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# *The Inner Logic and Implementation Path of Empowering Agricultural High Quality Development with New Quality Productivity*

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***Keywords:*** New Quality Productivity; High Quality Development of Agriculture; Internal Logic

***Abstract:*** New quality productivity is profoundly changing the pattern of agricultural development and becoming a key force in promoting high-quality agricultural development. This paper deeply analyzes the inherent logic of new quality productivity empowering high-quality agricultural development, and explains its mechanism from the dimensions of technological innovation driven, efficient resource allocation, industrial structure optimization, and market competitiveness enhancement. At the same time, a detailed exploration of the implementation path, including the application of digital technology, talent cultivation, and industrial integration development, aims to provide theoretical support and practical guidance for high-quality agricultural development, and help accelerate the process of agricultural modernization.

## 1. Introduction

In the current era of rapid economic and social development, agriculture, as the fundamental industry of the national economy, has significant significance for high-quality development. New quality productivity, as a new form distinct from traditional productivity, is deeply integrated into the agricultural field driven by technological innovation. It brings new opportunities to break through the bottleneck of agricultural development and improve the quality of agricultural development. Exploring the internal logic and implementation path of empowering high-quality agricultural development with new quality productivity is of great practical significance for promoting agricultural modernization transformation, ensuring national food security, and promoting rural revitalization.

## 2. The Inner Logic of Empowering Agricultural High Quality Development with New Quality Productivity

### 2.1 Technological innovation leads agricultural transformation

Technological innovation is the core element of new quality productivity and plays a transformative role in the field of agriculture. With the development of biotechnology, cutting-edge technologies such as gene editing have opened up new paths for crop variety improvement. For

example, through gene editing technology, researchers can accurately modify rice genes and cultivate varieties with stronger resistance to common pests and diseases. This not only reduces the use of pesticides, lowers production costs, but also ensures the quality and safety of agricultural products. Meanwhile, this technology can optimize the photosynthetic efficiency of rice, increase its yield, and provide strong support for increasing grain production. In terms of intelligent agricultural machinery equipment, unmanned tractors are equipped with advanced global positioning systems (GPS) and sensors, which can operate accurately according to the terrain of the farmland and preset programs. This not only ensures the consistency of the depth of the farmland and the sowing distance, but also works efficiently in complex terrains, greatly improving the accuracy and efficiency of operations. Precision fertilization and spraying drones, with the help of image recognition technology, can accurately identify crop growth status and pest distribution areas, and carry out targeted fertilization and spraying. While reducing the use of agricultural chemicals[1], it significantly improves crop health and yield, promotes agricultural production to move towards intelligence and efficiency, and injects strong impetus into high-quality agricultural development.

### 2.2 Resource allocation optimization promotes efficient utilization

New quality productivity promotes more scientific and efficient allocation of agricultural resources. In traditional agriculture, there are often irrational resource allocation phenomena[2]. With the help of big data technology, comprehensive analysis can be conducted on information such as soil fertility, climate conditions, and water resource distribution. Taking soil fertility data as an example, by sampling and analyzing soil in different areas of farmland, and combining historical planting data, a soil fertility model is constructed[3]. Based on the model, planting areas are accurately planned, and suitable crops are planted under the most matching soil conditions to fully utilize the potential fertility of the soil. In terms of irrigation, the precision irrigation system can not only accurately control the irrigation amount according to the soil moisture content and the crop water demand law, but also predict the future precipitation situation in combination with meteorological data, adjust the irrigation plan in advance[4], and further improve the water resource utilization efficiency. In the procurement process of agricultural production materials, the supply chain management system utilizes big data to analyze market price fluctuations and supplier reputation, helping farmers purchase high-quality production materials such as seeds and fertilizers at the optimal price. In the sales process of agricultural products, by analyzing market demand data, optimizing logistics and distribution paths, agricultural products can be quickly and accurately delivered to target markets, reducing intermediate losses, improving resource circulation efficiency, and thus obtaining higher agricultural output with less resource input, helping to promote sustainable and high-quality development of agriculture.

### 2.3 Upgrading Industrial Structure and Expanding Agricultural Value

New quality productivity promotes the continuous upgrading of agricultural industrial structure and expands the diversified value of agriculture. In the field of deep processing of agricultural products, advanced processing technologies can transform primary agricultural products into high value-added products. For example, using ultrafine grinding technology to process grains into fine powders can be used to make nutritious and unique tasting infant and health foods[5], greatly enhancing the added value of agricultural products. In terms of the integration of agriculture and other industries, taking rural tourism as an example, some regions have developed rural tourism projects that integrate agricultural experience, folk performances, agricultural product picking, and specialty catering, relying on unique rural scenery and folk culture. Tourists can not only personally participate in the process of crop planting and harvesting, experience the joy of agricultural labor,

but also enjoy folk performances, taste local specialty cuisine, and deeply experience the charm of rural culture[6]. This integration model not only provides consumers with rich and diverse experiences, but also drives the development of related industries such as catering, accommodation, and handicraft production in the surrounding areas, creating a large number of employment opportunities and economic growth points, enriching the agricultural industry format, promoting the transformation of agriculture from a single production to a multifunctional industry, and achieving the connotation improvement of high-quality agricultural development.

### 2.4 Enhancing Market Competitiveness and Promoting Agricultural Development

The new quality productivity improves the quality and yield of agricultural products through technological innovation, enhances total factor productivity, and thereby strengthens the market competitiveness of agricultural products. For example, investing in research and development of drought-resistant and pest-resistant crop varieties can overcome the constraints of natural conditions and traditional breeding techniques, ensuring stable agricultural production and enhancing the competitiveness of agricultural products at the source. At the same time, enhancing agricultural scientific and technological innovation competitiveness is essential. By promoting the integration of artificial intelligence, big data, and agricultural production, intelligent farming systems can be established. These systems can monitor soil conditions, crop growth, and environmental factors in real-time, enabling precise irrigation, fertilization, and pest control, thus improving production efficiency and product quality[7].

Enhancing the resilience of the agricultural industry chain is a critical aspect of new quality productivity. Strengthening the cooperation between upstream and downstream enterprises, for example, integrating seed suppliers, agricultural machinery manufacturers, processing enterprises, and marketing platforms, can reduce transaction costs and risks. In case of supply chain disruptions, such as natural disasters or market fluctuations, the coordinated operation of the industry chain can ensure the normal production and marketing of agricultural products. Additionally, promoting the development of diversified agricultural business models, such as agricultural tourism and e-commerce, can extend the agricultural industry chain, increase added value, and enhance the overall resilience and competitiveness of the agricultural industry.

Moreover, in the context of brand building, novel media marketing channels, such as short video platforms and social media applications, offer agricultural enterprises powerful tools to vividly showcase the unique features and advantages of their products. For instance, some regions have produced captivating short videos documenting the cultivation and processing of agricultural products, which have gone viral on the internet, attracting extensive consumer attention and successfully establishing distinctive agricultural brands, thereby enhancing product visibility and reputation. High-quality branded products command greater pricing power and market share, incentivizing agricultural enterprises to continuously refine product and service quality, fostering a virtuous cycle that propels the high-quality development of agriculture in the competitive market landscape[8].

## 3. The Implementation Path of Empowering Agricultural High Quality Development with New Quality Productivity

### 3.1 Deep integration of digital technology in agricultural production

The deep application of digital technology in the field of agriculture is an important path to achieve high-quality development of agriculture. Taking smart agriculture as an example, sensors and IoT technology collect real-time data on crop growth environment, such as temperature,

humidity, and light intensity. In large orchards, by densely deploying sensors between fruit trees, it is possible to accurately monitor the changes in the microenvironment around each fruit tree. After being processed by the data analysis system, these data provide a basis for precise regulation of crop growth[9]. The vegetable planting base in Shouguang, Shandong has achieved automatic control of greenhouse environment by building a smart agriculture system. When the sensor detects that the temperature inside the greenhouse is too high, the system will automatically turn on the ventilation equipment and sunshades; When the soil moisture is below the set value, the irrigation system will accurately replenish water. Through this refined management, vegetable yields have increased by over 30% and the quality has improved. Big data analysis plays an important role in predicting the agricultural product market. By collecting massive data on agricultural product prices, market demand, climate change, and other factors over the years, and using data analysis models, it is possible to accurately predict future trends in the agricultural product market, help farmers arrange planting plans reasonably, and reduce market risks. The rise of e-commerce platforms has expanded the sales channels for agricultural products. For example, some farmers in remote areas sell local specialty agricultural products directly to various parts of the country and even export them to international markets through e-commerce platforms, improving the efficiency of agricultural product circulation, promoting digital transformation of agriculture, and achieving high-quality development.

### 3.2 Cultivate a new type of agricultural talent team

Talents are the key to the effectiveness of new quality productivity. New agricultural talents not only possess agricultural professional knowledge, but also master modern information technology and management concepts. Various regions have carried out agricultural vocational education and training to enhance the quality of farmers. Jiangsu Province has implemented the "Million Farmers Training Project", offering a variety of courses tailored to the needs of farmers at different levels. For large-scale growers, offer high-end courses such as intelligent planting management and agricultural product brand marketing; For ordinary farmers, practical courses such as planting and breeding new technologies, and agricultural product e-commerce operation basics should be carried out[10]. Through systematic training, a large number of new professional farmers have been cultivated, who are proficient in using new technologies for agricultural production and management. Universities and research institutions should strengthen the construction of agricultural related disciplines, increase investment in emerging disciplines such as agricultural information technology and agricultural engineering, and cultivate high-level agricultural research and management talents. For example, some universities have established smart agriculture majors to cultivate compound talents who understand both agriculture and information technology, providing intellectual support for agricultural technology innovation and industrial development. In addition, local governments have introduced preferential policies to attract talents to return home and start businesses, such as providing entrepreneurship subsidies, land transfer incentives, tax reductions, etc. These policies have attracted a group of talents who have studied and worked abroad to return to their hometowns, utilizing their knowledge and resources to develop characteristic agriculture, agricultural product processing industry, etc., injecting fresh blood into agricultural development, and promoting high-quality agricultural development through talent leadership.

### 3.3 Intensify core technology research and development in key areas and promote the transformation of agricultural scientific and technological achievements

To drive the high-quality development of agriculture, it is crucial to intensify core technology

research and development in key areas. In crop breeding, for instance, continuous efforts should be made to develop new varieties with high yield, superior quality, and strong resistance to diseases and pests. China's hybrid rice research, which has achieved remarkable success, has significantly increased rice yields worldwide. By investing more resources in gene editing technology, scientists can precisely modify the genetic traits of crops, accelerating the breeding process and creating varieties that can better adapt to changing climate conditions and soil environments. In agricultural machinery, there is a need to develop more intelligent and efficient equipment. For example, the research and development of autonomous driving tractors equipped with advanced sensors and control systems can improve the accuracy and efficiency of tillage, sowing, and harvesting operations, reducing labor costs and enhancing production capacity[11].

Promoting the transformation of agricultural scientific and technological achievements is equally important. Establishing a sound technology transfer and commercialization mechanism is the first step. Agricultural research institutions and enterprises can form strategic partnerships, jointly carrying out research and development projects, and sharing the risks and benefits. This way, scientific research results can be quickly transformed into practical productivity. For example, some agricultural science and technology parks act as platforms for technology transfer, where researchers can directly demonstrate and promote their new technologies and products to farmers and enterprises. Additionally, the government should introduce policies to encourage the application of scientific and technological achievements in agriculture, such as providing financial subsidies and tax incentives for enterprises that adopt new agricultural technologies. By doing so, it can create a favorable environment for the transformation of agricultural scientific and technological achievements, continuously injecting new impetus into the high-quality development of agriculture[12].

### 3.4 Strengthen policy support and guarantee system construction

The policy support and improved guarantee system provide a solid backing for empowering high-quality agricultural development with new quality productivity. The government will increase funding for agricultural technology innovation, establish special research funds, and encourage research institutions to carry out key agricultural technology research and development. For example, the central government continues to increase investment in agricultural technology, supporting a series of major agricultural research projects such as the development of crop gene editing technology and innovation in intelligent agricultural machinery and equipment. Introduce tax incentives[13], subsidies and other policies to guide enterprises and social capital to invest in the agricultural sector. Provide tax reductions and exemptions for investment in agricultural technology innovation enterprises, and offer subsidies to farmers and agricultural enterprises that purchase advanced agricultural machinery and equipment. At the same time, we will improve the agricultural insurance system and develop diversified insurance products to address risks such as natural disasters and market fluctuations faced by agricultural production. If meteorological index insurance is launched, corresponding compensation will be given according to the degree of meteorological disasters; Government departments develop agricultural product price index insurance, which provides subsidies to farmers when the market price of agricultural products is lower than the agreed price, reducing agricultural production and operation risks. We need to strengthen the construction of agricultural infrastructure, improve rural transportation, water conservancy and other conditions[14]. Constructing and renovating rural roads to improve the efficiency of agricultural product transportation; Constructing water conservancy facilities, ensuring agricultural irrigation water, creating a favorable environment for the application of new quality productivity in the agricultural field, and promoting the steady progress of high-quality agricultural

development[15].

## 4. Conclusion

The new quality productivity provides strong impetus for the high-quality development of agriculture through internal logic such as technological innovation, resource optimization, structural upgrading, and competitiveness enhancement. On the implementation path, measures such as digital technology integration, talent cultivation, industry integration, and policy guarantees are mutually coordinated. In the future, we will continue to strengthen the empowering role of new quality productivity in agriculture, explore and innovate continuously, in order to promote the steady progress of agriculture on the path of high-quality development, achieve the grand goal of agricultural modernization, and assist in the comprehensive revitalization of rural areas.

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