

Research on the Mechanism of Digital Economy Empowering High Quality Agricultural Development in Anhui Province

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Abstract: China is currently in a period of transformation between old and new driving forces, and agricultural development still faces the most arduous task. Realizing the digital economy empowering high-quality development of agriculture can help improve the level of agricultural quality, modernization, and efficiency, thus truly achieving the ultimate goal of high-quality development and comprehensive modernization of agriculture in China. This article elaborates on the three mechanisms of digital economy empowering high-quality agricultural development in Anhui Province: improving agricultural quality, empowering agricultural modernization, and empowering agricultural efficiency. And point out the practical obstacles that China's digital economy empowers the high-quality development of agriculture in Anhui Province. The digital infrastructure is weak, there is a shortage of digital professionals, and the business environment needs further improvement. Further pointing out the countermeasures for empowering the high-quality development of agriculture in Anhui Province with the digital economy: accelerating the construction of digital infrastructure and talent team to make up for the shortage of digital infrastructure and talent, actively optimizing the business environment through multi-channel fundraising, and providing a good development atmosphere for agricultural digitization, ultimately achieving the high-quality development of agriculture in Anhui Province with the digital economy.

Keywords: Digital economy, High-quality agricultural development, Mechanisms.

1. Introduction

The report of the 20th National Congress of the Communist Party of China pointed out that accelerating the construction of a new development pattern and focusing on promoting high-quality development is the primary task of comprehensively building a socialist modernized country. Agriculture, as the foundation of the national economy, the overall high-quality development of rural areas cannot do without the improvement of agricultural quality and efficiency. At present, agricultural development still faces many difficulties. The development of the digital economy has provided a new path for achieving the goal of high-quality agricultural development. Empower the high-quality development of agriculture with the digital economy, realize the transformation of agricultural production methods, promote the improvement of quality and efficiency in agriculture, and thus promoting rural revitalization.

2. The Mechanism of Digital Economy Empowering High-Quality Agricultural Development

2.1. Digital economy improves agricultural quality through information processing

From a technical perspective, the digital economy mainly utilizes technological means such as big data and cloud computing, indirectly or directly processing and utilizing data to increase the transparency of agricultural market information, accelerate the flow of resources among agricultural participants, and also facilitate the agricultural industry to take corresponding measures based on relevant

information, effectively preventing various risks. Firstly, in terms of information processing, the digital economy can organize scattered information and data, publicly disclose trading information, and ensure that market traders can obtain symmetrical trading information, thereby reducing the situation of unsold and low prices of agricultural products caused by asymmetric trading information, which is conducive to improving agricultural quality. Secondly, in terms of resource circulation, the digital economy can gather massive resources, reduce intermediate resource waste, and promote resource flow, which is conducive to optimizing the allocation of agricultural resources and ultimately improving agricultural quality. Finally, in terms of risk response, the digital economy enables agricultural enterprises to collect more information, identify potential risks in advance, and take corresponding measures, ultimately helping to improve agricultural quality.

2.2. Digital economy improves the level of agricultural modernization through information technology

The digital economy has broken the limitations of agricultural development and achieved significant breakthroughs in agricultural production technology through lower investment costs. From the perspective of new agricultural production technologies, digital agriculture has transformed the original agricultural production methods, achieved intelligent agricultural production, and extended various forms of "Technology+Agriculture" to improve the level of agricultural modernization. One is agricultural biotechnology, which uses agricultural biotechnology to cultivate new animal and plant varieties, develop biological

vaccines and fertilizer regulators and other materials, which is conducive to enriching the diversity of agricultural varieties and meeting the diverse consumption needs of consumers. The research and development of corresponding biological vaccines and fertilizer regulators can provide guarantee for the quality of agricultural products, produce green and safe agricultural products, and meet the requirements of agricultural modernization for agricultural products. The second is the commercialization of agricultural information technology, mainly reflected in the application of drones and remote sensing monitoring technology in agricultural research and production. Through the application of these technologies in agriculture, real-time monitoring of agricultural production can be achieved, reducing the workload of agricultural personnel, effectively preventing potential risks in agricultural production, and improving the level of agricultural modernization. The third is the development of Internet plus agriculture, which has changed the traditional sales mode. It can rely on digital information technology to realize the circulation of agricultural products based on various online sales platforms, which can not only increase the income of farmers but also promote the development of agricultural industrialization, achieve the efficient development of "farmers -- enterprises -- market" integration, and constantly improve the level of agricultural modernization.

2.3. The digital economy improves agricultural efficiency through intelligent management of agricultural production, management, and other aspects

The intelligent effect of the digital economy can largely break through human limitations, solve the limitations of farmers in agricultural cultivation environment and methods, improve agricultural production methods, and thus improve agricultural efficiency. For example, using intelligent environmental monitoring technology to monitor land conditions such as soil, temperature, humidity, and pests in advance can achieve targeted prevention in advance and reduce the occurrence of inefficient compensation afterwards; The digital economy empowers the entire process of agricultural production and operation, including intelligent sowing, intelligent fertilization, intelligent picking, intelligent sorting, intelligent processing, online sales, etc. Through intelligent production and operation throughout the entire process, resources and time waste caused by human factors can be reduced, thereby improving agricultural efficiency.

2.4. Digital economy realizing agricultural economic welfare through digital technology

the digital economy relies on technological means to empower agricultural development, improving the quality of farmers and increasing their income. On the one hand, based on the demand for talent in the digital economy, farmers are constantly learning through online classrooms to meet the emerging development requirements of agriculture, enriching their professional knowledge of digital agriculture, thereby improving the quality of farmers and realizing the transformation from traditional farmers to new farmers. Finally, the digital economy can build agricultural product trading platforms through digital technology, explore emerging trading methods, expand the scope of agricultural

product trading, obtain a huge market, improve agricultural output value, promote the circulation of agricultural products, and ultimately achieve a doubling of farmers' income. In addition, the digital economy can leverage the synergistic effect of enterprise agriculture through digital technology, promote the construction of agricultural industrialization, create an industrial chain throughout the entire agricultural production process, and ultimately achieve the economic prosperity of farmers.

3. The Realistic Obstacles of Digital Economy Empowering High Quality Agricultural Development in Anhui Province

3.1. Weak digital infrastructure

According to statistical data, the internet penetration rate in Anhui Province in 2022 was 63.8%, lower than the national average of 75.6%. As of 2021, the number of computers owned by rural residents in Anhui Province per 100 households is 41.3, which is lower than the national average of 47. The small number of information equipment is not conducive to farmers' access to agricultural production and sales information. In addition, the construction quantity and layout of new infrastructure such as 5G base stations, fiber optic broadband, and Internet of Things facilities in some remote agricultural production bases cannot meet the development needs of agricultural digitization. Among them, agricultural and rural data resources are not centralized, and problems such as weak comprehensive data acquisition ability, low network coverage, and poor data information sharing all hinder the development of agricultural digitization to some extent.

3.2. Insufficient digital professionals

Talent is the core element of digital empowerment for high-quality development of agricultural economy. However, the situation of digital agricultural talents in Anhui Province is not optimistic. Firstly, there is a shortage of agricultural technology talents. As of the end of December 2021, the China Agricultural Technology Promotion Platform showed that the total number of agricultural technology personnel in Anhui Province is 15525, including 394 at the provincial level, 795 at the municipal level, 6020 at the county (city, district) level, and 8316 at the township (town) level. From this figure, we can see that the number of agricultural science and technology talents in Anhui Province is still relatively small, mostly township technical talents, and the total number of provincial and municipal level talents does not exceed 1000. Secondly, the phenomenon of talent outflow is quite prominent. Under the attraction of favorable policies in developed regions, high-end talents in Anhui Province are gradually flowing out. In 2022, the number of talents flowing out of the province was 11.52 million, accounting for 18.9% of the permanent population. In the case of talent outflow, agriculture, due to its economic disadvantage, is unable to attract and retain talents, resulting in a shortage of agricultural digital talents.

3.3. The business environment needs further improvement

A good business environment includes a complete infrastructure, sound policy and institutional mechanisms, as

well as a sound legal system and the improvement of efficiency and transparency in government work. However, based on the evaluation criteria of these business environments, it is obvious that the digital development of agriculture in Anhui Province has not yet formed a good business environment. In recent years, with the acceleration of digital economy empowering the development of agricultural economy, in order to seize the opportunities of digital economy development and achieve further development of agricultural economy, Anhui Province has successively introduced multiple policies to support the digital development of agriculture, taken various measures to create a good environment for the digital development of agriculture, and vigorously supported the digital development of agriculture in Anhui Province.

In the process of agricultural digitization in Anhui Province, the government is also accelerating the implementation of several measures for "digital agriculture in Anhui", with "5+8" as a pilot to promote agricultural digitization. However, the introduction of certain measures clearly lacks corresponding supervision mechanisms, and the lack of supervision will lead to the inability to implement the measures, ultimately leading to difficulties for "digital agriculture in Anhui", and also unable to provide government work efficiency and transparency. So we need to establish a policy implementation supervision mechanism to ensure the implementation of various measures, provide policy support for agricultural digitization, and also create a good business environment for the development of agricultural digitization.

4. Strategies for Empowering High-Quality Agricultural Development in Anhui Province with the Digital Economy

4.1. Accelerate the construction of digital infrastructure

Firstly, we need to continue to improve the digital and intelligent construction of infrastructure such as water conservancy projects, road facilities, power equipment, logistics and transportation, and agricultural production and processing in rural areas. Secondly, we should actively make up for the shortcomings of rural digital infrastructure, and significantly improve the level of rural digitization by accelerating the construction of information data networks mainly consisting of rural broadband communication networks, mobile internet, and digital television networks.

4.2. Strengthen the construction of talent team

The decisive factor in achieving agricultural production and economic development lies in how to cultivate high-quality, large-scale specialized talents related to agriculture. Firstly, "Introducing Talents". Corresponding talent cultivation policies and incentive measures are indispensable key measures in introducing talents. The implementation of the talent policy of "attracting and training together" not only actively attracts foreign technical personnel, but also focuses on the cultivation of local digital agriculture talents, and continuously expands the rural specialized digital talent team. Secondly, 'transformational Talents'. Establish online classrooms such as digital agriculture and digital rural areas, and cultivate new professional farmers and farmers' e-commerce anchors with digital skills through digital online

training platforms, achieving the transformation of identity from "traditional farmers" to "new farmers", thereby better assisting in the construction of agricultural digitization. Thirdly, "Cultivating Talents". Establish a training system for "Agriculture+Information Technology" composite talents, strengthen cooperation with scientific research institutions and key technical talents in digital agriculture in universities, and establish a long-term mechanism for cultivating talents through industry, academia, and research.

4.3. Multi channel fundraising

One of the reasons for the slow and high-quality development of agriculture in Anhui Province is insufficient funding. Firstly, it is necessary to establish a diversified funding mechanism, integrate resources and funds, and encourage social capital to invest in agricultural development through methods such as rewards instead of subsidies, construction before subsidies, and loan interest discounts. Secondly, to increase investment in agricultural equipment technology innovation funds, the Anhui Provincial Government should actively raise financial funds or establish special financial funds to support agricultural technology. Finally, the Anhui Provincial Government should encourage and support the construction of agricultural cooperatives, leverage their advantages, form a cluster effect of agricultural cooperatives, drive agricultural economic development, and achieve independent provision of agricultural development funds.

4.4. Actively optimizing the business environment

In terms of building a business environment, the government should do a good job in building a business environment, introduce relevant policies to encourage and support the development of e-commerce for agricultural products, strengthen departmental and government enterprise collaboration, and create a fair and competitive market environment for the high-quality development of agriculture empowered by the digital economy.

In promoting the coordinated operation of the market, the government should formulate relevant support policies. On the one hand, it should encourage the introduction of "big projects", and on the other hand, it should also closely grasp the "small individuals" at the local level, implement the "one place, one policy", accurately position, stimulate the enthusiasm of farmers to participate in the construction of high-quality agricultural development empowered by the digital economy, and thus achieve the development of the "farmers market government" trinity, It is more conducive to promoting the digital economy to empower the high-quality development of the agricultural economy. Through a series of policies and technical support provided by the Anhui Provincial Government to empower the high-quality development of agriculture through the digital economy, it will jointly promote the high-quality development of agriculture in Anhui Province.

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