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## **Research on the Development of the Integrated Green Agriculture Industrial Chain——Taking Zhengding TaYuanzhuang as an example**

**Abstract:** The essay dominantly takes the new rural construction and development of Zhengding TaYuanzhuang as a sample, combining it with its practical industrial development. This research focuses on the green agriculture industrial chain from the perspective of industrial integration, and ultimately to clarifies the must-taken way for China's future agriculture and rural development--achieving the development of the integrated green agriculture industrial chain.

**Keywords:** green agriculture; industrial chain; industrial integration

### 1. Introduction

'Green' is one of the five new development philosophy put forward at the Fifth Plenum of the 18th Central Committee of the Communist Party of China. Our president Xi stressed ' We should be guided by the conviction that lucid waters and lush mountains are invaluable assets.' Following the new development philosophy of green is the direction of China's future development and the must-taken way for agricultural development and Rural Revitalization. Adhering to green agriculture, accelerating the transformation and upgrading of agricultural industry, building a green agricultural industrial chain of green production, green processing, green marketing and service, striving to promote the organic integration of agriculture and secondary and tertiary industries, and building a more three-dimensional, stable and efficient new agricultural development pattern are the inevitable requirements of high-quality agricultural development. Based on this, through the research on the development of green agricultural industrial chain from the perspective of industrial integration, combining it with the industrial development practice of TaYuanzhuang, this essay makes an attempt to demonstrate that the necessary way for China's future agricultural development and rural revitalization is the integrated development of green agricultural industrial.

### 2.Theoretical Definition, Features Framework and Significance

#### (1) Basic Concept of Integrated Development of Green Agricultural Industrial Chain:

## iGreen Agriculture

Green agriculture is an agricultural development type that coordinates agricultural production with environmental protection, protects the environment and ensures the green and pollution-free agricultural products while promoting agricultural development and increasing farmers' income. It refers to a pattern and of agricultural development that is effective to environmental protection, the quantity and quality safety of agricultural products, and sustainable development. The green agriculture carries out standardized production by fully using modern agricultural technology, achieving sustainable agricultural development and promoting agriculture modernization. Developing the green agriculture is an effective way to promote harmony and stability, achieve the welfare of farmers and form an effective path for the harmonious coexistence of mankind, nature and economy.(Liu & Xiao, 2022, p.148)

## iiIndustrial Chain

Industrial chain is a form of chain relationship based on certain technological and economic correlation. There are upstream and downstream connections and mutual value exchanges in the industrial chain, including many dimensional part like value chain, enterprise chain and supply chain. The green agriculture industry chain, instructed by green agriculture, involves the raw materials, and processes, production and sales of agricultural products, so as to meet people's demands for 'pollution-free, safe, high-yield, high-quality and ecological agricultural products', reach the transformation of agriculture from increasing quantity to improving quality, and take into account economic, social and ecological benefits while increasing the green supply of major agricultural products, which includes the whole process of scientific research, three product certification, production, processing, storage, logistics, sales, consumption, market supervision and e-commerce industry chain from farmland to after-sales service.

## iiiIndustrial Integration

Industrial integration refers to the industrial form and economic growth mode in which agriculture, industry, service industry, information industry and knowledge industry, which have emerged successively in time and are at different levels in structure, penetrate, contain mutually and integrate into the same industry, industrial chain and industrial network. The integration of green agricultural industrial chain is based on agriculture, effectively integrated with industry, service industry, information industry, etc., further expanding agricultural production, agricultural processing, agricultural sales and agricultural services. To form a future agricultural sustainable development direction of integrated development of primary, secondary and tertiary industries integrating agricultural leisure, sightseeing, health care and agricultural deep processing. It can complement each other, extend the industrial chain, expand the scope of business, and maximize the available resources

to enhance the agricultural development and ultimately promote a virtuous cycle of rural economic development.(Liu, 2022, p.84)

## (2)Basic Features of Green Agriculture Industrial Chain Integration Development

iSystematization: the integrated development of green agricultural industrial chain must be established under the guidance of the system theory based on the development of industrial chain, and comprehensively consider the development of agriculture before, during and after production, so as to form an integrated development of industry, University, research, production, supply and marketing. The development of industrial chain is the inevitable requirement and fundamental guarantee for the sustainable development of agriculture. And the integrated development of green agricultural industrial chain based on green development is the main theme of future agricultural development. Through the horizontal and vertical extension of the industrial chain, the obstruction is eliminated, the added value is increased, and the whole process of agricultural development is more smooth.

iiDiversity: Firstly, it can be integrated within the rural industry, which is the industrial integration between the breeding industry and the planting industry, forming a mixed agriculture and realizing the recycling of various resources. Secondly, the integration of industrial chains between production and processing sessions, which refers to holding agriculture-oriented idea to achieve the goal of industrial integration by extending the industrial chain forward and backward, for example, ensure the reasonable supply of pesticides, fertilizers and seeds in the process of agricultural production, and then form an integrated production and marketing industrial chain through the processing and sales of agricultural products, which helps to enhance the added value of agricultural products. Finally, industrial integration needs to achieve external integration, such as the integration of agricultural industry, agriculture and leisure tourism, agriculture and related supporting service industries, and agriculture and the Internet industry.

iiiOrientation: the integrated development of green agricultural industry chain has distinct orientation. It is guided by green development philosophy, through overall consideration and planning, in order to build a system with complete and scientific operation, coordination and cooperation, and up-down linkage. It is the must-taken way for China's agricultural and rural development in the future.

## (3)The Significance of Integrated Development of Green Agricultural Industrial chain

iPromoting the integrated development of green agricultural industrial Chain will accelerate the transformation and upgrading of agriculture

At present, China's rural areas are in the face of four major problems:the backward agricultural economic structure, great pressure on agricultural resources and environment, difficulties in increasing agricultural farmers' income, and great pressure on international competitions. The above-mentioned problems can be effectively solved and the transformation and upgrading of agriculture can be accelerated by changing the mode of agricultural operation, production and resource utilization with clear objectives and unswervingly, and accelerating the integrated development of green agricultural industries.

iiPromoting the integrated development of green agricultural industrial chain is the must-taken way to achieve high-quality agricultural development

High quality development is to insist on quality and benefit first, effectively change the pattern of development, promote quality change, efficiency change and motivation change, and make the development achievements better benefit all people. The high-quality development of agriculture also should break the restriction of the traditional agricultural development and make agricultural development authentically based on higher quality, more efficiency, more fairness, more sustainable and more security. It is based on this that the integrated development of green industrial chain is put forward, which practices the philosophy of green development, develops green agriculture, extends the industrial chain, promotes industrial integration, expands the three-dimensional space of agricultural development, and realizes the harmonious coexistence between man and nature. It will become the must-taken way for high-quality agricultural development and sustainable development.

iiiPromoting the integrated development of green agricultural industrial chain will promote the rapid transformation of China's rural areas to comparatively well-off villages

The overall requirements of the Rural Revitalization strategy were put forward in the report of the 19th CPC National Congress are 'industrial prosperity, ecological livability, civilized rural style, effective governance and affluence'. The effective implementation of this national strategic task, the overall consideration of agriculture, rural areas and farmers, and the integrated development of the green agricultural industrial chain can effectively implement the development strategy of 'Rural Revitalization and achieving a comparatively well-off society'. It points out the development direction for China's rural revitalization, and can ensure the rapid realization of rural villages moving towards a comparatively well-off society in an all-round way.

### 3.Main Influencing Factors

The integrated development of green agricultural industry chain is the future development direction of China's agricultural and rural areas. How to effectively promote it requires us to focus on the

following factors:

### (1) Green Development Philosophy

The priority of the green development philosophy is 'respecting nature, conforming to nature and protecting nature'. We should always adhere to the green development philosophy to guide agricultural development, especially the implementation of three-dimensional agriculture, the extension of the industrial chain, the development of the integration of local agricultural products and rural leisure tourism, and we need to expand the development prospect under the guidance of the green development philosophy. Only by maintaining the green development direction can we ensure the correct development direction.(Wang & Lu, 2020, p.20)

### (2) Suitable Main Management Body

The main bodies of industrial integration play a leading and supporting role, mainly including large professional breeding households, family farmers, farmers' cooperatives, agricultural enterprises and other new agricultural main management body. Under the patterns of 'farmers + cooperatives + leading enterprises' and 'family farms + leading enterprises', farmers are the direct producers of agricultural products and the cornerstone of the agricultural industrial chain. Leading enterprises gather elements and integrate resources, which is the basis for the improvement of the added value of agricultural products. Grasping the main business body, mobilizing its enthusiasm, and giving full play to its leadership, integration and embeddedness are the basic guarantee for integrated development.(Lu, 2022, p.231)

### (3) Intensive Operating Costs

Transaction costs include transportation costs, time costs, loss costs, etc. Explore the docking mode of agricultural products, agricultural supermarkets and agricultural enterprises, reduce intermediate trading links, and leave more profits of the industrial chain to the production end. We will promote green channels for agricultural products, concentrate on the main production areas of advantageous agricultural products, and build a number of large-scale cold chain logistics bases for agricultural products to reduce circulation costs. We will also explore the circulation mode of 'production base + central kitchen + channel distribution' to reduce the distribution cost of agricultural products.

### (4) Comprehensive production and marketing information

We should follow the systematic principle. On the one hand, we need to widely collect all kinds of data, production and market information required by agricultural production to provide guarantee for scientific production; On the other hand, in order to lay a foundation for expanding the market of green agricultural products, we need to make comprehensive use of multiple media and modern communication methods, strengthen the integration of agriculture and the Internet, use short video platforms such as Kwai and Tiktok to promote green agricultural product information, strengthen cooperation with well-known e-commerce brands such as jd.com, Alibaba and Suning, create green agricultural product brands, use brand effects to enhance information interaction and expand the audience of green agricultural product information.

#### (5) Diversified marketing market

We should Strengthen the integration of agriculture, culture and tourism, make use of the advantages of tourism and cultural resources, hold agricultural product fairs, agricultural trade fairs, improve the popularity and recognition of green agricultural products through the combination of agriculture and tourism, constantly explore agricultural available resources, enlarge agricultural development space, expand distribution channels in various ways, and constantly enhance agricultural stability through picking, leisure and sightseeing.

#### 4.Practice of integrated development of green agricultural industrial chain in TaYuanzhuang, Zhengding

Zhengding TaYuanzhuang is located on the North Bank of Hutuo River in Shijiazhuang, Hebei Province, and it is the origin and practice of Xi Jinping thought on socialism with Chinese characteristics for a new era, and it is also a model and epitome of rural development in New China since the reform and open. During president Xi's inspection of TaYuanzhuang village in Zhengding in 2013, it was required that TaYuanzhuang should enter a well-off society in advance across the country, and make agriculture industrialized, pension market-oriented, and tourism standardized. It is under President Xi's kind care and guidance that TaYuanzhuang village has implemented a new path of integrated development of green agricultural industrial chain and embarked on a happy road of strong agriculture, rural beauty and rich farmers.

Relying on agriculture, culture and tourism, research and learning, and health care, TaYuanzhuang village has achieved green development, industrial chain extension, and integrated industrial development. TaYuanzhuang village adheres to the philosophy of green development, takes the transformation of agricultural development pattern as the main line, vigorously develops characteristic, leisure, green and smart agriculture, greatly improves agricultural added value, establishes vegetable factories, bean sprout factories, bean curd factories, develops modern agricultural technology and rural e-commerce, registers the trademark of 'Zhending TaYuanzhuang', and realizes the extension and

development of the green agricultural industrial chain. Zhengding TaYuanzhuang also deepens and expands projects such as three-dimensional soilless cultivation of plants(Fig1) and symbiotic planting of fish and vegetables(Fig2), builds a modern agricultural science and Technology Industrial Park with green agriculture as its characteristics, and realizes the simultaneous development of culture, tourism, research and learning with research and learning tourism, leisure and entertainment, rural scenery and so on. On this basis, Zhengding TaYuanzhuang actively builds a new health and elderly care service mode, so that industrial development can benefit people's livelihood more, and truly realizes the integrated development of primary, secondary and tertiary industries under the development of green agricultural industrial chain based on green agriculture.



Fig1 :three-dimensional soilless cultivation of plants



Fig2:symbiotic planting of fish and vegetables

## 5.Successful Experiences of Zhengding TaYuanzhuang

In recent years, TaYuanzhuang village has cooperated with Tongfu enterprise to find a way to integrate the development of green agricultural industry chain in line with the actual development of TaYuanzhuang village. Through their successful practice, it is proved that adhering to the road of integrated development of green agricultural industrial chain is the must-taken way for rural and agricultural revitalization. Summarizing their development mode, we mainly focus on the following aspects:

- (1) Always adhere to the philosophy of green development and develop ecological circular

agriculture.(Fig3)

Based on the green agriculture of TaYuanzhuang village, Tongfu enterprise adheres to the selection of improved varieties, the recycling of waste to produce green organic fertilizer, the soil improvement, and the standardization, mechanization, and intelligent scientific management. It has achieved the unified supply of high-quality improved varieties, bio organic fertilizer, use of biological pesticides, production technical procedures and procurement standards, ensuring the ecological green nutrition and health of the product source.

(2) Supported by the cooperative assistance, the win-win cooperation between villages and enterprises has been achieved.(Fig3)

In terms of business entities, Tongfu enterprise integrates multiple resources, gathers scientific research institutes, rural professional cooperatives, financial and insurance institutions, cultural industry institutions, management consulting companies, standard technical service companies and other entities, adheres to the principles of co construction and sharing, mutual benefit, and win-win, builds a platform to ensure the orderly and coordinated development of the cooperative alliance. Under the multi assistance system, the effective extension of the industrial chain and the stability of development are realized through the common standard system and strict and standardized operation.

(3) Actively explore the extension of the industrial chain and improve the added value of agriculture. (Fig3)

The mode 'Production base + central kitchen + channel distribution' further processes the high-quality agricultural products produced by the base to form a series of products such as Tongfu porridge, Tongfu clean vegetables, Tongfu nutritious meals, and Tongfu pastry, and then through the 'three operations', that is, platform, branding, and standardization, truly realizes the one-stop development of the industry.



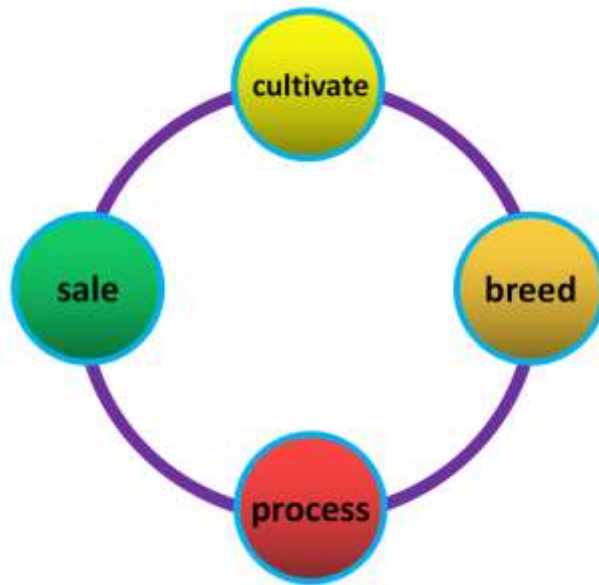


Fig3:development flow chart

Zhengding TaYuanzhuang takes rural cultural tourism as the link to realize the combination of cultural tourism, study tours and research studies. Tongfu enterprise takes agriculture as the foundation, takes ecology, sharing, nature and health as the core concept, injects into the mainstream business format of the market, improves the supporting facilities related to leisure and entertainment, creates a healthy life destination integrating sightseeing and picking, research and education, leisure and vacation, parent-child experience and healthy diet, and strives to achieve the goal of 'Tourism Standardization' for Rural Revitalization.

(4) Take rural health care as the starting point to realize the deep integration of primary, secondary and tertiary industries.

Health care is linked to the health and well-being of people's livelihood on the one hand, and economic and social development on the other. Adhering to the concept of 'happy life, six in one', we will build a model of rural health care(Fig4), and finally achieve the goal of 'marketization of elderly care'.



Fig4:the model of rural health care for the seniors

The Rural Revitalization model of TaYuanzhuang Tongfu(Fig5) closely focuses on the development of modern agriculture and the integrated development of rural primary, secondary and tertiary industries to build a rural industrial system. It integrates R & D, production, sales, Internet, logistics and services, and integrates primary, secondary and tertiary industries. In the past three years, it has introduced more than 100 talents, created more than 10000 jobs, trained more than 10000 high-quality farmers, provided more than 3000 nursing beds, and received 2million tourists a year, truly realizing industrial prosperity and Rural Revitalization.

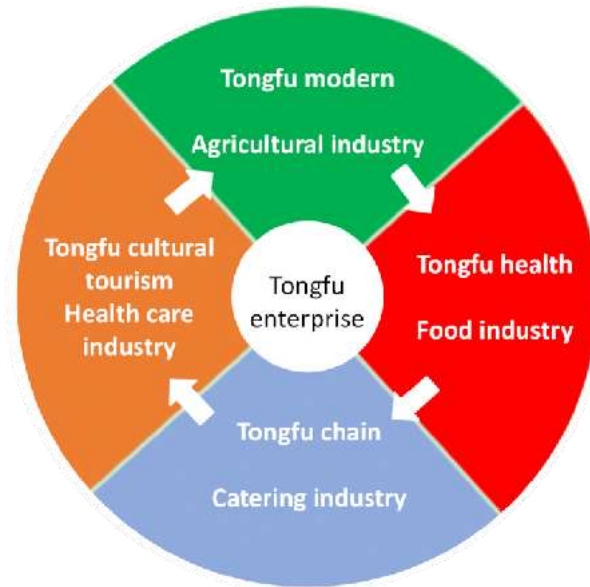


Fig5:The Rural Revitalization model of Ta Yuanzhuang Tongfu

## 6.Summary

The essence of industrial integration is to ensure that the agricultural industrial chain is more stable, and finally realize the sustainable and high-quality development of agriculture. Through the development practice of Ta Yuanzhuang village in Zhengding, it is proved that the road of integrated development of Ta Yuanzhuang green agricultural industrial chain is successful, and this road is the development direction most in line with China's new rural construction. We believe that the integrated development of green agricultural industrial chain must be the only way for China's future agricultural and rural development. It is the right way to practice the philosophy of green development, ensure that farmers are rich, agricultural development is strong, and rural areas are beautiful and livable. It will promote the comprehensive implementation of the strategy of beautiful villages and Rural Revitalization.

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