5.16% from the previous day. Judging from the price trend in the past week, the price gradually rebounded after falling to a low of 1.55 yuan/jin on July 17, indicating that market sentiment has begun to pick up. At the same time, the supply has shown a significant downward trend. From the perspective of the supply index, the supply index continued to fall after mid-July, and as of July 21, it was 698.4, down from the high point in early July, but still higher than the level of the same period last year, indicating that the overall output is relatively stable. With the gradual reduction of local fruit sources and the increase in farmers' reluctance to sell, some fruit farmers choose to refrigerate their fruits for the future, further compressing the market circulation.

On August 6, 2025, Sichuan Panzhihua Miyi Kate Mang ended a stable period of 1.61-1.62 yuan/jin for many consecutive days, and rebounded to 1.63 yuan/jin on August 6, an increase of about 1.24%, and the selling price remained at 4-6 yuan/jin. In the short term (1-2 weeks), it is predicted that Sichuan Panzhihua Miyi Kate Mango will be listed with late-maturing varieties, and the price is expected to rise to 1.60-1.65 yuan/jin;

For fruit farmers, the price of mangoes is constantly changing over time, and as a representative of late-ripening mangoes, the price of Panzhihua mangoes is constantly changing, showing a trend of falling and then rising.

However, many producing areas are seamlessly connected in the month of listing, and mango sales are under great pressure. The mango ripening season of the world's major mango producing countries is shown in Table 3-1. In recent years, the current situation of mango producing areas in our country is that "early fruits are getting earlier and earlier, and late fruits are getting later and later", and the overlap between the two production areas where the original sales seasons were staggered is getting higher and higher. Within a certain market range, the mango market is under high competitive pressure and low risk resistance, and the price of mango will also be affected^[18].



The picture shows our country's mango production from 2012 to 2020

Source: Sohu (http://news.sohu.com/a/534819818_121124522)

产地	品种	8月1日 (元/斤)	8月2日 (元/斤)	8月3日 (元/斤)	8月4日 (元/斤)	8月5日 (元/斤)	8月6日 (元/斤)
广西百色田阳区	贵妃芒	1.32	1.32	1.32	1.32	1.32	1.31
四川攀枝花米易	凯特芒	1.61	1.61	1.61	1.61	1.61	1.63
云南保山隆阳区	鹰嘴芒果	0.96	0.96	0.97	0.97	0.93	0.93

The table is the price list of the main origins in the past seven days

Data sources:<https://www.ymt.com/hangqing/hqfx-mangguo-3-0-335328-20250806>

Due to the expansion of planting area and a single variety, the concentrated listing of mangoes leads to oversupply, and the price decline will lead to the instability of fruit farmers' income. For the export of mangoes, individual farmers mainly rely on vendor purchases and local sales, lack of diversified sales channels, and weak market risk resistance. Most farmers have a low proportion of online sales and high logistics costs, making it difficult to effectively use e-commerce platforms to expand the market. Only some villages will independently develop live broadcasts, e-commerce industries and other online sales.

Research on the linkage mechanism of common prosperity

The impact of industrial upgrading on regional balanced development

The Third Plenary Session of the 18th Central Committee of the Communist Party of China drew a grand blueprint of "promoting the transformation and upgrading of industrial structure, steadily moving towards high-quality development, and then promoting a more efficient, fair and sustainable economy". In this context, industrial structure upgrading has become the core engine driving our country's economic development and a key force in promoting balanced regional development^[20]. Only through innovation can enterprises create competitive advantages, and only continuous upgrading can they stand at the forefront of the tide. By optimizing the industrial structure, introducing high technology, and improving production efficiency, industrial upgrading has created a large number of employment opportunities in underdeveloped areas and effectively increased the income level of residents^[21]. At the same time, it also promotes the flow and optimal allocation of resources between urban and rural areas, injecting strong impetus into narrowing the income gap between urban and rural areas.

The narrowing effect of the urban-rural income gap

In recent years, our country's urban-rural income gap has continued to narrow, and behind this positive phenomenon is the synergistic drive of labor market integration, human capital improvement and policy intervention. In-depth exploration of the evolution logic and driving factors of urban-rural income gap is of great practical significance for solving the problem of development imbalance, accelerating the process of urban-rural integration, and fully stimulating the potential of domestic demand^[22]. First, the deepening of the reform of the household registration system and the acceleration of urbanization have broken down the barriers to the transfer of rural surplus labor to non-agricultural industries, and effectively promoted the integration of urban and rural labor markets^[23]. The study shows that the increase in the wage level of migrant workers and the expansion of employment opportunities have significantly improved the income situation of rural residents. Coupled with the arrival of the Lewis inflection point, the rural labor supply has shifted from infinite surplus to relative scarcity, which not only pushed up agricultural labor productivity and wage levels, but also laid a solid

foundation for the continuous narrowing of the urban-rural income gap^[24]. Secondly, the accelerated accumulation of rural human capital has become an endogenous driving force for income growth. The balanced allocation of educational resources, the popularization of vocational skills training, and the sinking of Internet technology have significantly improved the skill literacy and employment competitiveness of rural residents. In particular, the widespread promotion of the "Internet + agriculture" model has enabled farmers to obtain market information more efficiently and broaden the channels for increasing income, thereby enhancing their ability to generate income independently. In addition, the improvement of the rural social security system and the equalization of basic public services have also reduced the burden of farmers' expenditure on education and medical care to a certain extent, and indirectly increased their disposable income. Finally, policy intervention has played a crucial guiding and guarantee role in bridging the income gap between urban and rural areas. The full implementation of the rural revitalization strategy, the precise optimization of agricultural subsidy policies, and the continuous improvement of rural financial services have provided solid institutional support for the steady development of the rural economy. At the same time, the in-depth promotion of regional coordinated development strategies and targeted poverty alleviation policies has effectively alleviated rural poverty and effectively promoted the steady growth of income of low-income groups. Looking ahead, efforts are still needed to break down the hidden barriers in the urban-rural factor market, enhance the endogenous sustainability of rural industries, and achieve a higher level of equilibrium in social security coverage to consolidate and expand the long-term results of narrowing the urban-rural income gap^[25].

Policy empowerment and innovation practice cases

On the road to common prosperity, policy empowerment plays an indispensable role. The government provides solid support to underdeveloped areas and vulnerable groups by formulating and implementing precise and effective policies. The true meaning of policy empowerment lies in stimulating its endogenous development momentum, rather than simple external "blood transfusion". Through institutional innovation and policy coordination, the government can build a superior institutional environment for common prosperity. The construction of digital government provides new technical support and development space for government governance, and is an inevitable requirement for promoting the modernization of social governance capabilities. The government's digital reform is to meet the urgent needs of the development of the new era; Achieving common prosperity is one of the grand goals that must be achieved in the process of Chinese-style modernization.

Evaluation of the effectiveness of government subsidies and e-commerce poverty alleviation

Government subsidies and e-commerce poverty alleviation are two important policy tools to promote common prosperity in recent years. Government subsidy policies mainly have an impact on the income of rural residents through two paths: direct support and indirect empowerment. At the level of direct support, the injection of funds in the form of agricultural production subsidies and living security subsidies provides basic living security for low-income groups in rural areas. This type of subsidy not only relieves their living pressure, but also provides them with a valuable financial buffer for their production and business activities. At the level of indirect empowerment, the government has effectively reduced the production and operation costs of rural residents through policy tools such as tax incentives and credit support, and enhanced their ability to integrate into the market and participate in competition^[26].

From the perspective of implementation effect, government subsidy policies show a significant "dual effect". On the one hand, direct subsidies have built a solid social "safety net" for rural disadvantaged groups; On the other hand, indirect support policies have improved the market competitiveness of rural residents by

reducing costs and increasing efficiency. However, subsidy policies also face challenges in resource allocation efficiency during the implementation process, and there is an urgent need to establish a more accurate identification and distribution mechanism to ensure that policy dividends can be accurately drip irrigated to target groups^[27].

With its unique advantages such as efficient use of resources, deep integration of production and consumption, and accurate matching of supply and demand, its development is regarded as an inevitable choice for the integrated development of digital economy and agricultural and rural economy, which is an inherent requirement for improving the level of agricultural and rural development, adjusting urban-rural production relations, and promoting urban-rural integrated development^[28]. E-commerce has shown vigor in promoting rural economic development. First of all, e-commerce platforms have completely broken the geographical restrictions on the sales of traditional agricultural products and greatly expanded the market radius of agricultural products. By establishing a direct mechanism for production and marketing, the intermediate links of circulation are effectively reduced, so that farmers can obtain more considerable practical benefits. Secondly, the vigorous development of e-commerce has led to the rise of clusters in supporting industries such as rural logistics, packaging, and marketing, creating diversified employment opportunities and income channels^[29].

More far-reaching, e-commerce poverty alleviation has played a key role in promoting rural industrial upgrading. On the one hand, the market feedback mechanism of e-commerce platforms forces agricultural producers to pay more attention to product quality and brand building; On the other hand, the development of e-commerce has promoted agricultural production in the direction of standardization and scale. This industrial upgrading driven by market forces has laid a solid foundation for the sustainable development of the rural economy^[30].

The effective synergy between government subsidies and e-commerce poverty alleviation has formed a three-dimensional policy system that combines "short-term support guarantee" and "long-term endogenous development". Government subsidies provide the necessary start-up capital and risk coverage for e-commerce poverty alleviation, while the development of e-commerce opens up an effective path for the continuous release of subsidy policy effects and market-oriented operation. The two complement each other and promote each other, jointly writing a vivid chapter of common prosperity in the new era.

V. The Development Path Of The Mango Industry In Panzhihua City

Short-term optimization strategy

Technology promotion

As an important mango production base in our country, Panzhihua City's unique geographical environment and climatic conditions provide unique advantages for mango planting. However, in the process of mango planting, the lag of technology promotion has become one of the key factors restricting the development of the industry. Water-saving irrigation technology is an important means to improve mango yield and quality, especially in hot and dry river valleys such as Panzhihua, where water shortages are particularly prominent. Studies have shown that drip irrigation and micro-sprinkler irrigation techniques can significantly improve water use efficiency while reducing soil salinization caused by over-irrigation^[31]. In addition, the application of green pest prevention and control technology is of great significance to ensure the quality of mangoes. Through the combination of biological control, physical control, and scientific drug use, the use of chemical pesticides can be effectively reduced, thereby improving the ecological safety and market competitiveness of fruits^[32].

Although the above technologies have proven to have high practical value, they still face many obstacles in the actual promotion process. First of all, some fruit farmers have low acceptance of new technologies, mainly due to their dependence on traditional planting methods and risk concerns about new

technologies. Secondly, insufficient investment in technology promotion makes it difficult for relevant training and demonstration projects to fully cover the target group. Thirdly, the grassroots agricultural technology extension system is not perfect, and the number of technicians is limited and the professional quality is uneven, which further limits the speed of technology popularization. In response to these problems, it is recommended to start from the following aspects: first, increase financial support and set up a special fund for technology promotion and fruit farmer training; second, establish a demonstration base to enhance the confidence of fruit farmers through on-site observation and technical display; The third is to strengthen the construction of grassroots agricultural technology teams, regularly organize technical personnel to participate in professional training, and improve their service capabilities^{[31][32]}.

In addition, modern information technology should be made full of modern information technology to build an online technical exchange platform to provide real-time technical consultation and support for fruit farmers. For example, develop mobile applications that integrate functions such as pest and disease identification, irrigation management, and fertilization guidance to help fruit farmers quickly grasp key technical points. This combination of online and offline technology promotion model can not only improve the promotion efficiency, but also significantly reduce the promotion cost, laying a solid foundation for the technological upgrading of the mango industry in Panzhihua City^[32].

Brand building

Brand building is the core link to enhance the competitiveness of Panzhihua mango market. Panzhihua mango enjoys a high reputation in the national and even international markets with its unique advantages of "the highest altitude, the northernmost latitude, the latest ripening, and the best quality". However, there are still many shortcomings in the shaping of Panzhihua Mango's brand image, especially in terms of brand culture excavation, packaging design, and publicity and promotion. First of all, the brand image of Panzhihua mango should be closely integrated with its geographical indications to strengthen consumers' awareness of its origin characteristics. For example, through advertising and public welfare activities, Panzhihua mangoes can be linked to the unique local natural environment and cultural history, forming a distinctive brand memory point^[33].

Secondly, product packaging design is an important part of brand image building. High-quality packaging not only protects the integrity of mangoes during transportation and storage, but also enhances the added value of the product through visual communication. It is recommended to use environmentally friendly materials to make packaging and incorporate local cultural elements, such as the landscape scenery of Panzhihua or the characteristics of ethnic minorities, to enhance the recognition and attractiveness of the brand^[18]. At the same time, the brand logo on the packaging should be uniform and standardized to ensure that consumers can quickly identify and build a sense of trust. In addition, for different consumer groups, diversified packaging forms can be designed, such as gift boxes, family packs, etc., to meet the needs of different scenarios.

In terms of brand promotion, we should make full use of the Internet and new media platforms to broaden marketing channels. For example, the mango planting process, picking scenes, and processing processes are displayed through short video platforms, allowing consumers to more intuitively understand the production process and quality assurance measures of the product^[19]. At the same time, promotional activities can be carried out with the help of e-commerce platforms, such as live streaming, limited-time discounts, etc., to attract the attention of more young consumers. In addition, the government and enterprises should strengthen cooperation to jointly build regional public brands, and enhance brand awareness and influence through activities such as mango cultural festivals and agricultural product^[33].

It is worth noting that brand building is not only image building and marketing, but also requires perfect industrial chain support. The Panzhihua mango industry should further improve postharvest grading, processing, packaging, storage and transportation to ensure the stability of product quality. At the same time, strengthen brand supervision to prevent counterfeit and shoddy products from damaging brand image and safeguard the legitimate rights and interests of consumers^[32]. Through multi-dimensional efforts, Panzhihua mango is expected to become a well-known brand in the domestic and even international markets in the future, injecting new vitality into local economic development.

Long-term planning

Digital agriculture

With the rapid development of information technology, digital agriculture has become an important direction for the transformation and upgrading of modern agriculture. As an important part of regional characteristic agriculture, the mango industry in Panzhihua City should actively explore the application of the Internet of Things, big data and other technologies in the precise management of planting to improve production efficiency and resource utilization. The core of IoT technology lies in real-time monitoring and intelligent regulation of the mango planting environment through sensors, wireless communication devices and cloud computing platforms. For example, by deploying soil moisture sensors, weather stations, and cameras, key data such as temperature, humidity, and light intensity can be dynamically collected, and irrigation systems or shading equipment can be automatically adjusted based on preset parameters, thereby creating optimal conditions for mango growth^[34].

The application of big data technology can further optimize mango planting decisions. Through in-depth analysis of historical data and real-time data, it is possible to predict pest and disease trends, assess yield potential, and formulate scientific and reasonable fertilization plans. For example, pest and disease warning models based on machine learning algorithms can detect potential risks in advance and provide targeted prevention and control suggestions, thereby reducing economic losses^[34]. In addition, big data can also be used for market demand analysis to help fruit farmers reasonably arrange planting scale and product structure, and avoid the phenomenon of "grain cheap hurting farmers" caused by the imbalance between supply and demand.

However, the advancement of digital agriculture also faces certain challenges. The first is the high cost of infrastructure construction, especially in remote mountainous areas, where network coverage and insufficient power supply can become bottlenecks in technology application. Secondly, fruit farmers have limited receptivity to new technologies, and their concerns need to be gradually eliminated through systematic training and technical support. In this regard, it is recommended that the government increase investment in digital agricultural infrastructure, give priority to the construction of Internet of Things demonstration bases in key production areas, and reduce the initial input cost of fruit farmers through policy subsidies^[34]. At the same time, strengthen cooperation with universities and scientific research institutions to develop technical solutions suitable for local actual needs to ensure the implementation of digital agricultural technology.

The development of digital agriculture will also promote the intelligent upgrading of the mango industry chain. For example, the traceability management of the entire process of mango production through blockchain technology can not only improve product transparency, but also enhance consumer trust in the brand. In addition, the introduction of intelligent logistics systems can significantly shorten the time from the field to the market, reduce transportation losses, and improve overall economic benefits^[34]. In short, digital agriculture is not only technological innovation, but also an important driving force for industrial transformation, which will provide strong support for the sustainable development of the mango industry in Panzhihua City.

Integration of three industries

The deep integration of the mango industry with processing, tourism and other industries is an important way for Panzhihua City to achieve agricultural modernization and rural revitalization. The integration of the three industries can not only extend the industrial chain and increase the added value of products, but also promote the diversified development of the rural economy and create more employment opportunities and sources of income for farmers. First of all, the development potential of the mango deep processing industry is huge. At present, mangoes in Panzhihua City are mainly sold as fresh fruits, and the postharvest processing capacity is relatively weak, resulting in low added value and high market risk^[35]. Through the development of mango deep processing, a variety of high value-added products such as juice, dried fruit, and jam can be produced to meet the diverse needs of consumers. At the same time, deep processing enterprises can also cooperate with scientific research institutions to develop functional foods or health products to further expand market space.

Secondly, the creation of mango-themed tourism projects is an effective way to promote the integration of primary, secondary and tertiary industries. Panzhihua City has rich natural landscapes and unique ethnic culture, which provide good conditions for the development of leisure agriculture and rural tourism. For example, ecological sightseeing parks can be built based on mango planting bases, and activities such as picking experience, DIY production, and cultural exhibitions can be set up to attract tourists to visit and play^[36]. In addition, it can also be combined with local specialties to launch mango-themed catering service projects, such as mango banquets, mango desserts, etc., to further enrich the tourism content. By combining mango planting with the tourism industry, it can not only improve the popularity of mango brands, but also drive the development of surrounding catering, accommodation and other related industries, and achieve a win-win situation of economic and social benefits.

However, there are also some difficulties and challenges in the implementation of the integration of the three industries. First of all, the industrial coordination mechanism has not yet been perfected, and the connection between various industries is not close enough, resulting in the difficulty of resource integration. Secondly, there is a lack of professional talents, especially in deep processing technology and tourism project planning, and there is a lack of compound talents with interdisciplinary backgrounds. In response to these problems, it is recommended that the government introduce special policies to encourage enterprises, cooperatives, and farmers to participate in the integration of the three industries, and reduce operating costs through financial subsidies, tax incentives, and other measures^[36]. At the same time, strengthen cooperation with universities and vocational colleges, cultivate a group of professionals who understand technology and good management, and provide intellectual support for the integration of the three industries.

In addition, it is also necessary to pay attention to brand building and marketing, and create a mango industry integration brand with local characteristics through unified planning and management. For example, the successful experience of the French appellation of origin protection system can be learned from the deep integration of the geographical indication brand "Panzhihua mango" with deep-processed products and tourism projects to form a synergistic effect^[19]. Through multi-channel publicity and promotion, we will continuously enhance the market influence and competitiveness of the brand, and lay a solid foundation for the long-term development of the mango industry in Panzhihua City.

VI. Panzhihua Mango Industry Policy Suggestions

Financial support policies

Funds are one of the core driving forces for the development of the mango industry, and the government should set up special funds to support key areas such as technology research and development,

brand building and digital agriculture transformation. First of all, technology research and development is the basis for enhancing the competitiveness of the mango industry, and special funds can be used to introduce and promote advanced planting technologies, such as water-saving irrigation systems, green pest prevention and control technologies, etc. The application of these technologies can not only improve mango yield and quality, but also reduce production costs and enhance the sustainable development of the industry^[2]. Secondly, in terms of brand building, funds can be used to create a regional public brand image of "Panzhihua Mango", including designing unified product packaging, exploring brand cultural connotations, and carrying out marketing activities. By integrating regional brand advantages, the market recognition and added value of products can be further enhanced^[17]. In addition, the transformation of digital agriculture requires a large amount of upfront investment, and special funds should give priority to supporting the application of technologies such as the Internet of Things and big data in mango planting to achieve precise management and efficient use of resources.

In order to ensure the rational allocation and effective supervision of funds, the government needs to formulate a scientific management mechanism. On the one hand, the allocation of funds should be dynamically adjusted according to the needs of industrial development, such as giving priority to meeting the urgent needs of technology research and development and infrastructure construction; On the other hand, establish a transparent fund approval and use process, and introduce third-party institutions to supervise and evaluate the flow of funds to avoid the occurrence of fund waste or misappropriation. At the same time, the effectiveness of fund use can be quantitatively evaluated by setting up performance appraisal indicators to ensure that funds truly play their due role^{[19][32]}.

Talent training policy

Talents are an important guarantee for promoting the innovation and development of the mango industry, so it is necessary to strengthen cooperation with universities and scientific research institutions to cultivate a group of technical talents and management talents with professional knowledge and practical ability. First of all, the government can cooperate with local universities and scientific research institutions to offer professional courses or training programs for the mango industry, covering planting technology, brand marketing, digital agriculture and other fields. Through systematic theoretical learning and field training, students can master the latest industry knowledge and skills, injecting fresh blood into industrial development^[19]. Secondly, in order to attract more outstanding talents to join the mango industry, the government can provide preferential policies, such as entrepreneurship subsidies, tax breaks, and housing support. In addition, special incentive funds can be set up to recognize individuals or teams that have made outstanding contributions to technology research and development, brand promotion, etc., and stimulate the enthusiasm and creativity of practitioners^[36].

In addition to internal talent training, attention should also be paid to the introduction of external talents. By holding national mango industry forums or seminars, Panzhihua City can attract domestic and foreign experts and scholars to exchange experiences and provide intellectual support to local industries. At the same time, establishing a talent sharing mechanism with developed regions and regularly sending local technicians to advanced production areas to learn from experience is also an effective way to improve^[37]. In short, through multiple measures of talent training policies, a solid foundation can be laid for the long-term development of Panzhihua's mango industry.

Infrastructure construction policy

The improvement of infrastructure is crucial to the development of the mango industry, especially the construction of water conservancy and transportation facilities, which directly affects the efficiency and

economic benefits of mango production. Due to the complex terrain of Panzhihua City, most of the mango planting areas are located on hillsides, with poor irrigation conditions and inconvenient transportation, which makes fruit transportation difficult and increases the loss rate^[32]. Therefore, the government should increase infrastructure construction and prioritize solving these problems. In terms of water conservancy facilities, it is recommended to build reservoirs, diversion canals and other projects to improve the irrigation conditions of orchards and ensure sufficient water supply during the growth of mangoes. At the same time, water-saving irrigation technologies should be promoted to improve water resource utilization efficiency and reduce economic losses caused by drought^[10].

In terms of transportation facilities, the government should develop detailed road construction plans, focusing on repairing and expanding the road network to major mango-producing areas. This not only helps in the timely transportation of fruits, but also reduces logistics costs and improves market competitiveness. In addition, the improvement of cold chain logistics facilities is also a part that cannot be ignored. At present, the cold storage capacity in Panzhihua City is seriously insufficient to meet the storage demand for mangoes, resulting in a large number of fresh fruits being sold during peak market periods, bearing high market risks^[32]. Therefore, the government should encourage enterprises to invest in the construction of modern cold chain storage centers and provide them with necessary financial subsidies and technical support.

Finally, funding for infrastructure construction can be raised through various channels, including central financial allocation, local bond issuance, and social capital participation. The government should actively explore the PPP (public-private partnership) model to attract enterprises and social organizations to participate in infrastructure construction and form a diversified investment pattern^[10]. Through scientific planning and reasonable investment, the infrastructure conditions of Panzhihua City will be significantly improved, providing strong support for the sustainable and healthy development of the mango industry.

VII. Conclusion

Summary of research results

This study takes the mango industry of Panzhihua in Sichuan as the object and deeply discusses the high-quality development path of characteristic industries in the common prosperity pilot zone. Studies have shown that the Panzhihua mango industry has played an important role in helping regional economic development, promoting farmers' income, and promoting the coordinated development of related industries. From the perspective of industrial scale and output value, its planting area and output have continued to grow in recent years, which has become an important part of the layout of characteristic industries in Sichuan Province, and has played a significant role in optimizing the regional economic structure. However, a series of problems have also been exposed in the process of industrial development, including intensified market competition pressure, insufficient technological innovation capabilities, and poor connection between the upstream and downstream of the industrial chain. In response to these problems, this paper proposes a high-quality development path to strengthen brand building, improve scientific and technological content and improve the industrial chain. These paths not only help improve the market competitiveness of Panzhihua's mango industry, but also provide useful enlightenment for the development of other characteristic industries in the common prosperity pilot zone. Through empirical analysis and case verification, this study further proves the feasibility and effectiveness of the proposed path, and provides a scientific basis for policymakers and practitioners.

The research results highlight the core position of characteristic industries in achieving the strategic goal of common prosperity. The development experience of Panzhihua mango industry shows that relying on the advantages of local resources to develop characteristic industries can effectively activate the vitality of rural economy, promote farmers' income growth, and promote the coordinated development of regional economy. In

addition, this study also reveals the key role of brand building, technological innovation and industrial chain improvement in the high-quality development of characteristic industries, and provides theoretical support and practical reference for the transformation and upgrading of other characteristic industries in the Common Prosperity Pilot Zone. Overall, this study not only enriches the theoretical system of common prosperity and the development of characteristic industries, but also provides an important reference for the formulation and implementation of relevant policies.

Future outlook

Looking forward to the future, the Panzhihua mango industry has broad development prospects in continuing to contribute to common prosperity. First of all, with the in-depth promotion of the country's common prosperity strategy, characteristic industries, as an important engine of regional economic development, will receive more policy support, which provides good opportunities for the further development of Panzhihua's mango industry. Secondly, in terms of brand building, Panzhihua mango can further enhance its market influence by deepening the coordinated development of regional public brands and leading enterprise brands. At the same time, with the help of digital marketing methods, broadening brand communication channels will help expand its share in the domestic and even international markets.

In the field of technological innovation, the Panzhihua mango industry should strengthen cooperation with scientific research institutions, focusing on breaking through bottlenecks in planting technology, preservation technology and deep processing technology. For example, through the introduction of smart agricultural technology and green production technology, it can not only improve production efficiency and product quality, but also enhance the sustainable development of the industry. In addition, improving the industrial chain is still one of the key directions for future development. By developing deep processing, expanding diversified sales channels, and strengthening the coordination of all links in the industrial chain, the added value of the industry can be significantly enhanced, thereby further consolidating its pillar position in the regional economy.

For follow-up research, it is recommended to focus on the following aspects: first, explore how to extend the development experience of Panzhihua's mango industry to other common prosperity pilot zones to form a more universal characteristic industrial development model; second, in-depth study of the application scenarios of digital technology in characteristic industries and evaluate its long-term impact on the high-quality development of the industry; The third is to analyze the interaction between the development of characteristic industries and rural social governance in combination with the rural revitalization strategy, and provide more dimensional theoretical support and practical paths for achieving common prosperity. In short, as a typical representative of the characteristic industries of the Common Prosperity Pilot Zone, the future development of the Panzhihua mango industry is not only related to the prosperity of the regional economy, but also provides valuable experience for the high-quality development of characteristic industries nationwide.

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