

Digital Economy and Rural Revitalization: Exploration in Changfeng County, Hefei City

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ABSTRACT

The digital economy has become a new driving force in the world's economic development, and in 2019, China proposed a "digital countryside" strategy to empower rural revitalization through the digital economy. The organic integration of the digital economy and agriculture and rural areas will start from four perspectives: industrial transformation, ecological livability, rural civilization, and rural governance, gradually realizing the revitalization of rural industries and the affluence of rural residents. Changfeng County, Hefei City, as the first batch of pilot counties (cities) of digital countryside in Anhui Province, has made its own useful explorations by focusing on four aspects, namely, economy, environment, rural culture and governance, perfecting infrastructure construction and integrating and utilizing all kinds of resources.

KEYWORDS

Digital economy; Rural revitalization; Changfeng County.

1. INTRODUCTION

In 2017, China put forward the strategy of rural revitalization. In March 2018, it once again put forward the need to vigorously implement the strategy of rural revitalization; in May, the National Rural Revitalization Strategic Plan (2018-2022) was approved and adopted; in 2021, the CPC Central Committee and the State Council issued Opinions on Comprehensively Promoting Rural Revitalization and Accelerating Modernization of Agriculture and Rural Areas; in February, the National Bureau of Rural Revitalization was listed; in April, the Law of the People's Republic of China on the Promotion of Rural Revitalization" was issued, proposing that the promotion of rural revitalization should be in accordance with the general requirements of industrial prosperity, ecological livability, civilized rural customs, effective governance and ecological affluence.

The "three rural areas" have always been a matter of great concern in China, and the digital economy has become an important engine of economic development in recent years. Digital economy empowered rural revitalization is not only an important strategic design in the national planning to solve the "three rural" problem, but also a necessary initiative to comply with the tide of economic development and the overall development trend of the country.

2. 2. THE CURRENT SITUATION OF THE INTEGRATION AND DEVELOPMENT OF THE DIGITAL ECONOMY AND RURAL REVITALIZATION

The G20 Digital Economy Development and Cooperation Initiative adopted at the G20 Hangzhou Summit in 2016 states, "The digital economy refers to a series of economic with the use of digitized knowledge and information as the key factors of production, modern information networks as an important carrier, and the effective use of information and communication technology as an important driving force for efficiency improvement and optimization of economic structure activities." [1] Digital transformation, on the other hand, is an important part of the development of China's digital economy, which refers to the transformation of individuals, organizations, industries and other dimensions triggered by the infrastructures of digital technologies, digital products and digital platforms as the starting point of support. [2] Nowadays, the wave of digital revolution is sweeping across the globe and is changing the global political and economic power structure. China has also responded to the development of the times and endeavored to seize the historical opportunities of the digital economy. The survey in the White Paper on China's Digital Economy Development (2021) shows that China's digital economy will still show vigorous development in 2020 against the trend, with the scale reaching 39.2 trillion yuan, an increase of 3.3 trillion yuan from last year, and accounting for 38.6% of GDP. The year-on-year increase is 2.4 percentage points, effectively supporting epidemic prevention and control and stable economic and social development. [3]

Rural revitalization is a systematic project aiming at realizing the modernization of agriculture and rural areas, taking into account the time concept of phased development, the spatial concept of county development, and the holistic concept of integrated urban and rural development. [4] In recent years, the cause of rural revitalization in China has achieved remarkable results in terms of industrial income generation, environmental protection, cultural construction and social governance. However, in the course of practice, there are still problems such as the difficulty of breaking down the barriers of production factors, insufficient distribution of resources, weak infrastructure, and backward governance mechanisms. This requires a continuous transformation of the development approach based on the innovation of rural development concepts, and a new practice approach to drive the institutional upgrading of the rural revitalization system.

The "digital countryside" strategy is precisely one of the important implementation directions of the rural revitalization strategy in the context of digitization, and an integral part of the construction of an accomplished digital China. The Outline of the Digital Countryside Development Strategy, issued in 2019, points out that "digital countryside" actually refers to the application of networking, informatization and digital technology in agricultural and rural economic development, and also refers to the focus on upgrading farmers' modern information skills to promote agricultural modernization and rural industrial transformation.

Accompanied by the release of documents such as the Outline of the Digital Rural Development Strategy in 2020, the Digital Agriculture and Rural Development Plan (2019-2025), the Key Points of Digital Rural Development in 2020, and the Opinions of the CPC Central Committee and State Council on Doing a Good Job in Comprehensively Promoting Rural Revitalization Key Tasks in 2022, it is important to strengthen the basic support of modern agriculture, orderly promote the development of smart agriculture, and use Digital technology empowers rural public services, promotes the rural coverage of "Internet + government services", broadens the application scenarios of agricultural and rural big data, promotes the standardized construction of digital villages, quantifies evaluation indexes, and strengthens the construction of rural information infrastructure, etc. It has become the focus of the construction of digital villages.

Under the guidance of a number of policies, the construction of digital villages in China has achieved milestones. 2021, the construction of digital infrastructure in villages has been comprehensively strengthened and leapfrogged in terms of quality and efficiency. 2021 September 3, "Digital Village Construction Guidelines 1.0" shows that in 2021, the administrative villages that are not yet connected to broadband have realized "dynamic clearing" through the universal service of telecommunication. "The ratio of fiber-optic access has increased from less than 70% to 100%, and the average download rate exceeds 100Mb/S, basically realizing the same speed as that of the urban network; the integrated population coverage rate of rural radio programs has reached 99.17%, and the integrated population coverage rate of TV programs has reached 99.45%; and the upgrading and reconstruction of rural power grids has covered more than 2,000 counties and cities across the country, benefiting more than 160 million rural residents. The upgrading of rural power grids covers more than 2,000 counties and cities nationwide, benefiting more than 160 million rural residents. [5]At the same time, the construction of big data in agriculture and rural areas has steadily gained momentum.2021 On November 19, the Agricultural and Rural Big Data Development Center was formally established, and the construction of the rural big data system was implemented from top-level design to the practical stage. Standards for big data collection, transmission and storage have been established one after another; the construction of a big data platform for the whole industrial chain of important agricultural products has been basically completed; a number of agricultural big data management systems, such as standard farmland and new management subjects, have been put on line; the application of Beidou and other high-resolution observing systems in agricultural production has been further promoted and popularized; and the foundation of digital agriculture is being constantly strengthened. The Internet of Things, big data, artificial intelligence, 5G, cloud computing and other new-generation information technologies are integrating with agriculture in a comprehensive and in-depth manner to promote the overall transformation and upgrading of agriculture; the emergence and development of new agricultural models such as rural e-commerce is reconstructing the new rural industry, and industries are showing a new situation of integrated development.

3. CHANGFENG COUNTY DIGITAL ECONOMY ENABLING RURAL REVITALIZATION EXPLORATION

Changfeng County is part of Hefei City, Anhui Province, located in the central part of Anhui Province, north of Hefei City. The county has a population of 804,434, of which 575,605 are rural, accounting for 71.6%.

Agriculture, forestry, animal husbandry and fishery are the county's pillar industries, with an annual GDP of 775,400 (million yuan), accounting for 21.8% of the region's annual GDP. [6]The county was ranked among the top 100 counties in the country in terms of comprehensive strength in 2016, and is also a national advanced county in scientific and technological progress, and a typical county in rural innovation and entrepreneurship. Strawberry is one of the major crops in the county. The county's strawberry planting area reaches 210,000 mu, with a brand value of 7.366 billion yuan, and it has been awarded the "National Geographical Indication Trademark". [7]

In recent years, Changfeng County has taken the strategic positioning of creating a distinctive digital economy development pioneer area as the lead, accelerated the development of digital economy, and comprehensively empowered the high-quality development of the real economy. Certain construction results have been achieved in industrial digitization, agricultural digitization and service industry digitization.

3.1. Industrial economy: digital technology "empowered" to create intelligent new agriculture

Strawberry industry is one of the characteristic agriculture in Changfeng County. In 2012, Changfeng County realized the network village to village, and invested special funds to set up a number of Changfeng strawberry production cooperatives, introduced the Internet of Things and related infrastructure, upgraded and transformed the strawberry greenhouses, distribution vehicles and other original facilities, real-time monitoring and control of strawberry planting, processing, materials, sales and other links. At the same time, the use of Internet of Things, big data, blockchain, artificial intelligence and other technologies, the construction of "digital strawberry" big data center, strawberry park intelligent management, strawberry quality brand digital management and other digital systems. To realize the strawberry production temperature, light, soil, fertilizer, medicine visualization and linkage control, to create the strawberry resource digitalization, production intelligence, management precision, remote service, quality monitoring network, the formation of replicable, popular digital agriculture application scenario model. Changfeng County's digital exploration in the strawberry industry has realized a 15% increase in the average strawberry yield, an increase of 3,600 yuan per mu, and a 15.2% increase in economic benefits. It has also led to the rapid development of online sales in the strawberry industry. Strawberry e-commerce sales accounted for 19.2% growth, online annual sales volume of more than 70,000 tons, the sales value of more than 100 million, hot sales in Beijing, Tianjin, Nanjing, Shanghai and other places. Strawberry planting industry has become the main source of economic income for farmers in Changfeng County, benefiting more than 300,000 farmers. [8]

3.2. Livable Environment: Digital Infrastructure Helps Build New Rural Areas for Livability and Workability

As of 2020, 1000M fiber-to-the-home coverage in Changfeng County has reached more than 99%, 4G network coverage has reached more than 98%, 5G penetration rate of 64.4%, and achieve full coverage of wireless networks in public places, 5G base station construction points and completion progress ranked in the forefront of the five counties (cities) in Hefei City. [9]

3.3. Cultural tourism: digital technology to shape the new mode of cultural tourism services

Changfeng County is rich in cultural tourism resources. In order to enhance the influence of local strawberry IP, Changfeng County adopts the "Internet +" publicity and promotion method, makes full use of digital technology resources, and builds a modern strawberry industry system integrating "strawberry + technology" and "strawberry + tourism". It has built a modern strawberry industry system integrating "strawberry + technology" and "strawberry + tourism", created a unique regional strawberry tourism brand, and driven farmers to increase their income and get rich. "Strawberry town" is one of the important practical achievements of Changfeng County strawberry brand construction.

3.4. Rural governance: digital technology empowered county governance to achieve new breakthroughs

In 2021, the county to build Yangmiao Town, Ma Ying community digital village demonstration site, efforts to build "digital Ma Ying". The construction program includes a map of the smart community, digital services, digital governance, digital agriculture and digital tourism, to realize the cell phone terminal one-stop walk around Ma Ying. At the same time, through the "digital Ma Ying" construction, in the community to provide information services, government processing, demand channels, such as "online office, fingertip office, immediately do" and "a net pass" and other convenient services. The government will also provide convenient services such as "online office,

fingertip office, immediate office" and "one network". Around the new business of agriculture and rural areas, the Ma Ying digital village system outline design and detailed functional design, complete the Ma Ying map, digital agriculture map, consumer small program part of the functional development, to complete some of the data docking work. Ma Ying village through the continuous integration of digital resources, build a smart community, the formation of "Internet + agricultural services", "intelligent party building" and other digital village matrix, the construction of a digital farm bookstore, to provide the masses with convenient and efficient information technology services. Digital technology and rural governance to achieve effective docking, high level to open the county governance "last kilometer", prompting rural residents to improve the convenience of life, the sense of well-being jumped.

4. PRACTICAL IMPLICATIONS OF DIGITAL RURAL CONSTRUCTION IN CHANGFENG COUNTY

Changfeng County's practical application in the context of the digital economy can yield general lessons for breaking through the current dilemma of rural digital construction.

4.1. Improving the construction of digital technological infrastructure and working to narrow the "digital divide"

Strengthening the digital environment in rural areas requires upgrading infrastructure hardware and information services software, as well as changing farmers' mindsets. On the basis of the "Broadband China" strategy to achieve full coverage of the rural Internet system, we will further promote the implementation of the construction of 5G base stations in rural areas, accelerate the innovative application of blockchain, remote communication and other new technologies in rural areas in multiple scenarios; accelerate the digital upgrading of traditional infrastructure, promote the balanced allocation of digital public resources in urban and rural areas, and promote urban and rural smart water conservancy, smart power grids, smart telecom, and smart telecommunication. water conservancy, smart grid, smart transportation, smart logistics and other comprehensive digital development.

4.2. Industrial upgrading-oriented, collaborative participation in the construction of digital agriculture

First of all, it is necessary to introduce all kinds of innovative elements to the convergence of enterprises in agriculture-related industries. Local governments should cooperate with the necessary public financial support and do a good job of attracting investment in agriculture-related industries.

Secondly, efforts should be made to cultivate new business forms in the countryside and innovate new modes of industrial development. Make good use of the resources of e-commerce, social networks, live broadcasting and other platforms to establish diversified product circulation channels, forming a government-led, enterprise-led, farmer-participating model of agricultural production and management.

At the same time, rural cultural tourism and service industries should be developed according to local conditions, digital service platforms should be built, data resources should be integrated, and a rural industrial environment in which one, two, and three industries interact at the same frequency should be built. The government should aim to provide farmers with digital production-related digital training services, through training to improve the level of production organization and standardization of farmers, reversing the traditional production mode of relying on experience. Change the crude, family workshop-style production organization, to achieve large-scale, intensive production. Efforts have been made to build new business entities such as farmers' cooperatives and collective farms,

with high-quality models as the center of the demonstration effect, attracting more farmers to participate in inputs.

4.3. Developing sustainable green agriculture based on rural environmental protection

Environmental pollution and the waste of agricultural resources are a major obstacle to the modernization of agriculture. The use of digital means can promote ecological environment management and modernization of agricultural and rural development through the following aspects:

The first, promoting the systematization of rural habitat monitoring. Rural human settlements are characterized by a wide range of problems, with the situation at the surface being clear, but the situation at the point is not precise enough to be grasped, especially given the lack of a dynamic monitoring mechanism and information technology, and the insufficient accumulation of long-term positioning and observation data, which makes it difficult to make early predictions and eliminate hidden dangers in advance. It is difficult to make early predictions and eliminate hidden problems in advance. The construction of data for monitoring the rural habitat environment should be strengthened, and the advantages of the informationization platform in terms of comprehensive coverage, real-time monitoring and intelligent prediction should be brought into play;

Second, promoting the intellectualization of rural human settlements services; in the promotion and implementation of rural environmental governance, there are still inconsistencies in the implementation of standards, unclear management procedures and uneven levels of service in the promotion of the implementation of policies in various regions. Strengthening the digitization of rural human settlements services and promoting online acceptance, real-time supervision and review of results will help to accurately solve problems such as the failure of governance services;

The third, promoting the diversification of farmers' interactive participation paths. From a practical point of view, the right of farmers to participate in rural environmental governance, the right to know, the right to participate, the right to complain and the right to supervise are often not effectively guaranteed, and the main body's enthusiasm for participation is not high, which restricts the effect of environmental governance. Opening the digital path of farmers' participation in rural green environment construction, guiding farmers to understand the direction of national policies through mobile terminals, small programs and other applications, participating in village decision-making on matters of all sizes, reasonably reflecting demands, and fully stimulating the endogenous motivation to participate in rural environmental governance and ecological environmental protection, opening up a pattern of building and sharing of the rural living environment governance.

The last, enriching the cultural life of villagers as a guide to promote the construction of civilized townships Culture is the soul of the countryside, and when culture flourishes, the countryside flourishes. The digital economy is an important way to promote rural civilization. At the level of cultural access, digital media communication is characterized by convenience and fast diversification. Villagers can conveniently access various cultural resources through the Internet mobile platform. On the cultural supply side, digital technology has enhanced the dissemination and influence of rural culture. Residents can export rural cultural content and participate in the supply of digital cultural products through microblogging, weibo, live broadcasting platforms, short video platforms and so on.

At the same time, the gap between urban and rural cultural and educational levels exists objectively, and the use of digital technology can effectively balance educational resources and bridge the gap between urban and rural educational resources.

As a strategic direction for rural revitalization, digital countryside is an important initiative to promote the modernization of agriculture and rural areas, as well as the modernization of national governance. The application of digital technology to agriculture and rural areas and the construction of a

multifaceted and coordinated rural governance system will enhance the feasibility of solving the "three rural issues" and help to consolidate the results of the poverty eradication strategy.

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